Georgia Rules and Regulations
Administrative Bulletin for April 2024

OFFICE OF SECRETARY OF STATE
ADMINISTRATIVE PROCEDURE DIVISION
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Final rules filed with the Georgia Secretary of State during the month of *April 2024:*

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Final rules filed with the Georgia Secretary of State that became effective *April 2024:*

Department	Rules List	Action	Filed	Effective
195. GEORGIA BOARD FOR HEALTH CARE WORKFORCE	195-25-.01 --- 195-25-.09	adopted	Apr. 2, 2024	Apr. 22
	195-25-.10	adopted	Apr. 2, 2024	Apr. 22
360. RULES OF GEORGIA COMPOSITE MEDICAL BOARD	360-32-.05	amended	Mar. 19, 2024	Apr. 8
	360-34-.01, 360-34-.05	amended	Mar. 19, 2024	Apr. 8
375. RULES OF DEPARTMENT OF DRIVER SERVICES	375-3-1-.02	amended	Mar. 25, 2024	Apr. 14
391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES	391-3-1-.02	amended	Apr. 1, 2024	Apr. 21
	391-3-17-.03, 391-3-17-.05, 391-3-17-.08 --- 391-3-17-.10, 391-3-17-.13	amended	Apr. 1, 2024	Apr. 21
505. PROFESSIONAL STANDARDS COMMISSION	505-2-.02, 505-2-.10, 505-2-.14, 505-2-.22, 505-2-.26, 505-2-.57	amended	Apr. 9, 2024	Apr. 15
	505-3-.77	amended	Mar. 22, 2024	Apr. 15
560. RULES OF DEPARTMENT OF REVENUE	560-7-8-.60	amended	Apr. 8, 2024	Apr. 28

Department 189. RULES OF STATE ETHICS COMMISSION

Chapter 189-2. PRACTICE AND PROCEDURE

189-2-.13 [Effective 5/16/2024] Requirement of Notice Given to Commission Members by Commission Staff of Initial Decision

In accordance with the Rules of the State Ethics Commission Rule 189-2-.08 (2), upon the issuance of an Initial Decision by a Hearing Officer, the State Ethics Commission Staff shall, within two (2) business days of issuance of an Initial Decision, provide the text of the Initial Decision to Commissioners with a recommendation from Commission Staff of what action, if any, the Commission should take on the Initial Decision.

Cite as Ga. Comp. R. & Regs. R. 189-2-.13

AUTHORITY: O.C.G.A. § 21-5-6(a)(7)**.**

HISTORY: Original Rule entitled "Requirement of Notice Given to Commission Members by Commission Staff of Initial Decision" adopted. F. Apr. 26, 2024; eff. May 16, 2024.

Department 195. GEORGIA BOARD FOR HEALTH CARE WORKFORCE

Chapter 195-25. GEORGIA PHYSICIAN EDUCATION LOAN REPAYMENT PROGRAM

195-25-.01 General Definitions

(1) "Georgia Board of Health Care Workforce" means the organization and its office created under O.C.G.A. § 49-10-1.

(2) "Georgia Physician Education Loan Repayment Program (GPELRP)" refers to that program of the Georgia Board of Health Care Workforce authorized under O.C.G.A. § 49-10-3.(2) and O.C.G.A § 31-34-1 through O.C.G.A. § 31-34-9, which awards service cancelable financial loans to physicians who desire to practice in rural communities of Georgia.

(3) "Loans" refers to a four (4) year service repayable grant awarded by the Georgia Board of Health Care Workforce to applicants who are desirous of becoming practicing physicians in rural areas of Georgia.

(4) "Loan Repayment" refers to repayment of all or a portion of recipient's outstanding medical education, and training loan debt.

(5) "Qualifying debt" is any debt held by an established lending institution, identifiable by a promissory note as origination from the debt incurred to obtain a medical education, fully disclosed at the time of application, and is currently not in default even if the creditor now considers the defaulted loan to be in good standing.

(6) "Medical Education and Training Loan Debt" refers to loans incurred by the applicant to finance his/her medical education and training that remain unpaid during the contract period.

(7) "Eligible and Qualified Applicant" is defined as a physician with outstanding medical education and training loan debt, holding a current, unrestricted license to practice medicine in the State of Georgia, who desires to serve in a Board-approved, medically underserved rural area of Georgia.

(8) "Medical School" means an institution of medical education that has received accreditation or provisional accreditation by the Liaison Committee on Medical Education of the American Medical Association (LCME) or Bureau of Professional Education of the American Osteopathic Association (AOA) for a program in medical education designed to qualify the graduate for licensure by the Georgia Composite Medical Board.

(9) "Recipient" means any person who receives any amount of funding from the Georgia Physician Education Loan Repayment Program administered by the Georgia Board of Health Care Workforce.

(10) "Service Repayment" means the period of service earned by the physician, as approved by the Board, toward repayment of the service cancelable loan in professional medical services rendered by the recipient and as required under the provisions of the loan contract.

(11) "Credit" means the amount of time credited to the recipient for services rendered in compliance with the provisions of the contract. Credit is typically applied with one year of funding for each year of service rendered in compliance with the repayment provisions of the contract.

(12) "Rural and Underserved Area" means a Georgia Board of Health Care Workforce approved rural county in Georgia of 50,000 population or less according to the United States decennial census of 2010 or any future such census or at any hospital or facility operated by or under the jurisdiction of Department of Public Health or at any facility operated by or under the jurisdiction of the Department of Corrections or at any facility operated by or under

the jurisdiction of the Department of Juvenile Justice or at any facility operated under the jurisdiction of the Department of Behavioral Health and Developmental Disabilities. Facilities falling under the jurisdiction of the mentioned state agencies must include physician employment by an approved agency or, in the case of contracted employment, the physician must be treating patients of the approved agency with equal provisions given to that agency's missions.

(13) "Board Certification" means the process of examining and certifying the qualifications of a physician or other professional by a board of specialists in the field.

(14) "Award Amount" refers to the annual amount obligated to a loan repayment recipient. The following maximum annual award amounts apply to physicians whose initial applications for participation in the program:

* Year 1 - $25,000 or 15% if the total loan balance is less than $150,000

* Year 2 - $35,000 or 20% if the total loan balance is less than $150,000

* Year 3 - $40,000 or 30% if the total loan balance is less than $150,000

* Year 4 - $50,000 or 35% if the total loan balance is less than $150,000

(15) "Approved Primary Care Specialties" refers to the priority of award consideration given to physician applicants. All specialties can apply with priority given to:

* Family Medicine/Family Practice

* General Internal Medicine

* General Pediatrics

* Obstetrics/Gynecology

* Internal Medicine-Pediatrics

* Psychiatry

* Geriatrics

* General Surgery

(16) "Georgia Board of Health Care Workforce" means that the agency of Georgia State Government, created under O.C.G.A. § 49-10-1, is responsible for monitoring Georgia's physician workforce needs and identifying areas of need by physician specialty and geographic area.

(17) "Default" means breach of contract by the recipient in failing to begin of failing to complete the contractual service obligation of the Georgia Physician Education Loan Repayment Program.

(18) "Ad Damnum or Double Damages" refers to the penalty resulting from a loan repayment recipient defaulting on their contractual obligations. Default requires immediate repayment of double the award amount for the unfulfilled service period as outlined in 195-25-.01(14) less any pro-rated amount for repaid service as provided in the contract.

(19) "Cancellation of Contract" refers to the discretionary power of the Georgia Board of Health Care Workforce to cancel any contract for cause deemed sufficient by the Board provided such authority is not exercised unreasonably or arbitrarily.

(20) "Full Time" refers to the minimum number of hours of work required per week to fulfill services obligation. Full-time is considered a minimum of 32 clinical hours, providing direct patient care during normal clinic hours at

the approved practice site. The remaining hours must be spent providing inpatient care to patients and/or in practice-related administrative activities. On-call hours are not considered part of the full-time requirement. Full-time hours for an OBGYN or Family Practice physicians who practice OB are considered at least 21 of the minimum 40-hour work week must be spent providing direct patient care during normal clinic hours at the approved practice site. The remaining hours must be spent providing inpatient care to patients of the approved site and/or in practice-related administrative activities, not exceeding 8 hours per week. 40 hours per week for General Surgery is combined clinical/office hours and surgery/inpatient care with no more than 8 hours per week devoted to practice-related administrative duties. For all specialties employed under state jurisdiction, the full-time equivalent recognized by the respective state or federal agency is acceptable. No more than 7 weeks (35 workdays) per year can be spent away from the practice for vacation, holidays, continuing professional education, illness, or any other reason. Absences greater than 7 weeks in a service year will extend the service commitment.

Cite as Ga. Comp. R. & Regs. R. 195-25-.01

AUTHORITY: O.C.G.A. § 49-10-3.(2), 31-34-1, 31-34-3**.**

HISTORY: Original Rule entitled "General Definitions" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.02 Eligibility Criteria and Application Process

(1) Eligibility Criteria. Program eligibility is limited to applicants who meet the following criteria:

(a) Licensed with no restrictions and in good standing to practice medicine in Georgia by the Georgia Composite Medical Board.

(b) Agree to practice full-time (a minimum of forty hours per week) in a Board-approved practice location in a rural and underserved community in Georgia designated by the Georgia Board of Health Care Workforce.

(c) Must maintain a Georgia Medicaid number and directly actively treat Medicaid and/or Peachcare patients. Recipient will not knowingly restrict Medicaid/Peachcare recipients as part of their practice.

(d) Must not have other contractual service obligations, such as National Health Service Corps Scholarships or Military Service Obligations.

(e) Must have medical education or undergraduate loans for repayment in good standing and must not have any loans in default status even if the creditor now considers the defaulted loan to be in good standing.

(f) Must be eligible to take the exam for board certification from the appropriate specialty board during the first, second, or third service period. Repayment assistance cannot be provided if the physician has not earned and maintained board certification by the fourth year.

(g) Must meet all other requirements the Georgia Board of Health Care Workforce sets forth.

(h) Previous award winners in the Physicians for Rural Areas Assistance loan repayment program may apply, provided the sum of their previous awards does not exceed $50,000.

(2) Application Process. Each applicant must:

(a) Submit a completed application form.

(b) Submit a copy of the promissory note, which required the loan proceeds to be used to pay for the cost of attendance of the medical education program. The loan must have originated before the date of the application being released. Full disclosure of all outstanding medical education and training debt is required.

(c) Submit a copy of the contract between the practice entity and the applicant or a letter of attestation from the applicant documenting a commitment to full-time (40+ hours per week) practice in the rural community where the practice is located.

(d) Attest that the applicant does not have any other current service obligations, such as National Health Service Corps Scholarships or Military Service Obligations. Participants in the Public Service Loan Forgiveness Program can continue.

Cite as Ga. Comp. R. & Regs. R. 195-25-.02

AUTHORITY: O.C.G.A. § 31-34**.**

HISTORY: Original Rule entitled "Eligibility Criteria and Application Process" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.03 Review Process

(1) **Administrative Review.**

(a) The Board staff shall collect and maintain documentation of the following information from PRAA loan repayment program applicants:

1. Application Form

2. Full disclosure of all outstanding medical education and training debt and a copy of the promissory note, which required the loan proceeds to be used to pay for the cost of medical education.

3. Documentation of the county and population where the practice is located.

4. Documentation that the practice will be in a rural Georgia community that needs additional physicians in the applicant's specialty, as determined by the Georgia Board for Physician Workforce.

5. A copy of the contract between the practice entity and the physician or attestation from the physician documenting full-time (40+ hours per week) practice in the rural community where the practice is located.

6. Documentation verifying enrollment in the Georgia Medicaid program.

7. Attestation from the applicant that the applicant does not have any other current service obligations.

8. Attestation from the applicant that the applicant is actively pursuing board certification or provide documentation of board certification.

(b) The Board staff shall review application materials to ensure eligibility requirements are met and all required documentation has been submitted.

(c) Staff will compile the information and prepare a summary of each applicant for the Board's review.

(2) **Board Review, Criteria for Prioritizing Awards, and Approval Process.**

(a) The Board shall receive and act upon all applications for the Georgia Physician Education Loan Repayment Program made by eligible and qualified physicians.

(b) The Board may employ such methods of applicant evaluation that it deems proper.

(c) The Board shall not discriminate or evaluate applicants based on race, religion, gender, or national origin.

(d) The Board shall review all documentation submitted by the applicant and the Board staff to ensure that the applicant meets all eligibility requirements for the PRAA program.

(e) The Board shall rank awards based on the following criteria:

1. All applicants shall be ranked in order using criteria established by the Board, approved at the Annual Meeting of the Board, and recorded in the official minutes.

(f) The Board shall establish a final ranking of all qualified applicants from highest priority to lowest priority and shall allocate awards based on the availability of funds and the final rank order of the applicants.

(g) Action approving the applicant ranking and order of awards shall be made upon a majority vote of the Board members present.

(h) Action on awards shall be duly recorded in the Board meeting minutes.

Cite as Ga. Comp. R. & Regs. R. 195-25-.03

AUTHORITY: O.C.G.A. § 31-34**.**

HISTORY: Original Rule entitled "Review Process" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.04 Award Process

(1) The Board staff shall notify each applicant in writing of the Board's decision within ten (10) days following the decision.

(2) The successful applicant will be asked to accept or decline the award of a loan by signing and submitting an Acceptance Form.

(3) Those applicants who accept the loan award shall receive a contract for participation in the Georgia Physician Education Loan Repayment Program. Each recipient will be allowed 10 days in which to review the contract with an attorney as to its contents if they so choose.

(4) Loan awards that the applicant rejects shall be made available to the next highest-ranking applicant based on the discussion and action taken by the Board.

(5) The Board staff shall arrange for the Executive Director and Board Chairman to execute all valid and approved contracts.

(6) A fully executed copy of each loan contract shall be returned to the applicant via DocuSign, and one will be kept in the permanent records of the Georgia Board of Health Care Workforce.

(7) Funds shall be paid directly to the financial institution holding the recipient's student loan debt unless payment arrangements are otherwise directed in writing by the Board.

(8) The Board staff shall submit a payment request to the Georgia Department of Community Health for payment of approved loan awards for which a fully executed contract is on file in the Board offices.

(9) The Board staff shall maintain appropriate records necessary to account for the expenditure of funds for the Georgia Physician Education Loan Repayment Program.

Cite as Ga. Comp. R. & Regs. R. 195-25-.04

AUTHORITY: O.C.G.A. § 31-34**.**

HISTORY: Original Rule entitled "Award Process" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.05 Contract Provisions

(1) The term of the GPELRP contract will be four years.

(2) Awards shall be in an amount as follows:

* Year 1 - $25,000 or 15% if the total loan balance is less than $150,000

* Year 2 - $35,000 or 20% if the total loan balance is less than $150,000

* Year 3 - $40,000 or 30% if the total loan balance is less than $150,000

* Year 4 - $50,000 or 35% if the total loan balance is less than $150,000

(3) Recipients shall provide one year of service in a practice location approved by the Board before award payment is made.

(4) Once staff has received, reviewed, and approved all required documentation of completion of each year of service, the annual award amount will be processed and mailed to the lender. Required documentation includes, but is not limited to:

(a) Listing showing total patients or total encounters treated by payor class and by place of service (hospital, clinic, etc.) for the service period. For year 1 awards, the previous year's listing will need to be submitted.

(b) Documentation of Practice Location

(c) Annual report of practice operations describing the successes and challenges of the practice.

(5) Recipients of the Georgia Board of Health Care Workforce scholarship shall be eligible for loan repayment and receive funds as described in section 195-25-.04 Award Process, but with the special proviso that they cannot apply until after they complete the scholarship service obligation.

(6) At all times, each GPELRP loan repayment recipient is responsible for keeping the Board apprised of his/her current mailing address, email address, and telephone number. Failure to do so may result in the cancellation of the contract and a request for payment in full.

(7) The Board has the discretionary power to cancel any contract for a cause deemed sufficient by the Board. Upon such cancellation by the Board, two times the total uncredited amount of the loan paid on behalf of the recipient shall become due and payable to the Georgia Board of Health Care Workforce.

(8) The Georgia Board of Health Care Workforce is vested with full and complete authority to bring an action in its own name against any recipient for any balance due the Georgia Board of Health Care Workforce on any such contract.

Cite as Ga. Comp. R. & Regs. R. 195-25-.05

AUTHORITY: O.C.G.A. § 31-34**.**

HISTORY: Original Rule entitled "Contract Provisions" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.06 Contract Default, Penalty, and Appeals

(1) Default - a recipient will be considered in default of the contractual obligations of the Georgia Physician Education Loan Repayment Program under any of the following situations:

(a) The recipient loses his/her Georgia medical license, or restrictions are placed on the recipient's license, rendering him/her ineligible to practice full-time medicine in agreement with the terms of the GPELRP contract.

(b) The recipient fails to begin professional practice in a board-approved practice location in a rural community in Georgia as specified in the contract.

(c) The recipient fails to complete the full term of the contractual service obligation in the practice location specified in the contract.

(d) The recipient fails to maintain a full-time practice (40+ hours per week) in the board-approved practice location specified in the contract.

(e) The recipient fails to provide Board staff access to records or other information necessary to monitor the recipient's compliance with contract terms.

(2) Penalty for Default - upon a finding of default by the Board, the recipient shall immediately be liable to the Board for two times the award amount for the uncompleted service period.

(3) Reduction of Penalty - the Georgia Board for Physician Workforce may consent or agree to a lesser measure of damages in recognition of service provided or for other compelling reasons.

(4) Appeal Process - a recipient found to be in default may appeal the finding to the Board in writing. The recipient shall also have the right to request a hearing before the Board to appeal a finding of default or enforcement of the penalty provision. If a recipient fails to appear for a scheduled hearing before the Board, the recipient shall forfeit all rights of appeal. The Board shall consider appeals from recipients prior to enforcement of the penalty provision.

(5) Enforcement of Penalty - the penalty provision for default shall be enforced by a letter of demand for payment from the Board to the recipient. If the recipient fails to respond to the letter of demand for payment, collection shall be pursued through the civil courts.

Cite as Ga. Comp. R. & Regs. R. 195-25-.06

AUTHORITY: O.C.G.A. § 31-34.

HISTORY: Original Rule entitled "Contract Default, Penalty, and Appeals" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.07 Monitoring Compliance

(1) The Board shall monitor compliance primarily through information submitted by the recipient in an annual report, which shall include information about the recipient and the recipient's practice as it relates to the service obligations of the contract.

(2) The Board may also monitor compliance through on-site visits by Board staff or contracted compliance officers to the recipient's practice during the contract period. Such on-site visits may be unannounced.

(3) The Board, at its discretion, may monitor compliance through other appropriate means.

Cite as Ga. Comp. R. & Regs. R. 195-25-.07

AUTHORITY: O.C.G.A. § 31-34 ***et seq.***

HISTORY: Original Rule entitled "Monitoring Compliance" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.08 Allocation of Funds

Funds for all awards granted through the Georgia Physician Education Loan Repayment Program shall be allocated from funding appropriated to the Georgia Board for Health Care Workforce by the Georgia General Assembly for that purpose.

Cite as Ga. Comp. R. & Regs. R. 195-25-.08

AUTHORITY: O.C.G.A. § 31-34**.**

HISTORY: Original Rule entitled "Allocation of Funds" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.09 Accounting Procedures and Reporting Requirements

The Georgia Department of Community Health shall maintain appropriate records in accordance with the provisions of the Georgia Administrative Attachment Statute, O.C.G.A. § 50-4-3.

Cite as Ga. Comp. R. & Regs. R. 195-25-.09

AUTHORITY: O.C.G.A. § 31-34 ***et seq*.**

HISTORY: Original Rule entitled "Accounting Procedures and Reporting Requirements" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

195-25-.10 Due Process and Collection Provisions in the Event of Default

(1) **Intent and General Approach.** The Georgia Board of Health Care Workforce intends to carry out the purpose of the Georgia Physician Education Loan Repayment Program to recruit physicians in medically underserved rural areas of Georgia. It is also the intention of the Georgia Board of Health Care Workforce to assure due process in the enforcement of the provisions of the program contract. Therefore, in the event of default by the recipient of the service obligations of the contract, the Board will take reasonable steps to negotiate the completion of the service obligation by the recipient prior to enforcement of the penalty provisions of the contract.

(2) **Assessment of Default.** Board staff shall investigate potential default situations, obtain information from recipients pertaining to the potential default, and report to the Board.

(3) **Notification and Due Process Procedures.** In the event the Board determines a recipient to be in default, the following steps shall be taken:

(a) Notification of Default. The Executive Director of the Board shall notify the recipient by certified mail of the Board's finding that the recipient is in default. The notification letter shall include the facts upon which the Board made its default finding. The letter of notification shall provide information on the penalty provisions of the contract, including the total penalty due and payable, the Board's procedures for enforcement of the penalty provisions, and the opportunity for the recipient to obtain a hearing before the Board to appeal the finding of default.

(b) Opportunity for a hearing prior to enforcement of penalty provisions. Upon receipt of a notice of default, the recipient will be allowed thirty (30) days from the mailing date of the default notice to request a hearing before the Board to dispute the finding of default or to provide information to the Board as to why the penalty provisions of the contract should not be enforced. Said hearing shall take place within sixty (60) days of receipt of a clearly written request for a hearing.

(c) Hearing

1. The Board Chair shall serve as the presiding officer for the hearing. In the absence of the Chair, the Board Vice Chair shall preside.

2. The recipient shall have a reasonable amount of time during the hearing to present information relevant to the issue of default to the Board. The presiding officer of the hearing shall determine the length of the hearing and shall have the sole authority to bring the hearing to closure.

3. The testimony of individuals with knowledge relevant to the recipient's case is requested to be submitted in writing to the Board at least one week prior to the date of the hearing. The presiding officer of the hearing may permit live testimony if, in the sole opinion of the presiding officer, the information to be presented by witnesses is relevant and useful to assist the Board in making an appropriate decision.

4. Neither the Board nor the recipient shall be represented by legal counsel at the hearing.

5. At the conclusion of the hearing, action to accept or reject the recipient's appeal shall be made by a majority vote of the Board members present. The decision of the Board shall be final.

6. The recipient shall be notified in writing of the Board's decision within ten days of the date of the hearing.

7. If the recipient declines the offer of a hearing before the Board or fails to appear as scheduled, the penalty provisions of the contract shall be enforced immediately.

(4) **Enforcement of Penalty Provisions.**

(a) In the event of default and following the implementation of the notification and due process procedures, the penalty provisions of the contract shall be enforced through the civil courts.

(b) In the event legal action is instituted to collect any amount under the contract, the recipient shall pay attorney's fees incurred in the collection in an amount equal to fifteen percent (15%) of the unpaid balance of principal and interest.

(c) Principal and penalties collected through the courts shall be used to pay the balance of any costs of collection, with the balance returned to the State of Georgia Treasury.

(d) Penalty payments made to the State Treasury shall be duly recorded by the Georgia Board of Health Care Workforce and a record of payment maintained in the recipient's permanent file.

Cite as Ga. Comp. R. & Regs. R. 195-25-.10

AUTHORITY: O.C.G.A. § 31-34**.**

HISTORY: Original Rule entitled "Due Process and Collection Provisions in the Event of Default" adopted. F. Apr. 2, 2024; eff. Apr. 22, 2024.

Department 297. GRANTS OF JUDICIAL COUNCIL OF GEORGIA ADMINISTRATIVE OFFICE OF THE COURTS

Chapter 297-1. GRANT PROGRAMS

297-1-.01 Legal Assistance to Families Victimized by Domestic Violence Project

I. Name of Grant Program: Civil Legal Assistance to Families Victimized by Domestic Violence Project (Short name: Civil Legal Assistance Project).

II. Legal Authority: O.C.G.A. § 15-5-24 and Supreme Court of Georgia Order of January 15, 1981 relating to the duties of the Judicial Council/Administrative Office of the Courts.

III. Definition: This is a statewide project designed to provide civil legal services to all persons, adults and children, victimized by or under the direct threat of domestic violence.

IV. Scope: Domestic violence is endemic throughout the nation and in Georgia. From 2018 to 2021, there were 171,596 reported incidents of family violence Georgia.[1] Domestic violence shelters refer more than an estimated 10,000 victims of domestic violence to legal service agencies each year. Other legal resources are inadequate to meet the serious needs of these families. This project provides a framework under which Georgia's non-profit legal services programs can serve approximately 6,000 families of domestic violence per year.

V. Purpose: The purpose of this program is to provide civil legal assistance to persons victimized or threatened by domestic violence. Such legal assistance helps with immediate needs through protective orders or orders for custody and child support, and also includes legal assistance with such issues as access to credit and bank accounts, housing, public benefits, employment and other consumer and financial problems that must be resolved to achieve safety, stability and economic security.

A. Eligible Services

This project focuses on providing direct services to victims in two major areas of need by:

1. Providing legal services related to domestic violence, child custody, and family support; and

2. Providing legal services related to the family's economic security and stability, including housing issues, employment-related problems, problems with access to education, and health care.

B. Excluded Services

Certain services are specifically excluded from this program. Excluded services are:

1. Class action suits;

2. Criminal defense;

3. Deportation proceedings;

4. Initial Temporary Protective Orders;

5. Juvenile delinquency;

6. Indirect legal services such as attorney training;

7. Matters to be adjudicated in courts outside of Georgia; or

8. Other client-initiated proceedings not related to the safety, stability, or economic security of the victim or the victim's family.

C. Eligible Clients

Victims or persons under the threat of domestic violence who have no reasonable access to resources that may be used for legal services are eligible. Evidence of violence or the threat of violence shall be reasonably demonstrated, but may also be shown by the following:

1. A protective order issued by a court of competent jurisdiction;

2. A referral from a domestic violence program or program for children or the elderly; or

3. A warrant or police report indicating an incident involving domestic violence.

D. Eligible Grantees

1. Eligible grantees for these funds are non-profit corporations registered and in good standing with the State of Georgia with at least two years of experience providing civil legal services in the State.

2. Recipients must also demonstrate they have the personnel and expertise necessary to deliver the services required, that their service delivery structure can adequately provide coverage throughout the geographical area for which the services are proposed, and that they have sufficient administrative recordkeeping capabilities to fulfill reporting requirements necessary for the evaluation of these projects.

3. Community partnerships are critical to achieving success with this program. The applicants must show broad community support and the support and cooperation of local domestic violence programs. Letters of support or other evidence establishing these relationships should accompany applications.

VI. General Terms and Conditions: Grants will be awarded for a one-year term. Each of Georgia's fifty circuits will be included. The amount of funds available for distribution to grantees may change each year based on the amount of funds appropriated to the Judicial Council/Administrative Office of the Courts and the cost of the administrative oversight of these funds. The grant awards are generally announced in July.

Grantees will be required to report to the Judicial Council/Administrative Office of the Courts every six months detailing how the grant funds were specifically used to assist victims throughout Georgia.

VII. Criteria for the Award of Grants: The total population of residents in each county served by the grant recipient will be considered. This number is based on the most current estimates from the U. S. Census Bureau.

In no event shall a grantee provide legal services to a client whose income exceeds 200% of the federal poverty guidelines. Special needs categories (such as homelessness, rural counties with fewer than ten attorneys, or regional areas or counties with a disproportionately high rate of death from domestic violence [2]) will also be considered.

The Judicial Council Standing Committee on Grants has the discretion to award grant funds to grantees for divorces. Grant funds used for divorces must be directly related to the protection and safeguarding of domestic violence victims.

VIII. Directions and Deadlines for Application: Applications for grant funds **must be submitted via email** to the Judicial Council/Administrative Office of the Courts at grants@georgiacourts.gov.

Comments may be submitted to the Judicial Council/Administrative Office of the Courts at grants@georgiacourts.gov or (404) 656-5171.

Cite as Ga. Comp. R. & Regs. R. 297-1-.01

AUTHORITY: O.C.G.A § 15-5-24.

HISTORY: Original grant description entitled "Legal Assistance to Families Victimized by Domestic Violence Project" submitted July 2, 2002.

Submitted: July 9, 2004.

Submitted: Apr. 13, 2018.

Submitted: Apr. 14, 2022.

Submitted: Apr. 4, 2024.

Footnotes:
[1] Georgia Commission on Family Violence annual fact sheet on domestic violence, available at *https://gcfv.georgia.gov/resources/data*.

[2] GEORGIA COMM'N ON FAMILY VIOLENCE, GEORGIA STATE PLAN FOR ENDING FAMILY VIOLENCE, at iv-v, 61-62 (December 2012), *available at* http://www.gcfv.org/.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-3. ENVIRONMENTAL PROTECTION

Subject 391-3-1. AIR QUALITY CONTROL

391-3-1-.02 Provisions. Amended

(1) **General Requirement.**

No person shall construct or operate any facility from which air contaminants are or may be emitted in such a manner as to fail to comply with:

(a) **Any applicable** standard of performance or other requirements established by EPA pursuant to Section 111 of the Federal Act;

(b) **Any applicable** emission standard or other requirement for a hazardous air pollutant established by EPA pursuant to Section 112 of the Federal Act;

(c) **Any applicable** increment, precondition for permit, or other requirement established for the Prevention of Significant Deterioration pursuant to Part C, Title I of the Federal Act; and

(d) **Any applicable** standard, precondition for permit, or other requirement established for sources in areas designated by the Director as being non-attainment with National Ambient Air Quality Standards pursuant to, or as part of Georgia's State Implementation Plan to meet the requirements of, Part D, Title I of the Federal Act.

(2) **Emission Limitations and Standards.**

(a) **General Provisions.**

1. No person owning, leasing or controlling the operation of any air contaminant sources shall willfully, negligently or through failure to provide necessary equipment or facilities or to take necessary precautions, cause, permit, or allow the emission from said air contamination source or sources of such quantities of air contaminants as will cause, or tend to cause, by themselves or in conjunction with other air contaminants a condition of air pollution in quantities or characteristics or of a duration which is injurious or which unreasonably interferes with the enjoyment of life or use of property in such area of the State as is affected thereby. Complying with any of the other paragraphs of these rules and regulations or any subparagraphs thereof, shall in no way exempt a person from this provision.

2. In cases where more than one paragraph of these regulations applies, the paragraph allowing the least emission of air contaminants to the atmosphere shall prevail.

3. Notwithstanding any other emission limitation or other requirement provided in the regulations, more stringent emission limitations or other requirements may be required of a facility as deemed necessary by the Director to:

(i) meet any existing Federal laws or regulations; or

(ii) safeguard the public health, safety and welfare of the people of the State of Georgia.

4. Notwithstanding any other requirement of this Chapter, in no event shall that part of a stack which came into existence after December 31, 1970, which exceeds good engineering practice stack height or any other dispersion technique, be taken into account for the purpose of determining the degree of emission limitations required for control of any pollutant for which there is an ambient air standard established under the Act of the Federal Act. The

terms and definitions of "dispersion techniques", "good engineering practice (GEP)", "nearby" and "excessive concentration" are those definitions found in 40 CFR 51.100(hh), (ii), (jj) and (kk) respectively.

5. If the Director finds, after notice and opportunity for public hearing that a particular instance of violation or noncompliance by a source, owner, or operator, with any emission limitation or standard or other requirement under the Act, is de minimis (as defined pursuant to 42 U.S.C. Section 7420 as amended) in nature, and duration, he may, as allowed by the Act and the Federal Act, exempt such source, owner or operator from the noncompliance penalties provided in Section 22 of the Act.

6. VOC Emission Standards, Exemptions, Area Designations, Compliance Schedules and Compliance Determinations.

(i) Exemptions and Area Designations.

(I) Sources located outside Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale counties whose potential emissions of volatile organic compounds are not more than 100 tons per year shall not be subject to subparagraphs (u), (v), (x), (aa) through (ff) [inclusive], (hh), (kk), (ll), (nn), and (qq) of this paragraph 391-3-1-.02(2).

(II) Sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance shall not be subject to subparagraphs (t) through (ff) [inclusive], (hh) through (nn) [inclusive], (qq), and (tt) of this paragraph 391-3-1-.02(2), provided:

I. The operation of the source is not an integral part of the production process; and provided;

II. The emissions from the source do not exceed 800 pounds in any calendar month; and provided;

III. The exemption from such source is approved in writing by the Director.

(III) Sources located within Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, or Rockdale counties whose actual emissions of volatile organic compounds are less than 15 pounds per day shall not be subject to subparagraphs (u), (v), (x), (aa) through (ff) [inclusive], (kk), (ll), and (qq) of this paragraph 391-3-1-.02(2).

(IV) Coatings, inks and other VOC-containing materials in use at sources of VOC emissions subject to any limitations or requirements of subparagraphs (t) through (aa) [inclusive], (ii), (jj), (mm), and (tt) of this paragraph 391-3-1-.02(2) shall not be subject to any requirements of such subparagraphs, provided the source's total aggregate use of such materials is not in excess of 55 gallons per year and such exemption is approved in writing by the Division.

(V) Sources located within Barrow, Bartow, Carroll, Hall, Newton, Spalding, or Walton Counties whose actual emissions of volatile organic compounds are greater than or equal to 15 pounds per day shall be subject to subparagraphs (u), (v), (x), (aa) through (ff) [inclusive], (hh), (kk), (ll), (nn), and (qq) of this paragraph 391-3-1-.02(2) effective January 1, 2015. The requirements of this subparagraph (V) will no longer be applicable if the counties specified in this subparagraph (V) are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in these counties or the counties specified in subparagraph (III) above, the requirements of this subparagraph (V) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

(VI) When determining applicability for a standard specified in this subparagraph 6.(i), only those emission sources that belong to the source category covered by each specific standard shall be included when compared against the applicability thresholds and provisions included in this subparagraph 6.(i).

(ii) Compliance Schedules.

(I) All sources of VOC emissions subject to any limitation or requirement of, or under, paragraph 391-3-1-.02(2) prior to the effective date of this amended Rule 391-3-1-.02, shall be in compliance or on an approved compliance schedule.

(iii) Compliance Determinations.

(I) Compliance determinations for coatings expressed as pounds of VOC per gallon of coating, excluding water, shall treat organic compounds that are not defined as VOCs as water for purposes of calculating the "excluding water" part of the coating composition.

7. Excess Emissions.

(i) Excess emissions resulting from startup, shutdown, malfunction of any source which occur though ordinary diligence is employed shall be allowed provided that (I) the best operational practices to minimize emissions are adhered to, and (II) all associated air pollution control equipment is operated in a manner consistent with good air pollution control practice for minimizing emissions and (III) the duration of excess emissions is minimized.

(ii) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction are prohibited and are violations of this Chapter (391-3-1).

(iii) The provisions of this subparagraph 7. shall apply only to those sources which are not subject to any requirement under paragraph (8) of this Rule (i.e., Rule 391-3-1-.02) or any requirement of 40 CFR, Part 60, as amended concerning New Source Performance Standards.

8. Emissions Bubbles.

(i) With respect to the emissions standards and limitations contained in this Chapter 391-3-1, as such requirements are applied to more than one process or piece of equipment at a source or sources, the Director may allow to the extent consistent with the Act and with the Federal Act under such conditions as he deems appropriate, emissions bubbles provided that:

(I) Such emissions bubbles will not interfere with the attainment and maintenance of ambient air quality standards as expeditiously as practical and does not result in any delay in compliance by any source beyond applicable deadline dates; and

(II) Such emissions bubbles are equivalent in pollution reduction, enforceability, and air quality impact to those individual process or equipment emission limits of State or federal requirements applicable at the time of the bubble; and

(III) Such emissions bubbles are consistent and in full compliance with the requirements of 40 CFR 52.21 (PSD), 40 CFR 60 (New Source Performance Standards) and 40 CFR 61 (NESHAPS); and

(IV) All modeling utilized in evaluating the air quality impact of emissions bubbles shall be done in accordance with modeling procedures acceptable to the Division.

(ii) Emissions bubbles involving different pollutants, types, temporary reductions, and increases of hazardous air pollutants are prohibited.

(iii) The affected source or facility which proposes the use of a bubble shall have the burden of demonstrating to the satisfaction of the Director, compliance with the requirements of this paragraph (2)(a)8.

(iv) For the purpose of this paragraph (2)(a)8. emissions bubbles let plants decrease pollution controls at one or more emission points in exchange for compensating increases in control at other emission points.

9. [reserved]

10. At all times, including periods of startup, shutdown, and malfunction, any person owning, leasing or controlling the operation of a stationary source shall maintain and operate such source, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on any information available to the Division which may include, but is not limited to, monitoring results, observations of the opacity or other characteristic of emissions, review of operating and maintenance procedures or records, and inspection or surveillance of the source.

11. Startup, Shutdown, and Malfunction Emissions for SIP-Approved Rules

(i) Upon the effective date of EPA's final approval of GA Rules Chapter 391-3-1-.02(2)(a)11. as published in the Federal Register, the provisions of subparagraph 11. apply in lieu of GA Rule 391-3-1-.02(2)(a)7.

(ii) The provisions of this subparagraph 11. shall apply to all sources subject to emission limitations and standards in 391-3-1-.02(2)(b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (n), (p), (q), (r), (t), (u), (v), (w), (x), (y), (z), (aa), (bb), (cc), (dd), (ee), (ff), (gg), (hh), (ii), (jj), (kk), (ll), (mm), (nn), (oo), (pp), (qq), (rr), (ss), (tt), (uu), (vv), (yy), (ccc), (ddd), (eee), (fff), (hhh), (jjj), (kkk), (lll), (mmm), (nnn), (rrr), (vvv), (yyy), (zzz), (aaaa).

(iii) Sources that are unable to comply with an applicable emission limitation or standard during periods of startup or shutdown may submit a request for an alternative emission limitation (AEL) to apply during startup and shutdown.

(I) The AEL request shall satisfy the following criteria:

I. Be specific to the source and the source's specific control strategies;

II. Demonstrate that it is technically infeasible, considering the specific control strategy, to comply with the applicable SIP emission limitation during startup or shutdown periods; and

III. Include an analysis of the potential worst-case emissions that could occur during startup and shutdown based on the applicable AEL.

IV. The frequency and duration of operation in startup or shutdown mode are minimized to the greatest extent practicable;

V. All practicable steps are taken to minimize the impact of emissions during startup and shutdown on ambient air quality;

VI. The facility is operated at all times in a manner consistent with good practice for minimizing emissions and that the source uses best efforts regarding planning, design, and operating procedures; and

VII. The owner or operator's actions during startup and shutdown periods are documented by signed, contemporaneous operating logs or other relevant evidence.

(iv) The Division shall determine if the AEL request meets the criteria specified in (iii)(I)I. through (iii)(I)VII. The AEL shall be established in a permit issued under Ga. Comp. R. & Regs. 391-3-1-.03 and will become effective upon final EPA approval of a request by the Division to incorporate the alternative emission limitation or standard into the SIP.

(v) Sources that are unable to comply with an applicable emission limitation or standard during periods of foreseeable malfunctions may submit an AEL request.

(I) The AEL request shall satisfy the following criteria:

I. Be specific to the source and the source's specific control strategies;

II. Demonstrate that it is technically infeasible, considering the specific control strategy, to comply with the applicable emission limitation during foreseeable malfunction periods;

III. Demonstrate that the malfunction type is foreseeable and can be considered a normal mode of operation appropriate for a specifically designed AEL; and

IV. Include an analysis of the potential worst-case emissions that could occur during foreseeable malfunction periods based on the applicable AEL.

V. The frequency and duration of operation in foreseeable malfunction mode is minimized to the greatest extent practicable;

VI. All practicable steps are taken to minimize the impact of emissions during foreseeable malfunction mode on ambient air quality;

VII. At all times, the facility is operated in a manner consistent with good practice for minimizing emissions and that the source uses best efforts regarding planning, design, and operating procedures; and

VIII. The owner or operator's actions during foreseeable malfunction periods are documented by signed, contemporaneous operating logs or other relevant evidence.

(vi) The Division shall determine if the AEL request meets the criteria specified in (v)(I)I. through (v)(I)VIII. The AEL shall be established in a permit issued under Ga. Comp. R. & Regs. 391-3-1-.03 and will become effective upon final EPA approval of a request by the Division to incorporate the alternative emission limitation or standard into the SIP.

(vii) Subparagraph 391-3-1-.02(2)(a)11. does not apply to emission limitations or standards in paragraphs 391-3-1-.02(8) or 391-3-1-.02(9).

(viii) If federal legislation, a federal court, or a subsequent final agency action renders unenforceable by the EPA, in whole or in part, the EPA's SSM SIP Call, subparagraph 391-3-1-.02(2)(a)11. shall be void to the same extent that the SSM SIP Call is unenforceable by the EPA as of the effective date of the Federal Register notice of vacatur.

(b) **Visible Emissions.**

1. Except as may be provided in other more restrictive or specific rules or subdivisions of this Chapter, no person shall cause, let, suffer, permit, or allow emissions from any air contaminant source the opacity of which is equal to or greater than forty (40) percent.

2. Upon written application to the Director, a person owning or operating an air pollution source may request that visible emission evaluations (opacity measurements) be conducted during particulate emission tests for a source, for the purpose of demonstrating compliance with a particulate emission standard. Any such tests or evaluations shall be conducted according to methods, procedures and requirements approved by the Division. All test results shall be subject to verification by the Division. The correlated visible emissions opacity determined during any such particulate emission tests which demonstrate compliance (with results verified by the Division) may, if greater than any applicable visible emissions opacity standard of this Chapter 391-3-1, be established by the Director as the visible emissions standard (opacity standard) for the source. Such visible emissions standards if so established shall be incorporated as a condition of the operating permit for the air pollution source.

3. The visible emission limitation of this subsection applies to direct sources of emissions such as stationary structures, equipment, machinery, stacks, flues, pipes, exhausts, vents, tubes, chimneys or similar structures.

4. The provisions of this subsection (b), apply only to facilities or sources subject to some other emission limitation under this section 391-3-1-.02(2).

(c) **Incinerators.**

1. Except as specified in the section dealing with conical burners, no person shall cause, let, suffer, permit, or allow the emissions of fly ash and/or other particulate matter from any incinerator, in amounts equal to or exceeding the following:

(i) Units with charging rates of 500 pounds per hour or less of combustible waste, including water, shall not emit fly ash and/or particulate matter in quantities exceeding 1.0 pound per hour.

(ii) Units with charging rates in excess of 500 pounds per hour of combustible waste, including water, shall not emit fly ash and/or particulate matter in excess of 0.20 pounds per 100 pounds of charge.

2. No person shall cause, let, suffer, permit, or allow from any incinerator, visible emissions the opacity of which is equal to or greater than twenty (20) percent except for one 6-minute period per hour of not more than twenty-seven (27) percent opacity.

3. No person shall cause or allow particles to be emitted from an incinerator which are individually large enough to be visible to the unaided eye.

4. No person shall operate an existing incinerator unless:

(i) it is a dual or multiple chamber incinerator;

(ii) it is equipped with an auxiliary burner in the primary chamber for the purpose of creating a pre-ignition temperature of 800°F; and

(iii) it has a secondary burner to control smoke and/or odors and maintain a temperature of at least 1500°F in the secondary chamber.

5. Designs other than those mentioned in Subparagraph 4. above shall be considered on an individual basis and will be exempt from the provisions if, in the judgment of the Director, said design results in performance which meets the standard set forth in paragraphs (2)(c)1., 2. and 3. above.

6. The provisions of this Subsection (c) shall not apply to:

(i) any hazardous waste incinerator subject to Section 391-3-11 of the Georgia Rules for Hazardous Waste Management, 40 CFR 264, Subpart O, as adopted by reference, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities," as amended;

(ii) any incinerator subject to Section 391-3-1-.02(8)(b)71. of the Georgia Rules for Air Quality Control, "Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994," as amended;

(iii) any incinerator subject to the Georgia State Plan, under Section 111(d) of the federal Act, for "Municipal Waste Combustors for Which Construction is Commenced On or Before September 20, 1994," as amended;

(iv) any incinerator subject to Section 391-3-1-.02(8)(b)73. of the Georgia Rules for Air Quality Control "Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators," as amended;

(v) any incinerator subject to Section 391-3-1-.02(2)(iii) of the Georgia Rules for Air Quality Control "Hospital/Medical/Infectious Waste Incinerators," as amended;

(vi) any incinerator subject to Section 391-3-1-.02(8)(b)75. of the Georgia Rules for Air Quality Control "Standards of Performance for Commercial and Industrial Solid Waste Incineration Units," as amended;

(vii) any incinerator subject to Section 391-3-1-.02(2)(ppp) of the Georgia Rules for Air Quality Control "Commercial and Industrial Solid Waste Incineration Units," as amended;

(viii) any vent gas incineration devices that are used as air pollution control equipment and boilers and industrial furnaces that burn waste (excluding hazardous waste) as a fuel;

(ix) any incinerator subject to Section 391-3-1-.02(8)(b)20. of the Georgia Rules for Air Quality Control "Standards of Performance for Sewage Treatment Plants," as amended;

(x) any incinerator subject to Section 391-3-1-.02(8)(b)74. of the Georgia Rules for Air Quality Control "Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999," as amended;

(xi) any incinerator subject to Section 391-3-1-.02(8)(b)76. of the Georgia Rules for Air Quality Control "Standards of Performance for Other Solid Waste Incinerator Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006," as amended;

(xii) any incinerator subject to Section 391-3-1-.02(8)(b)83. of the Georgia Rules for Air Quality Control "Standards of Performance for New Sewage Sludge Incineration Units" as amended; or

(xiii) any incinerator subject to Section 391-3-1-.02(2)(www) of the Georgia Rules for Air Quality Control "Sewage Sludge Incineration Units," as amended.

(d) **Fuel-Burning Equipment.**

1. No person shall cause, let, suffer, permit, or allow the emission of fly ash and/or other particulate matter from any fuel-burning equipment in operation or under construction on or before January 1, 1972, in amounts equal to or exceeding the following:

(i) for equipment less than 10 million BTU heat input per hour:

P = 0.7 pounds per million BTU heat input;

(ii) for equipment equal to or greater than 10 million BTU heat input per hour, and equal to or less than 2,000 million BTU heat input per hour:

$$P = 0.7\left(\frac{10}{R}\right)^{0.202} \text{ pounds per million BTU heat input;}$$

(iii) equipment larger than 2,000 million BTU heat input per hour:

P = 0.24 pounds per million BTU heat input.

2. No person shall cause, let, suffer, permit, or allow the emission of fly ash and/or other particulate matter from any fuel-burning equipment constructed after January 1, 1972, in amounts equal to or exceeding the following:

(i) for equipment less than 10 million BTU heat input per hour:

P = 0.5 pounds per million BTU heat input;

(ii) for equipment equal to or greater than 10 million BTU heat input per hour, and equal to or less than 250 million BTU heat input per hour:

$$P = 0.5\left(\frac{10}{R}\right)^{0.5} \text{ pounds per million BTU heat input;}$$

(iii) for equipment greater than 250 million BTU heat input per hour:

P = 0.10 pounds per million BTU heat input

P = allowable weight of emissions of fly ash and/or other particulate matter in pounds per million BTU heat input

R = heat input of fuel-burning equipment in million BTU per hour

3. No person shall cause, let, suffer, permit, or allow the emission from any fuel-burning equipment constructed or extensively modified after January 1, 1972, visible emissions the opacity of which is equal to or greater than twenty (20) percent except for one six minute period per hour of not more than twenty-seven (27) percent opacity.

4. No person shall cause, let, permit, suffer, or allow the emission of nitrogen oxides (NOx), reported as nitrogen dioxide, from any fuel-burning equipment equal to or greater than 250 million BTU per hour of heat input that is constructed or extensively modified after January 1, 1972, equal to or exceeding the following:

(i) when firing coal--0.7 pounds of NOx per million BTUs of heat input;

(ii) when firing oil--0.3 pounds of NOx per million BTUs of heat input;

(iii) when firing gas--0.2 pounds of NOx per million BTUs of heat input;

(iv) when different fuels are burned simultaneously in any combination the applicable standard, expressed as pounds of NOx per million BTUs of heat input, shall be determined by proration. Compliance shall be determined by using the following formula:

$$\frac{x(0.20)+y(0.30)+z(0.70)}{x+y+z}$$

where:

x = percent of total heat input derived from gaseous fuel;

y = percent of total heat input derived from oil;

z = percent of total heat input derived from coal.

(e) **Particulate Emission from Manufacturing Processes.**

1. Except as may be specified in other sections of these regulations or as may be specified in a permit issued by the Director, no person shall cause, let, permit, suffer, or allow the rate of emission from any source, particulate matter in total quantities equal to or exceeding the amounts specified in subparagraphs (i) or (ii), below, as applicable. Equipment in operation, or under construction contract, on or before July 2, 1968, shall be considered existing equipment. All other equipment put in operation or extensively altered after said date is to be considered new equipment.

(i) The following equations shall be used to calculate the allowable rates of emission from new equipment:

$E = 4.1\ P^{0.67}$; for process input weight rate up to and including 30 tons per hour.

$E = 55\ P^{0.11} - 40$; for process input weight rate above 30 tons per hour.

(ii) The following equation shall be used to calculate the allowable rates of emission from existing equipment:

$E = 4.1\ P^{0.67}$

E = emission rate in pounds per hour

P = process input weight rate in tons per hour.

(f) **Normal Superphosphate Manufacturing Facilities.**

1. Unit emissions of fluoride for normal superphosphate manufacturing facilities, expressed as pounds of fluoride ion per ton of P_20_5 or equivalent, shall not exceed 0.40 pounds. The allowable emission of fluorides shall be calculated by multiplying the unit emission specified above times the expressed design capacity of the source in question.

(g) **Sulfur Dioxide.**

1. New fuel-burning sources capable of firing fossil fuel(s) at a rate exceeding 250 million BTUs per hour heat input, constructed or extensively modified after January 1, 1972, excluding kraft pulp mill recovery furnaces, may not emit sulfur dioxide equal to or exceeding:

(i) 0.8 pounds of sulfur dioxide per million BTUs of heat input derived from liquid fossil fuel or derived from liquid fossil fuel and wood residue;

(ii) 1.2 pounds of sulfur dioxide per million BTUs of heat input derived from solid fossil fuel or derived from solid fossil fuel and wood residue;

(iii) When different fossil fuels are burned simultaneously in any combination, the applicable standard expressed as pounds of sulfur dioxide per million BTUs of heat input shall be determined by proration using the following formula:

$$a = \frac{y(0.80) + z(1.2)}{y + z}$$

where:

y = percent of total heat input derived from liquid fossil fuel;

z = percent of total heat input derived from solid fossil fuel;

a = the allowable emission in pounds per million BTUs.

2. All fuel burning sources below 100 million BTUs of heat input per hour shall not burn fuel containing more than 2.5 percent sulfur, by weight. All fuel burning sources having a heat input of 100 million BTUs per hour or greater shall not burn a fuel containing more than 3 percent sulfur, by weight.

3. Notwithstanding the limitations on sulfur content of fuels stated in paragraph 2. above, the Director may allow sulfur content greater than that allowed in paragraph 2. above, provided that the source utilizes sulfur dioxide removal and the sulfur dioxide emission does not exceed that allowed by paragraph 2. above, utilizing no sulfur dioxide removal.

(h) **Portland Cement Plants.**

1. See Section 391-3-1-.02(8) for applicable New Source Performance Standards.

(i) **Nitric Acid Plants.**

1. No person shall cause or allow the emission of nitrogen oxides (NOx), expressed as nitrogen dioxide, from Nitric Acid Plants equal to or exceeding:

(i) for plants constructed before January 1, 1972: 25 pounds of NOx expressed as nitrogen dioxide, per ton of 100% acid produced;

(ii) for plants constructed after January 1, 1972, the applicable New Source Performance Standards of 391-3-1-.02(8).

2. No person shall operate a nitric acid plant unless the plant is equipped with a continuous NOx monitor and recorder or an alternate system approved by the Director.

(j) **Sulfuric Acid Plants.**

1. No person shall cause or allow the emission of sulfur dioxide (SO_2) and acid mist from sulfuric acid plants equal to or exceeding:

(i) For plants constructed before January 1, 1972, 27.0 pounds of SO_2, and 0.15 pounds of acid mist per ton of 100% acid produced;

(ii) For plants constructed or extensively modified after January 1, 1972, the applicable New Source Performance Standards of 391-3-1.02(8).

2. No person shall operate a sulfuric acid plant unless the plant is equipped with a continuous SO_2 monitor and recorder or an approved alternate system approved by the Director.

(k) **Particulate Emission from Asphaltic Concrete Hot Mix Plants.**

1. No person shall cause, let, suffer, permit, or allow the emission of particulate matter from an Asphaltic Concrete Hot Mix Plant equal to or exceeding amounts derived from the following formulas:

(i) For existing plants below 45 tons per hour input--E = P, pounds per hour;

(ii) For existing plants equal to or greater than 45 tons per hour input--$E = 10P^{0.4}$, pounds per hour;

(iii) For new plants below 125 tons per hour input--$E = 2.1P^{0.6}$, pounds per hour;

(iv) For new plants equal to or greater than 125 tons per hour input--$E = 14P^{0.2}$, pounds per hour;

(v) Equals the allowable emission of particulate matter in pounds per hour. P equals the process input weight rate in tons per hour;

(vi) Equipment in operation, or under construction contract, on or before January 1, 1972, shall be considered existing equipment. All equipment constructed or extensively altered after said date shall be considered new.

2. The New Source Performance Standards of 391-3-1-.02(8) for such asphaltic concrete plants apply to all such plants commencing construction on or after the effective date of such standards.

(l) **[reserved]**

(m) **Repealed.**

(n) **Fugitive Dust.**

1. All persons responsible for any operation, process, handling, transportation or storage facility which may result in fugitive dust shall take all reasonable precautions to prevent such dust from becoming airborne. Some reasonable

precautions which could be taken to prevent dust from becoming airborne include, but are not limited to, the following:

(i) Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;

(ii) Application of asphalt, water, or suitable chemicals on dirt roads, materials, stockpiles, and other surfaces which can give rise to airborne dusts;

(iii) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods can be employed during sandblasting or other similar operations;

(iv) Covering, at all times when in motion, open bodied trucks, transporting materials likely to give rise to airborne dusts;

(v) The prompt removal of earth or other material from paved streets onto which earth or other material has been deposited.

2. The percent opacity from any fugitive dust source listed in paragraph (2)(n)1. above shall not equal or exceed 20 percent.

(o) **[reserved]**

(p) **Particulate Emissions from Kaolin and Fuller's Earth Processes.**

1. The following equations shall be used to calculate the allowable rates of emission from kaolin and fuller's earth process equipment constructed or extensively modified after January 1, 1972:

(i) $E = 3.59P^{0.62}$; for process input weight rate up to and including 30 tons per hour;

(ii) $E = 17.31P^{0.16}$; for process input weight rate in excess of 30 tons per hour.

2. The following equation shall be used to calculate the allowable rates of emission from kaolin and fuller's earth process equipment constructed or put in operation on or before January 1, 1972:

(i) $E = 4.1P^{0.67}$; for process input weight rate up to and including 30 tons per hour;

(ii) $E = 55P^{0.11} - 40$; for process input weight rate above 30 tons per hour.

E = allowable emission rate in pounds per hour;

P = process input weight rate in tons per hour.

(q) **Particulate Emissions from Cotton Gins.**

1. The emission of particulate matter from any cotton ginning operation shall not exceed the amounts specified below.

(i) The following equation shall be used to calculate the allowable rates of emission:

$E = 7 B^{0.5}$

E = allowable emission rate in pounds per hour

B = number of standard bales per hour--A standard bale is defined as a finished bale weighing 500 pounds.

2. In lieu of demonstrating compliance with the applicable emission standard contained in 391-3-1-.02(2)(q)1.(i) the following control devices may be utilized:

(i) for emission control from low pressure exhausts, the use of screens with a mesh size of 80 by 80 or finer, or the use of perforated condenser drums with holes not exceeding .045 inches in diameter, or the use of a dust house.

(ii) for emission control from high pressure exhausts, the use of high efficiency cyclones.

If compliance with the emission standard specified in 391-3-1-.02(2)(q)1.(i) is required, then the testing methodology to be utilized shall be that specified in the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants.

(r) **Particulate Emissions from Granular and Mixed Fertilizer Manufacturing Units.**

1. For the purpose of this regulation the ammoniator, dryer, cooler and associated equipment will be considered one unit.

2. The following equations shall be used to calculate the allowable rates of emission from granular and mixed fertilizer manufacturing units:

(i) $E = 3.59P^{0.62}$; for production weights up to and including 30 tons per hour;

(ii) $E = 17.31P^{0.16}$; for production rates above 30 tons per hour;

E = allowable emission rate in pounds per hour;

P = production rate of finished product in tons per hour. Recycle will not be included.

(s) **Nitrogen Oxides. (Repealed)**

(t) **VOC Emissions from Automobile and Light-Duty Truck Manufacturing.**

1. No person shall cause, let, permit, suffer or allow the emissions of VOC from automobile and/or light-duty truck manufacturing facilities to exceed:

(i) 1.2 pounds of VOC per gallon of coating excluding water, as a monthly weighted average, from each electrophoretic applied prime operation;

(ii) 15.1 pounds of VOC per gallon of applied coating solids, as a daily weighted average, from each spray prime operation;

(iii) 15.1 pounds of VOC per gallon of applied coating solids, as a daily weighted average, from each topcoat operation;

(iv) 4.8 pounds of VOC per gallon of coating delivered to the coating applicator from each final repair operation. If any coating delivered to the coating applicator contains more than 4.8 pounds of VOC per gallon of coating, the limit shall be 13.8 pounds of VOC per gallon of coating solids sprayed, as a daily weighted average.

(v) 3.5 pounds of VOC per gallon of sealer, excluding water, delivered to an applicator that applies sealers in amounts less than 25,000 gallons during a 12 consecutive month period;

(vi) 1.0 pounds of VOC per gallon of sealer, excluding water, delivered to a coating applicator that applies sealers in amounts greater than 25,000 gallons during a 12 consecutive month period;

(vii) 3.5 pounds of VOC per gallon of adhesive, excluding water, delivered to an applicator that applies adhesives, except body glass adhesives;

(viii) 6.9 pounds of VOC per gallon of cleaner, excluding water, delivered to an applicator that applies cleaner to the edge of body glass prior to priming;

(ix) 5.5 pounds of VOC per gallon of primer, excluding water, delivered to an applicator that applies primer to the body glass or to the body to prepare the glass and body for bonding;

(x) 1.0 pounds of VOC per gallon of adhesive, excluding water, delivered to an applicator that applies adhesive to bond body glass to the body;

(xi) 4.4 pounds of VOC per gallon of coating delivered to any applicator that applies clear coating to fascias. No coating may be used that exceeds this limit;

(xii) 4.4 pounds of VOC per gallon of coating delivered to any applicator that applies base coat to fascias, on a daily weighted average basis;

(xiii) 3.5 pounds of VOC per gallon of material, excluding water, for all other materials not subject to some other emission limitation stated in this paragraph.

2. No person shall cause, let, permit, suffer or allow the emissions of VOC from automobile and/or light-duty truck manufacturing facilities to exceed:

(i) 0.7 pounds of VOC per gallon of coating solids applied, as a monthly weighted average, from each electrodeposition primer (EDP) operation when the solids turnover ratio is greater than or equal to 0.16. For purposes of this subsection an EDP operation includes application area, spray/rinse stations, and curing oven.

(ii) Electrodeposition Primer Operation: the value calculated by the following formula, as a monthly weighted average, from each electrodeposition primer (EDP) operation when the solids turnover ratio is less than 0.160 and greater than or equal to 0.040:

(I) pounds of VOC per gallon of coating solids applied

$$= \left(8.34 lb/gal\right)\left(0.084\right)\left(350^{0.160-R_T}\right)$$

where R_T = Solids Turnover Ratio

(iii) 12.0 pounds of VOC per gallon of deposited solids, as a daily weighted average basis from each of the following: primer-surfacer operation; topcoat operation; combined primer-surfacer and topcoat operations. For purposes of this subsection each operation includes application area, flash-off area, and oven.

(iv) 4.8 pounds of VOC per gallon of coating, less water and less exempt solvents, as a daily weighted average, from each final repair operation.

(v) 3.5 pounds of VOC per gallon of sealer, excluding water, delivered to an applicator that applies sealers in amounts less than 25,000 gallons during a 12 consecutive-month period;

(vi) 1.0 pounds of VOC per gallon of sealer, excluding water, delivered to a coating applicator that applies sealers in amounts greater than 25,000 gallons during a 12 consecutive-month period;

(vii) 250 grams of VOC per liter of adhesive (2.08 lb/gallon), excluding water, delivered to an applicator that applies adhesives, except body glass adhesives and weatherstrip adhesives;

(viii) 1.0 pounds of VOC per gallon of adhesive, excluding water, delivered to an applicator that applies adhesive to bond body glass to the body;

(ix) 6.9 pounds of VOC per gallon of cleaner, excluding water, delivered to an applicator that applies cleaner to the edge of body glass prior to priming;

(x) 5.5 pounds of VOC per gallon of primer, excluding water, delivered to an applicator that applies glass bonding primer to the body glass or to the body to prepare the glass and body for bonding;

(xi) 4.4 pounds of VOC per gallon of coating delivered to any applicator that applies clear coating to fascias. No coating may be used that exceeds this limit;

(xii) 4.4 pounds of VOC per gallon of coating delivered to any applicator that applies base coat to fascias, on a daily weighted average basis;

(xiii) 200 grams of VOC per liter of coating (1.669 lb/gal), excluding water, delivered to an applicator that applies one of the following: gasket/gasket sealing material; bedliner;

(xiv) 3.5 pounds of VOC per gallon of material, excluding water, for all other materials not subject to some other emission limitation stated in this paragraph. This includes but is not limited to coatings such as cavity wax, deadener, underbody coating, interior coating, weatherstrip adhesive, and/or lubricating wax/compound.

3. The emission limits stated in paragraphs 1. and 2. shall be achieved by the application of low solvent technology or a system demonstrated to have equivalent control efficiency on the basis of pounds of VOC per gallon of solids.

4. No person shall cause, let, permit, suffer or allow the emissions of VOC from the use of wipe-off solvents to exceed 1.0 pounds per unit of production as a rolling, 12-month average. Wipe-off solvents shall include those solvents used to clean dirt, grease, excess sealer and adhesive, or other foreign matter from the car body in preparation for painting or other production-related operation.

5. No person shall cause, let, permit, suffer or allow the emission of VOCs from flush or clean paint application systems including paint lines, tanks and applicators, unless such solvents are captured to the maximum degree feasible by being directed into containers that prevent evaporation into the atmosphere.

6. No person shall store solvents or waste solvents in drums, pails, cans or other containers unless such containers have air-tight covers which are in place at all times when materials are not being transferred into or out of the container.

7. No person shall cause, let, permit, suffer or allow the emissions of VOC from the cleaning of oil and grease stains on the body shop floor to exceed 0.1 pounds per unit of production.

8. For the purpose of this subsection; the following definitions apply:

(i) "Adhesive" means any chemical substance that is applied for the purpose of bonding two surfaces together without regard to the substrates involved other than by mechanical means.

(ii) "Automobile" means all passenger cars or passenger car derivatives capable of seating a maximum of 12 or fewer passengers.

(iii) "Bedliner" means a multi-component coating, used at an automobile or light-duty truck assembly coating facility, applied to a cargo bed after the application of topcoat and outside of the topcoat operation to provide additional durability and chip resistance.

(iv) "Cavity wax" means a coating, used at an automobile or light-duty truck assembly coating facility, applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

(v) "Deadener" means a coating, used at an automobile or light-duty truck assembly coating facility, applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

(vi) "Electrodeposition primer" means a process of applying a protective, corrosion-resistant waterborne primer on exterior and interior surfaces that provides thorough coverage of recessed areas. It is a dip coating method that uses an electrical field to apply or deposit the conductive coating onto the part. The object being painted acts as an electrode that is oppositely charged from the particles of paint in the dip tank. Also referred to as E-coat, Uni-Prime, and ELPO Primer.

(vii) "Electrophoretic Applied Prime Operation" means the dip tank flash-off area and bake oven(s) which are used to apply and dry or cure the initial coating on components of automobile and light-duty truck bodies by submerging the body components in a coating bath with an electrical potential difference between the components and the bath, and drying or curing such coating on the components in bake oven(s);

(viii) "Final repair" means the operations performed and coating(s) applied to completely-assembled motor vehicles or to parts that are not yet on a completely assembled vehicle to correct damage or imperfections in the coating. The curing of the coatings applied in these operations is accomplished at a lower temperature than that used for curing primer-surfacer and topcoat. This lower temperature cure avoids the need to send parts that are not yet on a completely assembled vehicle through the same type of curing process used for primer-surfacer and topcoat and is necessary to protect heat sensitive components on completely assembled vehicles.

(ix) "Gasket/gasket sealing material" means a fluid, used at an automobile or light-duty truck assembly coating facility, applied to coat a gasket or replace and perform the same function as a gasket. Automobile and light-duty truck gasket/gasket sealing material includes room temperature vulcanization (RTV) seal material.

(x) "Glass bonding primer" means a primer, used at an automobile or light-duty truck assembly coating facility, applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass. Automobile and light-duty truck glass bonding primer includes glass bonding/cleaning primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of adhesive or the installation of adhesive bonded glass.

(xi) "In-line repair" means the operation performed and coating(s) applied to correct damage or imperfections in the topcoat on parts that are not yet on a completely assembled vehicle. The curing of the coatings applied in these operations is accomplished at essentially the same temperature as that used for curing the previously applied topcoat. Also referred to as high bake repair or high bake reprocess. In-line repair is considered part of the topcoat operation.

(xii) "Interior coating" means a coating, used at an automobile or light-duty truck assembly coating facility outside of the primer-surfacer and topcoat operations, applied to the trunk interior to provide chip protection.

(xiii) "Light-Duty Trucks" means any motor vehicles rated 8500 pounds gross weight or less which are designed primarily for the purpose of transportation or are derivatives of such vehicles;

(xiv) "Lubricating wax/compound" means a protective lubricating material, used at an automobile or light-duty truck assembly coating facility, applied to vehicle hubs and hinges.

(xv) "Manufacturing Facility" means a facility which assembles twenty (20) or more automobiles or light-duty trucks per day (either separately or in combination) ready for sale to vehicle dealers. Customizers, body shops and other repainters are not part of this definition;

(xvi) "Primer-surfacer" means an intermediate protective coating applied over the electrodeposition primer and under the topcoat. Primer-surfacer provides adhesion, protection, and appearance properties to the total finish. Primer-surfacer may also be called guide coat or surfacer. Primer-surfacer operations may include other coating(s) (e.g., anti-chip, lower-body anti-chip, chip-resistant edge primer, spot primer, blackout, deadener, interior color, basecoat replacement coating, etc.) that is (are) applied in the same spray booth(s).

(xvii) "Sealer" means a high viscosity material, used at an automobile or light-duty truck assembly coating facility, generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (e.g., primer-surfacer). The primary purpose of automobile and

light-duty truck sealer is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment. Such materials are also referred to as sealant, sealant primer, or caulk.

(xviii) "Solids turnover ratio (R_T)" means the ratio of total volume of coating solids that is added to the EDP system in a calendar month divided by the total volume design capacity of the EDP system.

(xix) "Spray Prime Operation" means the spray prime booth, flash-off area and bake oven(s) which are used to apply and dry or cure a surface coating between the electrophoretic applied prime and topcoat operations on the components of automobile and light-duty truck bodies;

(xx) "Topcoat" means the final coating system applied to provide the final color and/or a protective finish. The topcoat may be a monocoat color or basecoat/clearcoat system. In-line repair and two-tone are part of topcoat. Topcoat operations may include other coating(s) (e.g., blackout, interior color, etc.) that is (are) applied in the same spray booth(s).

(xxi) "Underbody coating" means a coating, used at an automobile or light-duty truck assembly coating facility, applied to the undercarriage or firewall to prevent corrosion and/or provide chip protection.

(xxii) "Weatherstrip adhesive" means an adhesive, used at an automobile or light-duty truck assembly coating facility, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

9. Applicability: Prior to January 1, 2015, the requirements of this subparagraph (t) shall apply to facilities at which actual emissions of volatile organic compounds from the use of automobile and light-duty truck assembly coatings equal or exceed 2.7 tons per 12-month rolling period and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1, 3, 4, 5, 6, 7, and 8.

10. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (t) shall apply to facilities at which the potential emissions of volatile organic compounds from the use of automobile and light-duty truck assembly coatings equal or exceed 100 tons per year and are located outside the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1, 3, 4, 5, 6, 7, and 8.

11. Applicability: On and after January 1, 2015, the requirements of this subparagraph (t) shall apply to facilities at which actual emissions of volatile organic compounds from the use of automobile and light-duty truck assembly coatings equal or exceed 2.7 tons per 12-month rolling period and are located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 2, 3, 4, 5, 6, 7, and 8.

(ii) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraph 2 are subject to the compliance schedule specified in subparagraph 14.

12. On and after January 1, 2015, the requirements of this subparagraph (t) shall apply to facilities at which the potential emissions of volatile organic compounds from the use of automobile and light-duty truck assembly coatings equal or exceed 100 tons per year and are located outside the counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding and Walton as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1, 3, 4, 5, 6, 7, and 8.

13. Applicability: The requirements of subparagraphs 11. and 12. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 9. and 10. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraphs 11. and 12. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

14. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014**.

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014**.

(iii) Full compliance with the applicable requirements specified in subparagraph 2 must be completed before **January 1, 2015**.

(u) **VOC Emissions from Can Coating.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from can coating operations to exceed:

(i) 2.8 pounds per gallon of coating, excluding water, delivered to the coating applicator from sheet base coat (exterior and interior) and overvarnish or two-piece can exterior (basecoat and overvarnish) operations. If any coating delivered to the coating applicator contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.52 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) 4.2 pounds per gallon of coating, excluding water, delivered to the coating applicator from two and three-piece can interior body spray and two-piece can exterior end (spray and roll coat) operations. If any coating delivered to the coating applicator contains more than 4.2 pounds VOC per gallon, the solids equivalent limit shall be 9.78 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iii) 5.5 pounds per gallon of coating, excluding water, delivered to the coating applicator from three-piece side-seam spray operations. If any coating delivered to the coating applicator contains more than 5.5 pounds VOC per gallon, the solids equivalent limit shall be 21.8 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iv) 3.7 pounds per gallon of coating, excluding water, delivered to the coating applicator from end seal compound operations. If any coating delivered to the coating applicator contains more than 3.7 pounds VOC per gallon, the solids equivalent limit shall be 7.44 pounds VOC per gallon of coating solids delivered to the coating applicator.

2. The emission limits in this subsection shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit expressed in pounds VOC per gallon of coating, excluding water, stated in paragraph 1. of this subsection; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit, expressed in pounds VOC per gallon of coating solids, stated in paragraph 1. of this subsection; averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the non-methane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit expressed in pounds VOC per gallon of coating solids stated in paragraph 1. of this subsection.

3. For the purpose of this subsection, the following definitions apply:

(i) "End sealing compound" means a synthetic rubber compound which is coated onto can ends and which functions as a gasket when the end is assembled on the can.

(ii) "Exterior base coating" means a coating applied to the exterior of a two-piece can body to provide protection to the metal or to provide background for the lithographic or printing operation.

(iii) "Sheet base coating" means a coating applied to metal in sheet form to serve as either the exterior or interior of two-piece or three-piece can bodies or can ends.

(iv) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(v) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(vi) "Three-piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or solder seam to protect the exposed metal.

(vii) "Two-piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(v) **VOC Emissions from Coil Coating.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from coil coating operations to exceed:

(i) 2.6 pounds per gallon of coating, excluding water, delivered to the coating applicator from prime and topcoat or single coat operations. If any coating delivered to the coating applicator contains more than 2.6 pounds VOC per gallon, the solids equivalent limit shall be 4.02 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) The emission limits in this subsection shall apply to the coating applicator(s), oven(s) and quench area(s) of coil coating lines involved in prime and topcoat or single coat operations.

2. The emission limits in this subsection shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit of 2.6 pounds VOC per gallon of coating, excluding water, stated in paragraph 1. of this subsection; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit of 4.02 pounds VOC per gallon of coating solids, stated in paragraph 1. of this subsection; averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the non-methane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit of 4.02 pounds VOC per gallon of coating solids stated in paragraph 1. of this subsection.

3. For the purpose of this subsection, the following definitions apply:

(i) "Coil Coating" means the coating of any flat metal sheet or strip that comes in rolls or coils;

(ii) "Quench Area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(w) **VOC Emissions from Paper Coating.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from paper coating to exceed:

(i) 2.9 pounds per gallon of coating, excluding water, delivered to the coating applicator from a paper coating line. This limit shall apply to roll, knife, rotogravure and saturation coater(s) and drying oven(s) of paper coating. If any coating delivered to the coating applicator contains more than 2.9 pounds VOC per gallon, the solids equivalent limit shall be 4.79 pounds VOC per gallon of coating solids delivered to the coating applicator.

2. The emission limits in subparagraph 1. shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit of 2.9 pounds VOC per gallon of coating, excluding water; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit of 4.79 pounds VOC per gallon of coating solids; averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the non-methane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit of 4.79 pounds VOC per gallon of coating solids.

3. No person shall cause, let, permit, suffer, or allow the emissions of VOC from paper, film and foil coating unless:

(i) VOC emission reduction equipment with an overall VOC control efficiency is 90 percent for each coating line is installed and operated; or

(ii) VOC emissions are less than 0.08 pounds per pound of coating for each coating line except pressure sensitive tape and label coating; or

(iii) VOC emissions are less than 0.40 pounds per pound of solids applied for each coating line except pressure sensitive tape and label coating.

4. No person shall cause, let, permit, suffer, or allow the emissions of VOC from pressure sensitive tape and label coating unless:

(i) VOC emission reduction equipment with an overall VOC control efficiency is 90 percent for each coating line is installed and operated; or

(ii) VOC emissions are less than 0.067 pounds per pound of coating for each coating line; or

(iii) VOC emissions are less than 0.20 pounds per pound of solids applied for each coating line.

5. Each owner or operator of a facility that coats paper, film or foil including pressure sensitive tape and label coating shall comply with the following housekeeping requirements for any affected cleaning operation:

(i) store all VOC-containing cleaning materials and used shop towels in closed containers;

(ii) ensure that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing cleaning materials;

(iv) convey VOC-containing cleaning materials from one location to another in closed containers or pipes; and

(v) minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

6. For the purpose of this subparagraph, the following definitions apply:

(i) "Knife Coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate;

(ii) "Paper Coating" means the application of a coating on paper and pressure sensitive tapes, including plastic film and metallic foil, regardless of substrate, in which the coating is distributed uniformly across the web;

(iii) "Roll Coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls;

(iv) "Rotogravure Coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

7. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (w) shall apply to facilities at which the actual emissions of volatile organic compounds from paper, film, and foil coating, including pressure sensitive tape and label coating, equal or exceed 15 pounds per day and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 6.

8. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (w) shall apply to facilities at which the potential emissions of volatile organic compounds from paper, film, and foil coating, including pressure sensitive tape and label coating, equal or exceed 100 tons per year and are located outside the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 6.

9. Applicability. On and after January 1, 2015, the requirements of this Subparagraph (w) shall apply to facilities at which actual emissions of volatile organic compounds from paper, film, and foil coating, including pressure sensitive tape and label coating, equal or exceed 15 pounds per day (or 2.7 tons per 12-month rolling period) for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 5. and 6.

(ii) Individual surface coating lines that have potential emissions of volatile organic compounds from paper, film, and foil coating, including pressure sensitive tape and label coating, that equal or exceed 25 tons per year shall comply with the provisions of subparagraphs 3. and 4.

(iii) Individual surface coating lines that have potential emissions of volatile organic compounds from paper, film, and foil coating, including pressure sensitive tape and label coating, that do not equal or exceed 25 tons per year and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, or Rockdale County shall comply with the provisions of subparagraphs 1. and 2.

(iv) Individual surface coating lines that have potential emissions of volatile organic compounds from paper, film, and foil coating, including pressure sensitive tape and label coating, that do not equal or exceed 25 tons per year but are located at facilities that have potential emissions of volatile organic compounds from paper coating that equal or exceed 100 tons per year and are located in Barrow, Bartow, Carroll, Hall, Newton, Spalding, or Walton County shall comply with the provisions of subparagraphs 1. and 2.

(v) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraphs 3., 4., or 5. are subject to the compliance schedule specified in subparagraph 12.

10. Applicability. On and after January 1, 2015, the requirements of this subparagraph (w) shall apply to facilities at which potential emissions of volatile organic compounds from paper, film, and foil coating, including pressure sensitive tape and label coating, equal or exceed 100 tons per year and are located outside of counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 6.

11. Applicability. The requirements of subparagraphs 9. and 10. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 7. and 8. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraphs 9. and 10. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

12. Compliance schedule.

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements of subparagraphs 3., 4., and 5. must be completed before **January 1, 2015.**

(x) **VOC Emissions from Fabric and Vinyl Coating.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from fabric and vinyl coating operations to exceed:

(i) 2.9 pounds per gallon of coating, excluding water, delivered to the coating applicator from a fabric coating line. If any coating delivered to the coating applicator contains more than 2.9 pounds VOC per gallon, the solids equivalent limit shall be 4.79 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) 3.8 pounds per gallon of coating, excluding water, delivered to the coating applicator from a vinyl coating line. If any coating delivered to the coating applicator contains more than 3.8 pounds VOC per gallon, the solids equivalent limit shall be 7.86 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iii) The emission limits in this subsection shall apply to roll, knife, or rotogravure coater(s) and drying oven(s) of fabric and vinyl coating lines.

2. The emission limits in this subsection shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit, expressed in pounds VOC per gallon of coating excluding water, stated in paragraph 1. of this subsection; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit, expressed in pounds VOC per gallon of coating solids, stated in paragraph 1. of this subsection; averaging across lines is not allowed: or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the non-methane volatile organic compounds which enter the control equipment are recovered or destroyed and that overall VOC emissions do not exceed the solids equivalent limit expressed in pounds VOC per gallon of coating solids stated in paragraph 1. of this subsection.

3. For the purpose of this subsection, the following definitions apply:

(i) "Fabric Coating" means the coating of a textile substrate with a knife roll, or rotogravure coater to impart properties that are not initially present, such as strength, stability, water or acid repellency, or appearance;

(ii) "Knife Coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate;

(iii) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls;

(iv) "Rotogravure Coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

(v) "Vinyl Coating" means applying a decorative or protective topcoat, or printing on vinyl coated fabric or vinyl sheets, but shall not mean applying plastisol coating.

(y) **VOC Emissions from Metal Furniture Coating.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from metal furniture coating operations to exceed:

(i) 3.0 pounds per gallon of coating, excluding water, delivered to the coating applicator from prime and topcoat or single coat operations. If any coating delivered to the coating applicator contains more than 3.0 pounds VOC per gallon, the solids equivalent limit shall be 5.06 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) The emission limit in this subparagraph shall apply to the application area(s), flashoff area(s) and oven(s) of metal furniture coating lines involved in prime and topcoat or single coat operations.

2. The emission limits in subparagraph 1. shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit of 3.0 pounds VOC per gallon of coating, excluding water; or

(ii) the application of low solvent coating technology where the 24-hour or monthly weighted average of all coatings on a single coating line or operation meets the solids equivalent limit of 5.06 pounds VOC-per-gallon of coating solids (averaging across lines is not allowed); or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the nonmethane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit of 5.06 pounds VOC per gallon of coating solids.

3. No person shall cause, let, permit, suffer, or allow the emissions of VOC from metal furniture coating operations for baked coatings to exceed:

(i) 2.3 pounds per gallon of coating, excluding water, delivered to the coating applicator from general one-component, and general multi-component coatings. If any coating delivered to the coating applicator contains more than 2.3 pounds VOC per gallon, the solids equivalent limit shall be 3.3 pounds VOC per gallon of coating solids as applied.

(ii) 3.0 pounds per gallon of coating, excluding water, delivered to the coating applicator from extreme high gloss, extreme performance, heat resistant, metallic, solar absorbent and pretreatment coatings. If any coating delivered to the coating applicator contains more than 3.0 pounds VOC per gallon, the solids equivalent limit shall be 5.06 pounds VOC per gallon of coating solids as applied.

4. No person shall cause, let, permit, suffer, or allow the emissions of VOC from metal furniture coating operations for air-dried coatings to exceed:

(i) 2.3 pounds per gallon of coating, excluding water, delivered to the coating applicator from general one-component coatings. If any coating contains more than 2.3 pounds VOC per gallon, the solids equivalent limit shall be 3.3 pounds VOC per gallon of coating solids as applied.

(ii) 2.8 pounds per gallon of coating, excluding water, delivered to the coating applicator from general multi-component, and extreme high gloss coatings. If any coating delivered to the coating applicator contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.5 pounds VOC per gallon of coating solids as applied.

(iii) 3.0 pounds per gallon of coating, excluding water, delivered to the coating applicator from extreme performance, heat resistant, metallic, solar absorbent and pretreatment coatings. If any coating delivered to the coating applicator contains more than 3.0 pounds VOC per gallon, the solids equivalent limit shall be 5.06 pounds VOC per gallon of coating solids as applied.

5. Each owner or operator of a facility that coats metal furniture shall ensure that all coating application systems utilize one or more of the application techniques stated below:

(i) Electrostatic spray application;

(ii) High volume low pressure (HVLP) spraying;

(iii) Flow/curtain application;

(iv) Roll coating;

(v) Dip coat application including electrodeposition;

(vi) Brush coat;

(vii) Airless spray;

(viii) Air-assisted airless spray; or

(ix) Other coating application methods that achieve transfer efficiency equivalent to HVLP or electrostatic spray application methods, as determined by the Director.

6. Each owner or operator of a facility that coats metal furniture shall comply with the following work practice standards:

(i) store all VOC-containing coatings, thinners, and coating-related waste materials in closed containers;

(ii) ensure that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing coatings, thinners, and coating-related waste materials; and

(iv) convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.

7. Each owner or operator of a facility that coats metal furniture shall comply with the following housekeeping requirements for any affected cleaning operation:

(i) store all VOC-containing cleaning materials and used shop towels in closed containers;

(ii) ensure that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing cleaning materials;

(iv) convey VOC-containing cleaning materials from one location to another in closed containers or pipes; and

(v) minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

8. The VOC limits specified in these subparagraphs 3. and 4. do not apply to the following types of metal furniture coatings and/or coating operations:

(i) Touch-up and repair coatings;

(ii) Stencil coatings;

(iii) Safety-indicating coatings;

(iv) Solid-film lubricants;

(v) Electric-insulating and thermal-conducting coatings; and

(vi) Coating application utilizing hand-held aerosol cans.

9. The emission limits in subparagraphs 3. and 4. shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit expressed in pounds VOC per gallon of coating, excluding water, stated in subparagraphs 3. and 4. of this subparagraph; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit expressed in pounds VOC per gallon of coating solids, stated in subparagraphs 3. and 4. of this subparagraph; averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the nonmethane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit, expressed in pounds VOC per gallon of coating solids stated in subparagraphs 3. and 4. of this subparagraph.

10. For the purpose of this subparagraph, the following definitions apply:

(i) "Application Area" means the area where the coating is applied by spraying, dipping or flow coating techniques.

(ii) "Metal Furniture Coating" means the surface coating of any furniture made of metal or any metal part, which will be assembled with other metal wood, fabric, plastic or glass parts to form a furniture piece.

11. Applicability: Prior to January 1, 2015, the requirements of this subparagraph (y) shall apply to facilities at which the actual emissions of volatile organic compounds from the use of metal furniture coatings equal or exceed 15 pounds per day and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 10.

12. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (y) shall apply to facilities at which the potential emissions of volatile organic compounds from the use of metal furniture coatings equal or exceed 100 tons per year and are located outside the counties of in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 10.

13. Applicability. On and after January 1, 2015, the requirements of this subparagraph (y) shall apply to facilities at which the actual emissions of volatile organic compounds from the use of metal furniture coatings, before controls, equal or exceed 15 pounds per day (or 2.7 tons per 12-month rolling period) for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 3., 4., 5., 6., 7., 8., 9., and 10.

(ii) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraphs 3., 4., 5., 6., 7., 8., or 9. are subject to the compliance schedule specified in subparagraph 16.

14. On and after January 1, 2015, the requirements of this subparagraph (y) shall apply to facilities at which the potential emissions of volatile organic compounds from the use of metal furniture coatings equal or exceed 100 tons per year and are located outside the counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 10.

15. Applicability. The requirements of subparagraphs 13. and 14. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 11. and 12. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraphs 13. and 14. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

16. Compliance schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements of subparagraphs 3., 4., 5., 6., 7., 8., and 9. must be completed before **January 1, 2015.**

(z) **VOC Emissions from Large Appliance Surface Coating.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the surface coating of large appliances to exceed:

(i) 2.8 pounds per gallon of coating, excluding water, delivered to the coating applicator from prime single or topcoat operations. If any coating delivered to the coating applicator contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.52 pounds VOC per gallon of coating solids delivered to the coating applicator;

(ii) The emission limits in this subparagraph shall apply to the application area(s), flashoff area(s) and oven(s) of large appliance coating lines involved in prime, single or topcoat coating operations;

(iii) The emission limit in this subparagraph shall not apply to the use of quick drying lacquers used for repair of scratches and nicks.

2. The emission limits in subparagraph 1. shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit of 2.8 pounds VOC per gallon of coating, excluding water; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit of 4.52 pounds VOC per gallon of coating solids; averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the non-methane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit of 4.52 pounds VOC per gallon of coating solids.

3. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the surface coating of large appliances using baked coatings to exceed:

(i) 2.3 pounds per gallon of coating, excluding water and exempt compounds, delivered to the coating applicator general one component and general multi-component coatings. If any coating delivered to the coating applicator contains more than 2.3 pounds VOC per gallon, the solids equivalent limit shall be 3.3 pounds VOC per gallon of coating solids delivered to the coating applicator;

(ii) 2.8 pounds per gallon of coating, excluding water and exempt compounds, delivered to the coating applicator from extreme high gloss, extreme performance, heat resistant, metallic, and solar absorbent, and pretreatment coatings. If any coating delivered to the coating applicator contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.5 pounds VOC per gallon of coating solids delivered to the coating applicator;

4. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the surface coating of large appliances using air-dried coatings to exceed:

(i) 2.3 pounds per gallon of coating, excluding water and exempt compounds, delivered to the coating applicator from general one-component coatings. If any coating delivered to the coating applicator contains more than 2.3 pounds VOC per gallon, the solids equivalent limit shall be 3.3 pounds VOC per gallon of coating solids delivered to the coating applicator;

(ii) 2.8 pounds per gallon of coating, excluding water and exempt compounds, delivered to the coating applicator from general multi-component, extreme high gloss, extreme performance, heat resistant, metallic, solar absorbent and pretreatment coatings. If any coating delivered to the coating applicator contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.5 pounds VOC per gallon of coating solids delivered to the coating applicator;

5. Each owner or operator of a facility that coats large appliances shall ensure that all coating application systems utilize one or more of the application techniques stated below:

(i) Electrostatic spray application;

(ii) High volume low pressure (HVLP) spraying;

(iii) Flow/curtain application;

(iv) Roll coating;

(v) Dip coat application including electrodeposition;

(vi) Brush coat;

(vii) Airless spray;

(viii) Air-assisted airless spray; or

(ix) Other coating application methods that achieve transfer efficiency equivalent to HVLP or electrostatic spray application methods, as determined by the Director.

6. Each owner or operator of a facility that coats large appliances shall comply with the following work practice standards:

(i) store all VOC-containing coatings, thinners, and coating-related waste materials in closed containers;

(ii) ensure that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing coatings, thinners, and coating-related waste materials; and

(iv) convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.

7. Each owner or operator of a facility that coats large appliances shall comply with the following housekeeping requirements for any affected cleaning operation:

(i) store all VOC-containing cleaning materials and used shop towels in closed containers;

(ii) ensure that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing cleaning materials;

(iv) convey VOC-containing cleaning materials from one location to another in closed containers or pipes; and

(v) minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

8. The VOC limits specified in subparagraphs 3. and 4. do not apply to the following types of large appliance coatings and/or coating operations:

(i) Touch-up and repair coatings;

(ii) Stencil coatings;

(iii) Safety-indicating coatings;

(iv) Solid-film lubricants;

(v) Electric-insulating and thermal-conducting coatings; and

(vi) Coating application utilizing hand-held aerosol cans.

9. The emission limits in subparagraphs 3. and 4. shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit expressed in pounds VOC per gallon of coating, excluding water, stated in subparagraphs 3. and 4. of this subparagraph; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit expressed in pounds VOC per gallon of coating solids, stated in subparagraphs 3. and 4. of this subparagraph (averaging across lines is not allowed); or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the nonmethane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit, expressed in pounds VOC per gallon of coating solids stated in subparagraphs 3. and 4. of this subparagraph.

10. For the purpose of this subparagraph, the following definitions apply:

(i) "Application Area" means the area where the coating is applied by spraying, dipping or flow coating techniques.

(ii) "Single Coat" means a single film of coating applied directly to the metal substrate omitting the primer application.

(iii) "Large Appliances" means doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners and other similar products.

11. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (z) shall apply to facilities at which the actual emissions of volatile organic compounds from the use of large appliance coatings equal or exceed 15 pounds per day and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 10.

12. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (z) shall apply to facilities at which the potential emissions of volatile organic compounds from the use of large appliance coatings equal or exceed 100 tons per year and are located outside the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 10.

13. Applicability. On and after January 1, 2015, the requirements of this subparagraph (z) apply to facilities at which actual emissions of volatile organic compounds from the use of large appliance coatings, before controls, equal or exceed 15 pounds per day (or 2.7 tons per 12-month rolling period) for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 3., 4., 5., 6., 7., 8., 9. and 10.

(ii) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraphs 3., 4., 5., 6., 7., 8., or 9. are subject to the compliance schedule specified in subparagraph 16.

14. Applicability. On and after January 1, 2015, the requirements of this subparagraph (z) shall apply to facilities at which potential emissions of volatile organic compounds from the use of large appliance coatings equal or exceed 100 tons per year and are located outside of counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2, and 10.

15. Applicability: The requirements of subparagraphs 13. and 14. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 11. and 12. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraphs 13. and 14. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

16. Compliance schedule: All existing facilities subject to this subparagraph shall comply with the following compliance schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements of subparagraphs 3., 4., 5., 6., 7., 8., and 9. must be completed before **January 1, 2015.**

(aa) **VOC Emissions from Wire Coating.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from wire coating operations to exceed:

(i) 1.7 pounds per gallon of coating, excluding water, delivered to the coating applicator from wire coating operations. If any coating delivered to the coating applicator contains more than 1.7 pounds VOC per gallon, the solids equivalent limit shall be 2.21 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) The emission limit in this subsection shall apply to the oven(s) of wire coating operations.

2. The emission limits in this subsection shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit of 1.7 pounds VOC per gallon of coating, excluding water, stated in paragraph 1. of this subsection; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit of 2.21 pounds VOC per gallon of coating solids, stated in paragraph 1. of this subsection; averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the nonmethane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit of 2.21 pounds VOC per gallon of coating solids stated in paragraph 1. of this subsection.

3. For the purpose of this subsection, the following definitions apply:

(i) "Wire Coating" means the process of applying a coating of electrically insulating varnish or enamel to aluminum or copper wire for use in electrical machinery.

(bb) **Petroleum Liquid Storage.**

1. No person shall cause, let, permit, suffer, or allow the use of a fixed roof storage vessel with capacities of 40,000 gallons or greater containing a volatile petroleum liquid where true vapor pressure is greater than 1.52 psia unless:

(i) the vessel has been fitted with a floating roof; or

(ii) the vessel has been fitted with control equipment demonstrated to have control efficiency equivalent to or greater than required in (i) of this paragraph, and approved by the Director.

2. The requirements of this subsection shall not apply to vessels:

(i) underground, if the total volume of petroleum liquids added to and taken from the tank annually does not exceed twice the volume of the tank; or

(ii) having capacities less than 425,000 gallons used to store crude oil prior to lease custody transfer.

3. For the purpose of this subsection, the following definitions shall apply:

(i) "Crude Oil" means a naturally occurring mixture which consists of hydrocarbons and/or sulfur, nitrogen and/or oxygen derivatives of hydrocarbons and which is a liquid at standard conditions;

(ii) "Floating Roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall;

(iii) "Petroleum Liquids" means crude oil, condensate, and any finished or intermediate products manufactured in a petroleum refinery;

(iv) "Petroleum Refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of crude oils, or through redistillation, cracking, extraction, or reforming of unfinished petroleum derivatives;

(v) "True Vapor Pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962.

(cc) **Bulk Gasoline Terminals.**

1. No person may load gasoline into any tank trucks or trailers from any bulk gasoline terminal unless:

(i) The bulk gasoline terminal is equipped with vapor control equipment capable of complying with subparagraph 1.(v) of this paragraph 1., properly installed, in good working order, in operation, and consisting of one of the following:

(I) An adsorber or condensation equipment which processes and recovers at least 90 percent of all vapors and gases from the equipment being controlled; or

(II) Vapor collection equipment which directs all vapors to a fuel gas system; or

(III) Control equipment demonstrated to have control efficiency equivalent to or greater than required in (I) or (II) of this paragraph, and approved by the Director; and

(ii) All displaced vapors and gases are vented only to the vapor control equipment; and

(iii) Complete drainage of any loading arm will be accomplished before it is removed from the tank; and

(iv) All loading and vapor lines are equipped with fittings which make vapor-tight connections and which close automatically when disconnected, or a loading arm with vapor return line and hatch seal designed to prevent the escape of gases and vapor while loading;

(v) Sources and persons affected under this subsection may not allow mass emissions of volatile organic compounds from control equipment to exceed 4.7 grains per gallon of gasoline loaded.

2. Sources and persons affected under this subsection shall comply with the vapor collection and control system requirements of Rule 391-3-1-.02(2)(ss).

3. The requirements of this subsection shall not apply to loading of gasoline into tank trucks or trailers of less than 3000 gallons capacity outside those counties of Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Paulding, and Rockdale.

4. The requirements of this subsection shall apply to loading of gasoline into tank trucks or trailers of less than 3000 gallons capacity inside those counties of Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Paulding, and Rockdale after July 1, 1991.

5. For the purpose of this subsection, the following definitions apply:

(i) "Bulk Gasoline Terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck and has an average daily throughput of more than 20,000 gallons of gasoline.

(ii) "Gasoline" means a petroleum distillate having a Reid vapor pressure of 4 psia or greater.

(dd) **Cutback Asphalt.**

1. After January 1, 1981, no person may cause, allow or permit the use of cutback asphalts for paving purposes except as necessary for:

(i) long-life stockpile storage; or

(ii) the use or application at ambient temperatures less than 50°F; or

(iii) solely as a penetrating prime coat; or

(iv) base stabilization.

2. For the purpose of this subsection, the following definitions shall apply:

(i) "Asphalt" means a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum;

(ii) "Cutback Asphalt" means asphalt cement which has been liquified by blending with petroleum solvents (diluents). Upon exposure to atmospheric conditions the diluents evaporate, leaving the asphalt cement to perform its function;

(iii) "Penetrating Prime Coat" means an application of low viscosity liquid asphalt to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime penetrates the base and plugs the voids, hardens the

top, and helps bind it to the overlying asphalt course. It also reduces the necessity of maintaining an untreated base course prior to placing the asphalt pavement.

(ee) **Petroleum Refinery.**

1. Persons responsible for any vacuum producing system at a petroleum refinery shall control the emissions of any noncondensable volatile organic compound from the condensers, hot wells or accumulators by:

(i) Piping the noncondensable vapors to a firebox or incinerator; or

(ii) Compressing the vapors and adding them to the refinery fuel gas; or

(iii) Controlling the vapors by using control equipment demonstrated to have control efficiency equivalent to or greater than required in (i) or (ii) of this paragraph, and approved by the Director; and

2. Persons responsible for any wastewater (oil/water) separator at a petroleum refinery shall:

(i) Provide covers and seals approved by the Director, on all separators and forebays; and

(ii) Equip all openings in covers, separators, and forebays with lids or seals such that the lids or seals are in the closed position at all times except when in actual use.

3. Before January 1, 1980, the owner or operator of any affected petroleum refinery located in this State shall develop and submit to the Director for approval a detailed procedure for minimization of volatile organic compound emissions during process unit turnaround. As a minimum, the procedure shall provide for:

(i) Depressurization venting of the process unit or vessel to a vapor recovery system, flare or firebox; and

(ii) No emission of volatile organic compounds from a process unit or vessel unless its internal pressure is 19.7 psi or less.

4. For the purpose of this subsection, the following definitions shall apply:

(i) "Accumulator" means the reservoir of a condensing unit receiving the condensate from the condenser;

(ii) "Condenser" means any heat transfer device used to liquefy vapors by removing their latent heats of vaporization. Such devices include, but are not limited to, shell and tube, coil, surface, or contact condensers;

(iii) "Firebox" means the chamber or compartment of a boiler or furnace in which materials are burned but does not mean the combustion chamber of an incinerator;

(iv) "Forebays" means the primary sections of a wastewater separator;

(v) "Hot Well" means the reservoir of a condensing unit receiving the warm condensate from the condenser;

(vi) "Petroleum Refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation, cracking, extraction, or refining of unfinished petroleum derivatives;

(vii) "Refinery Fuel Gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of natural gas and fuel gas;

(viii) "Turnaround" means the procedure of shutting a refinery unit down after a run to do necessary maintenance and repair work and putting the unit back on stream;

(ix) "Vacuum Producing System" means any reciprocating, rotary, or centrifugal blower or compressor, or any jet ejector or device that takes suction from a pressure below atmospheric and discharges against atmospheric pressure;

(x) "Vapor Recovery System" means a system that prevents releases to the atmospheric of no less than 90 percent by weight of organic compounds emitted during the operation of any transfer, storage, or process equipment;

(xi) "Wastewater (oil/water) Separator" means any device or piece of equipment which utilizes the difference in density between oil and water to remove oil and associated chemicals from water or any device, such as a flocculation tank, clarifier, etc., which removes petroleum derived compounds from wastewater.

(ff) **Solvent Metal Cleaning.**

1. No person shall cause, suffer, allow, or permit the operation of a cold cleaner degreaser unless the following requirements for control of emissions of the volatile organic compounds are satisfied:

(i) The degreaser shall be equipped with a cover to prevent the escape of volatile organic compounds during periods of non-use;

(ii) The degreaser shall be equipped with a facility for draining cleaned parts before removal;

(iii) If used, the solvent spray must be a solid, fluid stream (not a fine, atomized or shower type spray) and at a pressure which does not cause excessive splashing;

(iv) If the solvent volatility is 0.60 psi or greater measured at 100°F, or if the solvent is heated above 120°F, then one of the following control devices must be used:

(I) Freeboard that gives a freeboard ratio of 0.7 or greater;

(II) Water cover (solvent must be insoluble in and heavier than water);

(III) Other systems of equivalent control, such as a refrigerated chiller or carbon adsorption.

(v) Waste solvent shall be stored only in covered containers and shall not be disposed of by such a method as to allow excessive evaporation into the atmosphere.

2. No person shall cause, suffer, allow, or permit the operation of an open top vapor degreaser unless the following requirements for control of emissions of volatile organic compounds are satisfied:

(i) The degreaser shall be equipped with a cover to prevent the escape of volatile organic compounds during periods of non-use;

(ii) The degreaser shall be equipped with one of the following control devices:

(I) Freeboard ratio greater than or equal to 0.75;

(II) Refrigerated chiller;

(III) Enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser);

(IV) Carbon adsorption system, with ventilation greater than 50 cfm/ft^2 of air/vapor area (when cover is open), and exhausting less than 25 ppm solvent averaged over one complete adsorption cycle; or

(V) Control equipment demonstrated to have control efficiency equivalent to or better than any of the above.

(iii) The degreaser shall be operated in accordance with the following procedures. Operating instructions summarizing these procedures shall be displayed on the degreaser.

(I) Keep cover closed at all times except when processing work loads through the degreaser;

(II) Minimize solvent carry-out by the following measures:

I. Rack parts to allow full drainage;

II. Degrease the work load in the vapor zone at least 30 seconds or until condensation ceases;

III. Tip out any pools of solvent on the cleaned parts before removal;

IV. Allow parts to dry within the degreaser for at least 15 seconds or until visually dry.

(III) Do not degrease porous or adsorbent materials, such as cloth, leather, wood or rope;

(IV) Work loads should not occupy more than half of the degreaser's open top area;

(V) The vapor level should not drop more than 4 inches when the workload enters the vapor zone;

(VI) Never spray above the vapor level;

(VII) Repair solvent leaks immediately, or shutdown the degreaser;

(VIII) Ventilation fans should not be used near the degreaser opening;

(IX) Water should not be visually detectable in solvent exiting the water separator.

(iv) Waste solvent shall be stored only in covered containers and shall not be disposed of or transferred to another party by such a method as to allow excessive evaporation into the atmosphere.

3. No person shall cause, suffer, allow, or permit the operation of a conveyorized degreaser unless the following requirements for control of emissions of the volatile organic compounds are satisfied.

(i) The degreaser shall be equipped with a cover to prevent the escape of volatile organic compounds during periods of non-use;

(ii) The degreaser shall be equipped with either a drying tunnel, or other means such as rotating (tumbling) basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor;

(iii) The degreaser shall be equipped with one of the following:

(I) Refrigerated chiller;

(II) Carbon adsorption system, with ventilation greater than 50 cfm/ft^2 of air/vapor area (when down-time covers are open), and exhausting less than 25 ppm of solvent by volume averaged over a complete adsorption cycle; or

(III) Control equipment demonstrated to have control efficiency equivalent to or better than any of the above.

(iv) The degreaser shall be operated in accordance with the following procedure. Operating instructions summarizing these procedures shall be displayed on the degreaser.

(I) Exhaust ventilation should not exceed 65 cfm per ft^2 of degreaser opening, unless necessary to meet OSHA requirements. Work place fans should not be used near the degreaser opening;

(II) Minimize carryout emissions by:

I. Racking parts for best drainage; Maintaining vertical conveyor speed at less than 11 ft/min.

(III) Repair solvent leaks immediately, or shutdown the degreaser;

(IV) Water should not visibly be detectable in the solvent exiting the water separator;

(V) Down-time cover must be placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shutdown and removed just before they are started up.

(v) Waste solvent shall be stored only in covered containers and shall not be disposed of or transferred to another party by such a method as to allow excessive evaporation into the atmosphere.

4. The following requirements apply to degreasers using trichloroethylene, carbon tetrachloride, and/or chloroform in a total concentration greater than 5 percent by weight:

(i) Degreasers constructed or reconstructed after November 29, 1993 shall comply with paragraph 391-3-1-.02(9)(b)34. "Emission Standard for Halogenated Solvent Cleaning, 40 CFR 63, Subpart T, as amended" (NESHAP) and not paragraphs 1. through 3. of this subsection (ff) (Georgia Rule).

(ii) Existing degreasers (constructed or reconstructed on or before November 29, 1993) shall comply with paragraphs 1. through 3. of this subsection (ff) (Georgia Rule) until December 2, 1997; after which they must comply with paragraph 391-3-1-.02(9)(b)34. (NESHAP).

(iii) An existing degreaser (as defined above) may elect to comply with paragraph 391-3-1-.02(9)(b)34. prior to December 2, 1997. In such case, they are not required comply with Paragraphs 1. through 3. of this subsection (ff) (Georgia Rule) once they are in compliance with paragraph 391-3-1-.02(9)(b)34. (NESHAP).

(iv) Any facility which currently complies with paragraphs 391-3-1-.02(2)(ff)1. through 3. (Georgia Rule) which will be changing to comply with paragraph 391-3-1-.02(9)(b)34. (NESHAP) should submit a schedule of construction/ modification for changes necessary to comply with 391-3-1-.02(9)(b)34. (NESHAP) as soon as practically possible but no later than 60 days prior to any construction/modification.

5. For the purpose of this subsection, the following definitions shall apply:

(i) "Cold Cleaning" means the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition;

(ii) "Conveyorized Degreasing" means the continuous process of cleaning and removing soils from metal surfaces by operating with either cold or vaporized solvents;

(iii) "Freeboard Height" means the distance from the top of vapor zone to the top of the degreaser tank;

(iv) "Freeboard Ratio" means the freeboard height divided by the width (smallest dimension) of the degreaser;

(v) "Open Top Vapor Degreasing" means the batch process of cleaning and removing soils from metal surfaces by condensing hot solvent vapor on the colder metal parts;

(vi) "Solvent Metal Cleaning" means the process of cleaning soils from metal surfaces by cold cleaning, or open top vapor degreasing or conveyorized degreasing. Solvent metal cleaning does not include cleaners that use aqueous cleaning solvent or buckets, pails and beakers with capacities of two gallons or less.

(vii) "Aqueous Cleaning Solvent" means a cleaning solvent in which water is the primary ingredient (greater than 80 percent by weight of cleaning solvent solution as applied must be water).

6. The requirements of this subsection shall not apply to any solvent metal cleaning operation subject to Section 391-3-1-.02(2)(kkk) of the Georgia Rules for Air Quality Control "VOC Emissions from Aerospace manufacturing and Rework Facilities."

(gg) **Kraft Pulp Mills.**

1. Except as provided for in paragraph 2. of this subsection, no person shall cause, let, suffer, permit, or allow the emissions of TRS from any kraft pulp mill in operation, or under construction contract, on or before September 24, 1976, in amounts equal to or exceeding the following:

(i) Recovery Furnaces.

(I) Old Recovery Furnaces: 20 parts per million of TRS on a dry basis and as a 24-hour average, corrected to 8 volume percent oxygen;

(II) New Recovery Furnaces: 5 parts per million of TRS on a dry basis and as a 24-hour average, corrected to 8 volume percent oxygen;

(III) Cross Recovery Furnaces: 25 parts per million of TRS on a dry basis and as a 24-hour average, corrected to 8 volume percent oxygen.

(ii) Digester System or Multiple-Effect Evaporator System: 5 parts per million of TRS on a dry basis and a 24-hour average, corrected to 10 volume percent oxygen unless the following conditions are met:

(I) The gases are combusted in a lime kiln subject to the provisions of paragraph (iv) of this subsection; or

(II) The gases are combusted in a recovery furnace subject to the provisions of paragraph (i) of this subsection; or

(III) The gases are combusted with other gases in an incinerator or other device, or combusted in a lime kiln or recovery boiler not subject to the provisions of this subsection, and are subjected to a minimum temperature of 1200°F for at least 0.5 second; or

(IV) The gases are controlled by a means other than combustion. In this case, the gases discharged shall not contain TRS in excess of five parts per million on a dry basis and as a 24-hour average, corrected to the actual oxygen content of the untreated gas stream.

(iii) Smelt Dissolving Tanks: 0.0168 pounds of TRS per ton of black liquor solids (dry weight).

(iv) Lime Kilns: 40 parts per million of TRS on a dry basis and as a 24-hour average, corrected to 10 volume percent oxygen.

2. Nothing in paragraph 1. shall prevent the owner or operator of a kraft pulp mill subject to the provisions of this subsection (gg) from applying to the Director for permission to control TRS emissions from the kraft pulp mill under the provisions of this paragraph provided that:

(i) General Provisions.

(I) The owner or operator of such kraft pulp mill makes such application in writing no later than six months following the notification date; and

(II) In the event that the kraft pulp mill contains TRS emitting process equipment which is subject to the New Source Performance Standard for Kraft Pulp Mills, 391-3-1-.02(2)(b)23., then that TRS emitting process equipment must also comply with the applicable New Source Performance Standard TRS emission limitation(s);

(III) The owner or operator of such kraft pulp mill may not elect to control TRS emissions from process equipment not subject to the provisions of this subsection (gg) in lieu of controlling TRS emissions from those sources subject to this subsection (gg); and

(IV) For the purpose of this paragraph 2.; the maximum allowable emissions of TRS shall be calculated using the production rate (annual average or most recent 12 months of record) for the kraft pulp mill expressed as tons of air dried pulp per day, and the allowable emission rate of TRS from the kraft pulp mill shall be expressed as pounds of TRS per ton of air dried pulp.

(V) For the purpose of this paragraph, the "notification date" means September 1, 1988.

(ii) Emission Limitation: No person shall cause, let, suffer, permit, or allow the total emissions of TRS from the following processes: recovery furnace(s), lime kiln(s), smelt dissolving tank(s), digester system, multiple-effect evaporator system, equal to or exceeding the amount determined by the following formula:

A = RB + LK + 0.065 pounds of TRS per ton of air dried pulp;

The values for the terms RB and LK shall be determined using the following formula:

$$LK = \frac{(0.20U + 0.04V)}{U + V}$$

$$RB = \frac{(0.15W + 0.15X + 0.60Y + 0.75Z)}{W + X + Y + Z}$$

Where:

A = the total amount of allowable TRS emissions from the kraft pulp mill expressed as pounds of TRS per ton of air dried pulp;

LK = the fraction of the total allowable emission of TRS in pounds per ton of air dried pulp for lime kilns;

RB = the fraction of the total allowable emission of TRS in pounds per ton of air dried pulp for recovery furnaces;

U = tons per hour of lime mud solids calcined in lime kiln(s) not subject to the New Source Performance Standard for Kraft Pulp Mills;

V = tons per hour of lime solids calcined in lime kiln(s) subject to the New Source Performance Standard for Kraft Pulp Mills;

W = pounds per hour of black liquor solids burned in recovery furnace(s) subject to the New Source Performance Standard for Kraft Pulp Mills;

X = pounds per hour of black liquor solids burned in new recovery furnace(s);

Y = pounds per hour of black liquor solids burned in old recovery furnace(s);

Z = pounds per hour of black liquor solids burned in cross recovery furnace(s);

3. For the purpose of this subsection, the following definitions shall apply:

(i) "New Recovery Furnace" means a recovery furnace which had stated in the purchase contract a TRS performance guarantee or which included in the purchase contract a statement that the control of air pollutants was a design

objective and which has incorporated into its design: membrane wall or welded wall construction; and emission control air systems.

(ii) "Old Recovery Furnace" means a recovery furnace which is not classified as a new recovery furnace.

(hh) **Petroleum Refinery Equipment Leaks.**

1. No person shall cause, let, suffer, or allow the use of petroleum refinery equipment unless:

(i) A plan is submitted to the Director by no later than July 1, 1981 for monitoring VOC leaks. Such a program must contain:

(I) A list of refinery units and the quarter in which they will be monitored;

(II) A copy of the log book format;

(III) The make and model of the monitoring equipment to be used.

(ii) Monitoring for potential VOC leaks is carried out no less frequently than:

(I) Yearly using detection equipment for pump seals, pipeline valves in liquid service, and process drains;

(II) Quarterly using detection equipment for compressor seals, pipeline valves in gaseous service, and pressure relief valves in gaseous service;

(III) Weekly by visible inspection for all pump seals;

(IV) Immediately using detection equipment for any pump seals from which liquids are observed dripping and immediately after repair of any component previously found to be leaking;

(V) Within 24 hours for a relief valve after it has vented to the atmosphere.

(iii) All components which have emissions with a VOC concentration exceeding 10,000 ppm, as determined by Method 21 of the reference in Section 391-3-1-.02(3)(a) of these Rules, shall be affixed with a weatherproof and readily visible tag, bearing an identification number and the date on which the leak is located. This tag shall remain in place until the leaking component is repaired.

(iv) Leaking components as defined by (iii) above which can be repaired without a unit shutdown shall be repaired and retested as soon as practicable but no later than 15 days after the leak is identified.

(v) Leaking components as defined by (iii) above which require unit shutdown for repair may be corrected at the regularly scheduled turnaround unless the Director at his discretion requires early unit turnaround based on the number and severity of tagged leaks awaiting turnaround.

(vi) Except for safety pressure relief valves, no owner or operator of a petroleum refinery shall install or operate a valve at the end of a pipe or line containing volatile organic compounds unless the pipe or line is sealed with a second value, a blind flange, a plug, or a cap. The sealing device may be removed only when a sample is being taken or during maintenance operations.

(vii) Pipeline valves and pressure relief valves in gaseous volatile organic compound service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and the Director.

(viii) Pressure relief devices which are connected to an operation flare header, vapor recovery device, inaccessible valves, storage tank valves, and valves that are not externally regulated are exempt from the monitoring requirements of this rule.

2. The owner or operator of a petroleum refinery shall maintain a leaking components monitoring log. Copies of the monitoring log shall be retained by the owner or operator for a minimum of two years after the date on which the record was made or the report prepared and shall immediately be made available to the Director, upon verbal or written request, at any reasonable time. The monitoring log shall contain the following data:

(i) The name and the process unit where the component is located.

(ii) The type of component (e.g., valve, seal).

(iii) The tag number of the component.

(iv) The date on which a leaking component is discovered.

(v) The date on which a leaking component is repaired.

(vi) The date and instrument reading of the recheck procedure after a leaking component is repaired.

(vii) A record of the calibration of the monitoring instrument.

(viii) Those leaks that cannot be repaired until turnaround.

(ix) The total number of components checked and the total number of components found leaking.

3. The owner or operator of a petroleum refinery shall:

(i) Submit a report to the Director by the fifteenth day of January, April, July, and October that lists all leaking components that were located during the previous three calendar months but not repaired within fifteen days, all leaking components awaiting unit turnaround, the total number of components inspected, and the total number of components found leaking.

(ii) Submit a signed statement with the report attesting to the fact that, all monitoring and repairs were performed as stipulated in the monitoring program.

(iii) The first quarterly report shall be submitted to the Director no later than January 1, 1982.

4. The Director, upon written notice, may modify the monitoring, record keeping and reporting requirements.

5. For the purpose of this subsection, the following definitions apply:

(i) "Petroleum refinery" means any facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils residual fuel oils, lubricants, asphalt, or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.

(ii) "Component" means any piece of equipment which has the potential to leak volatile organic compounds when tested in the manner described in subparagraph 1.(iii). These sources include, but are not limited to, pumping seals, compressor seals, seal oil degassing vents pipeline valves, pressure relief devices, process drains, and open ended pipes. Excluded from these sources are valves which are not externally regulated.

(iii) "Liquid service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the liquid phase.

(iv) "Gas service" means equipment which processes, transfers or contains a volatile organic compound or mixture of volatile organic compounds in the gaseous phase.

(v) "Valves not externally regulated" means valves that have no external controls, such as in-line check valves.

(vi) "Refinery unit" means a set of compounds which are a part of a basic process operation, such as, distillation, hydrotreating, cracking or reforming of hydrocarbons.

(ii) **VOC Emissions from Surface Coating of Miscellaneous Metal Parts and Products.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of miscellaneous metal parts and products to exceed:

(i) 4.3 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies clear coatings. If any coating delivered to the coating applicator contains more than 4.3 pounds VOC per gallon, the solids equivalent limit shall be 10.3 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) 3.5 pounds per gallon of coating, excluding water, delivered to a coating applicator in a coating application system that is air dried or forced warm air dried at temperatures up to 194°F. If any coating delivered to the coating applicator contains more than 3.5 pounds VOC per gallon, the solids equivalent limit shall be 6.67 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iii) 3.5 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings. If any coating delivered to the coating applicator contains more than 3.5 pounds VOC per gallon, the solids equivalent limit shall be 6.67 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iv) 6.2 pounds per gallon of coating, excluding water, delivered to a coating applicator in a high performance architectural coating operation; and

(v) 3.0 pounds per gallon of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems. If any coating delivered to the coating applicator contains more than 3.0 pounds VOC per gallon, the solids equivalent limit shall be 5.06 pounds VOC per gallon of coating solids delivered to the coating applicator.

2. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of miscellaneous metal parts and products using air-dried coatings to exceed:

(i) 2.8 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies anyone of the following air-dried coatings: general one component; general multi component; military specification; drum coating - new exterior. If any coating delivered to the coating applicator contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.52 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) 3.5 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies any one of the following air-dried coatings: camouflage; electric-insulating varnish; etching filler; high temperature; metallic; mold-seal; pan backing; pretreatment; drum coating - new interior; drum coating - reconditioned, exterior; silicone release; vacuum-metalizing; extreme high-gloss; extreme performance; heat-resistant; drum coating - reconditioned interior; solar-absorbent; prefabricated architectural multi-component; prefabricated architectural one-component. If any coating delivered to the coating applicator contains more than 3.5 pounds VOC per gallon, the solids equivalent limit shall be 6.67 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iii) 3.5 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies the following air-dried coating: repair and touch-up.

(iv) 6.2 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies the following air-dried coating: high performance architectural.

3. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of miscellaneous metal parts and products using baked coatings to exceed:

(i) 2.3 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies anyone of the following baked coatings: general one component; general multi-component; military specification; prefabricated architectural multi-component; prefabricated architectural one-component. If any coating delivered to the coating applicator contains more than 2.3 pounds VOC per gallon, the solids equivalent limit shall be 3.35 pounds VOC per gallon of coating solids delivered to the coating applicator.

(ii) 2.8 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies drum coating - new exterior coating. If any coating delivered to the coating applicator contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.52 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iii) 3.0 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies anyone of the following baked coatings: drum coating - reconditioned interior; camouflage; electric-insulating varnish; etching filler; extreme high-gloss; extreme performance; heat-resistant; high temperature; metallic; mold-seal; pan backing; pretreatment; drum coating - new interior; drum coating - reconditioned exterior; silicone release; solar-absorbent; and vacuum-metalizing. If any coating delivered to the coating applicator contains more than 3.0 pounds VOC per gallon, the solids equivalent limit shall be 5.06 pounds VOC per gallon of coating solids delivered to the coating applicator.

(iv) 6.2 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies the following baked coating: high performance architectural.

(v) 3.0 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies repair and touch-up coatings.

4. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of motor vehicle materials at a facility that is not an automobile or light-duty truck manufacturing facility to exceed:

(i) 1.7 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies the following motor vehicle materials: gasket/gasket sealing material and bedliner.

(ii) 3.5 pounds per gallon of coating, excluding water, delivered to a coating applicator that applies the following motor vehicle materials: cavity wax, sealer, deadener, underbody coating, trunk interior coating, and lubricating wax/compound.

5. If more than one emission limitation in this subparagraph (ii) applies to a specific coating, then the least stringent emission limitation in this subparagraph (ii) of this subsection shall be applied.

6. All VOC emissions from solvent washings shall be considered in the emission limitations unless the solvent is directed into containers that prevent evaporation into the atmosphere.

7. The emission limits in this subsection shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit expressed in pounds VOC per gallon of coating, excluding water, stated in paragraphs 1., 2., 3., and 4. of this subsection; or

(ii) the application of low solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit expressed in pounds VOC per gallon of coating solids, stated in paragraphs 1.,2., and 3. of this subsection; averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the nonmethane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit, expressed in pounds VOC per gallon of coating solids stated in paragraphs 1.,2., 3., and 4. of this subsection.

(iv) for high performance architectural coatings, compliance may be achieved only as stated in subparagraph 7.(i) or 7.(iii). There is no solids equivalent limit for such coatings.

(v) for motor vehicle materials, compliance may be achieved only as stated in subparagraph 7.(i). There is no solids equivalent limit for such coatings.

(vi) for repair and touch-up materials, compliance may be achieved only as stated in subparagraphs 7.(i). There is no solids equivalent limit for such coatings.

8. For the purpose of this subsection, the following definitions apply:

(i) "Air dried coating" means coatings which are dried by the use of air or forced warm air at temperatures up to 194°F.

(ii) "Baked coating" means a coating that is cured at a temperature at or above 194°F.

(iii) "Bedliner" means a multi-component coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to a cargo bed after the application of topcoat to provide additional durability and chip resistance.

(iv) "Cavity wax" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

(v) "Camouflage coating" means a coating used, principally by the military, to conceal equipment from detection.

(vi) "Clear coating" means a colorless coating which contains binders, but no pigment, and is formulated to form a transparent film.

(vii) "Coating application system" means all operations and equipment which applies, conveys, and dries a surface coating, including, but not limited to spray booths, flow coaters, flashoff areas, air dryers and ovens.

(viii) "Deadener" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to selected vehicle surfaces primarily for the purpose of reducing the source of road noise in the passenger compartment.

(ix) "Drum" means any cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.

(x) "Electric dissipating coating" means a coating that rapidly dissipates a high-voltage electric charge.

(xi) "Electric-insulating varnish" means a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.

(xii) "EMI/RFI Shielding" means a coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.

(xiii) "Etching filler" means a coating that contains less than 23 percent solids by weight, at least 0.5 percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.

(xiv) "Extreme high-gloss coating" means a coating which, when tested by the American Society for Testing Material Test Method D-523 adopted in 1980, shows a reflectance of 75 or more on a 60 degree meter.

(xv) "Extreme-performance coating" means a coating used on a metal or plastic surface where the coated surface is, in its intended use, subject to the following:

(a) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions; or

(b) Repeated exposure to temperatures in excess of 250°F; or

(c) Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents. Extreme performance coatings include, but are not limited to, coatings applied to locomotives, railroad cars, farm machinery, and heavy duty trucks.

(xvi) "Extreme environmental conditions" means exposure to any of: the weather all of the time, temperatures consistently above 200°F, detergents, abrasive and scouring agents, solvents, corrosive atmospheres, or similar environmental conditions;

(xvii) "Gasket/sealing material" means a fluid, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to coat a gasket or replace and perform the same function as a gasket. Automobile and light-duty truck gasket/gasket sealing material includes room temperature vulcanization (RTV) seal material.

(xviii) "Heat-resistant coating" means a coating that must withstand a temperature of at least 400°F during normal use.

(xix) "High-performance architectural coating" means a coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturer Association's publication number AAMA 2604-05 (Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels) or 2605-05 (Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels).

(xx) "High-temperature coating" means a coating that is certified to withstand a temperature of 1000°F for 24 hours.

(xxi) "Low solvent coating" means coatings which contain less organic solvent than the conventional coatings used by the industry. Low solvent coatings include water-borne, higher solids, electrodeposition and powder coatings.

(xxii) "Lubricating wax/compound" means a protective lubricating material, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to vehicle hubs and hinges.

(xxiii) "Mask coating" means thin film coating applied through a template to coat a small portion of a substrate.

(xxiv) "Metallic coating" means a coating which contains more than five grams of metal particles per liter of coating as applied. "Metal particles" are pieces of a pure elemental metal or combination of elemental metals.

(xxv) "Miscellaneous metal parts and products" means surface coating of products manufactured by the following industrial source categories: large farm machinery, small farm machinery, small appliances, commercial machinery, industrial machinery, fabricated metal products and any other industrial category which coats metal parts or products under the Standard Industry Classification Code Major Groups 33, 34, 35, 36, 37, 38, 40, and 41. The miscellaneous metal parts and products source category does not include:

(I) automobiles and light-duty trucks;

(II) metal cans;

(III) flat metal sheets and strips in the form of rolls or coils;

(IV) magnet wire for use in electrical machinery;

(V) metal furniture;

(VI) large appliances;

(VII) aerospace manufacturing and rework operations;

(VIII) automobile refinishing;

(IX) customized top coating of automobiles and trucks, if production is less than 35 vehicles per day; and

(X) exterior of marine vessels.

(xxvi) "Military specification coating" means a coating which has a formulation approved by a United States Military Agency for use on military equipment.

(xxvii) "Mold seal coating" means the initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

(xxviii) "Multi-colored coating" means a coating which exhibits more than one color when applied, and which means packaged in a single container and applied in a single coat.

(xxix) "Multi-component coating" means a coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.

(xxx) "One-component coating" means a coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.

(xxxi) "Optical coating" means a coating applied to an optical lens.

(xxxii) "Pan-backing coating" means a coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.

(xxxiii) "Prefabricated architectural component coatings" are coatings applied to metal parts and products which are to be used as an architectural structure.

(xxxiv) "Pretreatment coating" means a coating which contains no more than 12 percent solids by weight, and at least 0.5 percent acid by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(xxxv) "Prime coat" means the first of two or more films of coating applied to a metal surface.

(xxxvi) "Repair coating" means a coating used to re-coat portions of a previously coated product which has sustained mechanical damage to the coating following normal coating operations.

(xxxvii) "Sealer" means a high viscosity material, used at a facility that is not an automobile or light-duty truck assembly coating facility, generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (e.g., primer-surfacer). The primary purpose of automobile and light-duty truck sealer is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment. Such materials are also referred to as sealant, sealant primer, or caulk.

(xxxviii) "Shock-free coating" means a coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance, and having resistance to breaking down under high voltage.

(xxxix) "Silicone-release coating" means any coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.

(xl) "Single coat" means one film of coating applied to a metal surface.

(xli) "Solar-absorbent coating" means a coating which has as its prime purpose the absorption of solar radiation.

(xlii) "Stencil coating" means an ink or a pigmented coating which is rolled or brushed onto a template or stamp in order to add identifying letters, symbols and/or numbers.

(xliii) "Topcoat" means the final film or series of films of coating applied in a two-coat or more operation.

(xliv) "Touch-up coating" means a coating used to cover minor coating imperfections appearing after the main coating operation.

(xlv) "Translucent coating" means a coating which contains binders and pigment and is formulated to form a colored, but not opaque, film.

(xlvi) "Transfer efficiency" means the weight (or volume) of coating solids adhering to the surface being coated divided by the total weight (or volume) of coating solids delivered to the applicator.

(xlvii) "Trunk interior coating" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the trunk interior to provide chip protection.

(xlviii) "Two-component coating" means a coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.

(xlix) "Underbody coating" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the undercarriage or firewall to prevent corrosion and/or provide chip protection.

(l) "Vacuum-metalizing coating" means the undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film. Vacuum metalizing/physical vapor deposition (PVD) is the process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

9. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (ii) shall apply to facilities at which the potential emissions of volatile organic compounds from all surface coating of miscellaneous parts and products equal or exceed 10 tons per year and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 5., 6., 7., and 8.

10. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (ii) shall apply to facilities at which the potential emissions of volatile organic compounds from all surface coating of miscellaneous parts and products equal or exceed 100 tons per year and are located outside the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 5., 6., 7., and 8.

11. Applicability. On and after January 1, 2015, the requirements of this subparagraph (ii) shall apply to facilities at which the potential emissions of volatile organic compounds from all surface coating of miscellaneous parts and products equal or exceed 10 tons per year and are located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 2., 3., 4., 5., 6., 7., and 8.

(ii) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraphs 2., 3., or 4. are subject to the compliance schedule specified in subparagraph 14.

12. Applicability. On and after January 1, 2015, the requirements of this subparagraph (ii) shall apply to facilities at which the potential emissions of volatile organic compounds from all surface coating of miscellaneous parts and products equal or exceed 100 tons per year and are located outside the counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale Spalding, and Walton as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 5., 6., 7., and 8.

13. Applicability: The requirements of subparagraphs 11. and 12. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 9. and 10. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraphs 11. and 12. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

14. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014**.

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014**.

(iii) Full compliance with the applicable requirements specified in subparagraphs 2., 3., and 4. must be completed before **January 1, 2015**.

(jj) **VOC Emissions from Surface Coating of Flat Wood Paneling.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of flat wood paneling to exceed:

(i) 6.0 pounds per 1000 square feet of coated finished product from printed interior panels, regardless of the number of coats applied;

(ii) 12.0 pounds per 1000 square feet of coated finished product from natural finish hardwood plywood panels, regardless of the number of coats applied; and

(iii) 10.0 pounds per 1000 square feet of coated finished product from Class II finishes on hardboard panels, regardless of the number of coats applied.

2. The emission limits in this subparagraph shall be achieved by:

(i) the application of low solvent coating technology where the 24-hour of all coatings on a single coating line or operation meets the limits stated in subparagraph 1. of this subparagraph; averaging across lines is not allowed; or

(ii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the nonmethane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the limits stated in subparagraph 1. of this subparagraph.

(iii) control equipment demonstrated to have control efficiency equivalent to or greater or VOC emissions equal to or less than required in (i) or (ii) of this subparagraph and approved by the Director.

3. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the inks, coatings, and adhesives used by flat wood paneling coating facilities to exceed:

(i) 2.1 lbs VOC per gallon (250 grams per liter) of coating, excluding water, and exempt compounds, or

(ii) 2.9 lbs VOC per gallon (350 grams per liter) of solids.

4. Averaging across lines for the VOC limits in subparagraph 3. is not permitted.

5. Should product performance requirements or other needs dictate the use of higher VOC coatings, than those specified in subparagraph 3., add-on control equipment with an overall control efficiency of 90% may be used as an alternative.

6. Each owner or operator of a facility that manufactures flat wood paneling shall comply with the following work practice standards:

(i) store all VOC-containing materials in closed containers;

(ii) ensure that mixing and storage containers used for VOC-containing materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing materials; and

(iv) convey VOC-containing materials from one location to another in closed containers or pipes.

7. For the purpose of this subparagraph, the following definitions also apply:

(i) "Class II hardboard paneling finish" means finishes which meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.

(ii) "Coating application system" means all operations and equipment which apply, convey, and dry a surface coating, including, but not limited to, spray booths, flow coaters, conveyers, flashoff areas, air dryers and ovens.

(iii) "Flat wood paneling" means both interior and exterior panels used in construction and typically include decorative interior panels, exterior siding and tileboard. Flat wood paneling includes hardboard, hardwood plywood, natural finish hardwood plywood panels, printed interior panels, thin particleboard and tileboard.

(iv) "Hardboard" is a panel manufactured primarily from interfelted lignocellulosic fibers which are consolidated under heat and pressure in a hot press.

(v) "Hardwood plywood" is plywood whose surface layer is a veneer.

(vi) "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

(vii) "Thin particleboard" is a manufactured board 1/4 inch or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

(viii) "Tileboard" means paneling that has a colored waterproof surface coating.

(ix) "Printed interior panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

8. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (jj) shall apply to facilities at which the actual emissions of volatile organic compounds from the surface coating of flat wood paneling equal or exceed 15 pounds per day and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 7.

9. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (jj) shall apply to facilities at which the potential emissions of volatile organic compounds from the surface coating of flat wood paneling equal or exceed 100 tons per year and are located outside the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 7.

10. Applicability. On and after January 1, 2015, the requirements of this subparagraph (jj) shall apply to facilities at which actual emissions of volatile organic compounds from the surface coating of flat wood paneling, before controls, equal or exceed 15 pounds per day (or 2.7 tons per 12-month rolling period) for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 3., 4., 5., 6., and 7.

(ii) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraphs 3., 4., 5., or 6. are subject to the compliance schedule specified in subparagraph 13.

11. Applicability. On and after January 1, 2015, the requirements of this subparagraph (jj) shall apply to facilities at which potential emissions of volatile organic compounds from the surface coating of flat wood paneling equal or exceed 100 tons per year and are located outside of counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 7.

12. Applicability. The requirements of subparagraphs 10. and 11. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 8. and 9. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraphs 10. and 11. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

13. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements specified in subparagraph 10.(i) must be completed before **January 1, 2015.**

(kk) **VOC Emissions from Synthesized Pharmaceutical Manufacturing.**

1. The owner or operator of a synthesized pharmaceutical manufacturing facility shall:

(i) Control the volatile organic compound emissions from all reactors, distillation operations, crystallizers, centrifuges and vacuum dryers that emit 15 pounds per day or more of VOC. Surface condensers or equivalent controls shall be used, provided that:

(I) If surface condensers are used, the condenser outlet gas temperature must not exceed:

I. -13°F when condensing VOC of vapor pressure greater than 5.8 psi, measured at 68°F;

II. 5°F when condensing VOC of vapor pressure greater than 2.9 psi, measured at 68°F;

III. 32°F when condensing VOC of vapor pressure greater than 1.5 psi, measured at 68°F;

IV. 50°F when condensing VOC of vapor pressure greater than 1.0 psi, measured at 68°F;

V. 77°F when condensing VOC of vapor pressure greater than 0.5 psi, measured at 68°F.

(II) If equivalent controls are used, the VOC emissions must be reduced by at least as much as they would be by using a surface condenser which meets the requirements of Part I. of this subparagraph.

(ii) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall reduce the VOC emissions from all air dryers and production equipment exhaust systems;

(I) By at least 90 percent if emissions are 330 pounds per day or more of VOC; or

(II) 33 pounds per day or less if emissions are less than 330 pounds;

(III) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall:

I. Provide a vapor balance system or equivalent control that is at least 90.0 percent effective in reducing emissions from truck or railcar deliveries to storage tanks with capacities greater than 2,000 gallons that store VOC with vapor pressures greater than 4.1 psi at 68°F; and

II. Install pressure/vacuum conservative vents set on all storage tanks that store VOC with vapor pressure greater than 1.5 psi at 68°F unless a more effective control system is used.

(iii) The owner or operator of a synthesized pharmaceutical facility subject to this regulation shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface, where the liquid contains VOC and exerts a total VOC vapor pressure of 0.5 psi or more at 68°F.

(iv) The owner or operator of a synthesized pharmaceutical facility subject to this regulation shall install covers on all in-process tanks containing a volatile organic compound at any time. These covers must remain closed, unless production, sampling, maintenance, or inspection procedures require operator access.

(v) The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall repair all leaks from which liquid, containing VOC, can be observed running or dripping. The repair shall be completed the first time the equipment is off-line for a period of time long enough to complete the repair.

2. For the purpose of this regulation, the following definitions also apply:

(i) "Condenser" means a device which cools a gas stream to a temperature which removes specific organic compounds by condensation;

(ii) "Control system" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of VOC emitted to the atmosphere;

(iii) "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions;

(iv) "Separation operation" means a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include extraction, centrifugation, filtration, and crystallization;

(v) "Synthesized pharmaceutical manufacturing" means manufacture of pharmaceutical products by chemical synthesis;

(vi) "Production equipment exhaust system" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.

(ll) **VOC Emissions from the Manufacture of Pneumatic Rubber Tires.**

1. The owner or operator of an undertread cementing, tread end cementing, or bead dipping operation subject to this regulation shall:

(i) Install and operate a capture system, designed to achieve maximum reasonable capture from all undertread cementing, tread and cementing and bead dipping operation; and install and operate a control device that effects at least a 90.0 percent reduction efficiency, measured across the control system, and has been approved by the Director.

(ii) The owner or operator of an undertread cementing operation, tread end cementing operation or bead dipping operation may, in lieu of a vapor capture and control system for those operations, make process changes which reduces emissions to a level equal to or below that which would be achieved with emission controls as specified in subparagraph (i) above.

2. The owner or operator of a green tire spraying operation subject to this regulation shall:

(i) Substitute water-based sprays for the normal solvent-based mold release compound; or

(ii) Comply with paragraph 1. of this regulation.

3. If the total volatile organic compound emissions from all undertreading cementing, tread end cementing, bead dipping and green tire spraying operations at a pneumatic rubber tire manufacturing facility do not exceed 57 grams per tire, paragraphs 1. and 2. above shall not apply.

4. For the purpose of this subsection the following definitions also apply:

(i) "Pneumatic rubber tire manufacture" means the undertread cementing, tread end cementing, bead dipping, and green tire spraying associated with the production of pneumatic rubber, passenger type tires on a mass production basis.

(ii) "Passenger type tire" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires with a bead diameter up to but excluding 20.0 inches and cross section dimension up to 12.8 inches.

(iii) "Undertread cementing" means the application of a solvent based cement to the underside of a tire tread.

(iv) "Bead dipping" means the dipping of an assembled tire bead into a solvent based cement.

(v) "Tread end cementing" means the application of a solvent based cement to the tire tread ends.

(vi) "Green tires" means assembled tires before molding and curing have occurred.

(vii) "Green tire spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the tire during molding and prevent the tire from sticking to the mold after curing.

(viii) "Water based spray" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for organic solvents.

(mm) **VOC Emissions from Graphic Arts Systems.**

1. No person shall cause, let, permit, suffer, or allow the operation of a packaging rotogravure, publication rotogravure or flexographic printing facility unless:

(i) For packaging rotogravure and flexographic printing, the VOC content of any ink or coating as applied is equal to or less than one of the following:

(I) 25 percent by volume of the volatile content of the coating or ink; or

(II) 40 percent by volume of the coating or ink, minus water; or

(III) 0.5 pounds of VOC per pound of coating solids.

(ii) For publication rotogravure printing, the VOC content of any ink or coating as applied is equal to or less than one of the following:

(I) 25 percent by volume of the volatile content of the coating or ink; or

(II) 40 percent by volume of the coating or ink, minus water.

2. As an alternative to compliance with the limits in subparagraph 1., an owner or operator of a packaging rotogravure, publication rotogravure or flexographic printing facility may comply with the requirements of this subparagraph by:

(i) Averaging on a 24-hour weighted basis the VOC content of all inks and coatings, as applied, on a single printing line, where the average does not exceed the limits in subparagraph 1.; averaging across lines is not allowed; or

(ii) Installing and operating volatile organic compound emission reduction equipment having at least 90.0 percent reduction efficiency, and a capture system approved by the Director.

3. If, as an alternative to compliance with the limits in subparagraph 1.(i), volatile organic compound emission reduction equipment is installed and operated at a flexible packaging printing facility to comply with subparagraph 2.(ii) it shall have an overall VOC control efficiency that is equal to or greater than the percentage specified in the following subparagraphs (i) through (iv).

(i) 65 percent for a press that was first installed prior to March 14, 1995, and that is controlled by an add-on air pollution control device whose first installation date was prior to February 19, 2012;

(ii) 70 percent for a press that was first installed prior to March 14, 1995, and that is controlled by an add-on air pollution control device whose first installation date was on or after February 19, 2012;

(iii) 75 percent for a press that was first installed on or after to March 14, 1995, and that is controlled by an add-on air pollution control device whose first installation date was prior to February 19, 2012; and

(iv) 80 percent for a press that was first installed on or after March 14, 1995, and that is controlled by an add-on air pollution control device whose first installation date was on or after February 19, 2012.

4. Each owner or operator of a facility that prints flexible packaging shall comply with the following housekeeping requirements for any affected cleaning operation:

(i) store all VOC-containing cleaning materials and used shop towels in closed containers;

(ii) ensure that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing cleaning materials;

(iv) convey VOC-containing cleaning materials from one location to another in closed containers or pipes; and

(v) minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

5. For the purpose of this subparagraph, the following definitions shall apply:

(i) "Cleaning" for flexible packaging printing means cleaning of a press, press parts, or removing dried ink from areas around a press. It does not include cleaning electronic components of a press, cleaning in-press or post-press operations or the use of janitorial supplies to clean areas around a press.

(ii) "Flexible packaging printing" refers to printing upon any package or part of a package the shape of which can be readily changed. Flexible packaging includes, but is not limited to, bags, pouches, liners, and wraps utilizing paper, plastic, film, aluminum foil, metalized or coated paper or film, or any combination of these materials.

(iii) "Flexographic printing" means the application of words, designs and pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.

(iv) "Packaging rotogravure printing" means rotogravure printing upon paper, paperboard, metal foil, plastic film, and other substrates, which are in subsequent operations, formed into packaging products and labels for articles to be sold.

(v) "Publication rotogravure printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.

(vi) "Rotogravure printing" means the application of words, designs and pictures to a substrate by means of a roll printing technique which involves intaglio or recessed image areas in the form of cells.

(vii) "Roll printing" means the application of words, designs and pictures to a substrate usually by means of a series of hard rubber or steel rolls each with only partial coverage.

6. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (mm) shall apply to facilities at which the potential emissions of volatile organic compounds from packaging rotogravure, publication rotogravure, and flexographic printing equal or exceed 25 tons per year and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 5.

7. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (mm) shall apply to facilities at which the potential emissions of volatile organic compounds from packaging rotogravure, publication rotogravure, and flexographic printing equal or exceed 100 tons per year and are located outside the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 5.

8. Applicability. On and after January 1, 2015, the requirements of this subparagraph (mm) shall apply to facilities at which actual emissions of volatile organic compounds from flexible package printing, before controls, equal or exceed 15 pounds per day (or 2.7 tons per 12-month rolling period) for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) Individual presses that have potential emissions of volatile organic compounds from flexible package printing that equal or exceed 25 tons per year shall comply with the provisions of subparagraphs 1.(i), 2., and 3.

(ii) Individual presses that have potential emissions of volatile organic compounds from flexible package printing that do not equal or exceed 25 tons per year shall comply with the provisions of subparagraphs 1.(i) and 2.

(iii) All applicable facilities shall comply with the provisions of subparagraphs 4., 5., and 14.

(iv) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraph 8.(i) or (iii) are subject to the compliance schedule specified in subparagraph 13.

9. Applicability, On and after January 1, 2015, the requirements of this subparagraph (mm) shall apply to facilities at which potential emissions of volatile organic compounds from packaging rotogravure, publication rotogravure, and flexographic printing equals or exceeds 25 tons per year but at which the actual emissions of volatile organic compounds from flexible package printing, before controls, is less than 15 pounds per day (or 2.7 tons per 12-month rolling period) and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 5.

10. Applicability. On and after January 1 2015, the requirements of this subparagraph (mm) shall apply to facilities at which potential emissions of volatile organic compounds from packaging rotogravure, publication rotogravure, and flexographic printing equal or exceeds 100 tons per year but at which the actual emissions of volatile organic compounds from flexible package printing, before controls, is less than 15 pounds per day (or 2.7 tons per 12-month rolling period) and are located Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 5.

11. Applicability. On and after January 1, 2015, the requirements of this subparagraph (mm) shall apply to facilities at which the potential emissions of volatile organic compounds from packaging rotogravure, publication rotogravure, and flexible package printing equal or exceed 100 tons per year and are located outside of counties of Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1., 2., and 5.

12. Applicability: The requirements of subparagraphs 8., 9., 10., and 11. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 6. and 7. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraphs 8., 9., 10., and 11. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

13. Compliance schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than July 1, 2014.

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by November 1, 2014**.**

(iii) Full compliance with the applicable requirements specified in subparagraph 8.(i) and (iii) must be completed before January 1, 2015**.**

14. Compliance determinations for inks shall treat volatile compounds not defined as VOCs as water for the purposes of calculating the "percent-by-volume-or-more of water" and the "less water" parts of the ink composition.

(nn) **VOC Emissions from External Floating Roof Tanks.**

1. No person shall cause, let, permit, suffer, or allow the storage of petroleum liquids in external floating roof tanks having capacities greater than 40,000 gallons unless:

(i) The vessel has been fitted with:

(I) A continuous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal); or

(II) A closure or other device which controls VOC emissions with an effectiveness equal to or greater than a seal required under Part (I) of this subparagraph and approved by the Director.

(ii) All seal closure devices meet the following requirements:

(I) There are no visible holes, tears, or other openings in the seal(s) or seal fabric;

(II) The seal(s) are intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall; and

(III) For vapor mounted primary seals, the accumulated area of gaps exceeding 1/8 inch in width between the secondary seal and the tank wall shall not exceed 1.0 inch 2 per foot of tank diameter.

(iii) All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves are:

(I) Equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and

(II) Equipped with projections into the tank which remain below the liquid surface at all times.

(iv) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

(v) Rim vents are set to open when the roof is being floated off leg supports or at the manufacturer's recommended setting; and

(vi) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.

2. The owner or operator of a petroleum liquid storage vessel with an external floating roof subject to this regulation shall:

(i) Perform routine inspections semi-annually in order to insure compliance with paragraph 1. of this subsection and the inspections shall include a visual inspection of the secondary seal gap;

(ii) Measure the secondary seal gap annually when the floating roof is equipped with a vapor-mounted primary seal; and

(iii) Maintain records of the types of volatile petroleum liquids stored, the maximum true vapor pressure of the liquid as stored, and the results of the inspections performed in subparagraphs 2.(i) and (ii).

3. Copies of all records under paragraphs 2. of this subsection shall be retained by the owner or operator for a minimum of two years after the date on which the record was made.

4. Copies of all records under this section shall immediately be made available to the Director, upon verbal or written request, at any reasonable time.

5. The Director may, upon written notice, require more frequent inspections or modify the monitoring and record keeping requirements, when necessary to accomplish the purposes of this regulation.

6. This regulation does not apply to petroleum liquid storage vessels which:

(i) Are used to store waxy, heavy pour crude oil;

(ii) Have capacities less than 420,000 gallons and are used to store produced crude oil and condensate prior to lease custody transfer;

(iii) Contain a petroleum liquid with a true vapor pressure of less than 1.5 psia;

(iv) Contain a petroleum liquid with a true vapor pressure of less than 4.0 psia; and

(I) Are of welded construction; and

(II) Presently possess a metallic-type shoe seal, a liquid mounted foam seal, a liquid-mounted liquid filled type seal, or other closure device of demonstrated equivalence approved by the Director; or

(III) Are of welded construction, equipped with a metallic-type shoe primary seal and has a secondary seal from the top of the shoe to the tank wall (shoe-mounted secondary seal).

7. For the purpose of this subsection, the following definitions shall apply:

(i) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(ii) "Crude oil" means a naturally occurring mixture which consists of hydrocarbons and sulfur, nitrogen and/or oxygen derivatives of hydrocarbons which is a liquid at standard conditions.

(iii) "Lease custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(iv) "External floating roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(v) "Liquid-mounted seal" means a primary seal mounted in continuous contact with the liquid between the tank wall and the floating roof around the circumference of the tank.

(vi) "Petroleum liquids" means crude oil, condensate, and any finished or intermediate products manufactured or extracted in a petroleum refinery.

(vii) "Vapor-mounted seal" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface and the floating roof.

(viii) "Waxy, heavy pour crude oil" means a crude oil with a pour point of 50°F or higher as determined by the American Society for Testing and Materials Standards D97-66, "Test for Pour Point of Petroleum Oils."

(oo) **Fiberglass Insulation Manufacturing Plants.**

1. No person shall cause, let, suffer, permit or allow the emission of particulate matter from any fiberglass insulation production line to exceed a concentration of 0.04 grains per standard dry cubic foot.

2. For the purpose of this subsection, "Fiberglass insulation production line" means any combination of equipment, devices or contrivances for the manufacture of fiberglass insulation. This does not include glass melting furnaces, equipment associated with the process which is defined herein as "Fuel-burning Equipment," equipment the primary purpose of which involves the handling, storing or packaging of the fiberglass insulation or equipment the primary purpose of which involves the handling, storing or conveying of raw products for input into the glass melting furnace.

(pp) **Bulk Gasoline Plants.**

1. After the compliance date specified in paragraph 6. of this subsection, no owner or operator of a bulk gasoline plant may permit the receiving or dispensing of gasoline by its stationary storage tanks unless:

(i) Each stationary storage tank is equipped with a submerged fill pipe, approved by the Director; or

(ii) Each stationary storage tank is equipped with a fill line whose discharge opening is at the tank bottom.

(iii) Each stationary storage tank has a vapor balance system consisting of the following major components:

(I) A vapor space connection on the stationary storage tank equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of gasoline or gasoline vapors; and

(II) A connecting pipe or hose equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of gasoline or gasoline vapors.

2. After the compliance date specified in paragraph 6. of this subsection, no owner or operator of a bulk gasoline plant, or the owner or operator of a tank truck or trailer may permit the transfer of gasoline between the tank truck or trailer and stationary storage tank unless:

(i) The vapor balance system is in good working order and is connected and operating;

(ii) The gasoline transport vehicle is maintained to prevent the escape of fugitive vapors and gasses during loading operations;

(iii) A means is provided to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected; and

(iv) The pressure relief valves on storage vessels and tank trucks or trailers are set to release at 0.7 psia or greater unless restricted by state or local fire codes or the National Fire Prevention Association guidelines in which case the pressure relief valve must be set to release at the highest possible pressure allowed by these codes or guidelines.

3. The requirements of this subsection shall not apply to stationary storage tanks of less than 2,000 gallons.

4. Sources and persons affected under this subsection shall comply with the vapor collection and control system requirements of subsection 391-3-1-.02(2)(ss).

5. For the purpose of this subsection, the following definitions shall apply:

(i) "Bottom filling" means the filling of a tank truck or stationary storage tank through an opening that is located at the tank bottom.

(ii) "Bulk gasoline plant" means a gasoline storage and distribution facility with an average daily throughput of more than 4,000 gallons but less than 20,000 gallons which receives gasoline from bulk terminals by rail and/or trailer

transport, stores it in tanks, and subsequently dispenses it via account trucks to local farms, businesses, and service stations.

(iii) "Bulk gasoline terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck and has an average daily throughput of more than 20,000 gallons of gasoline.

(iv) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 4.0 psia or greater.

(v) "Stationary Storage Tank" means all underground vessels and any aboveground vessels never intended for mobile use.

(vi) "Submerged filling" means the filling of a tank truck or stationary tank through a pipe or hose whose discharge opening is not more than six inches from the tank bottom.

(vii) "Vapor balance system" means a combination of pipes or hoses that create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

6. Compliance Dates.

(i) All bulk gasoline plants located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale counties shall be in compliance.

(ii) All bulk gasoline plants located in Catoosa, Richmond and Walker counties shall be in compliance with this subsection by May 1, 2006.

(iii) All bulk gasoline plants located in Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton counties shall be in compliance with this subsection by June 1, 2008.

(qq) **VOC Emissions from Large Petroleum Dry Cleaners.**

1. No person shall cause, let, permit, suffer or allow the emissions of VOC from a large petroleum dry cleaner facility to exceed 3.5 pounds per 100 pounds dry weight of articles dry cleaned.

2. The VOC content in all filtration waste shall be reduced to one pound or less per hundred pounds dry weight of articles dry cleaned before disposal and exposure to the atmosphere from a petroleum solvent filtration system; or

3. Install and operate a cartridge filtration system and drain the filter cartridges in the sealed housing for eight hours or more before their removal.

4. Each owner or operator of a large petroleum dry cleaner shall inspect all equipment for leaks every 15 days and repair all petroleum solvent vapor and liquid leaks within three working days after identifying the source of the leaks.

5. Each owner or operator of a large petroleum dry cleaner shall maintain sufficient records to demonstrate compliance and provide them to the Division upon request, for a period of two years.

6. For the purpose of this subsection, the following definitions shall apply:

(i) "Cartridge filter" means perforated canisters containing filtration paper and activated carbon that are used in the pressurized system to remove solid particles and fugitive dyes from soil-laden solvents.

(ii) "Large petroleum dry cleaner" means any facility engaged in the process of the cleaning of textile and fabric products in which articles are washed in a nonaqua solution (solvent), then dried by exposure to a heated air stream and consumes 25 tons or more of a petroleum solvent annually.

(iii) "Solvent recovery dryer" means a class of dry cleaning dryers that employs a condenser to liquefy and recover solvent vapors evaporated in a closed loop recirculating stream of heated air.

(rr) **Gasoline Dispensing Facility - Stage I.**

1. Requirements: After the compliance date specified in subparagraph 16. of this subparagraph, no person may transfer or cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank subject to subparagraph (rr), unless:

(i) The stationary storage tank is equipped with all of the following:

(I) A submerged fill pipe; and

(II) A Division approved Gasoline Vapor Recovery System as noted below:

A. An Enhanced Stage I Gasoline Vapor Recovery System as defined in subparagraph 15.(iv) that shall remain in good working condition, such as keeping the vapor return opening free of liquid or solid obstructions, and that also shall be leak tight as determined by tests conducted in accordance with test procedures as approved by the Division; or

B. For existing gasoline dispensing facilities in Catoosa, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, Richmond, Rockdale, and Walker counties, a Stage I Gasoline Vapor Recovery System as defined in subparagraph 15.(x) that shall remain in good working condition; and

(III) Vents that shall be vertical and at least 12 feet in height from the ground and shall have a Pressure/Vacuum vent valve with settings as specified by applicable Stage I or II vapor recovery CARB executive order. In systems where vents have manifolds, the manifold may be less than 12 feet.

(ii) The vapors displaced from the gasoline stationary storage tank during filling are controlled by one of the following:

(I) A vapor-tight vapor return line from the gasoline stationary storage tank(s) to the delivery vessel for each product delivery line that is connected from the delivery vessel to the gasoline stationary storage tank(s) and a method or procedure that will ensure the vapor line(s) is connected before gasoline can be transferred into the gasoline stationary storage tank(s); or

(II) If a manifold connects all gasoline stationary storage tanks vent lines, a vapor-tight vapor return line connected from a gasoline stationary storage tank being filled to the delivery vessel with sufficient return capacity to control vapors from all gasoline stationary storage tanks being filled at the time and to prevent release of said vapors from the vent line(s) or other gasoline stationary storage tank openings; however, no more than two tanks shall be filled at the same time per connected vapor-tight return line; or

(III) A refrigeration-condensation system or a carbon adsorption system is utilized and recovers at least 90 percent by weight of the organic compounds.

2. Applicability: The requirements contained in this subparagraph shall apply to all stationary storage tanks with capacities of 2,000 gallons or more which were in place before January 1, 1979, and stationary storage tanks with capacities of 250 gallons or more which were in place after December 31, 1978, located at gasoline dispensing facilities located in those counties of Barrow, Bartow, Carroll, Catoosa, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Paulding, Richmond, Rockdale, Spalding, Newton, Walker and Walton.

3. Applicability: Once a gasoline dispensing facility becomes subject to this rule, it will continue to be subject even if the gasoline average throughput rate falls below the applicability threshold.

4. Exemptions: The requirements of this subparagraph shall not apply to stationary storage tanks of less than 550 gallons capacity used exclusively for the fueling of implements of husbandry or to gasoline dispensing facilities that dispense no more than 10,000 gallons average monthly throughput rate of gasoline, provided the tanks are equipped with submerged fill pipes.

5. Stage I Gasoline Vapor Recovery Systems installed prior to January 1, 1993 that currently utilize a co-axial Stage I vapor recovery system in which the gasoline stationary storage tanks are not manifolded in any manner and that are utilized at a facility that is not required to have a Stage II vapor recovery system shall be exempted from installing a co-axial poppetted drop tube. All co-axial Stage I Gasoline Vapor Recovery Systems must be upgraded to Enhanced Stage I Gasoline Vapor Recovery Systems before May 1, 2012.

6. Certification and Recertification Testing Requirements: All Stage I Gasoline Vapor Recovery Systems and Enhanced Stage I Gasoline Vapor Recovery Systems at gasoline dispensing facilities shall be certified by the equipment owner as being properly installed and properly functioning in accordance with the applicable CARB Executive Order. Certification and recertification testing shall be conducted by a qualified technician who has a thorough knowledge of the system. Tests shall be conducted in accordance with test procedures as approved by the Division. The fill cap and vapor cap must be removed when performing certification testing.

7. Certification and Recertification Testing Requirements: Testing may be conducted by the Division or by an installation or testing company that meets the minimum criteria established by the Division for conducting such tests. In the case where a party other than the Division will be conducting the testing, the owner or operator shall notify the Division at least five business days in advance as to when and where the testing will occur, what party will conduct the testing, and the CARB Executive Order number associated with the system to be tested. For Enhanced Stage I Gasoline Vapor Recovery Systems, a certified and trained individual is required to install and test the System in accordance with the applicable CARB Executive Order.

8. Certification, recertification, and testing and compliance reporting for all Stage I gasoline vapor recovery systems shall be required according to the following schedule:

(i) Certification testing is required within 30 days of system installation for any Stage I gasoline vapor recovery systems approved by the Division after December 31, 2002.

(ii) After June 1, 2008, recertification testing will be required within 12 months following the initial certification or recertification for any Stage I Gasoline Vapor Recovery Systems approved by the Division.

9. Reporting Requirements: Compliance reporting shall be required within 30 days of the certification or recertification test(s) required by subparagraph 8. This report shall be submitted to the Division and shall include results of all tests conducted for certification or recertification, including failed test results.

10. Maintenance Requirements: The owner or operator of the gasoline dispensing facility shall maintain the Enhanced Stage I Gasoline Vapor Recovery System or Stage I Gasoline Vapor Recovery System in proper operating condition as specified by the manufacturer and free of defects that could impair the effectiveness of the system. For the purposes of this subparagraph, the following is a list of equipment defects that substantially impair the effectiveness of the systems in reducing gasoline bulk transfer and fugitive vapor emissions:

(i) Absence or disconnection of any component that is a part of the approved system;

(ii) Pressure/vacuum relief valves or dry breaks and drain valves in the spill bucket that are inoperative; and

(iii) Any visible product leaks.

11. Upon identification of any of the defects as described above, the owner or operator of the gasoline dispensing facility shall immediately schedule and implement repair, replacement or adjustment by the company's repair representative as necessary.

12. Recordkeeping Requirements: The following records shall be maintained on-site for two years:

(i) Maintenance records including any repaired or replaced parts and a description of the problems;

(ii) Compliance records including warnings or notices of violation issued by the Division; and

(iii) Gasoline throughput records that will allow the average monthly gasoline throughput rate to be continuously determined.

13. Record disposal may be approved by the Division upon a written request by the owner or operator of the gasoline dispensing facility. Approval may be granted on a case-by-case basis considering volume of records, number of times the records have been inspected by the Division, and the value of maintaining the records.

14. Compliance Inspections: Gasoline dispensing facilities equipped with Enhanced Stage I Gasoline Vapor Recovery Systems and Stage I Gasoline Vapor Recovery Systems shall be subject to annual compliance inspections and functional testing which include but are not limited to the following:

(i) Verification that all equipment is present and maintains a certified system configuration as defined in subparagraphs 15.(iv). or 15.(x), whichever is applicable.

(ii) Inspection of all Stage I vapor recovery related files to ensure that the gasoline dispensing facility has complied with maintenance requirements and other record keeping requirements such as inspection, compliance and volume reports as required by subparagraphs 10., 11., 12., and 13.

(iii) Observation of the use of equipment by facility operators and product suppliers.

(iv) Verification that the facility has complied with the certification and/or recertification testing requirements as specified by subparagraphs 6., 7., and 8., whichever is applicable.

15. Definitions: For the purpose of this subparagraph, the following definitions shall apply:

(i) "Average monthly throughput rate" means the average of the gallons pumped monthly for the most recent two year period of operation excluding any inactive period. If a facility has not been in operation for two years or does not have access to records for the most recent two years of operation, the Division shall determine the length of time to determine the average of the gallons pumped monthly.

(ii) "CARB" means the California Air Resources Board.

(iii) "Delivery vessel" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities.

(iv) "Enhanced Stage I Gasoline Vapor Recovery System" means:

(I) any Stage I gasoline vapor recovery system properly certified under current version of the CARB vapor recovery certification procedures and applicable executive order effective on or after April 1, 2001, and demonstrated efficiency of 98% collection of vapor; or

(II) any Stage I gasoline vapor recovery system whose design has been submitted to the Division, has passed any required certification tests, demonstrated an efficiency of 98% collection of vapors, and whose owner/operator has received a written approval from the Division. The submitted design shall include but may not be limited to drawings detailing all components of the system and a written narrative describing the components and their use.

(v) "Existing gasoline dispensing facility" means any applicable gasoline dispensing facility with an approved Stage I Gasoline Vapor Recovery System that was in operation on or before April 30, 2008.

(vi) "Gasoline" means a petroleum distillate having a Reid vapor pressure of 4.0 psia or greater.

(vii) "Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

(viii) "Major Modification" means the addition, replacement, or removal of a gasoline storage tank or a modification that causes the tank top of an underground storage tank to be unburied.

(ix) "Reconstruction" means the replacement of any stationary gasoline storage tank.

(x) "Stage I Gasoline Vapor Recovery System" means:

(I) any Stage I Gasoline Vapor Recovery System properly certified under the CARB vapor recovery certification procedures effective before April 1, 2001, excluding the coaxial poppetted drop tube requirement exempted by subparagraph 5.; or

(II) any Stage I Gasoline Vapor Recovery System whose design has been submitted to the Division, has passed any required certification tests, demonstrated an efficiency of 95% collection of vapor and whose owner/operator has received a written approval from the Division. The submitted design shall include but may not be limited to drawings detailing all components of the system and a written narrative describing the components and their use. Mixing of equipment components certified under separate certification procedures may be allowed when supported by manufacturer or independent third-party certification that the configuration meets or exceeds the applicable performance standards and has received prior written approval from the Division.

(xi) "Stationary storage tank" means all underground vessels and any aboveground vessels never intended for mobile use.

(xii) "Submerged fill pipe" means any fill pipe with a discharge opening which is within a nominal distance of six inches from the tank bottom.

16. Compliance Dates

(i) All gasoline dispensing facilities located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale counties shall be in compliance.

(ii) All gasoline dispensing facilities located in Catoosa, Richmond and Walker counties that dispense more than 50,000 gallons of gasoline per month shall be in compliance with this subparagraph by May 1, 2006.

(iii) All gasoline dispensing facilities located in Catoosa, Richmond and Walker counties that dispense 50,000 gallons or less of gasoline per month shall be in compliance with this subparagraph by May 1, 2007.

(iv) All gasoline dispensing facilities that dispense 100,000 gallons average monthly throughput of gasoline or more per month located in Barrow, Bartow, Carroll, Hall, Spalding, Newton and Walton counties shall be in compliance with this subparagraph by June 1, 2008.

(v) All gasoline dispensing facilities that dispense greater than or equal to 50,000 gallons and less than 100,000 gallons average monthly throughput of gasoline per month located in Barrow, Bartow, Carroll, Hall, Spalding, Newton and Walton counties shall be in compliance with this subparagraph by November 1, 2008.

(vi) All gasoline dispensing facilities that dispense greater than 10,000 gallons and less than 50,000 gallons average monthly throughput of gasoline-per-month and are located in Barrow, Bartow, Carroll, Hall, Spalding, Newton and Walton counties shall be in compliance with this subparagraph by March 1, 2009.

(vii) Upon the effective date of this rule, all newly constructed or reconstructed gasoline dispensing facilities located in Barrow, Bartow, Carroll, Catoosa, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Paulding, Richmond, Rockdale, Spalding, Newton, Walker and Walton shall be in compliance with this subparagraph upon startup of gasoline dispensing operations.

(viii) Upon the effective date of this rule, all existing gasoline dispensing facilities located in Catoosa, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, Richmond, Rockdale, and Walker counties that undergo major modification shall be in compliance with the requirements of an approved Enhanced Stage I Gasoline Vapor Recovery System as defined in subparagraph 15.(iv) upon completion of the modification.

(ix) All existing gasoline dispensing facilities located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale counties shall be in compliance with the requirements of an approved Enhanced Stage I Gasoline Vapor Recovery System as defined in subparagraph 15.(iv) before May 1, 2012.

(ss) **Gasoline Transport Vehicles and Vapor Collection Systems.**

1. After the compliance date specified in subparagraph 6. of this subparagraph, no person shall cause, let, permit, suffer, or allow the loading or unloading of gasoline from a gasoline transport vehicle of any size capacity unless:

(i) The tank sustains a pressure change of not more than three inches of water in five minutes when pressurized to 18 inches of water and evacuated to six inches of water as tested at least once per year in accordance with test procedures specified by the Division;

(ii) Displays a marking on the right front (passenger) side of the tank, in characters at least 2 inches high, which reads either P/V TEST DATE or EPA27 and the date (month and year) on which the gasoline transport tank was last tested;

(iii) The tank has no visible liquid leaks and no gasoline vapor leaks as measured by a combustible gas detector;

(iv) The owner or operator of the gasoline transport vehicle has submitted to the Division within 30 days of the test date a data sheet in the format specified by the Division containing at a minimum the following information: name of person(s) or company that conducted the test, date of test, test results including a list of any repairs made to the transport vehicle to bring it into compliance and the manufacturer's vehicle identification number (VIN) of the tank truck or frame number of a trailer-mounted tank; and

(v) The transport vehicle has been equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of gasoline or gasoline vapors, with a vapor return line and hatch seal designed to prevent the escape of gasoline or gasoline vapors while loading.

2. The owner or operator of a vapor collection and vapor control system shall:

(i) Design and operate the vapor collection and vapor control system and the gasoline loading equipment in a manner that prevents:

(I) Gauge pressure from exceeding 18 inches of water and vacuum from exceeding six inches of water in the gasoline tank truck;

(II) A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at one inch from all points on the perimeter of a potential leak source when measured (in accordance with test procedures specified by the Division) during loading or unloading operations at gasoline dispensing facilities, bulk gasoline plants and bulk gasoline terminals; and

(III) Avoidable visible liquid leaks during loading and unloading operations at gasoline dispensing facilities, bulk gasoline plants and bulk gasoline terminals.

(ii) Within 15 days, repair and retest a vapor collection or vapor control system that exceeds the limits in subparagraph (i) above.

3. Applicability: The requirements of this subparagraph shall apply only to those gasoline transport vehicles which load or unload gasoline at bulk gasoline terminals, bulk gasoline plants, and gasoline dispensing facilities subject to VOC vapor control requirements contained under paragraph 391-3-1-.02(2).

4. The Division may require a pressure/vacuum retest or leak check for any gasoline transport vehicle, vapor collection system, vapor control system, and/or gasoline loading equipment subject to this subparagraph. A gasoline transport vehicle, vapor collection system, vapor control system, and/or gasoline loading equipment for which the Division has required a pressure/vacuum retest or leak check shall:

(i) Cease loading and unloading operations within fourteen (14) days of the date of the initial retest or leak check request unless the retest or leak check has been completed to the satisfaction of the Division;

(ii) Provide written advance notification to the Division of the scheduled time and place of the test in order to provide the Division an opportunity to have an observer present; and

(iii) Supply a copy of the results of all such tests to the Division within 30 days of the test date.

5. For the purpose of this subparagraph, the following definitions shall apply:

(i) "Combustible Gas Detector" means a portable VOC gas analyzer with a minimum range of 0-100 percent of the LEL as propane.

(ii) "Gasoline" means a petroleum distillate having a Reid vapor pressure of 4.0 psia or greater.

(iii) "Gasoline Transport Vehicle" means any mobile storage vessel including tank trucks and trailers used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities, bulk gasoline plants or bulk gasoline terminals.

(iv) "Gasoline Vapor Leak" means a reading of 100 percent or greater of the Lower Explosive Limit (LEL) of gasoline when measured as propane at a distance of one inch.

(v) "Vapor Collection System" means a vapor transport system, including any piping, hoses and devices, which uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or vapor control system or vapor holding tank.

(vi) "Vapor Control System" means a system, including any piping, hoses, equipment and devices, that is designed to control the release of volatile organic compounds displaced from a vessel during transfer of gasoline.

6. Compliance Dates.

(i) All gasoline transport vehicles and vapor collection systems operating in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale counties shall be in compliance.

(ii) All gasoline transport vehicles and vapor collection systems operating in Catoosa, Richmond and Walker counties shall be in compliance with this subparagraph by May 1, 2006.

(iii) All gasoline transport vehicles and vapor collection systems operating in Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton counties shall be in compliance with this subparagraph by June 1, 2008.

(tt) **VOC Emissions from Major Sources.**

1. No person shall cause, let, permit, suffer or allow the emissions of VOC from any source to exceed the levels specified in paragraph 3. below unless such source has been approved by the Director as utilizing all reasonably available control technology in controlling those VOC emissions.

2. For the purpose of this subsection, "Reasonably Available Control Technology" means the utilization and/or implementation of water based or low solvent coatings, VOC control equipment such as incineration, carbon adsorption, refrigeration or other like means as determined by the Director to represent reasonably available control technology for the source category in question.

3. The requirements contained in this subsection shall apply to all such sources located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale which have potential VOC emissions exceeding 25 tons-per-year and to all such sources in the counties of Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton which have potential VOC emissions exceeding 100 tons-per-year.

4. Compliance Dates.

(i) All sources of VOC emissions subject to this subsection and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall be in compliance.

(ii) All sources of VOC emissions subject to this subsection located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton and in operation on or before October 1, 1999, shall comply with the following compliance schedule:

(I) A demonstration of appropriate reasonably available control technology for controlling VOC emissions from the source must be submitted to the Division no later than October 1, 2000. Each demonstration is subject to approval, denial, or modification by the Division.

(II) A final control plan and application for a permit to construct for the installation of VOC emission control systems and/or modification of coatings, solvents, processes, or equipment must be submitted to the Division no later than April 1, 2001.

(III) On-site construction of emission control systems and/or modification of coatings, solvents, processes, or equipment must be completed by March 1, 2003.

(IV) Full compliance with the applicable requirements of this subsection must be demonstrated through methods and procedures approved by Division on or before May 1, 2003.

(iii) All sources of VOC emissions subject to this subsection located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton and which begin initial operation after October 1, 1999, shall be in compliance upon startup.

(iv) All sources of VOC emissions subject to this subsection and located in Barrow County shall be in compliance by March 1, 2009.

5. For the purpose of determining applicability of this subsection, the emissions of VOC from any source shall exclude all VOC emissions subject to any other more specific VOC requirements contained in other subsections of this Rule.

6. For all Reasonably Available Control Technology demonstrations approved or determined pursuant to this subsection, the Division shall issue a public notice which provides for an opportunity for public comment and an opportunity for a hearing on the determination.

7. All Reasonably Available Control Technology demonstrations, and any modifications or changes to those determinations, approved or determined by the Division pursuant to this subsection shall be submitted by the Division to the U.S. EPA as a revision to the state implementation plan. No Reasonably Available Control Technology demonstration, nor any modification or change to a demonstration, approved or determined by the Division pursuant to this subsection shall revise the state implementation plan or be used as a state implementation plan credit, until it is approved by the U.S. EPA as a state implementation plan revision.

(uu) **Visibility Protection.**

1. The Director shall provide written notice of any permit application or written advance notice of a permit application for a proposed major stationary source or major modification to an existing major stationary source of emissions from which may have an impact on visibility in a Class I area to the federal land manager and the federal official charged with direct responsibility for management of any land within any such area.

2. The Director shall provide such notice within 30 days after receiving an application or written advance notice from a source as described in paragraph 1. above. The notification of a permit application shall include an analysis of the proposed source's anticipated impact on visibility in any federal Class I area and all materials in the application. In addition, the Director shall provide the Federal Land Manager a 60-day notice of any public hearing on that permit application.

3. The Director shall consider any analysis performed and/or written comments made by the Federal Land Manager in any final determination regarding the issuance of the permit provided that such analysis and/or comments are received within 30 days of having been notified by the Division. Where such analysis does not demonstrate to the satisfaction of the Director that an adverse impact will occur, the Director shall explain his decision and give notice of where the explanation can be obtained.

4. The provisions of this paragraph shall apply regardless of whether the proposed facility is to be located in an attainment, unclassified or non-attainment area.

5. The Director may require the source to monitor visibility in any Class I Federal area near the proposed new stationary source or major modification for such purposes and by such means as the Director deems necessary and appropriate.

6. For the purpose of this paragraph, major stationary source or major modification to an existing source shall be defined as in 40 CFR 51.24, but only for the pollutants of particulate matter, sulfur dioxide and nitrogen oxides.

7. Prior to the issuance of any permit, the Director shall ensure that the source's emissions will be consistent with making reasonable progress towards the national visibility goal of preventing any future, and remedying any existing, impairment of visibility in mandatory Class I areas which impairment results from manmade air pollution. The Director may take into account the cost of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the useful life of the source.

8. For the purpose of this paragraph, "impact on visibility" means visibility impairment (reductions in visual range and atmospheric discoloration) which interferes with the management, protection, preservation or enjoyment of the visitor's visual experience of the Federal Class I area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency and time of visibility impairment, and must have these factors correlate with:

(i) Times of visitor use of the Federal Class I area; and

(ii) The frequency and timing of natural conditions that reduce visibility.

(vv) **Volatile Organic Liquid Handling and Storage.**

1. After the compliance date specified in section 3. of this subsection, no person subject to other VOC requirements contained in other subsections of this Rule may transfer or cause or allow the transfer of any volatile organic liquid other than gasoline from any delivery vessel into a stationary storage tank of greater than 4,000 gallons, unless the tank is equipped with submerged fill pipes.

2. For the purpose of this subsection, the following definitions shall apply:

(i) "Delivery Vessel" means any tank truck or trailer equipped with a storage tank in use for the transport of volatile organic liquids from sources of supply to stationary storage tanks; and

(ii) "Submerged Fill Pipe" means any fill pipe with a discharge opening which is within six inches of the tank bottom.

3. Compliance Dates.

(i) All volatile organic liquid handling and storage facilities located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall be in compliance.

(ii) All volatile organic liquid handling and storage facilities subject to this subsection; located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and in operation on or before October 1, 1999, shall be in compliance by May 1, 2003.

(iii) All volatile organic liquid handling and storage facilities subject to this subsection; located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and which begin initial operation after October 1, 1999, shall be in compliance upon startup.

(iv) All volatile organic liquid handling and storage facilities subject to this subsection and located in Barrow County shall be in compliance by March 1, 2009.

(ww) **Reserved.**

(xx) **Reserved.**

(yy) **Emissions of Nitrogen Oxides from Major Sources.**

1. No person shall cause, let, permit, suffer or allow the emissions of nitrogen oxides from any source to exceed the levels specified in paragraph 2. below unless such source has been approved by the Director as meeting the appropriate requirement for all reasonably available control technology in controlling those emissions of nitrogen oxides.

2. The requirements contained in this subsection shall apply to all such sources located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale which have potential emissions of nitrogen oxides, expressed as nitrogen dioxide, exceeding 25 tons-per-year and to all such sources in the counties of Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton which have potential emissions of nitrogen oxides, expressed as nitrogen dioxide, exceeding 100 tons-per-year.

3. Compliance Dates.

(i) All sources of nitrogen oxides emissions subject to this subsection which have potential emissions of nitrogen oxides, expressed as nitrogen dioxide, exceeding 50 tons per year; were in operation on or before April 1, 2004; and are located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall be in compliance.

(ii) All sources of nitrogen oxides emissions subject to this subsection located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton and in operation on or before October 1, 1999, shall comply with the following compliance schedule:

(I) A demonstration of appropriate reasonably available control technology for controlling emissions of nitrogen oxides from the source must be submitted to the Division no later than October 1, 2000. Each demonstration is subject to approval, denial, or modification by the Division.

(II) A final control plan and application for a permit to construct for the installation of nitrogen oxides emission control systems and/or modifications of process or fuel-burning equipment must be submitted to the Division no later than April 1, 2001.

(III) On-site construction of emission control systems and/or modification of process or fuel-burning equipment must be completed by March 1, 2003.

(IV) Full compliance with the applicable requirements of this subsection must be demonstrated through methods and procedures approved by Division on or before May 1, 2003.

(iii) All sources of nitrogen oxides emissions subject to this subsection located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton and which begin initial operation after October 1, 1999, shall be in compliance.

(iv) All sources of nitrogen oxides emissions subject to this subsection which have potential emissions, expressed as nitrogen dioxide, not exceeding 50 tons-per-year; were in operation on or before April 1, 2004; and are located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall comply with the following compliance schedule:

(I) A demonstration of appropriate reasonably available control technology for controlling emissions of nitrogen oxides from the source must be submitted to the Division no later than October 1, 2004. Each demonstration is subject to approval, denial, or modification by the Division.

(II) A final control plan and application for a permit to construct for the installation of nitrogen oxides emission control systems and/or modifications of process or fuel-burning equipment must be submitted to the Division no later than April 1, 2005.

(III) On-site construction of emission control systems and/or modification of process or fuel-burning equipment must be completed by March 1, 2007.

(IV) Full compliance with the applicable requirements of this subsection must be demonstrated through methods and procedures approved by Division on or before May 1, 2007.

(v) All sources of nitrogen oxide emissions subject to this subsection located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale and which begin initial operation after April 1, 2004, shall be in compliance upon startup.

(vi) All sources of nitrogen oxide emissions subject to this subsection and located in Barrow County shall be in compliance by March 1, 2009.

4. The requirements contained in this subsection shall not apply to individual equipment at the source which have potential emissions of nitrogen oxides, expressed as nitrogen dioxide, in quantities less than a de minimis level of one ton-per-year or to air pollution control devices which are installed to effect compliance with any requirement of this Chapter.

5. The requirements contained in this subsection shall not apply to individual equipment at the source which are subject to subsections (jjj), (lll), (mmm), or (nnn) of this section 391-3-1-.02(2).

6. For the purpose of determining applicability of this subsection, the emissions of nitrogen oxides from any source shall exclude all nitrogen oxides emissions subject to subsections (jjj), (lll), (mmm), or (nnn) of this section 391-3-1-.02(2).

7. For all Reasonably Available Control Technology demonstrations approved or determined pursuant to this subsection, the Division shall issue a public notice which provides for an opportunity for public comment and an opportunity for a hearing on the determination.

8. All Reasonably Available Control Technology demonstrations, and any modifications or changes to those determinations, approved or determined by the Division pursuant to this subsection shall be submitted by the Division to the U.S. EPA as a revision to the state implementation plan. No Reasonably Available Control Technology demonstration, nor any modification or change to a demonstration, approved or determined by the Division pursuant to this subsection shall revise the state implementation plan or be used as a state implementation plan credit, until it is approved by the U.S. EPA as a state implementation plan revision.

(zz) **[reserved]**

(aaa) **[reserved]**

(bbb) **[reserved]**

(ccc) **VOC Emissions from Bulk Mixing Tanks.**

1. After the compliance date specified in section 4. of this subsection, no person shall let, permit, suffer, or allow the operation of a mixing tank unless the following requirements for control of emissions of volatile organic compounds are satisfied:

(i) All portable and stationary mixing tanks used for the manufacture of any VOC containing material shall be equipped with covers which completely cover the tank except for an opening no larger than necessary to allow for safe clearance of the mixer shaft. The tank opening shall be covered at all times except when operator access is necessary.

(ii) Free fall of VOC containing material into product containers shall be accomplished by utilization of drop tubes, fill pipes or low-clearance equipment design on filling equipment unless demonstrated to the Division impractical for a specific operation.

(iii) Detergents or non-VOC containing cleaners shall be utilized for both general and routine cleaning operations of floors, equipment, and containers unless the cleanup cannot be accomplished without the use of VOC containing cleaners.

(iv) All waste solvents shall be stored in closed containers or vessels, unless demonstrated to be a safety hazard, and shall be disposed or reclaimed such solvents in a manner approved by the Division.

2. For the purpose of this subsection, the following definitions shall apply:

(i) "Mixing Tanks" means any vessel in which resin, coating or other materials, or any combination thereof, are added to produce product blend.

3. The requirements of this subsection shall apply to facilities with potential VOC emissions exceeding 25 tons-per-year and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale and to facilities with potential VOC emissions exceeding 100 tons-per-year and located in the counties of Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton.

4. Compliance Dates.

(i) All sources subject to this subsection and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale shall be in compliance.

(ii) All sources subject to this subsection; located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and in operation on or before October 1, 1999, shall be in compliance by May 1, 2003.

(iii) All sources subject to this subsection; located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and which begin initial operation after October 1, 1999 shall be in compliance with this subsection upon startup.

(iv) All sources subject to this subsection and located in Barrow County shall be in compliance by March 1, 2009.

(ddd) **VOC Emissions from Offset Lithography and Letterpress.**

1. No person shall cause, let, permit, suffer, or allow the operation of any offset lithography printing facility unless:

(i) Offset presses utilize fountain solutions containing 8 percent or less by volume VOCs; and

(ii) The owner or operator installs and operates a VOC emission reduction system for all heatset offset printing operations approved by the Director to have at least a 90 percent reduction efficiency and a capture system approved by the Director, or an equivalent VOC emission rate.

2. No person shall cause, let, permit, suffer, or allow the operation of any sheet-fed offset lithography printing facility unless the VOC content of the on-press (as-applied) fountain solution is:

(i) 5.0 percent alcohol or less (by weight); or

(ii) 8.5 percent alcohol or less (by weight) and the fountain solution is refrigerated to below 60°F (15.5°C); or

(iii) 5 percent alcohol substitute or less (by weight) and no alcohol in the fountain solution.

3. Sheet-fed offset lithography presses with a sheet size of 11 inches by 17 inches or smaller, and presses with a total fountain solution reservoir of less than 1 gallon are exempt.

4. No person shall cause, let, permit, suffer or allow the operation of any cold-set web-fed offset lithography printing facility unless the VOC content of the on-press (as applied) fountain solution is 5 percent alcohol substitute or less (by weight) and no alcohol in the fountain solution.

5. No person shall cause, let, permit, suffer, or allow the operation of any heatset web-fed offset lithography printing facility unless the VOC content of the on-press (as-applied) fountain solutions is:

(i) 1.6 percent alcohol or less (by weight); or

(ii) 3.0 percent alcohol or less (by weight) and the fountain solution is refrigerated to below 60°F (15.5°C); or

(iii) 5.0 percent alcohol substitute or less (by weight) and no alcohol in the fountain solution.

6. For heatset web-fed offset lithographic and letterpress printing presses, the owner or operator shall install and operate a VOC emission reduction system for all dryers with a potential to emit greater than or equal to 25 tons of VOC emissions per year prior to controls.

(i) Control devices with an initial installation date on or before January 1, 2015, shall be approved by the Director to have at least a 90 percent reduction efficiency and a capture system approved by the Director.

(ii) Control devices with an initial installation date after January 1, 2015, shall be approved by the Director to have at least a 95 percent reduction efficiency and a capture system approved by the Director.

(iii) For situations where the inlet concentration is so low that 90 or 95 percent efficiency cannot be achieved, an outlet concentration of 20 ppmv as hexane on a dry basis may be used as an alternative.

(iv) Heatset presses used for book printing and heatset presses with a maximum web width of 22 inches or less are exempt from the requirements in of subparagraph 6.(i) through (iii).

(v) The following materials are exempt from the requirements of subparagraph 6.(i) through (iii):

(I) sheet-fed or coldset web-fed inks;

(II) sheet-fed or coldset web-fed varnishes; and

(III) waterborne coatings or radiation (ultra-violet light or electron beam) cured materials used on offset lithographic or letterpress presses.

7. All cleaners used for blanket washing, roller washing, plate cleaners, impression cylinder cleaners, rubber rejuvenators and other cleaners used for cleaning a press, press parts, or to remove dried ink from areas around a press shall have a VOC composite vapor pressure less than 10 mm Hg at 20°Celsius or contain less than 70 weight percent VOC. For those tasks that cannot be carried out with low VOC composite vapor pressure cleaning materials or reduced VOC content cleaning materials, 110 gallons per year of cleaning materials that do not meet the requirements of this subsection may be used.

8. All cleaning materials and used shop towels are to be kept in closed containers.

9. For the purpose of this subsection, the following definitions shall apply:

(i) "Cleaning Materials" means the materials used to remove excess printing inks, oils, and residual paper from press equipment. These materials are typically mixtures of organic (often petroleum-based) solvents.

(ii) "Fountain Solution" means the mixture of water and additional ingredients such as etchant, gum arabic and dampening aid which coats the non-image areas of the printing plate.

(iii) "Letterpress printing" means a printing process in which the image area is raised relative to the non-image area and the past ink is transferred to the substrate directly from the image surface.

(iv) "Lithographic printing" means a printing process where the image and the non-image areas are chemically differentiated; the image area is oil receptive and non-image area is water receptive.

(v) "Offset lithography printing" means a printing process that transfers the ink film from the lithographic plate to an intermediary surface (blanket) which then transfers the ink film to the substrate.

(vi) "Sheet-fed" refers to the process in which the substrate is cut into sheets before being printed.

(vii) "Web-fed" refers to the process in which the substrate is supplied to the press in the form of rolls.

10. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (ddd) shall apply to facilities at which the potential emissions of volatile organic compounds from offset lithography printing equal or exceed 25 tons per year and are located in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1. and 9.

11. Applicability. Prior to January 1, 2015, the requirements of this subparagraph (ddd) shall apply to facilities at which the potential emissions of volatile organic compounds from offset lithography printing equal or exceed 100 tons per year and are located in Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton Counties as follows:

(i) All applicable facilities shall comply with the provisions of subparagraphs 1. and 9.

12. Applicability. Prior to January 1, 2015, all letterpress printing operations are subject to the applicability and control requirements of subparagraph 391-3-1-.02(2)(tt).

13. Applicability. On and after January 1, 2015, the requirements of this subparagraph (ddd) shall apply to facilities at which actual emissions of volatile organic compounds from offset lithographic printing and letter press printing, before controls, equal or exceed 15 pounds per day (or 2.7 tons per 12-month rolling period) for facilities located in

Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties as follows:

(i) Individual heatset web offset lithographic printing presses and individual heatset web letterpress printing presses that have potential emissions of volatile organic compounds from the dryer, prior to controls, that equal or exceed 25 tons per year shall comply with the provisions of subparagraph 6;

(ii) Individual heatset web offset lithographic printing presses that have potential emissions of volatile organic compounds from the dryer, prior to controls, that do not equal or exceed 25 tons per year and are located at facilities at which the potential emissions of volatile organic compounds from offset lithography printing equal or exceed 25 tons per year in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties shall comply with the provisions of subparagraph 1.(ii);

(iii) Individual heatset web offset lithographic printing presses that have potential emissions of volatile organic compounds from the dryer, prior to controls, that do not equal or exceed 25 tons per year and are located at facilities at which the potential emissions of volatile organic compounds from offset lithography printing equal or exceed 100 tons per year in Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton Counties shall comply with the provisions of subparagraph 1.(ii);

(iv) All applicable facilities shall comply with the provisions of subparagraphs 2., 3., 4., 5., 7., 8., and 9;

(v) Any physical or operational changes that are necessary to comply with the provisions specified in subparagraphs 13.(i) or (iv) are subject to the compliance schedule specified in subparagraph 15.

14. Applicability: The requirements of subparagraph 13. will no longer be applicable by the compliance deadlines if the counties specified in those subparagraphs are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015 and such counties continue to maintain that Standard thereafter. Instead, the provisions of subparagraphs 10., 11., and 12. will continue to apply on and after January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of subparagraph 13. will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

15. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements specified in subparagraphs 13.(i) and (iv) must be completed before **January 1, 2015.**

(eee) **VOC Emissions from Expanded Polystyrene Products Manufacturing.**

1. Except as provided in sections 2., 3., and 4. of this section, after the compliance date specified in section 8. of this subsection, no person shall cause, let, permit, suffer, or allow the VOC emissions from an expandable polystyrene product manufacturing facility to exceed 0.015 lbs VOC/lb bead utilized.

2. No person shall cause, let, permit, suffer, or allow the operation of an expandable polystyrene cup manufacturing facility existing before November 1, 1987 unless the facility has installed and operates volatile organic compound emission reduction equipment on the pre-expanders having at least a 90.0 percent reduction efficiency and a capture system approved by the Director.

3. No person shall cause, let, permit, suffer, or allow the operation of an expandable polystyrene board insulation manufacturing facility existing before January 1, 1990 unless the facility has installed and operates volatile organic

compound emission reduction equipment on the pre-expanders so as to achieve at least a 90.0 percent reduction efficiency and a capture system approved by the Director; or limits VOC emissions from the entire facility to no greater than 0.0175 lb VOC/lb bead utilized.

4. No person shall cause, let, permit, suffer, or allow the operation of an expandable polystyrene custom shape manufacturing facility existing before January 1, 1990, unless the facility utilizes a batch expander and reduced volatile expandable polystyrene bead containing no more than 4.5 percent initial VOC content. The monthly weighted average of all beads used shall not exceed 4.5 percent.

5. For the purposes of this subsection, VOC emitted after the average curing time shall not be considered to be emitted from the facility.

6. For the purpose of this subsection, the following definitions shall apply:

(i) "Expandable Polystyrene Products Manufacturing" means the manufacturing of products utilizing expandable polystyrene bead impregnated with a VOC blowing agent.

(ii) "Board Insulation Manufacturers" means producers of thermal insulation, display foam, or floatation products. Thermal insulation production usually requires densities as specified in ASTM C-578, the industry standard for both EPS and XPS insulation applications.

(iii) "Custom Shape Manufacturers" means producers of a variety of different products ranging in density and size and based primarily on customer specifications.

(iv) "Pre-expander" means the system where initial expansion of the bead occurs.

(v) "Process" means the point from the opening of the gaylord to the end of the average curing time.

7. The requirements of this subsection shall apply to facilities with potential VOC emissions exceeding 25 tons per year and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale and to facilities with potential VOC emissions exceeding 100 tons per year and located in the counties of Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton.

8. Compliance Dates.

(i) All sources subject to this subsection and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall be in compliance.

(ii) All sources subject to this subsection located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and in operation on or before October 1, 1999, shall be in compliance with this subsection by May 1, 2003.

(iii) All sources subject to this subsection; located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and which begin initial operation after October 1, 1999, shall be in compliance with this subsection upon startup.

(iv) All sources subject to this subsection and located in Barrow County shall be in compliance by March 1, 2009.

(fff) **Particulate Matter Emissions from Yarn Spinning Operations.**

1. No person shall cause, let, permit, suffer or allow the rate of particulate matter emissions from a yarn spinning operation with process input rates up to and including 30 tons per hour to equal or exceed the allowable rate of emissions calculated from the following equation.

$E = 4.1P^{0.67}$

where:

E = allowable emission rate in pounds per hour;

P = process input weight of raw or partially processed fiber in tons per hour.

2. For the purpose of this subparagraph, the term process, as it applies to the yarn spinning operation, shall include all of the activities from bale delivery, bale stripping, carding, drawing, spinning, twisting, to and including winding, conducted at the facility.

(ggg) **Existing Municipal Solid Waste Landfills.**

1. The provisions of subparagraphs 1. through 3. of this subsection apply to each existing municipal solid waste landfill that commenced construction, reconstruction or modification before May 30, 1991 and has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition. Physical or operational changes made to an existing municipal solid waste landfill solely to comply with this subsection are not considered construction, reconstruction, or modification and would not subject an existing municipal solid waste landfill to the requirements of 391-3-1-.02(8)(b)72. which are the Federal New Source Performance Standards for Municipal Solid Waste Landfills.

2. Definitions of all Terms used, but not defined in this subsection, have the meaning given them in 40 CFR Part 60 Subpart WWW, as amended. Terms not defined therein shall have the meaning given them in the federal Clean Air Act, the Georgia Air Quality Act or 40 CFR Part 60 Subparts A and B.

(i) The word "Administrator" as used in regulations adopted in this subsection shall mean the Director of the Georgia Environmental Protection Division.

3. For the purposes of implementing the requirements and provisions of the Emission Guidelines of 40 CFR 60 Subpart Cc for Existing Municipal Solid Waste Landfills, each existing municipal solid waste landfill meeting the conditions of paragraph 1. of this subsection shall comply with all of the applicable standards, requirements and provisions of 40 CFR Part 60 Subpart WWW, as amended, which is hereby incorporated and adopted by reference with the exceptions as follows:

(i) Standards for air emissions from municipal solid waste landfills. The provisions of 40 CFR 60.752 apply as stated therein with the exception of the following:

(I) In lieu of 40 CFR 60.752(a)(2), the following provision applies:

When an increase in the maximum design capacity of a landfill exempted from the provisions of 40 CFR 60.752(b) through 40 CFR 60.759 on the basis of the design capacity exemption in 40 CFR 60.752(a) results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with the provision of 391-3-1-.02(8)(b)72. which are the Federal New Source Performance Standards for Municipal Solid Waste Landfills.

(II) In lieu of 40 CFR 60.752(b)(2)(i)(B), the following provision applies:

The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of 40 CFR 60.753 through 40 CFR 60.758 proposed by the owner or operator. In addition, the collection and control system design plan must specify:

(1) the date by which contracts for control system/process modifications shall be awarded, (which shall be no later than 20 months after the date the NMOC emissions rate is first calculated to meet or exceed 50 megagrams per year);

(2) the date by which on-site construction or installation of the air pollution control devices(s) or process changes will begin (which shall be no later than 24 months after the date the NMOC emissions rate is first calculated to meet or exceed 50 megagrams per year); and

(3) the date by which the construction or installation of the air pollution control devices(s) or process changes will be complete.

(III) In lieu of 40 CFR 60.752(c)(1) and (c)(2) which establishes the date that a landfill is subject to 40 CFR Parts 70 and 71, the following date applies:

I. June 23, 1997.

(ii) Operational standards for collection and control systems. The provisions of 40 CFR 60.753 apply as stated therein.

(iii) Test methods and procedures. The provisions of 40 CFR 60.754 apply as stated therein with the exception of 40 CFR 60.754(c), which does not apply.

(iv) Compliance provisions. The provisions of 40 CFR 60.755 apply as stated therein.

(v) Monitoring of operations. The provisions of 40 CFR 60.756 apply as stated therein.

(vi) Reporting requirements. The provisions of 40 CFR 60.757 apply as stated therein with the exception of the following:

(I) In lieu of 40 CFR 60.757(a)(1), (a)(1)(i) and (a)(1)(ii), the following provision applies:

The initial design capacity report shall be submitted by October 1, 1997.

(II) In lieu of 40 CFR 60.757(b)(1)(i), (i)(A) and (i)(B), the following provision applies:

The initial NMOC emission rate report shall be submitted by October 1, 1997 and may be combined with the initial design capacity report required in 40 CFR 60.757(a). Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in 40 CFR 60.757(b)(1)(ii) and 40 CFR 60.757(b)(3).

(vii) Recordkeeping requirements. The provisions of 40 CFR 60.758 apply as stated therein.

(viii) Specifications for active collection systems. The provisions of 40 CFR 60.759 apply as stated therein.

4. Subparagraphs 1. through 3. are applicable PRIOR to the approval of Georgia's state plan implementing the revised Emission Guidelines for existing Municipal Solid Waste (MSW) Landfills (40 CFR Part 60 Subpart Cf).

5. Subparagraphs 6. through 8. are applicable AFTER the approval of Georgia's state plan implementing the revised Emission Guidelines for existing Municipal Solid Waste (MSW) Landfills (40 CFR Part 60 Subpart Cf).

6. The provisions of subparagraphs 6. through 8. of this subparagraph apply to each existing municipal solid waste landfill that commenced construction, reconstruction or modification on or before July 17, 2014 and has either accepted waste at any time since November 8, 1987 or has additional design capacity available for future waste deposition. Physical or operational changes made to an existing municipal solid waste landfill solely to comply with this subparagraph are not considered construction, reconstruction, or modification and would not subject an existing municipal solid waste landfill to the requirements of 391-3-1-.02(8)(b)89., 40 CFR Part 60 Subpart XXX Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014.

7. Definitions of all Terms used, but not defined in subparagraphs 6. through 8., have the meaning given them in 40 CFR Part 60 Subpart Cf. Terms not defined therein shall have the meaning given them in the federal Clean Air Act, the Georgia Air Quality Act or 40 CFR Part 60 Subparts A and B.

(i) Except as noted, the word "Administrator" as used in regulations adopted by reference in subparagraphs 6. through 8. shall mean the Director of the Georgia Environmental Protection Division. For 40 CFR 60.30f(c), 40 CFR 60.35f(a)(5) and 40 CFR 60.38f(j) the word "Administrator" shall mean the Administrator of the EPA.

8. For the purposes of implementing the requirements and provisions of the Emission Guidelines of 40 CFR Part 60 Subpart Cf for Existing Municipal Solid Waste Landfills, each existing municipal solid waste landfill meeting the conditions of subparagraph 6. shall comply with all of the applicable standards, requirements and provisions of 40 CFR Part 60 Subpart Cf, as amended on March 26, 2020, which is hereby incorporated and adopted by reference with the exceptions as follows:

(i) The requirements of the State to incorporate the provisions into an approvable state plan, and

(ii) The provisions of 60.30f.

(iii) In lieu of 40 CFR 60.33f(d)(2), the following provision applies:

When an increase in the maximum design capacity of a landfill exempted from the provisions of 40 CFR 60.33f through 40 CFR 60.40f on the basis of the design capacity exemption in 40 CFR 60.31f results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, due to reconstruction or modification, that was commenced after July 17, 2014, then the owner or operator shall comply with the provision of 391-3-1-.02(8)(b)89., 40 CFR Part 60 Subpart XXX Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014.

(iv) In lieu of 40 CFR 60.38f(d)(2), the following provision applies:

(I) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of 40 CFR 60.34f through 40 CFR 60.39f proposed by the owner or operator. In addition, the collection and control system design plan must specify:

I. The date by which contracts for control system/process modifications shall be awarded, which shall be no later than 20 months after the date the NMOC emissions rate is first reported to meet or exceed 34 megagrams per year, or the date the NMOC emissions rate is first reported to meet or exceed 50 megagrams per year for a landfill in the closed landfill subcategory, or the date when a surface emission concentration of 500 parts per million methane or greater is reported if conducting Tier 4 surface emissions monitoring;

II. The date by which on-site construction or installation of the air pollution control devices(s) or process changes will begin which shall be no later than 24 months after the date the NMOC emissions rate is first reported to meet or exceed 34 megagrams per year, or the date the NMOC emissions rate is first reported to meet or exceed 50 megagrams per year for a landfill in the closed landfill subcategory, or the date when a surface emission concentration of 500 parts per million methane or greater is reported if conducting Tier 4 surface emissions monitoring; and

III. The date by which the construction or installation of the air pollution control device(s) or process changes will be complete.

(II) Operational standards for collection and control systems. The provisions of 40 CFR 60.34f apply as stated therein.

(III) Test methods and procedures. The provisions of 40 CFR 60.35f apply as stated therein.

(IV) Compliance provisions. The provisions of 40 CFR 60.36f apply as stated therein.

(V) Monitoring of operations. The provisions of 40 CFR 60.37f apply as stated therein.

(VI) Reporting requirements. The provisions of 40 CFR 60.38f apply as stated therein. Except as provided in 7.(i) and 8.(iv).

(VII) Recordkeeping requirements. The provisions of 40 CFR 60.39f apply as stated therein.

(VIII) Specifications for active collection systems. The provisions of 40 CFR 60.40f apply as stated therein.

(hhh) **Wood Furniture Finishing and Cleaning Operations.**

1. Each owner or operator of a wood furniture finishing and cleaning operation shall limit VOC emissions from finishing operations by:

(i) Using topcoats that contain no more than 0.8 pounds of VOC per pound of solids, as applied; or

(ii) In lieu of complying with subsection (i), wood furniture finishing operations may comply by:

(I) Using a finishing system of sealers that contain no more than 1.9 pounds of VOC per pound of solids, as applied; and

(II) Using topcoats that contain no more than 1.8 pounds of VOC per pound of solids, as applied; or

(iii) For wood furniture finishing operations that use acid-cured alkyd amino vinyl sealers and that use acid-cured alkyd amino conversion varnish topcoats:

(I) Using sealers that contain no more than 2.3 pounds of VOC per pound of solids, as applied; and

(II) Using topcoats that contain no more than 2.0 pounds of VOC per pound of solids, as applied; or

(iv) For wood furniture finishing operations that do not use acid-cured alkyd amino vinyl sealers and that use acid-cured alkyd amino conversion varnish topcoats:

(I) Using sealers that contain no more than 1.9 pounds of VOC per pound of solids, as applied; and

(II) Using topcoats that contain no more than 2.0 pounds of VOC per pound of solids, as applied; or

(v) For wood furniture finishing operations that use acid-cured alkyd amino vinyl sealers and that do not use acid-cured alkyd amino conversion varnish topcoats:

(I) Using sealers that contain no more than 2.3 pounds of VOC per pound of solids, as applied; and

(II) Using topcoats that contain no more than 1.8 pounds of VOC per pound of solids, as applied; or

(vi) Using an averaging approach that demonstrates the wood furniture finishing operation meets the emission limits defined in subsections (i), (ii), (iii), (iv) or (v), averaged on a daily basis throughout the facility; or

(vii) Using a control system that will achieve an equivalent reduction in emissions and meet the requirements of subsections (i), (ii), (iii), (iv) or (v) of this section; or

(viii) Using a combination of the methods presented in subsections (i), (ii), (iii), (iv), (v), (vi), and (vii).

2. Each owner or operator of a wood furniture finishing and cleaning operation shall limit VOC emissions by using strippable booth coating materials that contain no more than 0.8 pounds of VOC per pound of solids, as applied.

3. Each owner or operator of a wood furniture finishing and cleaning operation shall prepare and maintain a written work practice implementation plan that defines work practices for each wood furniture manufacturing operation and addresses each of the topics specified. The work practice implementation plan shall be submitted to the Division for approval by the compliance dates contained in section 7. This plan shall include: an operator training course; a leak inspection and maintenance plan; a cleaning and washoff solvent accounting system; a spray booth cleaning plan; a storage plan for finishing, cleaning and washoff materials; an application equipment requirement plan; a paint line and gun cleaning plan; and an outline of washoff operations.

4. Each owner or operator of a wood furniture finishing and cleaning operation shall maintain certified product data sheets for each sealer, topcoat, and strippable booth coating material that is used to meet the requirements of sections 1. and 2. of this rule. If solvent or other VOC is added to the finishing material before application, the affected source shall maintain documentation showing the VOC content of the finishing material in pounds of VOC-per-pound of solids, as applied.

5. For the purpose of this subsection the following definitions shall apply:

(i) "As applied" means the VOC and solids content of the finishing material that is actually used for coating the substrate. It includes the contribution of materials used for in-house dilution of the finishing material.

(ii) "Certified product data sheet" means documentation furnished by a coating supplier or an outside laboratory that provides the VOC content by percent weight, the solids content by percent weight, and density of a finishing material, strippable booth coating, or solvent, measured using the EPA Method 24, or an equivalent or alternative method. The VOC content should represent the maximum VOC emission potential of the finishing material, strippable booth coating, or solvent.

(iii) "Sealer" means a finishing material used to seal the pores of a wood substrate before additional coats of finishing material are applied. Washcoats, which are used in some finishing systems to optimize aesthetics, are not sealers.

(iv) "Stain" means any color coat having a solids content by weight of no more than 8.0 percent that is applied in single or multiple coats directly to the substrate. This includes, but is not limited to, nongrain raising stains, equalizer stains, sap stains, body stains, no-wipe stains, penetrating stains, and toners.

(v) "Strippable booth coating" means a coating that: (1) is applied to a booth wall to provide a protective film to receive overspray during finishing operations; (2) that is subsequently peeled off and disposed; and (3) by achieving (1) and (2), reduces or eliminates the need to use organic solvents to clean booth walls.

(vi) "Topcoat" means the last film-building finishing material applied in a finishing system. Non-permanent final finishes are not topcoats.

(vii) "Wood Furniture" means any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712.

6. The requirements of this subsection shall apply to facilities with potential VOC emissions exceeding 25 tons-per-year and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale and to facilities with potential VOC emissions exceeding 100 tons-per-year and located in the counties of Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton.

7. Compliance Dates.

(i) All sources subject to this subsection and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall be in compliance.

(ii) All sources subject to this subsection; located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and in operation on or before October 1, 1999, shall be in compliance with this subsection by May 1, 2003.

(iii) All sources subject to this subsection; located in the counties of Bartow, Carroll, Hall, Newton, Spalding, and Walton; and which begin initial operation after October 1, 1999, shall be in compliance with this subsection upon startup.

(iv) All sources subject to this subsection and located in Barrow County shall be in compliance by March 1, 2009.

(iii) **Hospital/Medical/Infectious Waste Incinerators.**

1. The provisions of this subparagraph apply to each hospital/medical/infectious waste incinerator (HMIWI) that commenced construction no later than December 1, 2008 or commenced modification no later than April 6, 2010 (hereinafter referred to as an "Existing HMIWI"). Physical or operational changes made to an Existing HMIWI solely to comply with this subparagraph are not considered construction or modification and would not subject an Existing HMIWI to the requirements of 391-3-1-.02(8)(b)73.

(i) A combustor is not subject to this subparagraph during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in 40 CFR 60.51c) is burned, provided the owner or operator of the combustor:

(I) Notifies the Director of an exemption claim; and

(II) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste and/or chemotherapeutic waste is burned.

(ii) Any co-fired combustor (defined in 40 CFR 60.51c) is not subject to this subparagraph if the owner or operator of the co-fired combustor:

(I) Notifies the Director of an exemption claim;

(II) Provides an estimate of the relative amounts of hospital waste, medical/infectious waste, and other fuels and wastes to be combusted; and

(III) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

(iii) Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subparagraph.

(iv) Any combustor which meets the applicability requirements under subpart Cb, Ea, or Eb of 40 CFR Part 60 is not subject to this subparagraph.

(v) Any pyrolysis unit (defined in 40 CFR 60.51c) is not subject to this subparagraph.

(vi) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subparagraph.

2. Each Existing HMIWI is subject to the permitting requirements of 391-3-1-.03(10) "Title V Operating Permits."

3. Definitions of all Terms used, but not defined in this subparagraph, shall have the meaning given to them in 40 CFR Part 60, Subpart Ec, as amended on April 4, 2011. Terms not defined therein shall have the meaning given to them in the federal Clean Air Act or 40 CFR Part 60, Subparts A and B. For the purposes of this subparagraph the following definitions also apply:

(i) Except as noted, the word "Administrator" as used in regulations adopted by reference in this subparagraph shall mean the Director of the Georgia Environmental Protection Division. For subparagraph (iii)6. the word "Administrator" shall mean the Administrator of the EPA.

4. For the purposes of implementing the requirements and provisions of the Emission Guidelines of 40 CFR 60, Subpart Ce for Existing HMIWIs, each Existing HMIWI shall comply with the standards, requirements and provisions of 40 CFR Part 60, Subpart Ec, as amended on April 4, 2011, which is hereby incorporated and adopted by reference, with the exceptions as follows:

(i) The provisions of 40 CFR 60.50c apply to each Existing HMIWI as stated therein with the exception of the following:

(I) In lieu of 40 CFR 60.50c(a), the following provision applies:

Except as provided in 40 CFR 60.50c(b) through (h), this subparagraph shall apply to each existing HMIWI, as identified in subparagraph 1.

(II) In lieu of 40 CFR 60.50c(e), the following provision applies:

Any combustor which meets the applicability requirements under 40 CFR Part 60 Subparts Cb, Ea, or Eb is not subject to this subparagraph.

(III) The provisions of 40 CFR 60.50c(j), (k), (l), (m), and (n) do not apply to an Existing HMIWI.

(ii) Emission Limits. The provisions of 40 CFR 60.52c apply to each Existing HMIWI as stated therein with the exception of the following:

(I) In lieu of 40 CFR 60.52c(a), the following provisions apply:

I. From an affected facility constructed on or before June 20, 1996 no owner or operator of an Existing HMIWI shall cause to be discharged into the atmosphere from that affected facility any gases that contain stack emissions in excess of the applicable limits found in Table 1B of 40 CFR Part 60, Subpart Ce.

II. From an affected facility constructed after June 20, 1996 but no later than December 1, 2008 no owner or operator of an Existing HMIWI shall cause to be discharged into the atmosphere from that affected facility any gases that contain stack emissions in excess of the applicable limits found in the more stringent of the requirements listed in Table 1B of 40 CFR Subpart Ce and Table 1A of 40 CFR Part 60, Subpart Ec.

(II) The provisions of 40 CFR 60.52c(c), (d), and (e) do not apply to an Existing HMIWI.

(iii) Operator Training. The provisions of 40 CFR 60.53c apply to each Existing HMIWI as stated therein.

(iv) Siting Requirements. The provisions of 40 CFR 60.54c do not apply to an Existing HMIWI.

(v) Waste Management Plan. The provisions of 40 CFR 60.55c apply to each Existing HMIWI as stated therein.

(vi) Compliance and Performance Testing. In lieu of 40 CFR 60.56c, Section 2.117.2 of the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants applies to each Existing HMIWI.

(vii) Monitoring Requirements. In lieu of 40 CFR 60.57c, Section 2.117.3 of the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants applies to each Existing HMIWI.

(viii) Reporting and Record Keeping Requirements. In lieu of 40 CFR 60.58c, Section 2.117.4 of the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants applies to each Existing HMIWI.

(ix) Table 1B of 40 CFR Part 60, Subpart Ec does not apply to an Existing HMIWI.

5. In keeping with subparagraph (iii)4., owners and operators of existing HMIWI units must comply with Georgia's state plan for existing HMIWI units, which is required by 40 CFR Part 60, Subpart Ce. The owner operator of each existing HMIWI unit shall comply with the requirements of 391-3-1-.02(2)(iii)4. upon approval of Georgia's state plan for existing HMIWI units by EPA.

6. The owner of an existing HMIWI unit must contact EPA with respect to the following subparagraphs (i) through (v) as specified in 40 CFR 60.50c(i).

(i) The requirements of 40 CFR 60.56c(j) establishing operating parameters when using controls other than those listed in 40 CFR 60.56c(d)

(ii) Approval of alternative methods of demonstrating compliance under 40 CFR 60.8 including:

(I) Approval of CEMS for PM, HCl, multi-metals, and Hg where used for purposes of demonstrating compliance,

(II) Approval of continuous automated sampling systems for dioxin/ furan and Hg where used for purposes of demonstrating compliance, and

(III) Approval of major alternatives to test methods;

(iii) Approval of major alternatives to monitoring;

(iv) Waiver of recordkeeping requirements; and

(v) Performance test and data reduction waivers under 40 CFR 60.8(b)

(jjj) **NOx Emissions from Electric Utility Steam Generating Units.**

1. Effective May 1, 1999, through September 30, 1999, no person shall cause, let, permit, suffer, or allow the emissions of NOx from an affected unit under this subsection unless:

(i) The NOx emissions from each affected unit(s) do not exceed the alternative emission limit established by the Director for the unit(s). Said alternative emission limits shall be determined by the Division and established in the Title V Permit for the affected unit(s). In no case shall the alternative emission limits established pursuant to this section, averaged over all affected units on a maximum rated heat input capacity basis, be greater than the average allowable rate specified in subsection 1.(ii).

(ii) If the person does not comply with all alternative emission limits established under subsection 1.(i) above, the person shall demonstrate that the NOx emissions, averaged over all affected units, do not exceed 0.34 lb/MMBTU heat input.

2. Effective May 1, 2000 through September 30, 2002, no person shall cause, let, permit, suffer, or allow the emissions of NOx from an affected unit under this subsection unless:

(i) The NOx emissions from each affected unit(s) do not exceed the alternative emission limit established by the Director for the unit(s). Said alternative emission limits shall be determined by the Division and established in the Title V Permit for the affected unit(s). In no case shall the alternative emission limits established pursuant to this section, averaged over all affected units on a maximum rated heat input capacity basis, be greater than the average allowable rate specified in subsection 2.(ii).

(ii) If the person does not comply with all alternative emission limits established under subsection 2.(i) above, the person shall demonstrate that the NOx emissions, averaged over all affected units, do not exceed 0.30 lb/MMBTU heat input.

3. Effective May 1, 2003, no person shall cause, let, permit, suffer, or allow the emissions of NOx from an affected unit under this subsection unless:

(i) The NOx emissions from each affected unit(s) do not exceed the alternative emission limit established by the Director for the unit(s). Said alternative emission limits shall be determined by the Division and established in the Title V Permit for the affected unit(s). In no case shall the alternative emission limits established pursuant to this section, averaged over all affected units using the highest 30 consecutive days of actual heat input for 1999, be greater than the average allowable rate specified in subsection 3.(ii).

(ii) If the person does not comply with all alternative emission limits established under subsection 3.(i) above, the person shall demonstrate that the NOx emissions, averaged over all affected units, do not exceed 0.13 lb/MMBTU heat input.

4. Effective May 1, 2003, through September 30, 2006, no person shall cause, let, permit, suffer, or allow the emissions of NOx from an affected unit under this subsection unless:

(i) The NOx emissions from each affected unit(s) do not exceed the alternative emission limit established by the Director for the unit(s). Said alternative emission limits shall be determined by the Division and established in the Title V Permit for the affected unit(s). In no case shall the alternative emission limits established pursuant to this section, averaged over all affected units using the highest 30 consecutive days of actual heat input for 1999, be greater than the average allowable rate specified in subsection 4.(ii).

(ii) If the person does not comply with all alternative emission limits established under subsection 4.(i) above, the person shall demonstrate that the NOx emissions, averaged over all affected units, do not exceed 0.20 lb/MMBTU heat input.

5. Effective May 1, 2007, no person shall cause, let, permit, suffer, or allow the emissions of NOx from an affected unit under this subsection unless:

(i) The NOx emissions from each affected unit(s) do not exceed the alternative emission limit established by the Director for the unit(s). Said alternative emission limits shall be determined by the Division and established in the Title V Permit for the affected unit(s). In no case shall the alternative emission limits established pursuant to this section, averaged over all affected units using the highest 30 consecutive days of actual heat input for 1999, be greater than the average allowable rate specified in subsection 5.(ii).

(ii) If the person does not comply with all alternative emission limits established under subsection 5.(i) above, the person shall demonstrate that the NOx emissions, averaged over all affected units, do not exceed 0.18 lb/MMBTU heat input.

6. Effective May 1, 2007, no person shall cause, let, permit, suffer, or allow the emissions of NOx from an affected unit under this subsection unless:

(i) The NOx emissions from each affected unit(s) do not exceed the alternative emission limit established by the Director for the unit(s). Said alternative emission limits shall be determined by the Division and established in the Title V Permit for the affected unit(s). In no case shall the alternative emission limits established pursuant to this section, averaged over all affected units using the highest 30 consecutive days of actual heat input for 1999, be greater than the average allowable rate specified in subsection 6.(ii).

(ii) If the person does not comply with all alternative emission limits established under subsection 6.(i) above, the person shall demonstrate that the NOx emissions, averaged over all affected units, do not exceed 0.17 lb/MMBTU heat input.

7. The compliance period shall be based on a 30-day rolling average beginning May 1 and ending September 30 of each year.

(i) The first 30-day averaging period shall begin on May 1.

(ii) The last 30-day averaging period shall end on September 30.

(iii) Affected units under this subsection shall be all coal-fired electric utility steam generating units with a maximum heat input greater than 250 MMBTU/hr.

8. The requirements contained in sections 1 and 2 of this subsection shall apply to all such sources located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale. The requirements contained in Section 3 of this subsection shall apply to all such sources located in the counties of Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Floyd, Forsyth, Fulton, Gwinnett, Heard, Henry, Paulding, and Rockdale. The requirements contained in sections 4 and 5 of this subsection shall apply to all such sources located in the counties of Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Floyd, Forsyth, Fulton, Gwinnett, Heard, Henry, Monroe, Paulding, Putnam, and Rockdale. The requirements contained in Section 6 of this subsection shall apply to sources located in Monroe County.

(kkk) **VOC Emissions from Aerospace Manufacturing and Rework Facilities.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the coating of aerospace vehicles or components to exceed:

(i) 2.9 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies primers. For general aviation rework facilities, the VOC limitation shall be 4.5 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies primers.

(ii) 3.5 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies topcoats (including self-priming topcoats). For general aviation rework facilities, the VOC limitation shall be 4.5 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies topcoats (including self-priming topcoats).

(iii) The VOC content limits listed in Table (kkk) -1 below expressed in pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies specialty coatings.

TABLE (kkk) -1 Specialty Coating VOC Limitations

Coating Type	**VOC Content Limit (lb/gal)**	**VOC Content Limit (g/L)**
Ablative Coating	5.0	600
Adhesion Promoter	7.4	890
Adhesive Bonding Primers:		
Cured at 250°F or below	7.1	850
Cured above 250°F	8.6	1030
Adhesives:		
Commercial Interior Adhesive	6.3	760
Cyanoacrylate Adhesive	8.5	1,020
Fuel Tank Adhesive	5.2	620
Nonstructural Adhesive	3.0	360
Rocket Motor Bonding Adhesive	7.4	890
Rubber-based Adhesive	7.1	850
Structural Autoclavable Adhesive	0.5	60
Structural Nonautoclavable Adhesive	7.1	850
Antichafe Coating	5.5	660
Bearing Coating	5.2	620
Caulking and Smoothing Compounds	7.1	850
Chemical Agent-Resistant Coating	4.6	550
Clear Coating	6.0	720

Coating Type	VOC Content Limit (lb/gal)	VOC Content Limit (g/L)
Commercial Exterior Aerodynamic Structure Primer	5.4	650
Compatible Substrate Primer	6.5	780
Corrosion Prevention Compound	5.9	710
Cryogenic Flexible Primer	5.4	645
Cryoprotective Coating	5.0	600
Dry Lubricative Material	7.3	880
Electric or Radiation-Effect Coating	6.7	800
Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	6.7	800
Elevated Temperature Skydrol Resistant Commercial Primer	6.2	740
Epoxy Polyamide Topcoat	5.5	660
Fire-Resistant (Interior) Coating	6.7	800
Flexible Primer	5.3	640
Flight-Test Coatings:		
Missile or Single Use Aircraft	3.5	420
All Other	7.0	840
Fuel-Tank Coating	6.0	720
High-Temperature Coating	7.1	850
Insulation Covering	6.2	740
Intermediate Release Coating	6.3	750
Lacquer	6.9	830
Maskants:		
Bonding Maskant	10.3	1,230
Critical Use and Line Sealer Maskant	8.5	1,020
Seal Coat Maskant	10.3	1,230
Metallized Epoxy Coating	6.2	740
Mold Release	6.5	780
Optical Anti-Reflective Coating	6.3	750
Part Marking Coating	7.1	850
Pretreatment Coating	6.5	780
Rain Erosion-Resistant Coating	7.1	850
Rocket Motor Nozzle Coating	5.5	660
Scale Inhibitor	7.3	880
Screen Print Ink	7.0	840
Sealants:		
Extrudable/Rollable/Brushable Sealant	2.3	280
Sprayable Sealant	5.0	600
Silicone Insulation Material	7.1	850
Solid Film Lubricant	7.3	880
Specialized Function Coating	7.4	890
Temporary Protective Coating	2.7	320
Thermal Control Coating	6.7	800
Wet Fastener Installation Coating	5.6	675
Wing Coating	7.1	850

(iv) 5.2 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies Type I chemical milling maskants.

(v) 1.3 pounds per gallon of coating, excluding water and exempt solvents, delivered to a coating applicator that applies Type II chemical milling maskants.

(vi) The following aerospace activities are exempt from the coating emission limits in subparagraphs 1.(i) through (v): touchup coating, aerosol coating, and the application of Department of Defense classified coatings; coatings used on space vehicles; and facilities that comply with the low volume usage exemption in subparagraph 10.

2. The emission limitations in subparagraph (kkk) shall be achieved by:

(i) The application of low solvent coating technology where each and every coating meets the specified applicable limitation expressed in pounds of VOC per gallon of coating, excluding water and exempt solvents, stated in subparagraph 1.; or

(ii) The application of low solvent coating technology where the monthly volume-weighted average VOC content of each specified coating type meets the specified applicable limitation expressed in pounds of VOC per gallon of coating, excluding water and exempt solvents, stated in subparagraph 1.; averaging is not allowed between primers, topcoats (including self-priming topcoats), specialty coating types, Type I milling maskants, and Type II milling maskants or any combination of the above coating categories; or

(iii) Control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that the control system has a VOC reduction efficiency of 81 percent or greater.

3. Each owner or operator of an aerospace manufacturing and/or rework operation shall apply all spray applied non-exempt primers, topcoats, and specialty coatings utilizing one or more of the spray application techniques specified below:

(i) High-volume low-pressure (HVLP) spraying;

(ii) Electrostatic spray application;

(iii) Airless spray application;

(iv) Air-assisted airless spray application; or

(v) Other coating application methods that achieve emission reductions equivalent to HVLP, electrostatic spray application, airless spray, or air-assisted airless spray application methods, as determined by the Director.

4. Each owner or operator of an aerospace manufacturing and/or rework operation shall ensure that all application devices used to apply primers, topcoats (including self-priming topcoats), and specialty coatings are operated according to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at all times. Equipment modified by the owner or operator shall maintain a transfer efficiency equivalent to HVLP, electrostatic spray application, airless spray application, or air-assisted airless spray application techniques.

5. Each owner or operator of an aerospace manufacturing and/or rework operation shall comply with the following housekeeping requirements for any affected cleaning operation. Aqueous cleaning solvents and hydrocarbon-based solvents which have a maximum composite vapor pressure of 7 mm Hg at 20°C are exempt from these requirements.

(i) Solvent-laden cloth, paper, or any other absorbent applicators used for cleaning shall be placed in bags or other closed containers upon completing their use. These bags and containers must be kept closed at all times except when depositing or removing these materials from the container. The bags and containers used must be of such a design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.

(ii) All fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, used in aerospace cleaning operations shall be stored in closed containers.

(iii) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh spent cleaning solvents in such a manner that spills are minimized.

6. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing hand-wipe cleaning operations (excluding the cleaning of spray gun equipment performed in accordance with subparagraph 7.) shall comply with one of the following:

(i) Utilize cleaning solvent solutions that are classified as an aqueous cleaning solvent and/or a hydrocarbon-based cleaning solvent with a maximum composite vapor pressure of 7 mm Hg at 20°C.

(ii) Utilize cleaning solvent solutions that have a composite vapor pressure of 45 mm Hg or less at 20°C.

7. Each owner or operator of an aerospace manufacturing and/or rework operation shall clean all spray guns used in the application of primers, topcoats (including self-priming topcoats), and specialty coatings utilizing one or more of the following techniques:

(i) Enclosed System: Spray guns shall be cleaned in an enclosed system that is closed at all times except when inserting or removing the spray gun. Cleaning shall consist of forcing cleaning solvent through the gun. If leaks are found, repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.

(ii) Nonatomized Cleaning: Spray guns shall be cleaned by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. The cleaning solvent from the spray gun shall be directed into a vat, drum, or other waste container that is closed when not in use.

(iii) Disassembled Spray Gun Cleaning: Spray guns shall be cleaned by disassembling and cleaning the components by hand in a vat, which shall remain closed at all times except in use. Alternatively, the components shall be soaked in a vat, which shall remain closed during the soaking period and when not inserting or removing components.

(iv) Atomizing cleaning: Spray guns shall be cleaned by forcing the cleaning solvent through the gun and directing the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.

8. Each owner or operator of an aerospace manufacturing and/or rework operation that includes a flush cleaning operation shall empty the used cleaning solvents each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned into an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control approved by the Director. Hydrocarbon-based solvents which have a maximum composite vapor pressure of 7 mm Hg at 20°C and aqueous and semi-aqueous materials are exempt from the requirements of subparagraph (kkk).

9. The following activities are not regulated by subparagraph (kkk):

(i) Research and development;

(ii) Quality control;

(iii) Laboratory testing activities;

(iv) Metal finishing;

(v) Electrodeposition (except for the electrodeposition of paints);

(vi) Composites processing (except for cleaning and coating of composite parts or components that become part of an aerospace vehicle or component as well as composite tooling that comes in contact with such composite parts or components prior to cure);

(vii) Electronic parts and assemblies (except for cleaning and topcoating of completed assemblies);

(viii) Manufacture of aircraft transparencies;

(ix) Wastewater treatment operations;

(x) Regulated activities associated with space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the space shuttle;

(xi) Maintenance and rework of antique aerospace vehicles and components;

(xii) Chemical milling;

(xiii) Rework of aircraft or aircraft components if the holder of the Federal Aviation Administration (FAA) design approval, or the holder's licensee, is not actively manufacturing the aircraft or aircraft components;

(xiv) Parts and assemblies not critical to the vehicle's structural integrity or flight performance;

(xv) Primers, topcoats, specialty coatings, chemical milling maskants, strippers, and cleaning solvents that meet the definition of non-VOC material, as determined from manufacturer's representations, such as in a material safety data sheet or product data sheet, or testing, except that if an owner or operator chooses to include one or more non-VOC primer, topcoat, specialty coating, or chemical milling maskant in averaging under subparagraph 2.(ii);

(xvi) Primers, topcoats, and specialty coatings that meet the definition of "classified national security information" in subparagraph 17.(xvii).

10. The requirements for primers, topcoats, specialty coatings, and chemical milling maskants in subparagraphs 1.(i), 1.(ii), 1.(iii), 1.(iv) and 1.(v) do not apply to the use of low-volume coatings in these categories for which the rolling twelve month total of each separate formulation used at a facility does not exceed 50 gallons, and the combined rolling twelve month total of all such primers, topcoats, specialty coatings, and chemical milling maskants used at a facility does not exceed 200 gallons. Primers, topcoats, and specialty coatings exempted under subparagraphs 9. and 11. are not included in the 50 and 200 gallon limits.

11. The following situations are exempt from the requirements of subparagraphs 3. and 4.:

(i) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

(ii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that cannot be applied by any of the application methods specified in subparagraph 3.;

(iii) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 inches) and that cannot be applied by any of the application methods specified in subparagraph 3.;

(iv) The spray application of no more than 3.0 fluid ounces of coating in a single application (i.e., the total volume of a single coating formulation applied during any one day to any one aerospace vehicle or component) from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters). Using multiple small paint cups or refilling a small paint cup to apply more than 3.0 fluid ounces under the requirements of subparagraph (kkk) is prohibited. If a paint cup liner is used in a reusable holder or cup, then the holder or cup must be designed to hold a liner with a capacity of no more than 3.0 fluid ounces. For example, a 3.0 ounce liner cannot be used in a holder that can also be used with a 6.0 ounce liner under the requirements of subparagraph (kkk);

(v) The use of airbrush application methods for stenciling, lettering, and other identification markings;

(vi) The use of hand-held non-refillable spray (aerosol) can application methods;

(vii) Touchup and repair operations;

(viii) Adhesives, sealants, maskants, caulking materials, and inks; and

(ix) The application of coatings that contain less than 0.17 pounds of VOC per gallon of coating.

12. The following cleaning operations are exempt from the requirements of subparagraph 6.:

(i) Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

(ii) Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);

(iii) Cleaning and surface activation prior to adhesive bonding;

(iv) Cleaning of electronic parts and assemblies containing electronic parts;

(v) Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid including air-to-air heat exchangers and hydraulic fluid systems;

(vi) Cleaning of fuel cells, fuel tanks, and confined spaces;

(vii) Surface cleaning of solar cells, coating optics, and thermal control surfaces;

(viii) Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;

(ix) Cleaning of metallic and non-metallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture or maintenance of aerospace vehicles or components;

(x) Cleaning of aircraft transparencies, polycarbonate, or glass substrates;

(xi) Cleaning and solvent usage associated with research and development, quality control, and laboratory testing;

(xii) Cleaning operations, using nonflammable liquids, conducted within five feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells, and tail sections; and

(xiii) Cleaning operations identified as essential uses under the Montreal Protocol for which the U.S. EPA has allocated essential use allowances or exemptions.

13. Each owner or operator of an aerospace manufacturing and/or rework operation shall submit a monitoring plan to the Division that specifies the applicable operating parameter value, or range of values, to ensure ongoing compliance with subparagraph 2.(iii). The monitoring device shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's specifications.

14. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing an enclosed spray gun cleaner shall visually inspect the seals and all other potential sources of leaks at least once per month. Each inspection shall occur while the spray gun cleaner is in operation.

15. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing coatings specified in subparagraph 1. shall maintain the following records:

(i) If following the compliance option in subparagraph 2.(i), a current list of each coating formulation including the specific category, VOC content as applied, and the annual amount used for each coating.

(ii) If following the compliance option in subparagraph 2.(ii), a current list of each coating formulation including the specific category, VOC content as applied, the monthly amount used for each coating, and the calculated monthly volume-weighted average VOC content of each specified coating type expressed in pounds of VOC per gallon of coating, excluding water and exempt solvents.

(iii) If following the compliance option in subparagraph 2.(iii), continuous records demonstrating the control device was operating at the required destruction efficiency at all times the coating process was in operation and records demonstrating the control device was achieving the required destruction efficiency while the coating process was in operation.

(iv) If using the low volume usage exemption in subparagraph 10., a list of each separate formulation and quantity applied each month and the twelve-consecutive month total of each formulation and the twelve-consecutive month total of all materials exempted.

16. Each owner or operator of an aerospace manufacturing and/or rework operation utilizing cleaning solvents shall maintain the following records:

(i) Maintain a current list of hand-wipe and flush cleaning solvents with documentation that demonstrates that the cleaning solvent complies with one of the composition requirements in subparagraph 6.(i) and for semi aqueous cleaning solvent used for flush cleaning. This list shall include the annual amount of each applicable solvent used.

(ii) Maintain a current list of hand-wipe cleaning solvents with their respective vapor pressures or, for blended solvents, VOC composite vapor pressures for all vapor pressure compliant hand-wipe cleaning solvents listed in subparagraph 6.(ii). This list shall include the monthly amount of each applicable solvent used.

(iii) Maintain a current list of all cleaning solvents with a vapor pressure greater than 45 mm Hg used in exempt hand-wipe cleaning operations. This list shall identify the applicable exemption(s) for each process and include the monthly amount of each applicable solvent used.

(iv) Maintain a record of all leaks from enclosed gun cleaners, as found during the monthly inspection required by subparagraph 14.. The record shall include the identification of the leaking paint gun cleaner, the date the leak was discovered, and the date the leak was repaired.

17. For the purpose of subparagraph (kkk), the following definitions shall apply:

(i) "Ablative coating" means a coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

(ii) "Adhesion promoter" means a very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

(iii) "Adhesive bonding primer" means a primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F.

(iv) "Aerosol coating" means a coating applied by means of a hand-held, pressurized container, which is non-refillable or which utilizes non-refillable propellant canisters and which expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

(v) "Aerospace facility" means any facility that produces, reworks, or repairs in any amount any commercial, civil, or military aerospace vehicle or component. Regulated activities include coating, chemical milling, solvent use, and depainting operations.

(vi) "Aerospace vehicle or component" means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft.

(vii) "Aircraft transparency" means the aircraft windshield, canopy, passenger windows, lenses and other components which are constructed of transparent materials.

(viii) "Airless and air-assisted airless spray" mean any coating spray application technology that relies solely on the fluid pressure of the coating to create an atomized coating spray pattern and does not apply any atomizing compressed air to the coating before it leaves the spray gun nozzle. Air-assisted airless spray uses compressed air to shape and distribute the fan of atomized coating, but still uses fluid pressure to create the atomized coating.

(ix) "Antichafe coating" means a coating applied to areas of moving aerospace components that may rub during normal operations or installation.

(x) "Antique aerospace vehicle or component" means an aircraft or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

(xi) "Aqueous cleaning solvent" means a cleaning solvent in which water is the primary ingredient (greater than 80 percent by weight of cleaning solvent solution as applied must be water). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93°C (200°F) (as reported by the manufacturer) and the solution must be miscible with water.

(xii) "Bearing coating" means a coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

(xiii) "Bonding maskant" means a temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

(xiv) "Caulking and smoothing compounds" means semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can be classified as a sealant.

(xv) "Chemical agent-resistant coating (CARC)" means an exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

(xvi) "Chemical milling maskants" means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or Type II etchants and any of the above types of maskants are also not included in this definition. (See also Type I and Type II etchant definitions.)

(xvii) "Classified National Security Information" means information that has been determined pursuant to Executive Order 13526, "Classified National Security Information," December 29, 2009 or any successor order to require protection against unauthorized disclosure and is marked to indicate its classified status when in documentary form. The term "Classified Information" is an alternative term that may be used instead of "Classified National Security Information."

(xviii) "Cleaning operation" means collectively spray-gun, hand-wipe, and flush cleaning operations.

(xix) "Cleaning solvent" means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain no VOCs (i.e., VOC content less than 1.0 weight percent).

(xx) "Clear coating" means a transparent coating applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.

(xxi) "Coating" means a material that is applied to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, sealants, liquid plastic coatings, caulks, inks, adhesives, and maskants. Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances; paper film or plastic film which may be precoated with an adhesive by the film manufacturer; or pre-impregnated composite sheets are not considered coatings for the purposes of subparagraph (kkk). Materials in handheld non-refillable aerosol containers, touch-up markers, and marking pens are also not considered coatings for the purposes of subparagraph (kkk). A liquid plastic coating means a coating made from fine particle-size polyvinyl chloride (PVC) in solution (also referred to as a plastisol).

(xxii) "Coating operation" means using a spray booth, tank, or other enclosure or any area, such as a hangar, for applying a single type of coating (e.g., primer); using the same spray booth for applying another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

(xxiii) "Coating unit" means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area to be included in this definition.

(xxiv) "Commercial exterior aerodynamic structure primer" means a primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, landing gear, and doors, for the purpose of extended corrosion protection and enhanced adhesion.

(xxv) "Commercial interior adhesive" means materials used in the bonding of passenger cabin interior components. These components must meet FAA fireworthiness requirements.

(xxvi) "Compatible substrate primer" means either compatible epoxy primer or adhesive primer.

(xxvii) "Corrosion prevention compound" means a compound that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.

(xxviii) "Critical use and line sealer maskant" means a temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, or high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scrubbing operations are also included in this category.

(xxix) "Cryogenic flexible primer" means a primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-275°F and below).

(xxx) "Cryoprotective coating" means a coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or reentry, and prevent ice formation.

(xxxi) "Cyanoacrylate adhesive" means a fast-setting, single component adhesive that cures at room temperature. Also known as "super glue."

(xxxii) "Depainting operation" means the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or components. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue.

(xxxiii) "Dry lubricative material" means a coating consisting of lauric acid, cetyl alcohol, waxes, or other noncross linked resin-bond materials that act as a dry lubricant.

(xxxiv) "Electric or radiation-effect coating" means a coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lighting strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as "classified" by the Department of Defense are exempt.

(xxxv) "Electrostatic discharge and electromagnetic interference (EMI) coating" means a coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

(xxxvi) "Elevated-temperature Skydrol-resistant commercial primer" means a primer applied primarily to commercial-type aircraft that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150°F for 1,000 hours.

(xxxvii) "Epoxy polyamide topcoat" means a coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

(xxxviii) "Exempt solvent" means a specified organic compound that has been determined by the EPA to have negligible photochemical reactivity and is listed in 40 CFR 51.100 and/or 391-3-1-.01(llll).

(xxxix) "Fire-resistant (interior) coating" means for civilian aircraft, fire-resistant coatings are used on passenger cabin interior parts that are subject to the FAA fire-worthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts that are subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721. For space applications, these coatings are used on parts that are subject to the flammability requirements of SE-R-0006 and SSP 30233.

(xl) "Flexible primer" means a primer that meets flexibility requirements such as those needed for adhesive bond primer fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between fasteners, skin, and skin-to-skin joints on outer aircraft skins.

(xli) "Flight test coating" means a coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

(xlii) "Flush cleaning" means the removal of contaminants such as dirt, grease, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand actions used are not included in this definition.

(xliii) "Fuel tank adhesive" means a non-rubber based adhesive used to bond components exposed to fuel and which must be compatible with fuel tank coatings.

(xliv) "Fuel tank coating" means a coating applied to fuel tank components for the purpose of corrosion and/or bacterial growth inhibition and to assure sealant adhesion in extreme environmental conditions.

(xlv) "General aviation" means that segment of civil aviation that encompasses all facets of aviation except air carriers, commuters, and military. General aviation includes charter and corporate-executive transportation, instruction, rental, aerial application, aerial observation, business, pleasure, and other special uses.

(xlvi) "General aviation rework facility" means any aerospace facility with the majority of its revenues resulting from the reconstruction, repair, maintenance, repainting, conversion, or alteration of general aviation aerospace vehicles or components.

(xlvii) "Hand-wipe cleaning operation" means removing contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

(xlviii) "High temperature coating" means a coating designed to withstand temperatures of more than 350°F.

(xlix) "High volume low pressure (HVLP) spray equipment" means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

(l) "Hydrocarbon-based cleaning solvent" means a cleaning solvent that is composed of a mixture of photochemically reactive hydrocarbons and oxygenated hydrocarbons and have a maximum vapor pressure of seven mm Hg at 20°C. These cleaners also contain no hazardous air pollutants.

(li) "Insulation covering" means material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

(lii) "Intermediate release coating" means a thin coating applied beneath topcoats to assist in removing the topcoats in depainting operations and generally to allow the use of less hazardous depainting methods.

(liii) "Lacquer" means a clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

(liv) "Leak" means any visible leakage, including misting and clouding.

(lv) "Metallized epoxy coating" means a coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

(lvi) "Mold release" means a coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

(lvii) "Non-VOC material" means a primer, topcoat, specialty coating, chemical milling maskant, cleaning solvent, or stripper that contains no more than 1.0 percent by mass VOC.

(lviii) "Nonstructural adhesive" means an adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

(lix) "Optical antireflection coating" means a coating with a low reflectance in the infrared and visible wavelength ranges that is used for antireflection on or near optical and laser hardware.

(lx) "Part marking coating" means coatings or inks used to make identifying markings on material, components, and/or assemblies. These markings may be either permanent or temporary.

(lxi) "Pretreatment coating" means an organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal or composite surfaces provide surface etching, corrosion resistance, adhesion, and ease of stripping.

(lxii) "Primer" means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from

the environment, functional fluid resistance, and adhesion of subsequent coatings. Primers that are defined as specialty coatings are not included under this definition.

(lxiii) "Rain erosion-resistant coating" means a coating or coating system used to protect leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc., against erosion caused by rain impact during flight.

(lxiv) "Research and development" means an operation whose primary purpose is for research and development of new processes and products and that is conducted under the close supervision of technically trained personnel and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

(lxv) "Rocket motor bonding adhesive" means an adhesive used in rocket motor bonding applications.

(lxvi) "Rocket motor nozzle coating" means a catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

(lxvii) "Rubber-based adhesive" means a quick setting contact cement that provide a strong, yet flexible bond between two mating surfaces that may be of dissimilar materials.

(lxviii) "Scale Inhibitor" means a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

(lxix) "Screen print ink" means an ink used in screen printing processes during fabrication of decorative laminates and decals.

(lxx) "Sealant" means a material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components.

(lxxi) "Seal coat maskant" means an overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

(lxxii) "Self-priming topcoat" means a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

(lxxiii) "Semi-aqueous cleaning solvent" means a solution in which water is a primary ingredient (greater than 60 percent by weight of the solvent solution as applied must be water).

(lxxiv) "Silicone insulation material" means an insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

(lxxv) "Solid film lubricant" means a very thin coating consisting of a binder system containing as its main pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

(lxxvi) "Specialty coating" means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection.

(lxxvii) "Specialized function coating" means a coating that fulfills extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty coating categories.

(lxxviii) "Spray-applied coating operation" means coatings that are applied using a device that creates an atomized mist of coating and deposits the coating on a substrate. For the purposes of subparagraph (kkk), spray-applied coatings do not include the following materials or activities:

(I) Coatings applied from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters) in which no more than 3.0 fluid ounces of coating is applied in a single application (i.e., the total volume of a single coating formulation applied during any one day to any one aerospace vehicle or component). Under this definition, the use of multiple small paint cups and the refilling of a small paint cup to spray apply more than 3.0 fluid ounces of a coating is a spray-applied coating operation. Under this definition, the use of a paint cup liner in a reusable holder or cup that is designed to hold a liner with a capacity of more than 3.0 fluid ounces is a spray-applied coating operation.

(II) Application of coating using powder coating, hand-held non-refillable aerosol containers, or non-atomizing application technology, including but not limited to paint brushes, rollers, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, marking pens, trowels, spatulas, daubers, rags, sponges, mechanically and/or pneumatic-driven syringes, and inkjet machines.

(III) Application of adhesives, sealants, maskants, caulking materials, and inks.

(lxxix) "Spray gun" means a device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

(lxxx) "Stripper" means a liquid that is applied to an aerospace vehicle or component to remove permanent coatings such as primers, topcoats, and specialty coatings.

(lxxxi) "Structural autoclavable adhesive" means an adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

(lxxxii) "Structural nonautoclavable adhesive" means an adhesive used to bond load-carrying aerospace components that is cured under ambient conditions.

(lxxxiii) "Surface preparation" means the removal of contaminants from the surface of an aerospace vehicle or component or the activation or reactivation of the surface in preparation for the application of a coating.

(lxxxiv) "Temporary protective coating" means a coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions.

(lxxxv) "Thermal control coating" means a coating formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

(lxxxvi) "Topcoat" means a coating that is applied over a primer on a aerospace vehicle or component for appearance, identification, camouflage, or protection. Topcoats that are defined as specialty coatings are not included under this definition.

(lxxxvii) "Touch-up and repair coating" means a coating used to cover minor coating imperfections appearing after the main coating operation.

(lxxxviii) "Touch-up and repair operation" means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

(lxxxix) "Type I etchant" means a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

(xc) "Type II etchant" means a chemical milling etchant that is a strong sodium hydroxide solution containing amines.

(xci) "Wet fastener installation coating" means a primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

(xcii) "Wing coating" means a corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

18. Applicability.

(i) The requirements of subparagraph (kkk) shall apply to all aerospace facilities with potential emissions of volatile organic compounds exceeding 100 tons per year, except in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale, where facilities with potential emissions of volatile organic compounds exceeding 25 tons per year are subject to subparagraph (kkk).

(ii) Effective January 1, 2015, the requirements of subparagraph (kkk) shall apply to all aerospace facilities with potential emissions of volatile organic compounds exceeding 25 tons per year in Barrow, Bartow, Carroll, Hall, Newton, Spalding, or Walton County. The requirements of this subparagraph (ii) will no longer be applicable if the counties specified in this subparagraph (ii) are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in these counties or the counties specified in subparagraph (i) above, the requirements of this subparagraph (ii) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

19. Compliance Dates.

(i) All aerospace facilities subject to subparagraph (kkk) and located in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale shall be in compliance.

(ii) All aerospace facilities subject to subparagraph (kkk); located outside Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale counties; and in operation on or before October 1, 1999, shall be in compliance by January 1, 2001.

(iii) All aerospace facilities subject to subparagraph (kkk); located outside Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale counties; and which begin initial operation after October 1, 1999, shall be in compliance upon startup.

(iv) All aerospace facilities subject to subparagraph (kkk) and utilizing specialty coatings that begin operation after the effective date of this rule shall be in compliance upon startup. All aerospace facilities subject to subparagraph (kkk) and utilizing specialty coatings that are in operation on or before the effective date of this rule shall be in compliance on or before March 31, 2019.

(lll) **NOx Emissions From Fuel-Burning Equipment.**

1. No person shall cause, let, suffer, permit, or allow the emission of nitrogen oxides (NOx) from an affected unit under this subparagraph that is installed or modified on or after May 1, 1999, to exceed 30 ppm at 3% oxygen on a dry basis.

2. The requirements of this subparagraph shall apply during the period May 1 through September 30 of each year.

3. All affected units subject to this subparagraph shall be in compliance on or before May 1, 2000.

4. The requirements contained in Subparagraph 1. shall apply to all such affected units as defined in subparagraph 5.(i) that are located in the counties of Banks, Barrow, Bartow, Butts, Carroll, Chattooga, Cherokee, Clarke,

Clayton, Cobb, Coweta, Dawson, DeKalb, Douglas, Fayette, Floyd, Forsyth, Fulton, Gordon, Gwinnett, Hall, Haralson, Heard, Henry, Jackson, Jasper, Jones, Lamar, Lumpkin, Madison, Meriwether, Monroe, Morgan, Newton, Oconee, Paulding, Pickens, Pike, Polk, Putnam, Rockdale, Spalding, Troup, Upson, and Walton.

5. For the purpose of this subparagraph, the following definitions apply:

(i) "Affected Unit" means fuel-burning equipment with a maximum design heat input capacity equal to or greater than 10 MMBTU/hr and less than or equal to 250 MMBTU/hr.

(ii) "Annual Capacity Factor" as used in this subparagraph means the ratio between the actual heat input to the fuel-burning equipment from fuels other than wood during a period of 12 consecutive calendar months and the potential heat input to the fuel-burning equipment from all fuels had the fuel-burning equipment been operated 8,760 hours during that 12-month period at the maximum design heat input capacity.

(iii) "Modified" as used in subparagraph 1. shall be as defined in 40 CFR 60.14.

(iv) "Wood" means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

6. The requirements of this subparagraph do not apply to the following:

(i) Fuel-burning equipment, which was permitted under 391-3-1-.03(1) on or before May 1, 1999, or which was brought onto the facility on or before May 1, 1999.

(ii) Duct burners associated with combined cycle gas turbines.

(iii) Fuel-burning equipment located in any of the following counties: Banks, Butts, Chattooga, Clarke, Dawson, Floyd, Gordon, Haralson, Heard, Jackson, Jasper, Jones, Lamar, Lumpkin, Madison, Meriwether, Monroe, Morgan, Oconee, Pickens, Pike, Polk, Putnam, Troup, and Upson that combusts either:

(I) wood alone; or

(II) wood in combination with any other fuel and has annual capacity factor for the other fuels of 10 percent (0.10) or less and is subject to an enforceable requirement limiting operation of the equipment to an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(mmm) **NOx Emissions from Stationary Gas Turbines and Stationary Engines used to Generate Electricity.**

1. No person shall cause, let, suffer, permit, or allow the emission of nitrogen oxides (NOx), from any stationary gas turbine or any stationary engine used to generate electricity whose nameplate capacity is greater than or equal to 100 kilowatts (KWe) and is less than or equal to 25 megawatts (MWe), to exceed the following:

(i) For stationary engines in operation before April 1, 2000:

160 ppm @ 15% O_2, dry basis

(ii) For stationary engines installed or modified on or after April 1, 2000:

80 ppm @ 15% O_2, dry basis

(iii) For stationary gas turbines in operation on or after January 1, 1999 and before October 1, 1999:

42 ppm @ 15% O_2, dry basis

(iv) For stationary gas turbines installed or modified on or after October 1, 1999:

30 ppm @ 15% O_2, dry basis

2. The requirements of this subsection shall apply during the period May 1 through September 30 of each year.

3. Compliance Dates.

(i) For stationary engines in operation before April 1, 2000, the affected unit shall comply with the applicable standard under paragraph 1 above by May 1, 2003.

(ii) For stationary engines installed or modified on or after April 1, 2000, the affected unit shall comply with the applicable standard under paragraph 1 upon startup of the affected unit.

(iii) For stationary gas turbines in operation on or after January 1, 1999 and before October 1, 1999, the affected unit shall comply with the applicable standard under paragraph 1 above by May 1, 2000.

(iv) For stationary gas turbines in installed or modified on or after October 1, 1999, the affected unit shall comply with the applicable standard under paragraph 1 upon startup of the affected unit.

4. For the purpose of this subsection, the following definitions apply:

(i) "Emergency standby stationary gas turbines and stationary engines" means any stationary gas turbine or stationary engine that operates only when electric power from the local utility is not available and which operates less than 200 hours per year.

(ii) "Modified" shall be as defined in 40 CFR 60.14.

(iii) "Stationary engine" means any spark or compression ignited internal combustion engine which is either attached to a foundation at a facility or is portable equipment located at a specific facility.

(iv) "Stationary gas turbine" means any gas turbine that is gas and/or liquid fueled with or without power augmentation. It is either attached to a foundation at a facility or is portable equipment located at a specific facility.

5. Exemptions.

The following units are exempt from the provisions of this subsection:

(i) Stationary engines used to power portable rock crushing plants.

(ii) Stationary engines used directly and exclusively for agricultural operation necessary for the growing of crops or the raising of fowl or animals.

(iii) Stationary gas turbines and stationary engines not connected to an electrical generator.

(iv) Laboratory engines or gas turbines used for research and testing purposes.

(v) Engines or gas turbines operated by the manufacturer or distributor of such equipment for purposes of performance verification and testing at the production facility.

(vi) Portable, temporary generators used for special events (i.e., county fair, circus) provided the event does not last more than 14 days.

(vii) Nonroad engines as defined in 40 CFR 89.2.

6. The requirements contained in this subsection shall apply to all such sources located in the counties of Banks, Barrow, Bartow, Butts, Carroll, Chattooga, Cherokee, Clarke, Clayton, Cobb, Coweta, Dawson, DeKalb, Douglas,

Fayette, Floyd, Forsyth, Fulton, Gordon, Gwinnett, Hall, Haralson, Heard, Henry, Jackson, Jasper, Jones, Lamar, Lumpkin, Madison, Meriwether, Monroe, Morgan, Newton, Oconee, Paulding, Pickens, Pike, Polk, Putnam, Rockdale, Spalding, Troup, Upson, and Walton.

7. Emergency standby stationary gas turbines and stationary engines which meet the definition stated in paragraph 4.(i) are not subject to the emission limitations of paragraph 1.

8. Stationary engines at data centers that meet all of the following criteria are not subject to the emission limitations in subparagraph 1:

(i) Operate only for routine testing and maintenance, when electric power from the local utility is not available, or during internal system failures;

(ii) Total annual operation for the engine is less than 500 hours per year;

(iii) Operation for routine testing and maintenance during the months of May through September occurs only between 10 p.m. to 4 a.m. Operation for routine testing and maintenance during the months of January through April and October through December may be done during any time of day; and

(iv) The facility maintains records of all operation, including the reason for the operation.

(nnn) **NOx Emissions from Large Stationary Gas Turbines.**

1. No person shall cause, let, suffer, permit, or allow the emission of nitrogen oxides (NOx), from any stationary gas turbine whose nameplate capacity is greater than 25 megawatts (MWe), to exceed the following:

(i) For stationary gas turbines permitted under 391-3-1-.03(1) before April 1, 2000:

30 ppm @ 15% O_2, dry basis

(ii) [reserved]

(iii) For stationary gas turbines permitted under 391-3-1-.03(1) on or after April 1, 2000:

6 ppm @ 15% O_2, dry basis

2. The requirements of this subparagraph shall apply during the period May 1 through September 30 of each year.

3. Compliance Dates.

(i) Stationary gas turbines subject to subparagraph 1.(i) above shall comply by May 1, 2003.

(ii) Stationary gas turbines subject to subparagraph 1.(iii) above shall be in compliance upon startup.

4. The requirements contained in subparagraph 1.(iii) of this subparagraph shall not apply to stationary gas turbines subject to NOx emission limits established between April 1, 2000, and February 21, 2023 (inclusive).

5. By no later than May 1, 2003, the owner/operator of an affected unit may submit actual operating performance data on the affected unit, with the emission reduction technologies, as approved by the Director, in place and optimized on the affected unit, sufficient to allow the Director to determine if the NOx emission limit in subparagraph 1.(i) is technically achievable taking into account the cost and feasibility of available control options. Based on the Director's review of the data provided, this rule may be modified.

6. The requirements contained in this subparagraph shall apply to all such sources located in the counties of Banks, Barrow, Bartow, Butts, Carroll, Chattooga, Cherokee, Clarke, Clayton, Cobb, Coweta, Dawson, DeKalb, Douglas, Fayette, Floyd, Forsyth, Fulton, Gordon, Gwinnett, Hall, Haralson, Heard, Henry, Jackson, Jasper, Jones, Lamar,

Lumpkin, Madison, Meriwether, Monroe, Morgan, Newton, Oconee, Paulding, Pickens, Pike, Polk, Putnam, Rockdale, Spalding, Troup, Upson, and Walton.

7. Exemptions.

The following units are exempt from the provisions of this subparagraph provided that they only operate under the following conditions:

(i) Units operating for purposes of routine testing, to maintain operability, not to exceed three (3) hours per month.

(ii) Units operating under one of the following emergency conditions. For the purpose of restarting the steam-electric generating units when all steam-electric generating units at a facility are down and off-site power is not available (also known as a "Black Start"). Or, when power problems on the grid would necessitate implementing manual load shedding procedures for retail customers (Note: This does not apply to special rate structure conditions).

(ooo) **Reserved.**

(ppp) **Commercial and Industrial Solid Waste Incineration Units.**

1. The provisions of this subparagraph apply to each commercial and industrial solid waste incinerator (CISWI) unit that commenced construction on or before June 4, 2010, or commenced modification or reconstruction after June 4, 2010 but no later than August 7, 2013 (hereinafter referred to as "existing CISWI unit").

(i) For the purposes of this subparagraph, a "CISWI unit" means any unit that meets the definition of "Commercial and industrial solid waste incineration (CISWI) unit" in 40 CFR Part 60, Subpart DDDD. The types of CISWI units include the following: incinerators; air curtain incinerators; small, remote incinerators; waste-burning kilns; and energy recovery units. Physical or operational changes made at an existing CISWI unit solely to comply with this subparagraph are not considered construction, reconstruction, or modification and would not subject an existing CISWI unit to the requirements of Georgia rule 391-3-1-.02(8)(b)75.

(ii) The following units are exempt from the requirements of this subparagraph:

(I) This subparagraph exempts the types of units described in subparagraphs I. through XI., but some units are required to provide notifications. Air curtain incinerators are exempt from the requirements in this subparagraph except for the provisions in 40 CFR 60.2805, 60.2860, and 60.2870.

I. Pathological waste incineration units. Incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low level radioactive waste, and/or chemotherapeutic waste as defined in 40 CFR 60.2875 are not subject to this subpart if you meet the two requirements specified in subparagraphs I.A. and B.

A. Notify the Administrator that the unit meets these criteria.

B. Keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/ or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit.

II. Municipal waste combustion units. Incineration units that are subject to 40 CFR Part 60, Subpart Ea (Standards of Performance for Municipal Waste Combustors); 40 CFR Part 60, Subpart Eb (Standards of Performance for Large Municipal Waste Combustors); 40 CFR Part 60, Subpart Cb (Emission Guidelines and Compliance Time for Large Municipal Combustors); 40 CFR Part 60, Subpart AAAA (Standards of Performance for Small Municipal Waste Combustion Units); or 40 CFR Part 60, Subpart BBBB (Emission Guidelines for Small Municipal Waste Combustion Units).

III. Medical waste incineration units. Incineration units regulated under 40 CFR Part 60, Subpart Ec (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June

20, 1996) or 40 CFR Part 60, Subpart Ce (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators).

IV. Small power production facilities as specified below.

A. The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

B. The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

C. You submit documentation to the Director and notify the EPA Administrator that the qualifying small power production facility is combusting homogenous waste.

D. You maintain the records specified in 40 CFR 60.2740(v).

V. Cogeneration facilities as specified below.

A. The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

B. The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

C. You submit documentation to the Director and notify the EPA Administrator that the qualifying cogeneration facility is combusting homogenous waste.

D. You maintain the records specified in 40 CFR 60.2740(w).

VI. Hazardous waste combustion units. Units for which you are required to get a permit under section 3005 of the Solid Waste Disposal Act.

VII. Materials recovery units. Units that combust waste for the primary purpose of recovering metals, such as primary and secondary smelters.

VIII. Air curtain incinerators. Air curtain incinerators that burn only the materials listed in paragraphs VIII.A. through C. of this section are only required to meet the requirements under "Air Curtain Incinerators" (40 CFR 60.2810 through 60.2870).

A. 100 percent wood waste.

B. 100 percent clean lumber.

C. 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

IX. Sewage treatment plants. Incineration units regulated under Subpart O of 40 CFR Part 60 (Standards of Performance for Sewage Treatment Plants).

X. Sewage sludge incineration units. Incineration units combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter that are subject to 40 CFR Part 60, Subpart LLLL (Standards of Performance for Sewage Sludge Incineration Units) or 40 CFR Part 60, Subpart MMMM (Emission Guidelines for Sewage Sludge Incineration Units).

XI. Other solid waste incineration units. Incineration units that are subject to 40 CFR Part 60, Subpart EEEE (Standards of Performance for Other Solid Waste Incineration Units) or 40 CFR Part 60, Subpart FFFF (Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units).

2. Each existing CISWI unit shall comply with the model rule standards, requirements, and provisions of 40 CFR Part 60, Subpart DDDD (Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units), as amended on March 20, 2023, which are hereby incorporated and adopted by reference.

(i) For the purposes of implementing the requirements and provisions of 40 CFR Part 60, Subpart DDDD, the following provisions are hereby incorporated and adopted by reference:

(I) 40 CFR 60.2575 through 40 CFR 60.2615, Increments of Progress except that in 40 CFR 60.2580, "table 1 of this subpart" is replaced with "391-3-1-.02(2)(ppp)6."; and in 40 CFR 60.2595, "for that increment of progress in table 1 of this subpart" is replaced with "in 391-3-1-.02(2)(ppp)6.".

(II) 40 CFR 60.2620 through 40 CFR 60.2630, Waste Management Plan except that in 40 CFR 60.2625, "table 1 of this subpart for submittal of the final control plan" is replaced with "391-3-1-.02(2)(ppp)6.".

(III) 40 CFR 60.2635 through 40 CFR 60.2665, Operator Training and Qualification.

(IV) 40 CFR 60.2670 through 60.2680, Emission Limitations and Operating Limits.

(V) 40 CFR 60.2690 through 60.2695, Performance Testing.

(VI) 40 CFR 60.2700 through 60.2706, Initial Compliance Requirements except that in 40 CFR 60.2705(a), "table 1 of this subpart" is replaced with "391-3-1-.02(2)(ppp)6.".

(VII) 40 CFR 60.2710 through 60.2725, Continuous Compliance Requirements.

(VIII) 40 CFR 60.2730 through 60.2735, Monitoring.

(IX) 40 CFR 60.2740 through 60.2800, Recordkeeping and Reporting with the exception of the following:

I. In 40 CFR 60.2755, "table 1 of this subpart for submittal of the final control plan" is replaced with "391-3-1-.02(2)(ppp)6.".

II. In lieu of 40 CFR 60.2795(b)(1)&(2):

A. Within 60 days after the date of completing each performance test as required by this subparagraph, each owner or operator must submit the results of the performance test required by this subparagraph to the Director. Performance test results required to be submitted to EPA must follow provision 40 CFR 60.2795(b)(1).

B. Within 60 days after the date of completing each CEMS performance evaluation test, as defined in this subparagraph and required by this subparagraph, each owner or operator must submit the relative accuracy test audit (RATA) data, to the Director. RATA data required to be submitted to EPA must follow provision 40 CFR 60.2795(b)(2).

(X) 40 CFR 60.2805, Title V Operating Permits.

(XI) 40 CFR 60.2810 through 60.2870, Air Curtain Incinerators except that in 40 CFR 60.2820, "table 1 of this subpart" is replaced with "391-3-1-.02(2)(ppp)6."; and in 40 CFR 60.2835, "for that increment of progress in table 1 of this subpart" is replaced with "391-3-1-.02(2)(ppp)6.".

(XII) 40 CFR 60.2875, Definitions.

(XIII) 40 CFR Part 60 Subpart DDDD Tables 2 through 9 except that in Table 5, in the Due Date column for the Waste Management Plan report, "table 1 for the submittal of the final control plan" is replaced with "391-3-1-.02(2)(ppp)6.".

3. The owner of an existing CISWI unit must contact EPA with respect to the authorities specified in 40 CFR Part 60.2542.

4. Each Existing CISWI unit is subject to the permitting requirements of 391-3-1-.03(10) "Title V Operating Permits".

5. Definitions of all terms used, but not defined in this subparagraph, shall have the meaning given to them in 40 CFR Part 60, Subpart DDDD, as amended. Terms not defined therein shall have the meaning given to them in the federal Clean Air Act or 40 CFR Part 60, Subparts A and B. For the purposes of this subparagraph the following definitions also apply:

(i) Except as noted, the word "Administrator" as used in regulations adopted by reference in this subparagraph shall mean the Director of the Georgia Environmental Protection Division. For subparagraph (ppp)3. the word "Administrator" shall mean the Administrator of the EPA.

(ii) The term "Air Curtain Incinerator" as used in regulations adopted in this subparagraph shall mean an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

(iii) The term "You" means the owner or operator of a CISWI unit subject to this rule.

6. In keeping with subparagraph (ppp)2., owners and operators of existing CISWI units must comply with Georgia's state plan for existing CISWI units, which is required by 40 CFR Part 60, Subpart DDDD. The owner operator of each existing CISWI unit shall comply with the requirements of 391-3-1-.02(2)(ppp)2. upon approval of Georgia's state plan for existing CISWI units by EPA.

(qqq) **VOC Emissions from Extruded Polystyrene Products Manufacturing Utilizing a Blowing Agent.**

1. No person shall cause, let, permit, suffer, or allow the three-month rolling average VOC emissions from an existing extruded polystyrene (XPS) products manufacturing facility that utilizes a blowing agent, to exceed 0.8 lbs per 100 lbs of raw material processed during any month. Compliance with this limit shall be calculated as follows:

Final VOC Emissions = (Facility VOC Emissions)/(Raw Material)

2. No person shall cause, let, permit, suffer, or allow the three-month rolling average VOC emissions from any new or reconstructed extruded polystyrene (XPS) products manufacturing facility that utilizes a blowing agent, to exceed 0.3 lbs per 100 lbs of raw material processed during any month. Compliance with this limit shall be calculated as follows:

Final VOC Emissions = (Facility VOC Emissions)/(Raw Material)

3. For the purposes of subparagraphs 1 and 2 above, the VOC emissions from the product manufacturing operations and the post-manufacturing operations are to be calculated as follows:

Facility VOC Emissions =

$$\sum_{i=1}^{m} B_i(1 - OCE_i) +$$

$$\sum_{i=1}^{n}$$

$C_i(1 - OCE_i)$ +

$$\sum_{i=1}^{p}$$

$E_i(1 - OCE_i)$

B = A - C - D

A = VOC Blowing Agent Used (pounds per any consecutive three-month period)

B = VOC Emissions Primary Extrusion, Roll Storage, and Thermoforming (Uncontrolled) for each control device (pounds per any consecutive three-month period)

C = VOC in the Reclaim Material (pounds per any consecutive three-month period)

D = VOC in the Final Product (pounds per any consecutive three-month period)

E = VOC Emissions from Finished Goods Warehouses (Uncontrolled) (pounds per any consecutive three-month period)

OCE = Overall Control Efficiency of a control device = [(CE)/100*(DE)/100*(UT)/100]

CE = Capture Efficiency of a Control Device (percent VOC captured)

DE = Destruction Efficiency of a Control Device (percent VOC destruction)

UT = Percentage of operating time for the control device (for the consecutive three-month period)

n = Total number of control device systems associated with primary extrusion, roll storage, and thermoforming

m = Total number of control device systems associated with the reclaim system

p = Total number of control device systems associated with the finished goods warehouses

4. Exemptions.

(i) The provisions of subparagraphs 1 and 2 above shall not apply to Extruded Polystyrene Products Manufacturing facilities at any single site that processes less than 200 pounds per day of raw material.

(ii) The provisions of subparagraphs 1and 2 above shall not apply to any single site that contains one or more XPS post-manufacturing operations and does not contain any XPS product manufacturing operations.

5. Any owner or operator subject to subparagraphs 1 or 2 above shall maintain a record of operations, including but not limited to the amount of raw material processed, the equipment used, the type of blowing agent used, and operation and maintenance records of all VOC emission control systems such as temperature, pressure, flow rate, and other measures to demonstrate compliance with subparagraphs 1 or 2, as applicable. Such records shall be maintained in a format specified by the Division and shall be retained on site for a period of five years from the date of record and shall be made available to the Division upon request.

6. For the purpose of this rule, the following definitions shall apply:

(i) "Affected Facility" means the entire Extruded Polystyrene (XPS) manufacturing operations and post-manufacturing operations at a single site.

(ii) "Blowing Agent" means a liquid, gaseous or solid material that facilitates the formation of a cellular product from raw polymeric material.

(iii) "Existing Extruded Polystyrene (XPS) Products Manufacturing Facility" means any such facility that begins initial operation on or before April 16, 2003.

(iv) "Extruded Polystyrene (XPS) Products Manufacturing Facility" means a series of processes, where a blowing agent is injected into an extruded polystyrene resin and processed through cup, block, or shape molding into low-density, closed cell, cellular products. XPS products include but are not limited to insulation board, product and food packaging material. For the purposes of the applicability thresholds in subparagraph 7 below, all of the potential VOC emissions from the affected facility at a single site should be counted toward the emission thresholds. XPS product manufacturing facility includes all product manufacturing operations as well as post-manufacturing operations.

(v) "Facility VOC Emissions" means VOC emissions from the product manufacturing operation and the post-manufacturing operation during any consecutive three-month period as calculated per subparagraph 3 above.

(vi) "Final VOC Emissions" means VOC emission calculations that are expressed in pounds VOC emitted from the facility per 100 pounds of raw material processed during any consecutive three-month period as calculated per subparagraphs 1 and 2 above.

(vii) "New Extruded Polystyrene (XPS) Products Manufacturing Facility" means any such facility that begins initial operation after April 16, 2003.

(viii) "Product Manufacturing Operation" means every step of the processing of a polymeric material from the delivery of the raw material, up until the storage of the final cellular product.

(ix) "Post-Manufacturing Operation" means the storage of the final cellular product.

(x) "Raw Material" means all polystyrene (including recycle polystyrene from reclaim systems), additives, and blowing agent used in the manufacture of polymeric cellular products during any consecutive three-month period.

(xi) "Reconstructed" means the replacement or addition of components at an existing affected facility in which the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable affected facility.

(xii) "Reconstructed Extruded Polystyrene (XPS) Products Manufacturing Facility" means any existing facility that is reconstructed after April 16, 2003.

(xiii) "Single Site" means any stationary source or group of stationary sources that are located on one or more contiguous or adjacent properties and are under common control.

7. The requirements of this rule shall apply to all Extruded Polystyrene (XPS) Products Manufacturing facilities, at a single site, with potential VOC emissions from product manufacturing and post-manufacturing operations equal to or exceeding 25 tons per year in the counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding and Rockdale. In the counties of Bartow, Carroll, Hall, Newton, Spalding and Walton, facilities, at a single site, with potential VOC emissions from product manufacturing and post-manufacturing operations equal to or exceeding 100 tons per year are subject to this rule.

8. Compliance Dates.

(i) All existing facilities shall be subject to the following compliance schedule:

(I) Existing facilities shall submit a letter to the Division no later than May 1, 2003, indicating the option they are considering to comply with the limit in subparagraph 1. These options shall be either installation and use of additional VOC emission control systems or a blowing agent substitution.

(II) Existing facilities that choose to install and operate additional VOC emission control systems shall do the following:

1. An application for a permit to construct for the installation of VOC emission control systems shall be submitted no later than November 1, 2003.

2. Full compliance with the limit in subparagraph 1 above shall be demonstrated no later than November 1, 2004.

(III) Existing facilities that choose a blowing agent substitution shall do the following:

1. Two six-month progress reports shall be submitted to the Division no later than November 1, 2003, and May 1, 2004.

2. Full compliance with the limit in subparagraph one above shall be demonstrated no later than November 1, 2004.

3. If the facility cannot comply with the limit, then an application for a permit to construct for the installation of VOC emission control systems shall be submitted no later than November 1, 2004, and full compliance with the limit in subparagraph 1 above shall be demonstrated no later than January 1, 2006.

(i) All new or reconstructed facilities shall be subject to the limit in subparagraph 2 upon startup.

(rrr) **NOx Emissions from Small Fuel-Burning Equipment.**

1. The owner or operator of an affected unit as defined in subparagraph 4. shall:

(i) Perform an annual tune-up of each affected unit, no earlier than February 1 and no later than May 1 of each calendar year. The annual tune-up shall be performed using the manufacturer's recommended settings for reduced NOx emissions, or using a NOx analyzer so that NOx emissions are minimized in a manner consistent with good combustion practices and safe fuel-burning equipment operation.

(ii) Fire only natural gas, LPG or propane in an affected unit during the calendar months of May through September of each year. If an affected unit is not equipped to fire LPG or propane, the owner or operator shall be excused from this requirement only during periods of natural gas curtailment as defined in subparagraph 5.

(iii) Maintain records of all tune-ups required to be performed in accordance with subparagraph 1.(i). These records shall indicate the date and time the tune-up was performed, state what burner settings were implemented to minimize NOx emissions, and explain how those settings were determined. All documents and calculations used to determine reduced NOx fuel-burning equipment settings shall be kept as part of the tune-up, maintenance and adjustments records. All records required by this subparagraph shall be retained available for inspection or submittal either in written or electronic form for at least five years from the date of record.

2. The owner or operator shall cause all affected units in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, or Rockdale County to be in compliance with the requirements of this paragraph on or before May 15, 2005, and the owner or operator shall cause all affected units in Barrow, Bartow, Carroll, Hall, Newton, Spalding or Walton County to be in compliance with the requirements of this paragraph on or before March 1, 2009.

3. As an alternative to complying with the requirements of this paragraph, the owner or operator of any affected emissions unit(s) may elect to comply with the requirements of paragraph 391-3-1-.02(2)(yy).

4. For the purposes of this paragraph, the term "affected unit" means individual fuel burning equipment that:

(i) is not subject to the requirements of paragraphs 391-3-1-.02(2)(jjj) or 391-3-1-.02(2)(lll); and

(ii) is located at a facility having (from all emission sources combined) potential emissions of nitrogen oxides, expressed as nitrogen dioxide, exceeding 25 tons-per-year in Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, or Rockdale County or any facility having (from all emission sources combined) potential emissions of nitrogen oxides, expressed as nitrogen dioxide, exceeding 100 tons-per-year in Barrow, Bartow, Carroll, Hall, Newton, Spalding or Walton County; and

(iii) has potential emissions (from the individual fuel burning equipment) of nitrogen oxides, expressed as nitrogen dioxide, equal to or exceeding one ton per year; and either

(iv) was installed before May 1, 1999 and has a maximum design heat input capacity of less than 100 million BTU-per-hour, or

(v) was installed on or after May 1, 1999 and has a maximum design heat input capacity of less than 10 million BTU-per-hour.

5. For the purposes of this paragraph, the term "natural gas curtailment" means any period during which the supply of natural gas is not available for firing in an affected unit, for reasons beyond the control of and not related to any action or decision of the owner or operator.

6. An affected unit shall be exempt from the requirements of subparagraph 1, provided the owner or operator submits such documentation as specified in the facility's air quality permit confirming that the affected unit will not be operated during the months of May through September.

(sss) **Multipollutant Control for Electric Utility Steam Generating Units.**

1. **Effective December 31, 2008**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Bowen Unit 4 unless such source is equipped and operated with selective catalytic reduction and flue gas desulfurization.

(ii) Plant Bowen Unit 3 unless such source is equipped and operated with selective catalytic reduction and flue gas desulfurization.

(iii) Plant Wansley Unit 1 unless such source is equipped and operated with selective catalytic reduction and flue gas desulfurization.

(iv) Plant Hammond Unit 1 unless such source is equipped and operated with flue gas desulfurization.

(v) Plant Hammond Unit 2 unless such source is equipped and operated with flue gas desulfurization.

(vi) Plant Hammond Unit 3 unless such source is equipped and operated with flue gas desulfurization.

(vii) Plant Hammond Unit 4 unless such source is equipped and operated with selective catalytic reduction and flue gas desulfurization.

(viii) Plant Yates Unit 1 unless such source is equipped and operated with flue gas desulfurization.

2. **Effective June 1, 2009**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Bowen Unit 2 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

(ii) Plant Scherer Unit 2 unless such source is equipped and operated with sorbent injection and a baghouse.

(iii) Plant Scherer Unit 3 unless such source is equipped and operated with sorbent injection and a baghouse.

3. **Effective December 31, 2009**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Scherer Unit 1 unless such source is equipped and operated with sorbent injection and a baghouse.

(ii) Plant Wansley Unit 2 unless such source is equipped and operated with selective catalytic reduction and flue gas desulfurization.

4. **Effective April 30, 2010**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Scherer Unit 4 unless such source is equipped and operated with sorbent injection and a baghouse.

5. **Effective June 1, 2010**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Bowen Unit 1 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

6. **Effective July 1, 2011**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Scherer Unit 3 unless such source is equipped and operated with selective catalytic reduction, flue gas desulfurization, sorbent injection, and a baghouse; provided that the owner or operator is not required to operate the selective catalytic reduction system during the months of January through April and October through December of each year.

7. **Effective December 31, 2011**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) [reserved]

(ii) Plant McDonough Unit 2 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

8. **Effective April 30, 2012**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant McDonough Unit 1 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

9. **Effective December 31, 2012**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Scherer Unit 4 unless such source is equipped and operated with selective catalytic reduction, flue gas desulfurization, sorbent injection, and a baghouse, provided that the owner or operator is not required to operate the selective catalytic reduction system during the months of January through April and October through December of each year.

10. **Effective October 1, 2013**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Branch Unit 2 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

11. **Effective December 31, 2013**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) [reserved]

(ii) Plant Scherer Unit 2 unless such source is equipped and operated with selective catalytic reduction, flue gas desulfurization, sorbent injection, and a baghouse, provided that the owner or operator is not required to operate the selective catalytic reduction system during the months of January through April and October through December of each year.

(iii) [reserved]

12. **Effective December 31, 2014**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) [reserved]

(ii) [reserved]

(iii) Plant Scherer Unit 1 unless such source is equipped and operated with selective catalytic reduction, flue gas desulfurization, sorbent injection, and a baghouse; provided that the owner or operator is not required to operate the selective catalytic reduction system during the months of January through April and October through December of each year.

13. **Effective April 16, 2015**, no person shall cause, let, permit, suffer or allow the operation of the following affected units except as specified below:

(i) Plant Yates Unit 6 unless such source is operated as a natural gas-fired electric utility steam generating unit or is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

(ii) Plant Yates Unit 7 unless such source is operated as a natural gas-fired electric utility steam generating unit or is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

(iii) Plant Yates Units 2, 3, 4, and 5 unless such sources are operated as natural gas-fired electric steam generating units.

(iv) Plant Branch Unit 1 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

(v) Plant Branch Unit 3 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

(vi) Plant Branch Unit 4 unless such source is equipped and operated with selective catalytic reduction (SCR) and flue gas desulfurization (FGD).

(vii) Plant Yates Unit 1 unless such source is operated as a natural gas-fired electric utility steam generating unit and is equipped and operated with flue gas desulfurization when burning coal.

14. [reserved]

15. [reserved]

16. **Effective January 1, 2018**, should the annual heat input (from coal combustion) of the following unit or group of units exceed the levels specified in each Subparagraphs 16.(i) through 16.(iii), the owner/operator will comply with the requirements specified in Subparagraph 16.(v):

(i) Plant Kraft Units 1, 2, and 3 with a total annual heat input of 17,911,898 million Btu;

(ii) Plant McIntosh Unit 1 with a total annual heat input of 14,557,638 million Btu;

(iii) Plant Mitchell Unit 3 with a total annual heat input of 8,621,580 million Btu;

(iv) [reserved]

(v) The owner/operator shall evaluate the economic and technical feasibility of additional mercury controls on the applicable unit(s) specified in Subparagraphs 16.(i) through 16.(iii), and submit a report on their findings to the Division no later than September 1 of the calendar year following the calendar year that the annual heat input exceeded the applicable level specified in Subparagraphs 16.(i) through 16.(iii).

(vi) The Division will review the report submitted in accordance with Subparagraph 16.(v) and determine if additional mercury controls are required and, if additional mercury controls are required, establish deadlines for submission of a permit application(s) to the Division and for start-up of such mercury controls.

(vii) The Division will document the results of its evaluation conducted in accordance with Subparagraph 16.(vi) and notify the owner and/or operator within a timely fashion whether additional mercury controls are required.

17. **Control Equipment Monitoring Design:** For the anticipated range of operations of the affected units specified in Subparagraphs 1. through 13., the designated representative shall follow the procedures given in Section 2.124 of the Division's **Procedures for Testing and Monitoring Sources of Air Pollutants** for the establishment of optimized operating parameters for the applicable control equipment installed as required in Subparagraphs 1. through 13.

18. **Alternative Control Technology:** The owner/operator of an affected unit specified in Subparagraphs 1. through 13. may operate alternative control technology or alternative method of emissions reductions from that which is specified in the applicable Subparagraphs 1. through 13. if the following requirements are met:

(i) The Division has approved the operation of the alternative control technology or the alternative method of emission reductions as being capable of achieving reductions of NOx, SO_2 and/or mercury emissions equivalent to or greater than the control technology requirement specified in applicable Subparagraphs 1. through 13. for an individual emissions unit or the respective plant site as a whole; and

(ii) The owner/operator has obtained the appropriate permit(s) from the Division prior to operating the alternative control technology.

19. **The owner or operator** of any electric utility steam generating unit subject to this subsection may submit a request to the Director to delay implementation of any of the controls required by Subparagraphs 1. through 13. for a specific electric utility steam generating unit if there is a delay caused by reasonably unforeseen circumstances beyond the control of the owner operator. Any delay allowed under this subparagraph is subject to review and approval by the Division. Reasonably unforeseen circumstances beyond the control of the owner or operator shall include, without limitation, the following:

(i) Failure to secure timely and necessary federal, state or local approvals, responses, notifications or permits to install the controls, provided that such approvals or permits have been timely and diligently sought;

(ii) Act of God, act of war, insurrection, civil disturbance, flood or other extraordinary weather conditions, vandalism, contractor or supplier strikes or bankruptcy, or unanticipated breakage or accident to machinery or equipment despite diligent maintenance; and

(iii) Any other delay caused by unforeseeable circumstances beyond the reasonable control of owner or operator as reasonably determined by the Director.

20. **On and after the effective date** of each Subparagraph 1. through 13. for an affected unit, the applicable owner or operator is not required to operate the required control technology under the following conditions:

(i) Restarting an electric utility steam generating unit when all electric utility steam generating units [as listed in Subparagraphs 1. through 13.] at a facility are down and off-site power is not available (also known as a "Black Start").

(ii) Periods of startup of an electric utility steam generating unit provided that such periods are consistent with the requirements of Paragraph 391-3-1-.02(2)(a)7.

(iii) Periods of shutdown of an electric utility steam generating unit provided that such periods are consistent with the requirements of Paragraph 391-3-1-.02(2)(a)7.

(iv) Periods of scheduled and/or preventative maintenance of control technology equipment if such maintenance cannot reasonably be performed during a scheduled outage of the respective electric utility steam generating unit.

(v) Periods of malfunction of electric utility steam generating unit and/or control technology equipment provided that such periods are consistent with the requirements of Paragraph 391-3-1-.02(2)(a)7.

(vi) Periods when the owner/operator is required to conduct the Relative Accuracy Test Audit and any other necessary periodic quality assurance procedures on the Continuous Emissions Monitoring System located on the bypass stack pursuant to 40 CFR Part 75 or the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants**.

(vii) Periods when the owner/operator is required to conduct any performance tests on the bypass stack as required by state or federal air quality rules, air quality operating permits, or as ordered by the Division.

(viii) Division-approved periods of research and development of emission control technologies, provided that the unit does not exceed other applicable emission limits. For purposes of this subparagraph, the owner/operator shall submit a request for approval under this subparagraph at least 120 days prior to such date as well as including the following items: (1) length of time of research and development (R&D) period; (2) identification of steps to take to minimize emissions in accordance with best operational practices during R&D period; (3) for periods of R&D lasting more than 48 hours during any 5-day period, a demonstration that any increase in emissions resulting from the R&D project that are above that which is allowed by this subparagraph (sss) will not cause or significantly contribute to a violation of any national ambient air quality standard or prevent compliance with any other applicable provisions.

(ix) Any other occasion not covered by Subparagraphs 20.(i) through (viii), as approved by the Division.

21. **The requirements** of Subparagraph 20 do not relieve the owner or operator from the requirement to comply with any other applicable requirements of Georgia Rules for Air Quality Control Chapter 391-3-1**.**

22. **Technology and Mercury Impact Review - Periodic Evaluation:** The Director shall submit a report to the Georgia Department of Natural Resources Board by December 31, 2023. The report shall constitute an evaluation of available and relevant information to determine if additional reductions of mercury emissions from electric utility steam generating units are necessary or appropriate. This report shall include an evaluation that includes, but is not limited to, the following:

(i) mercury concentrations in fish tissue in water bodies in the State and any changes or trends of such concentrations over time;

(ii) the sources of mercury (including air, land, and water sources) that might influence in-state mercury concentrations in fish tissue;

(iii) the state of the science regarding the relationship among sources of mercury, mercury speciation and mercury concentrations in fish tissue in water bodies in the State;

(iv) the health impact of mercury contamination in fish tissue;

(v) technically- and economically-feasible controls for the reduction of mercury emissions from coal-fired EGUs or other sources;

(vi) whether additional reductions of mercury from coal-fired electric utility steam generating units or other sources and/or whether additional time or study is appropriate and necessary in light of items (i) through (v);

(vii) recommendations for any necessary revisions to Paragraph (sss) or other actions as needed to address other sources; and

(viii) recommendations for an appropriate timeline for the development of any such additional regulations; provided, however, that implementation and operation of any such additional controls shall be required no earlier than January 1, 2027.

23. **Effective January 1, 2013**, no person shall cause, let, permit, suffer or allow the operation of the following units affected except as specified below:

(i) Plant Branch Units 3 and 4, combined, shall not emit more than 11,165 tons of nitrogen oxides annually in 2013, 2014, and 2015 only.

(ii) Plant Branch Units 3 and 4, combined, shall not emit more than 52,988 tons of sulfur dioxide annually in 2013, 2014, and 2015 only.

24. **Definitions.** For the purpose of this subparagraph (sss), the following definitions apply:

(i) "Affected Unit" means electric utility steam generating units at Plants Bowen 1, 2, 3, and 4; Plants Branch Units 1, 2, 3, and 4; Plant Hammond Units 1, 2, 3, and 4; Plant McDonough Units 1 and 2; Plant Scherer Units, 1, 2, 3, and 4; Plant Wansley Units 1 and 2; and Plant Yates Units 1, 2, 3, 4, 5, 6, and 7.

(ii) The definition of natural gas-fired electric utility steam generating unit specified in 40 CFR 63.10042 is hereby incorporated and adopted by reference.

(ttt) **[reserved]**

(uuu) **SO_2 Emissions from Electric Utility Steam Generating Units.**

1. Effective January 1, 2010, no person shall cause, let, permit, suffer or allow any gases which contain sulfur dioxide in excess of 10 percent (0.10) of the potential combustion concentration (90 percent reduction) from the following affected unit: Plant Yates Unit 1.

2. Effective on the dates established below, no person shall cause, let, permit, suffer or allow any gases which contain sulfur dioxide in excess of 5 percent (0.05) of the potential combustion concentration (95 percent reduction) from the following affected units: Plant Bowen Units 1 through 4, Plant Branch Units 1 through 4, Plant Hammond Units 1 through 4, Plant McDonough Units 1 and 2, Plant Scherer Units 1 through 4, Plant Wansley Units 1 and 2, and Yates Units 6 and 7.

The limit established in this subparagraph shall become effective beginning:

(i) January 1, 2010, for Plant Bowen Units 2, 3 and 4, and Plant Wansley Units 1 and 2.

(ii) July 1, 2011, for Plant Scherer Unit 3.

(iii) January 1, 2012, for Plant Bowen Unit 1, Plant Hammond Units 1, 2, 3, and 4, and Plant McDonough Unit 2.

(iv) May 1, 2012, for Plant McDonough Unit 1.

(v) January 1, 2013, for Plant Scherer Unit 4.

(vi) October 1, 2013, for Plant Branch Unit 2.

(vii) January 1, 2014, for Plant Scherer Unit 2.

(viii) January 1, 2015, for Plant Scherer Unit 1.

(ix) April 16, 2015, for Plant Yates Units 6 and 7, and Plant Branch Units 1, 3, and 4.

(x) [reserved]

(xi) [reserved]

3. Compliance with Subparagraphs 1 and 2 shall be determined on a 30-day rolling average basis. The first 30-day averaging period for each Affected Unit shall begin on the effective date specified in Subparagraphs 1 and 2.

4. The requirements of Subparagraphs 1 and 2 do not apply during the following periods:

(i) Restarting an Electric Utility Steam Generating Unit specified in subparagraphs 1 or 2 when all Electric Utility Steam Generating Units at a facility are down and off-site power is not available (also known as a "Black Start").

(ii) Periods of startup of an Electric Utility Steam Generating Unit provided that such periods are consistent with the requirements of Paragraph 391-3-1-.02(2)(a)7.

(iii) Periods of shutdown of an Electric Utility Steam Generating Unit provided that such periods are consistent with the requirements of Paragraph 391-3-1-.02(2)(a)7.

(iv) Periods of scheduled and/or preventative maintenance of control technology equipment if such maintenance cannot reasonably be performed during a scheduled outage of the respective Electric Utility Steam Generating Unit.

(v) Periods of malfunction of an Electric Utility Steam Generating Unit and/or control technology equipment provided that such periods are consistent with the requirements of Paragraph 391-3-1-.02(2)(a)7.

(vi) Periods when the owner/operator is required to conduct the Relative Accuracy Test Audit and any other necessary periodic quality assurance procedures on the Continuous Emissions Monitoring System located on the bypass stack pursuant to 40 CFR Part 75 or the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants**.

(vii) Periods when the owner/operator is required to conduct any performance tests on the bypass stack as required by State or Federal air quality rules, air quality operating permits, or as ordered by the Division.

(viii) Division-approved periods of research and development of emission control technologies, provided that the unit does not exceed other applicable emission limits. For purposes of this subparagraph, the owner/operator shall submit a request for approval under this subparagraph at least 120 days prior to such date, as well as include the following items: (1) length of time of research and development (R&D) period; (2) identification of steps to take to

minimize emissions in accordance with best operational practices during R&D period; (3) for periods of R&D lasting more than 48 hours during any 5-day period, a demonstration that any increase in emissions resulting from the R&D project that are above that which is allowed by this subparagraph (uuu) will not cause or significantly contribute to an violation of any national ambient air quality standard or prevent compliance with any other applicable provisions.

5. For the purpose of this subsection, the following definitions apply:

(i) "Potential combustion concentration" means the theoretical sulfur dioxide emissions (lb/MMBtu heat input) that would result from combusting fuel without using emission control systems.

(ii) "Affected Unit" means electric utility steam generating units Plant Bowen Units 1, 2, 3, and 4; Plant Branch Units 1, 2, 3, and 4; Plant Hammond Units 1, 2, 3, and 4; Plant McDonough Units 1 and 2; Plant Wansley Units 1 and 2; Plant Scherer Units 1, 2, 3, and 4; and Plant Yates Units 1, 6, and 7, except when operated as a natural gas-fired electric utility steam generating unit. The definition of natural gas-fired electric generating unit notwithstanding, Plant Yates Unit 1 shall be treated as an affected unit whenever it burns any coal.

(iii) The definition of natural gas-fired electric steam generating units specified in 40 CFR 63.10042 is hereby incorporated and adopted by reference.

(vvv) **VOC Emissions from Surface Coating of Miscellaneous Plastic Parts and Products.**

1. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of miscellaneous plastic parts and products that does not fall under subparagraphs 2., 3., 4., 5., 6., 7., and/or 8. of this subsection to exceed:

(i) 2.3 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a general one-component coating. If any coating delivered to the coating application system contains more than 2.3 pounds VOC per gallon, the solids equivalent limit shall be 3.35 pounds VOC per gallon of coating solids delivered to the coating application system.

(ii) 2.8 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a military specification (1-pack) coating. If any coating delivered to the coating application system contains more than 2.8 pounds VOC per gallon, the solids equivalent limit shall be 4.52 pounds VOC per gallon of coating solids delivered to the coating application system.

(iii) 3.5 pounds per gallon of coating, excluding water, delivered to a coating application system that applies one or more of the following coatings: general multi-component; extreme-performance (2-pack) coating; metallic coating; and military specification (2-pack) coating. If any coating delivered to the coating application system contains more than 3.5 pounds VOC per gallon, the solids equivalent limit shall be 6.67 pounds VOC per gallon of coating solids delivered to the coating application system.

(iv) 5.7 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a multi-colored coating. If any coating delivered to the coating application system contains more than 5.7 pounds VOC per gallon, the solids equivalent limit shall be 25.3 pounds VOC per gallon of coating solids delivered to the coating application system.

(v) 6.3 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a mold-seal coating. If any coating delivered to the coating application system contains more than 6.3 pounds VOC per gallon, the solids equivalent limit shall be 43.7 pounds VOC per gallon of coating solids delivered to the coating application system.

(vi) 6.7 pounds per gallon of coating, excluding water, delivered to a coating application system that applies an electric dissipating coating, shock-free coating, optical coating, or vacuum metalizing coating. If any coating delivered to the coating application system contains more than 6.7 pounds VOC per gallon, the solids equivalent limit shall be 74.7 pounds VOC per gallon of coating solids delivered to the coating application system.

2. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of plastic parts of automobiles and trucks at a facility that is not an automobile or light-duty truck manufacturing facility using baked coatings for interior and exterior parts to exceed:

(i) 3.5 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a non-flexible primer. If any non-flexible primer coating delivered to the coating application system contains more than 3.5 pounds VOC per gallon, the solids equivalent limit shall be 6.67 pounds VOC per gallon of coating solids delivered to the coating application system.

(ii) 4.0 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a clear coat. If any clear coat coating delivered to the coating application system contains more than 4.0 pounds VOC per gallon, the solids equivalent limit shall be 8.76 pounds VOC per gallon of coating solids delivered to the coating application system.

(iii) 4.3 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a base coat or non-base coat/clear coat. If any one of these coatings delivered to the coating application system contains more than 4.3 pounds VOC per gallon, the solids equivalent limit shall be 8.76 pounds VOC per gallon of coating solids delivered to the coating application system.

(iv) 4.5 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a flexible primer. If any coating delivered to the coating application system contains more than 4.5 pounds VOC per gallon, the solids equivalent limit shall be 11.58 pounds VOC per gallon of coating solids delivered to the coating application system.

3. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of plastic parts of automobiles and trucks at a facility that is not an automobile or light-duty truck manufacturing facility using air dried coatings for exterior parts to exceed:

(i) 4.0 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a clear coat. If any coating delivered to the coating application system contains more than 4.0 pounds VOC per gallon, the solids equivalent limit shall be 11.58 pounds VOC per gallon of coating solids delivered to the coating application system.

(ii) 4.8 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a primer. If any coating delivered to the coating application system contains more than 4.8 pounds VOC per gallon, the solids equivalent limit shall be 13.80 pounds VOC per gallon of coating solids delivered to the coating application system.

(iii) 4.0 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a base coat or a non-basecoat/clear coat. If any coating delivered to the coating application system contains more than 4.0 pounds VOC per gallon, the solids equivalent limit shall be 13.4 pounds VOC per gallon of coating solids delivered to the coating application system.

4. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of plastic parts of automobile and trucks at a facility that is not an automobile or light-duty truck manufacturing facility using air dried coatings for interior parts to exceed:

(i) 5.0 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a coating. If any coating delivered to the coating application system contains more than 5.0 pounds VOC per gallon, the solids equivalent limit shall be 15.59 pounds VOC per gallon of coating solids delivered to the coating application system.

5. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of plastic parts of automobile and trucks at a facility that is not an automobile or light-duty truck manufacturing facility using touchup and repair coatings to exceed:

(i) 5.2 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a coating. If any coating delivered to the coating application system contains more than 5.2 pounds VOC per gallon, the solids equivalent limit shall be 17.72 pounds VOC per gallon of coating solids delivered to the coating application system.

6. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of plastic parts of business machines to exceed:

(i) 2.2 pounds per gallon of coating, excluding water, delivered to a coating application system that applies a fog coat. If any coating delivered to the coating application system contains more than 2.2 pounds VOC per gallon, the solids equivalent limit shall be 3.14 pounds VOC per gallon of coating solids delivered to the coating application system.

(ii) 2.9 pounds per gallon of coating, excluding water, delivered to a coating application system that applies one or more of the following coatings: primer. topcoat. texture coat. touchup and repair. If any coating delivered to the coating application system contains more than 2.9 pounds VOC per gallon, the solids equivalent limit shall be 4.80 pounds VOC per gallon of coating solids delivered to the coating application system.

7. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of miscellaneous motor vehicle plastic parts and products at a facility that is not an automobile or light-duty truck manufacturing facility to exceed:

(i) 1.7 pounds per gallon of coating, excluding water, delivered to a coating application system that applies the following motor vehicle materials: gasket/gasket sealing material and bedliner.

(ii) 3.5 pounds per gallon of coating, excluding water, delivered to a coating application system that applies the following motor vehicle materials: cavity wax, sealer, deadener, underbody coating, trunk interior coating, and lubricating wax/compound.

8. No person shall cause, let, permit, suffer, or allow the emissions of VOC from surface coating of plastic parts of automobile and trucks at a facility that is not an automobile or light-duty truck manufacturing facility using red or black coatings to exceed 1.15 times the applicable limit in this subsection except in the case of touch-up and repair coatings in which the applicable limit shall apply.

9. Each owner or operator of a facility that coats plastic parts shall ensure that all coating application systems utilize one or more of the application techniques stated below:

(i) Electrostatic spray application;

(ii) High volume low pressure (HVLP) spraying;

(iii) Flow/curtain application;

(iv) Roll coating;

(v) Dip coat application including electrodeposition;

(vi) Airless spray;

(vii) Air-assisted airless spray; or

(viii) Other coating application methods that achieve transfer efficiency equivalent to HVLP or electrostatic spray application methods, as determined by the Director.

10. Each owner or operator of a facility that coats plastic parts shall comply with the following work practice standards:

(i) store all VOC-containing coatings, thinners, and coating-related waste materials in closed containers;

(ii) ensure that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing coatings, thinners, and coating-related waste materials; and

(iv) convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.

11. Each owner or operator of a facility that coats plastic parts shall comply with the following housekeeping requirements for any affected cleaning operation:

(i) store all VOC-containing cleaning materials and used shop towels in closed containers;

(ii) ensure that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;

(iii) minimize spills of VOC-containing cleaning materials;

(iv) convey VOC-containing cleaning materials from one location to another in closed containers or pipes; and

(v) minimize VOC emission from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

12. The VOC limits specified in this subsection do not apply to the following types of plastics coatings and/or coating operations:

(i) Touch-up and repair coatings;

(ii) Stencil coatings applied on clear or transparent substrates;

(iii) Clear or translucent coatings;

(iv) Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings;

(v) Any individual coating category used in volumes less than 50 gallons in any one year, if substitute compliant coatings are not available, provided that the total usage of all such coatings does not exceed 200 gallons per year, per facility;

(vi) Reflective coating applied to highway cones;

(vii) Mask coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches;

(viii) EMI/RFI shielding coatings; and

(ix) Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gallons per year, per facility.

The recommended application methods and work practice standards specified in this subsection still apply.

13. Airbrush operations using five gallons or less per year of coating are exempt from the application technique requirements of this subsection but must comply with the VOC limits and work practices specified.

14. The VOC limits specified in this subsection do not apply to the coating of plastic parts of automobiles and trucks or the coating of plastic parts of business machines of the following types of coatings and/or coating operations:

(i) Texture coatings;

(ii) Vacuum metalizing coatings;

(iii) Gloss reducers;

(iv) Texture topcoats;

(v) Adhesion primers;

(vi) Electrostatic preparation coatings;

(vii) Resist coatings; and

(viii) Stencil coatings.

The application methods and work practice standards specified in this subsection still apply.

15. All VOC emissions from solvent washings shall be considered in the emission limitations unless the solvent is directed into containers that prevent evaporation into the atmosphere.

16. The emission limits in this subsection shall be achieved by:

(i) the application of low solvent coating technology where each and every coating meets the limit expressed in pounds VOC per gallon of coating, excluding water, stated in paragraphs 1., 2., 3., 4., 5., 6., 7., and 8. of this subsection; or

(ii) the application of low-solvent coating technology where the 24-hour weighted average of all coatings on a single coating line or operation meets the solids equivalent limit expressed in pounds VOC per gallon of coating solids stated in paragraphs 1., 2., 3., 4., 5., 6., and 8. of this subsection. Averaging across lines is not allowed; or

(iii) control equipment, including but not limited to incineration, carbon adsorption and condensation, with a capture system approved by the Director, provided that 90 percent of the nonmethane volatile organic compounds which enter the control equipment are recovered or destroyed, and that overall VOC emissions do not exceed the solids equivalent limit, expressed in pounds VOC per gallon of coating solids stated in paragraphs 1., 2., 3., 4., 5., 6., and 8. of this subsection; and

(iv) for motor vehicle plastic parts, compliance may be achieved only as stated in subparagraph 7. of this section. There is no solids equivalent limit for such coatings.

17. Definitions: For the purpose of this subsection, the following definitions apply:

(i) "2-pack coating" means a coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film. 2-pack coating may also be known as a "two-component coating".

(ii) "Adhesion primer" means a coating that is applied to a polyolefin part to promote the adhesion of a subsequent coating. An adhesion prime is clearly identified as an adhesion prime or adhesion promoter on its accompanying material safety data sheet.

(iii) "Air brush operations" means the application of a coating with a small, air-operated tool.

(iv) "Air-dried coating" means a coating that is dried by the use of air or forced warm air at temperatures up to 194°F.

(v) "Baked Coating" means a coating that is cured at a temperature at or above 90°C (194°F).

(vi) "Base Coat" means an initial coat of paint, generally after a primer, that is applied for protection or as a background color.

(vii) "Bedliner" means a multi-component coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to a cargo bed after the application of topcoat to provide additional durability and chip resistance.

(viii) "Black coating" means a coating which meets both of the following criteria:

(1) maximum lightness: 23 units; and

(2) saturation: less than 2.8, where saturation equals the square root of $A^2 + B^2$. These criteria are based on Cielab color space, 0/45 geometry. For spherical geometry, specular included, maximum lightness is 33 units.

(ix) "Business machine" means a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information or convert sound into electrical impulses for transmission, including devices listed in standard industrial classification numbers 3572, 3573, 3579, and 3661 and photocopy machines, a subcategory of standard industrial classification number 3861.

(x) "Cavity wax" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

(xi) "Clear coating" means a coating which lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color;

(xii) "Coating application system" means all operations and equipment which applies, conveys, and dries a surface coating including, but not limited to, spray booths, flow coaters, flashoff areas, air dryers and ovens.

(xiii) "Coating of plastic parts of automobiles and trucks" means the coating of any plastic part that is or shall be assembled with other parts to form an automobile or truck.

(xiv) "Coating of plastic parts of business machines" means the coating of any plastic part that is or shall be assembled with other parts to form a business machine.

(xv) "Deadener" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to selected vehicle surfaces primarily for the purpose of reducing the source of road noise in the passenger compartment.

(xvi) "Electric dissipating coating" means a coating that rapidly dissipates a high-voltage electric charge.

(xvii) "Electrostatic prep coat" means a coating that is applied to a plastic part solely to provide conductivity for the subsequent application of a primer, a topcoat, or other coating through the use of electrostatic application methods. An electrostatic prep coat is clearly identified as an electrostatic prep coat on its accompanying material safety data sheet.

(xviii) "EMI/RFI shielding coating" means a coating used on plastic electronics enclosures to reduce or eliminate electromagnetic or radio frequency interference.

(xix) "Extreme-performance coating" means a coating used on a plastic surface where the coated surface is, in its intended use, subject to the following: (a) chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions; or (b) repeated exposure to temperatures in excess of 250°F; or (c) repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents. Extreme-performance coatings include, but are not limited to, coatings applied to locomotives, railroad cars, farm machinery, and heavy duty trucks.

(xx) "Flexible coating" means any coating including but not limited to primer, base coat, clear coat or topcoat that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.

(xxi) "Fog coat" means a coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture. A fog coat shall not be applied at a thickness of more than 0.5 mils of coating solids.

(xxii) "Gasket/sealing material" means a fluid, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to coat a gasket or replace and perform the same function as a gasket. Automobile and light-duty truck gasket/gasket sealing material includes room temperature vulcanization (RTV) seal material.

(xxiii) "Gloss reducer" means a coating that is applied to a plastic part solely to reduce the shine of the part. A gloss reducer shall not be applied at a thickness of more than 0.5 mils of coating solids.

(xxiv) "Lubricating wax/compound" means a protective lubricating material, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to vehicle hubs and hinges.

(xxv) "Metallic coating" means a coating which contains more than five grams of metal particles per liter of coating as applied. "Metal particles" are pieces of a pure elemental metal or combination of elemental metals.

(xxvi) "Miscellaneous plastic parts and products" means surface coating of products manufactured by the following industrial source categories: large farm machinery, small farm machinery, small appliances, commercial machinery, industrial machinery, fabricated plastic products and any other industrial category which coats plastic parts or products under the Standard Industry Classification Code Major Groups 33, 34, 35, 36, 37, 38, 40, and 41. The miscellaneous plastic parts and products source category does not include:

(I) automobiles and light-duty trucks;

(II) metal cans;

(III) flat metal sheets and strips in the form of rolls or coils;

(IV) magnet wire for use in electrical machinery;

(V) metal furniture;

(VI) large appliances;

(VII) aerospace manufacturing and rework operations;

(VIII) automobile refinishing;

(IX) customized top coating of automobiles and trucks, if production is less than 35 vehicles per day;

(X) exterior of marine vessels;

(XI) gel coats applied to fiber reinforced plastic (fiberglass composite) products removed from the mold or used as in-mold coatings in the production of fiberglass parts;

(XII) fiberglass boat manufacturing materials; and

(XIII) miscellaneous industrial adhesives.

(xxvii) "Military specification coating" means a coating which has a formulation approved by a United States Military Agency for use on military equipment.

(xxviii) "Mold-seal coating" means the initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

(xxix) "Multi-colored coating" means a coating which exhibits more than one color when applied and is packaged in a single container and applied in a single coat.

(xxx) "Multi-component coating" means a coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.

(xxxi) "Non-flexible Coating" means any coating that does not meet the definition of "flexible coating" as specified in this subsection.

(xxxii) "One-component coating" or "1-pack coating" means a coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.

(xxxiii) "Optical coating" means a coating applied to an optical lens.

(xxxiv) "Primer" means the first layer and any subsequent layers of identically-formulated coating applied to the surface of a plastic part or product. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings.

(xxxv) "Red coating" means a coating which meets all of the following criteria:

(I) Yellow limit: the hue of hostaperm scarlet.

(II) Blue limit: the hue of monastrel red-violet.

(III) Lightness limit for metallics: 35 percent aluminum flake.

(IV) Lightness limit for solids: 50 percent titanium dioxide white.

(V) Solid reds: hue angle of -11 to 38 degrees and maximum lightness of 23 to 45 units.

(VI) Metallic reds: hue angle of -16 to 35 degrees and maximum lightness of 28 to 45 units.

(VII) These criteria are based on Cielab color space, 0/45 geometry. For spherical geometry, specular included, the upper limit is 49 units. The maximum lightness varies as the hue moves from violet to orange. This is a natural consequence of the strength of the colorants, and real colors show this effect.

(xxxvi) "Sealer" means a high viscosity material, used at a facility that is not an automobile or light-duty truck assembly coating facility, that is generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (e.g., primer-surfacer). The primary purpose of automobile and light-duty truck sealer is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment. Such materials are also referred to as sealant, sealant primer, or caulk.

(xxxvii) "Repair coating" means a coating used to re-coat portions of a previously coated product which has sustained mechanical damage to the coating following normal coating operations.

(xxxviii) "Resist coat" means a coating that is applied to a plastic part before metallic plating to prevent deposits of metal on portions of the plastic part.

(xxxix) "Shock-free coating" means a coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance, high resistance, and having resistance to breaking down under high voltage.

(xl) "Stencil coating" means an ink or a pigmented coating which is rolled or brushed onto a template or stamp in order to add identifying letters, symbols and/or numbers.

(xli) "Texture coating" means a coating that is applied to a plastic part which, in its finished form, consists of discrete raised spots of the coating.

(xlii) "Topcoat" means any final coating applied to a plastic part or product.

(xliii) "Touch-up coating" means a coating used to cover minor coating imperfections appearing after the main coating operation.

(xliv) "Translucent coating" means a coating which contains binders and pigment and is formulated to form a colored, but not opaque, film.

(xlv) "Transfer efficiency" means the weight (or volume) of coating solids adhering to the surface being coated divided by the total weight (or volume) of coating solids delivered to the applicator.

(xlvi) "Trunk interior coating" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the trunk interior to provide chip protection.

(xlvii) "Underbody coating" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the undercarriage or firewall to prevent corrosion and/or provide chip protection.

(xlviii) "Vacuum-metalizing coating" means the undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film. Vacuum metalizing/physical vapor deposition (PVD) is the process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

18. Applicability: On and after January 1, 2015, the requirements of this subparagraph (vvv) shall apply to facilities at which the potential emissions of volatile organic compounds from all surface coating of miscellaneous plastic parts and products categories covered in subparagraphs 1. through 8. of this subparagraph equal or exceed 10 tons per year and are located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton counties. Any physical or operational changes that are necessary to comply with the provisions specified in this subparagraph are subject to the compliance schedule specified in subparagraph 20. Prior to January 1, 2015, such facilities shall comply with the provisions of subparagraph 391-3-1-.02(2)(tt), if applicable.

19. Applicability: The requirements of this Subparagraph (vvv) will no longer be applicable by the compliance deadlines if the counties specified in subparagraph 18. are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of this Subparagraph (vvv) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

20. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements specified this subparagraph (vvv) must be completed before **January 1, 2015.**

(www) **Sewage Sludge Incineration Units.**

1. The provisions of this subparagraph apply to each sewage sludge incineration (SSI) unit that is located at a wastewater treatment facility and that commenced construction on or before October 14, 2010 (hereinafter referred to as "existing SSI unit"). Physical or operational changes made at an existing SSI unit solely to comply with this subparagraph are not considered construction, reconstruction, or modification and would not subject an existing SSI unit to the requirements of 40 CFR Part 60, Subpart LLLL, which contains the "Standards of Performance for Sewage Sludge Incineration Units for Which Construction is Commenced After October 14, 2010".

2. For the purposes of implementing the requirements and provisions of 40 CFR Part 60, Subpart MMMM (Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units), each existing SSI unit shall comply with the model rule standards, requirements, and provisions of 40 CFR Part 60, Subpart MMMM, as promulgated March 21, 2011, which are hereby incorporated and adopted by reference.

(i) For the purposes of implementing the requirements and provisions of 40 CFR Part 60, Subpart MMMM, the following provisions are hereby incorporated and adopted by reference. The emission limits and standards apply at all times and during periods of malfunction. The operating limits apply at all times that sewage sludge is in the combustion chamber.

(I) 40 CFR 60.5085 through 40 CFR 60.5125, Increments of Progress with the exception of 40 CFR 60.5090 and Table 1 which do not apply to an Existing SSI.

(II) 40 CFR 60.5130 through 40 CFR 60.5160, Operator Training and Qualification.

(III) 40 CFR 60.5240 and 60.5245, Title V Operating Permits.

(IV) 40 CFR Part 60, Subpart MMMM Tables 2 through 6 and 60.5181.

(ii) With the following exceptions:

(I) Emission Limits, Emission Standards, and Operating Limits and Requirements. In lieu of 40 CFR 60.5165 through 60.5180, Sections 2.130.2 through 2.130.4 of the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants shall apply to each existing SSI unit.

(II) Initial and Continuous Compliance Requirements. In lieu of 40 CFR 60.5185 through 60.5215, Sections 2.130.2 through 2.130.4 of the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants shall apply to each existing SSI unit.

(III) Performance Testing, Monitoring, and Calibration Requirements. In lieu of 40 CFR 60.5220 through 60.5225, Sections 2.130.2 through 2.130.4 of the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants shall apply to each existing SSI unit.

(IV) Record keeping and Reporting Requirements. In lieu of 40 CFR 60.5230 and 60.5235, Sections 2.130.2 through 2.130.4 of the Georgia Department of Natural Resources Procedures for Testing and Monitoring Sources of Air Pollutants shall apply to each existing SSI unit.

3. In keeping with subparagraph 2., owners and operators of existing SSI units must comply with Georgia's state plan for existing SSI units, which is required by 40 CFR Part 60, Subpart MMMM. The owner or operator of each existing SSI unit shall comply with the requirements of 391-3-1-.02(2)(www)2. upon approval of Georgia's state plan for existing SSI units by EPA.

4. Each existing SSI unit is subject to the permitting requirements of 391-3-1-.03(10) "Title V Operating Permits".

5. Definitions of all terms used but not defined in this subparagraph shall have the meaning given to them in 40 CFR Part 60, Subpart MMMM, as promulgated on March 21, 2011. Terms not defined therein shall have the meaning given to them in the federal Clean Air Act or 40 CFR Part 60, Subparts A and B. For the purposes of this subsection the following definitions also apply:

(i) Except as noted, the word "Administrator" as used in regulations adopted by reference in this subparagraph shall mean the Director of the Georgia Environmental Protection Division. For subparagraph (www)6. the word "Administrator" shall mean the Administrator of the EPA.

(ii) The term "You" means the owner or operator of an affected sewage sludge incineration unit subject to this rule.

6. The owner of an existing SSI facility must contact EPA with respect to the following subparagraphs (i) through (vii) as specified in 40 CFR 60.5050.

(i) Approval of alternatives to the emission limits and standards in Tables 2 and 3 to 40 CFR Part 60, Subpart MMMM and operating limits established under provisions of 40 CFR 60.5175 or 60.5190.

(ii) Approval of major alternatives to test methods.

(iii) Approval of major alternatives to monitoring.

(iv) Approval of major alternatives to recordkeeping and reporting.

(v) The requirements in provision 40 CFR 60.5175.

(vi) The requirements in provision 40 CFR 60.5155(b)(2).

(vii) Performance test and data reduction waivers under provision 40 CFR 60.8(b).

(xxx) **Reserved.**

(yyy) **VOC Emissions from the Use of Miscellaneous Industrial Adhesives.**

1. No person shall cause, let, permit, suffer or allow the emissions of VOC from the use of miscellaneous industrial adhesives with general adhesive application processes to exceed:

(i) 0.3 pounds per gallon of adhesive or adhesive primer, excluding water, when used with one of the following substrates: metal; wood.

(ii) 1.0 pounds per gallon of adhesive or adhesive primer, excluding water, when used with porous material (except wood) substrates.

(iii) 1.7 pounds per gallon of adhesive or adhesive primer, excluding water, when used with reinforced plastic composite substrates.

(iv) 2.1 pounds per gallon of adhesive or adhesive primer, excluding water, when used with flexible vinyl or rubber substrates.

(v) 2.1 pounds per gallon of adhesive or adhesive primer, excluding water, when used with a substrate not specified in paragraphs 1.(i) through 1.(iv).

2. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the use of miscellaneous industrial adhesives with specialty adhesive application processes to exceed:

(i) 0.8 pounds per gallon of adhesive or adhesive primer, excluding water, when used with one of the following: structural glazing; tire repair.

(ii) 1.1 pounds per gallon of adhesive or adhesive primer, excluding water, when used in ceramic tile installation.

(iii) 1.3 pounds per gallon of adhesive or adhesive primer, excluding water, when used with one of the following: cove base installation; indoor floor covering installation.

(iv) 1.4 pounds per gallon of adhesive or adhesive primer, excluding water, when used with waterproof resorcinol glue.

(v) 1.7 pounds per gallon of adhesive or adhesive primer, excluding water, when used with multipurpose construction.

(vi) 2.1 pounds per gallon of adhesive or adhesive primer, excluding water, when used with one of the following: contact bond adhesive; outdoor floor covering installation; motor vehicle adhesive; single-ply roof membrane installation/repair (except ethylene propylenediene monomer (EPDM) roof membrane installation/repair).

(vii) 3.3 pounds per gallon of adhesive or adhesive primer, excluding water, when used with plastic solvent welding (containing acrylonitrile-butadiene-styrene or ABS).

(viii) 4.2 pounds per gallon of adhesive or adhesive primer, excluding water, when used with plastic solvent welding (except ABS).

(ix) 5.5 pounds per gallon of adhesive or adhesive primer, excluding water, when used with perimeter-bonded sheet vinyl (floor covering installation).

(x) 6.3 pounds per gallon of adhesive or adhesive primer, excluding water, when used with motor vehicle weatherstrip adhesive.

(xi) 6.5 pounds per gallon of adhesive or adhesive primer, excluding water, when used with thin metal laminating.

(xii) 7.1 pounds per gallon of adhesive or adhesive primer, excluding water, when used with one of the following: metal to urethane/rubber molding or casting; sheet rubber lining installation.

3. No person shall cause, let, permit, suffer, or allow the emissions of VOC from the use of miscellaneous industrial adhesives with adhesive primer application processes to exceed:

(i) 7.5 pounds per gallon of adhesive or adhesive primer, excluding water, when used as motor vehicle glass bonding primer.

(ii) 5.4 pounds per gallon of adhesive or adhesive primer, excluding water, when used as a plastic solvent welding adhesive primer.

(iii) 2.1 pounds per gallon of adhesive or adhesive primer, excluding water, when used as an adhesive primer for an application process not specified in paragraphs 3.(i) through 3.(ii).

4. All volatile organic compounds containing materials applied by each miscellaneous industrial adhesive application process shall be used in one of the following application methods in conjunction with using low volatile organic compound adhesives or adhesive primers:

(i) Electrostatic spray;

(ii) High Volume-Low Pressure (HVLP) spray;

(iii) Flow coat;

(iv) Roll coat or hand application, including non-spray application methods similar to hand or mechanically-powered caulking gun, brush, or direct hand application;

(v) Dip coat (including electrodeposition);

(vi) Airless spray;

(vii) Air-assisted airless spray; or

(viii) Other adhesive application method capable of achieving a transfer efficiency equivalent to or better than achieved by HVLP spraying.

5. The VOC emission limits and the recommended application methods of this subsection do not apply to the following adhesives and adhesives primer application processes:

(i) Adhesives or adhesive primers being tested or evaluated in any research and development, quality assurance, or analytical laboratory.

(ii) Adhesives or adhesive primers used in the assembly, repair, or manufacture of aerospace or undersea-based weapon systems.

(iii) Adhesives or adhesive primers used in medical equipment manufacturing operations.

(iv) Cyanoacrylate adhesive application processes.

(v) Aerosol adhesive and aerosol adhesive primer application processes.

(vi) Processes using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities.

(vii) Processes using adhesives and adhesive primers that are supplied to the manufacturer in containers with a net volume of 16 ounces or less, or a net weight of one pound or less,

The recommended work practice standards specified in this subsection still apply.

6. The emission limits in this subsection shall be achieved by the application of adhesive or adhesive primer where each and every adhesive meets the limit expressed in pounds VOC per gallon of coating, excluding water, stated in paragraphs 1., 2., and 3. of this subsection; or

7. Any miscellaneous industrial adhesive application process subject to this subsection, which chooses to use control equipment for adhesive application processes rather than to comply with the emission limits and requirements established in paragraphs 1., 2., 3., and 4. of this subsection, shall install control equipment with an overall control efficiency of at least 85 percent or use a combination of adhesives and add-on control equipment on an application process to meet limits established in paragraph 1. of this subsection.

8. If an adhesive is used to bond dissimilar substrates together in general adhesive application processes, then the applicable substrate category with the highest volatile organic compounds emission limit shall be established as the limit for such application.

9. For the purpose of this subsection; the following definitions apply:

(i) "Acrylonitrile-butadiene-styrene" or "ABS welding" means any process to weld acrylonitrile-butadiene-styrene pipe.

(ii) "Adhesive" means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

(iii) "Adhesive primer" means any product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.

(iv) "Adhesive primer application process" means any one of the following: motor vehicle glass bonding primer; plastic solvent welding adhesive primer; single-ply roof membrane adhesive primer; other adhesive primer.

(v) "Aerosol adhesive" means an adhesive or adhesive primer packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for handheld application without the need for ancillary hoses or spray equipment.

(vi) "Air-assisted airless spray" means a system that consists of an airless spray gun with a compressed air jet at the gun tip to atomize the adhesive.

(vii) "Airless spray" means the application of an adhesive through an atomizing nozzle at high pressure (1,000 to 6,000 pounds per square inch) by a pump force.

(viii) "Ceramic tile installation adhesive" means any adhesive intended by the manufacturer for use in the installation of ceramic tiles.

(xi) "Contact bond adhesive" means an adhesive that: (1) is designed for application to both surfaces to be bonded together, (2) is allowed to dry before the two surfaces are placed in contact with each other, (3) forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and (4) does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces. Contact bond adhesive also does not include rubber cements that are primarily intended for use on paper substrates. Contact bond adhesive also does not include vulcanizing fluids that are designed and labeled for tire repair only.

(xii) "Cove base" means a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one edge and a convex radius on the opposite edge that is used in forming a junction between the bottom wall course and the floor or to form an inside corner.

(xiii) "Cove base installation adhesive" means any adhesive intended by the manufacturer to be used for the installation of cove base or wall base on a wall or vertical surface at floor level.

(xiv) "Cyanoacrylate adhesive" means any adhesive with a cyanoacrylate content of at least 95 percent by weight.

(xv) "Dip coating" means application where substrates are dipped into a tank containing the adhesive. The substrates are then withdrawn from the tank and any excess adhesive is allowed to drain.

(xvii) "Electrostatic spray" means application where the adhesive and substrate are oppositely charged.

(xviii) "EPDM roof membrane" means a prefabricated single sheet of elastomeric material composed of ethylene propylenediene monomer (EPDM) and that is field applied to a building roof using one layer or membrane material.

(xix) "Flexible vinyl" means non-rigid polyvinyl chloride plastic with a 5 percent by weight plasticizer content.

(xx) "Flow coating" means conveying the substrate over an enclosed sink where the adhesive is applied at low pressure as the item passes under a series of nozzles.

(xxi) "General adhesive application processes" means the use of adhesive on any one of the following substrates: reinforced plastic composite; flexible vinyl; metal; porous material (except wood); rubber; wood; other substrates.

(xxii) "HVLP" means a system with specialized nozzles that provide better air and fluid flow at lower air pressure, shape spray pattern, and guide high volumes of atomized adhesive particles to the substrate using lower air pressure (10 pounds per square inch or less at the spray cap).

(xxiii) "Indoor floor covering installation adhesive" means any adhesive intended by the manufacturer for use in the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll or artificial grass. Adhesives used to install ceramic tile and perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl, are excluded from this category.

(xxv) "Metal to urethane/rubber molding or casting adhesive" means any adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded rubber materials, in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.

(xxvi) "Miscellaneous industrial adhesive application" means an application process which consists of a series of one or more adhesive applicators and any associated drying area and/or oven wherein an adhesive is applied, dried, and/or cured. An application process ends at the point where the adhesive is dried or cured, or prior to any subsequent application of a different adhesive. It is not necessary for an application process to have an oven or flash-off area.

(xxvii) "Motor vehicle adhesive" means an adhesive, including glass bonding adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied for the purpose of bonding tow vehicle surfaces together without regard to the substrates involved.

(xxviii) "Motor vehicle glass bonding primer" means a primer, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to a windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass. Motor vehicle glass bonding primer includes glass bonding/cleaning primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of adhesive or the installation of adhesive bonded glass.

(xxix) "Motor vehicle weatherstrip adhesive" means an adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

(xxx) "Multipurpose construction adhesive" means any adhesive intended by the manufacturer for use in the installation or repair of various construction materials, including but not limited to drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile and acoustical tile.

(xxxi) "Outdoor floor covering installation adhesive" means any adhesive intended by the manufacturer for use in the installation of floor covering that is not in an enclosure and that is exposed to ambient weather conditions during normal use.

(xxxii) "Panel installation" means the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces using an adhesive formulated for that purpose.

(xxxiii) "Perimeter bonded sheet vinyl installation" means the installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four inches wide around the perimeter of the sheet flooring.

(xxxiv) "Plastic solvent welding adhesive" means any adhesive intended by the manufacturer for use to dissolve the surface of plastic to form a bond between mating surfaces.

(xxxv) "Plastic solvent welding adhesive primer" means any primer intended by the manufacturer for use to prepare plastic substrates prior to bonding or welding.

(xxvi) "Plastics" means synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers and are capable of being molded, extruded, cast into various shapes and films, or drawn into filaments.

(xxxvii) "Porous material" means a substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged, including, but not limited to, paper and corrugated paperboard. For the purpose of this section, porous material does not include wood.

(xl) "Reinforced plastic composite" means a composite material consisting of plastic reinforced with fibers.

(xli) "Roll coating", "brush coating", and "hand application" means application of high viscosity adhesives onto small surface area.

(xlii) "Rubber" means any natural or manmade rubber substrate, including but not limited to, styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene and ethylene propylene diene terpolymer.

(xliii) "Sheet rubber lining installation" means the process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric by hand.

(xliv) "Single-ply roof membrane" means a prefabricated single sheet or rubber, normally ethylene-propylenediene terpolymer, that is field applied to a building roof using one layer of membrane material. For the purposes of this section, single-ply roof membrane does not include membranes prefabricated from ethylene-propylenediene monomer (EPDM).

(xlv) "Single-ply roof membrane installation and repair adhesive" means any adhesive labeled for use in the installation or repair of single-ply roof membrane. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes and ducts that protrude through the membrane. Repair includes gluing the edges of torn membrane together, attaching a patch over a hole and reapplying flashings to vents, pipes or ducts installed through the membrane.

(xlvi) "Single-ply roof membrane adhesive primer" means any primer labeled for use to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.

(xlvii) "Specialty adhesive application processes" means any one of the following: ceramic tile installation; contact bond adhesive; cove base installation; floor covering installation (indoor); floor covering installation (outdoor); floor covering installation (perimeter bonded sheet vinyl); metal to urethane/rubber molding or casting; motor vehicle adhesive; motor vehicle weatherstrip adhesive; multipurpose construction; plastic solvent welding (ABS); plastic solvent welding (except ABS); sheet rubber lining installation; single-ply roof membrane installation/repair (except EPDM); structural glazing; thin metal laminating; tire repair; and waterproof resorcinol glue.

(xlviii) "Structural glazing" means a process that includes the application of adhesive to bond glass, ceramic, metal, stone or composite panels to exterior building frames.

(xlix) "Thin metal laminating adhesive" means any adhesive intended by the manufacturer for use in bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 millimeters.

(l) "Tire repair" means a process that includes expanding a hole, tear, fissure or blemish in a tire casing by grinding or gouging, applying adhesive and filling the hole or crevice with rubber.

(li) "Waterproof resorcinol glue" means a 2-part resorcinol-resin-based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

10. Applicability: On and after January 1, 2015, the requirements of this Subparagraph (yyy) shall apply:

(i) to facilities at which the actual emissions of volatile organic compounds from all miscellaneous industrial adhesive application processes at a facility equal or exceed 2.7 tons per 12-month rolling period for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton counties;

(ii) the facility is not subject to Georgia Rules 391-3-1-.02(2)(t), (u), (v), (w), (x), (y), (z), (jj), (ll), (mm), (ddd), or (kkk); and

(iii) any physical or operational changes that are necessary to comply with the provisions specified in this subparagraph are subject to the compliance schedule specified in Subparagraph 12.

Prior to January 1, 2015, facilities that meet the applicability provisions of subparagraphs 10.(i) and (ii) shall comply with the provisions of Subparagraph 391-3-1-.02(2)(tt), if applicable.

11. Applicability: The requirements of this Subparagraph (yyy) will no longer be applicable by the compliance deadlines if the counties specified in subparagraph 10. are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of this Subparagraph (yyy) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

12. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements specified in this Subparagraph (yyy) must be completed before **January 1, 2015.**

(zzz) **VOC Emissions from the Fiberglass Boat Manufacturing.**

1. No person shall cause, let, permit, suffer or allow the emissions of monomer VOC from open molding resin and gel coat operations to exceed the limit specified by Equation 1 of this section, based on a 12-month rolling average.

Equation 1:

$$Monomer\,VOC\,Limit = 46(M_R) + 159(M_{PG}) + 291(M_{CG}) + 54(M_{TR}) + 214(M_{TG})$$

where:

Monomer VOC Limit = total allowable monomer VOC that can be emitted from the open molding operations included in the average, kilograms per 12 consecutive-month period.

M_R = mass of production resin used in the previous 12 consecutive months, excluding any materials that are exempt (megagrams).

M_{PG} = mass of pigmented gel coat used in the previous 12 consecutive months, excluding any materials that are exempt (megagrams).

M_{CG} = mass of clear gel coat used in the previous 12 consecutive months, excluding any materials that are exempt (megagrams).

M_{TR} = mass of tooling resin used in the previous 12 consecutive months, excluding any materials that are exempt (megagrams).

M_{TG} = mass of tooling gel coat used in the previous 12 consecutive months, excluding any materials that are exempt (megagrams).

2. The emission limit specified by Equation 1 of this subsection shall be achieved by one or more of the options listed in paragraphs 2.(i) through 2.(iii) of this subsection:

(i) Emissions averaging option: Demonstrate that emissions from the open molding resin and gel coat operations included in the average meet the emission limit specified by Equation 1 of this subsection using the procedures described in subparagraph 3. of this subsection.

(I) Compliance with this option is based on a 12-month rolling average; and

(II) Those operations and materials not included in the emissions average must comply with either paragraph 2.(ii) or 2.(iii) of this subsection.

(ii) Compliant materials option: Demonstrate compliance by using resins and gel coats that meet the monomer VOC content requirements specified in subparagraph 4. of this subsection.

(I) Compliance with this option is based on a 12-month rolling average.

(iii) Add-on control option: Use an enclosure and add-on control device, and demonstrate that the resulting emissions meet the emission limit specified by Equation 1 of this subsection.

(I) Compliance with this option is based on control device performance testing and control device monitoring.

3. Emissions Averaging Option:

(i) Compliance using this option is demonstrated on a 12-month rolling average basis and is determined at the end of every month (12 times per year).

(ii) At the end of the first twelfth month after initial operation and at the end of every subsequent month, use Equation 2 of this subsection to demonstrate that the monomer VOC emissions from those operations included in the average do not exceed the emission limit specified by Equation 1 of this subsection for the same 12-month period. (Include terms in Equation 1 and Equation 2 of this subsection only for those operations and materials included in the average.)

Equation 2:

Monomer VOC emissions =

$$(PV_R)(M_R)+(PV_{PG})(M_{PG})+(PV_{CG})(M_{CG})+(PV_{TR})(M_{TR})+(PV_{TG})(M_{TG})$$

where:

Monomer VOC emissions = Monomer VOC emissions calculated using the monomer VOC emission equations for each operation included in the average (kilograms).

PV_R = Weighted-average monomer VOC emission rate for production resin used in the past 12 months (kilograms per megagram).

M_R = Mass of production resin used in the past 12 months (megagrams).

PV_{PG} = Weighted-average monomer VOC emission rate for pigmented gel coat used in the past 12 months (kilograms per megagram).

M_{PG} = Mass of pigmented gel coat used in the past 12 months (megagrams).

PV_{CG} = Weighted-average monomer VOC emission rate for clear gel coat used in the past 12 months (kilograms per megagram).

M_{CG} = Mass of clear gel coat used in the past 12 months (megagrams).

PV_{TR} = Weighted-average monomer VOC emission rate for tooling resin used in the past 12 months (kilograms per megagram).

M_{TR} = Mass of tooling resin used in the past 12 months (megagrams).

PV_{TG} = Weighted-average monomer VOC emission rate for tooling gel coat used in the past 12 months (kilograms per megagram).

M_{TG} = Mass of tooling gel coat used in the past 12 months (megagrams).

(iii) At the end of every calendar month, use Equation 3 of this subsection to compute the weighted average monomer VOC emission rate for each open molding resin and gel coat operation included in the average:

Equation 3:

$$PV_{OP} = \left[\frac{\sum_{i=1}^{n} [(M_i)(PV_i)]}{\sum_{i=1}^{n} (M_i)} \right]$$

where:

PV_{OP} = Weighted-average monomer VOC emission rate for each open molding operation (PV_R, PV_{PG}, PV_{CG}, PV_{TR}, PV_{TG}) included in the average, kilograms of monomer VOC per megagram of material applied.

M_i = Mass of resin or gel coat *used within an operation in the past 12 months, megagrams.*

n = Number of different open molding resins and gel coats used within an operation in the past 12 months.

PV_i = The monomer VOC emission rate for resin or gel coat *used within an operation in the past 12 months, kilograms or monomer VOC per megagram of material applied.*

(iv) The monomer VOC emission rate (PV_i) from the atomization of production resin or tooling resin is computed by the following equation:

$$\left[(0.014)(\text{Resin } VOC\%^{2.425}) \right]$$

(v) The monomer VOC emission rate (PV_i) from the atomization plus vacuum bagging with roll-out of production resin or tooling resin is computed by the following equation:

$$\left[(0.01185)(\text{Resin } VOC\%^{2.425}) \right]$$

(vi) The monomer VOC emission rate (PV_i) from the atomization plus vacuum bagging without roll-out of production resin or tooling resin is computed by the following equation:

$$\left[(0.00945)\left(\text{Resin } VOC\%^{2.425}\right)\right]$$

(vii) The monomer VOC emission rate (PV_i) from the non-atomization of production resin or tooling resin is computed by the following equation:

$$\left[(0.014)\left(\text{Resin } VOC\%^{2.275}\right)\right]$$

(viii) The monomer VOC emission rate (PV_i) from the non-atomization plus vacuum bagging with roll-out of production resin or tooling resin is computed by the following equation:

$$\left[(0.0110)\left(\text{Resin } VOC\%^{2.275}\right)\right]$$

(ix) The monomer VOC emission rate (PV_i) from the non-atomization plus vacuum bagging without roll-out of production resin or tooling resin is computed by the following equation:

$$\left[(0.0076)\left(\text{Resin } VOC\%^{2.275}\right)\right]$$

(x) The monomer VOC emission rate (PV_i) from the application of any pigmented gel coat, clear gel coat or tooling gel coat is computed by the following equation:

$$\left[(0.445)\left(Gel\,Coat\,VOC\%^{1.675}\right)\right]$$

4. Compliant Coating Option: For each open molding operation complying using the compliant materials option:

(i) The monomer VOC content requirements are specified in paragraphs 4.(i)(I) through 4.(i)(VII).

(I) The weighted-average monomer VOC content requirement for spray atomized production resin operations is 28 percent (weight percent).

(II) The weighted-average monomer VOC content requirement for nonatomized production resin operations is 35 percent (weight percent).

(III) The weighted-average monomer VOC content requirement for pigmented gel coat operations applied using any method is 33 percent (weight percent).

(IV) The weighted-average monomer VOC content requirement for clear coat gel operations using any method is 48 percent (weight percent).

(V) The weighted-average monomer VOC content requirement for atomized tool resin operations is 30 percent (weight percent).

(VI) The weighted-average monomer VOC content requirement for nonatomized tooling resin operations is 39 percent (weight percent).

(VII) The weighted-average monomer VOC content requirement for tooling gel coat operations applied using any method is 40 percent (weight percent).

(ii) Compliance using the monomer VOC content requirements listed in paragraph 4.(i)(I) through 4.(i)(VII) is based on a 12-month rolling average that is calculated at the end of every month.

(iii) At the end of the first twelfth month and at the end of every subsequent month, if all resins and gel coats used in an operation have monomer VOC contents no greater than the applicable monomer VOC content limits specified in paragraph 4.(i)(I) through 4.(i)(VII), then:

(I) Compliance with the emission limit specified by Equation 1 of this subsection for the particular operation is achieved; and

(II) There is no need to complete the calculations required by paragraph 4.(iv) for that operation.

(iv) If compliance as specified in subparagraph 4.(iii) is not achieved, calculate the weighted-average monomer VOC content for all resins and gel coats [excluding filled resins] used in the previous 12 months at the end of every month using Equation 4:

Equation 4:

Weighted-Average Monomer VOC Content (%) =

$$\left[\frac{\sum_{i=1}^{n}[(M_i)(VOC_i)]}{\sum_{i=1}^{n}(M_i)}\right]$$

where:

M_i = Mass of open molding resin or gel coat *i* used in the past 12 months in an operation (megagrams).

VOC_i = Monomer VOC content, by weight percent, of open molding resin or gel coat *i* used in the past 12 months in an operation.

n = Number of different open molding resins or gel coats used in the past 12 months in an operation.

(v) The monomer VOC emissions from the use of filled production resins and filled tooling resins shall be calculated using Equation 5:

(I) Equation 5:

$$(PV_F) = (PV_U)\left[\frac{(100 - \%Filler)}{100}\right]$$

where:

PV_F = The as-applied monomer VOC emission rate for the filled production resin or tooling resin (kilograms monomer VOC per megagram of filled material).

PV_U = The monomer VOC emission rate for the neat (unfilled) resin, before filler is added, as calculated using paragraphs 3.(iv) through 3.(x), whichever is applicable.

% Filler = The weight-percent of filler in the as-applied filled resin system.

(II) The value of PV_F calculated by Equation 5 shall not exceed 46 kilograms of monomer VOC per megagram of filled resin, as applied, if the filled resin used is a production resin.

(III) The value of PV_F calculated by Equation 5 shall not exceed 54 kilograms of monomer VOC per megagram of filled resin, as applied, if the filled resin used is a tooling resin.

(IV) The facility shall use the value of PV_F calculated using Equation 5 if the facility is including a filled resin in Equation 3 of this subsection.

5. Add-On Control Option: If product performance requirements or other needs dictate the use of higher monomer VOC materials than those that would meet the recommended emission limits specified in subparagraph 4. of this subsection, a fiberglass boat manufacturing facility shall:

(i) Install and operate a thermal oxidizer as an add-on control device and meet the operating limits specified in Table 4 of 40 CFR Part 63 Subpart VVV, as amended, that apply to the emission capture system and thermal oxidizer.

(ii) Use of an add-on control device other than a thermal oxidizer, or monitoring an alternative parameter and complying with a different operating limit must be approved by the Director.

6. The non-monomer VOC content of filled resins shall not exceed 5 percent (weight percent) for all resins and gel coats included in VOC limits described in paragraphs 1. through 5. of this subsection.

7. All resin and gel coat mixing containers with a capacity equal to or greater than 55 gallons, including those used for on-site mixing of putties and polyputties, shall have a cover with no visible gaps in place at all times except during the following operations:

(i) When mixing is being manually added to or removed from a container; and

(ii) When mixing or pumping equipment is being placed or removed from a container.

8. The VOC content of cleaning solvents for routine application equipment cleaning shall not contain in excess of 5 percent VOC by weight.

9. For the purpose of this subsection, the definitions specified in 40 CFR Part 63.5779, as amended, are hereby incorporated and adopted by reference with the following additions:

(i) "Fiberglass boat manufacturing" means a facility that manufacturers hulls or decks of boats and related parts, builds molds to make fiberglass boat hulls or decks and related parts from fiberglass, or makes polyester resin putties for assembling fiberglass parts. For purposes of this subsection, fiberglass boat manufacturing does not include facilities that manufacture solely parts of boats (such as hatches, seats, or lockers), or boat trailers, but not manufacture hulls or decks of boats from fiberglass, or build molds to make fiberglass boat hulls or decks. If a facility manufactures hulls or decks, or molds for hulls or decks, then the manufacture of all other fiberglass boat parts, including small parts such as hatches, seats, and lockers is also covered.

(ii) "Monomer" means a volatile organic compound that partly combines with itself, or other similar compounds, by a cross-linking reaction to become a part of the cured resin.

10. Applicability: On and after January 1, 2015, the requirements of this subparagraph (zzz) shall apply to facilities at which the actual emissions of volatile organic compounds from all non-exempt fiberglass boat manufacturing processes at a facility equal or exceed 2.7 tons per 12-month rolling period for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton counties. Any physical or operational changes that are necessary to comply with the provisions specified in this subparagraph are subject to the compliance schedule specified in subparagraph 12. Prior to January 1, 2015, such facilities shall comply with the provisions of subparagraph 391-3-1-.02(2)(tt), if applicable.

11. Applicability: The requirements of this Subparagraph (zzz) will no longer be applicable by the compliance deadlines if the counties specified in subparagraph 10. are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of this Subparagraph (zzz) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

12. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014**.

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014**.

(iii) Full compliance with the applicable requirements specified Subparagraph (zzz) must be completed before **January 1, 2015**.

13. Applicability: The requirements of this subsection apply to the following operations at a fiberglass boat manufacturer:

(i) open molding and gel coat operations (including pigmented gel coat, clear gel coat, production resin, tooling gel coat, and tooling resin);

(ii) resins and gel coat mixing operations; and

(iii) resins and gel coat application equipment cleaning operations.

14. Applicability: The requirements of this subsection do not apply to the following operations at a fiberglass boat manufacturer:

(i) Surface coating applied to fiberglass boats;

(ii) Surface coating for fiberglass and metal recreational boats (pleasure craft); and

(iii) industrial adhesives used in the assembly of fiberglass boats.

15. Exemptions: The following activities are exempt from the open molding emission limit specified in subparagraph 1. of this subsection:

(i) Production resins (including skin coat resins) that shall meet specifications for use in military vessels or shall be approved by the U.S. Coast Guard for use in the construction of lifeboats, rescue boats, and other life saving appliances approved under 46 CFR Subchapter Q, or the construction of small passenger vessels regulated by 46 CFR Subchapter T. Production resins for which this exemption is used must be applied with nonatomizing (non-spray) resin application equipment. You must keep a record of the resins for which you are using this exemption.

(ii) Pigmented, clear, and tooling gel coat used for part or mold repair and touch up. The total gel coat materials included in this exemption must not exceed 1 percent by weight of all gel coat used at the facility on a 12-month rolling average basis. You must keep a record of the amount of gel coats used per month for which you are using this exemption and copies of calculations showing that the exempt amount does not exceed 1 percent of all gel coat used.

(iii) Pure, 100 percent vinylester resin used for skin coats. This exemption does not apply to blends of vinylester and polyester resins used for skin coats. The total resin materials included in the exemption cannot exceed 5 percent by weight of all resin used at the facility on a 12-month rolling-average basis. You must keep a record of the amount of

100 percent vinylester skin coat resin used per month that is eligible for this exemption and copies of calculations showing that the exempt amount does not exceed 5 percent of all resin used.

(aaaa) **Industrial Cleaning Solvents.**

1. No person shall cause, suffer, allow, or permit the use of organic solvents for cleaning operations such as mixing vessels (tanks), spray booths, parts drums or for other cleaning activities performed for the removal of material from substrate including actions such as wiping, flushing or spraying, unless the following requirements for control of emissions of the volatile organic compounds are satisfied:

(i) All containers used for organic solvent-related materials are kept closed at all times except when depositing or removing these materials;

(ii) All organic cleaning solvents and used solvent-related materials including shop towels shall be stored in closed containers;

(iii) Air circulation around cleaning-related operations and waste materials shall be minimized;

(iv) All used solvent materials and shop towels shall be disposed of in a manner that minimizes emissions (e.g., moving these items from one location to another in closed containers or pipes); and

(v.) Equipment shall be maintained in such a way that minimizes emissions (e.g., keeping parts cleaners covered, maintaining cleaning equipment to repair solvent leaks, etc.).

2. No person shall cause, suffer, allow, or permit volatile organic compound emissions from each cleaning process, spray gun cleaning, spray booth cleaning, large manufactured components cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning, tank cleaning or small manufactured components cleaning to exceed 0.42 lbs of VOC per gallon (50 g/liter) of cleaning material unless the cleaning operation is equipped with an emission control system with an overall control efficiency of at least 85 percent. Alternatively, a VOC composite vapor pressure limit of 8 millimeters of mercury (mmHg) at 20° Celsius may be used as a replacement limit for VOC content limit.

3. The requirements of this subparagraph shall not apply to any cleaning operations in categories subject to other more specific VOC requirements contained in other subparagraphs of this Rule. The requirements of this subparagraph shall not apply to cleaners used for low temperature (below 40°F) applications, or the use of janitorial cleaners as relating to cleaning offices, bathrooms or other similar areas.

4. For the purpose of this subparagraph, the following definition shall apply:

(i) "Industrial cleaning solvents" means a variety of products that are used to remove contaminants such as adhesives, inks, paint, dirt, soil, oil, and grease from parts, products, tools, machinery, equipment, vessels, floors, walls, and other production related work areas for a variety of reasons including safety, operability, and to avoid product contamination.

5. Applicability: On and after January 1, 2015, the requirements of this Subparagraph (aaaa) shall apply to facilities at which actual emissions of volatile organic compounds from the use of organic solvents for cleaning operations equal or exceed 15 pounds per day for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton counties. Any physical or operational changes that are necessary to comply with the provisions specified in this Subparagraph (aaaa) are subject to the compliance schedule specified in Subparagraph 7. Prior to January 1, 2015, such facilities shall comply with the provisions of Subparagraph 391-3-1-.02(2)(tt), if applicable.

6. Applicability: The requirements of this Subparagraph (aaaa) will no longer be applicable by the compliance deadlines if the counties specified in subparagraph 5. are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality

Standard for ozone is violated in the specified counties, the requirements of this Subparagraph (aaaa) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

7. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014.**

(ii) On-site construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014.**

(iii) Full compliance with the applicable requirements specified this Subparagraph (aaaa) must be completed before **January 1, 2015.**

(3) **Sampling.**

(a) Any sampling, computation and analysis to determine the compliance with any of the emissions limitations or standards set forth herein shall be in accordance with applicable procedures and methods specified in the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants**. When no applicable test method or procedure is published therein, the Director shall specify or approve an applicable method or procedure prior to its use.

(b) The owner or operator of any equipment which is being sampled for the purpose of determining compliance with the Regulations shall operate such equipment during the sampling period at the maximum expected operating capacity, or at other specific operating conditions prescribed in the applicable operating permit or as otherwise may be required by the Director.

(c) The owner or operator of any source shall provide performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to such source;

2. Safe sampling platform;

3. Safe access to sampling platforms; and

4. Electric power for sampling and testing equipment.

(4) **Ambient Air Standards.**

(a) **No person** shall cause, suffer, permit, or allow the emission from any source the quantities of compounds listed below which would cause the ambient air standards listed to be exceeded. This does not exempt such sources from controlling their emissions to a point equal to or lower than the levels required to comply with a specific emission standard enumerated in other sections of these Rules.

(b) **Sulfur Dioxide.**

1. The level of the 2010 1-hour ambient air quality primary standard for oxides of sulfur is 75 parts per billion (ppb), measured in the ambient air as sulfur dioxide (SO_2).

(i) The 1-hour primary standard is attained when the three-year average of the annual (99^{th} percentile) of the daily maximum 1-hour average concentrations is less than or equal to 75 ppb, as determined in accordance with Appendix T of 40 CFR Part 50.

(ii) The level of the 2010 1-hour ambient air quality primary standard shall be measured by a reference method based on Appendix A or A-1 of 40 CFR Part 50, or by a Federal Equivalent Method (FEM) designated in accordance with 40 CFR Part 53.

2. The level of the 1971 3-hour ambient air quality secondary standard for oxides of sulfur for any successive nonoverlapping calendar day three-hour period starting at midnight each calendar day is 0.5 ppm, measured in the ambient air as sulfur dioxide (SO_2).

(i) The 3-hour secondary standard is attained when the second-highest 3-hour average, as determined in accordance with 40 CFR 50.5(c), is less than or equal to 0.5 ppm. The standard shall not be exceeded more than once per calendar year.

(ii) The level of the 1971 3-hour ambient air quality secondary standard shall be measured in the ambient air as sulfur dioxide by the reference method described in Appendix A of 40 CFR Part 50, or by a FEM designated in accordance with 40 CFR Part 53.

(c) **Particulate Matter.**

1. PM_{10}

(i) The level of the 24-hour ambient air quality standard for PM_{10} is 150 micrograms per cubic meter, 24-hour average concentration.

(I) The standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter, as determined in accordance with Appendix K of 40 CFR 50, is equal to or less than 1.

(II) PM_{10} shall be measured in the ambient air as PM_{10} (particles with an aerodynamic diameter less than or equal to a nominal ten micrometers) by a reference method based upon 40 CFR 50, Appendix J.

2. $PM_{2.5}$

(i) The level of the annual ambient air quality standard of $PM_{2.5}$ (particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers) in the ambient air is 12.0 micrograms per cubic meter, annual arithmetic mean.

(I) The annual standard is attained when the annual arithmetic mean concentration, as determined in accordance with Appendix N of 40 CFR 50 is less than or equal to 12.0 micrograms per cubic meter.

(II) $PM_{2.5}$ shall be measured in the ambient air as $PM_{2.5}$ by reference method based upon 40 CFR 50, Appendix L.

(ii) The level of the 24-hour ambient air quality standard of $PM_{2.5}$ in the ambient air is 35 micrograms per cubic meter, 24-hour average concentration.

(I) The 24-hour standard is attained when the 98^{th} percentile 24-hour concentration, as determined in accordance with Appendix N of 40 CFR 50, is less than or equal to 35 micrograms per cubic meter.

(II) $PM_{2.5}$ shall be measured in the ambient air as $PM_{2.5}$ by reference method based upon 40 CFR 50, Appendix L.

(d) **Carbon Monoxide.**

1. The level of the ambient air quality standard for carbon monoxide is 35 ppm (40 milligrams per cubic meter) for a one-hour average or 9 ppm (10 milligrams per cubic meter) for an eight-hour average.

(i) These standards are not to be exceeded more than once per year.

(ii) Carbon monoxide shall be measured in the ambient air as CO by reference method based upon 40 CFR 50, Appendix C.

(e) **Ozone.**

1. The level of the 2008 8-hour ambient air standard for ozone is 0.075 ppm, daily maximum 8-hour average.

(i) The standard is attained when the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.075 ppm, as determined in accordance with Appendix P of 40 CFR 50.

(ii) Ozone shall be measured in the ambient air by a reference method based upon 40 CFR 50, Appendix D or an equivalent method designated in accordance with 40 CFR 53.

2. The level of the 2015 8-hour ambient air standard for ozone is 0.070 ppm, daily maximum 8-hour average.

(i) The standard is attained when the 3-year average of the annual fourth highest daily maximum 8-hour average ozone concentration is less than or equal to 0.070 ppm, as determined in accordance with Appendix U of 40 CFR 50.

(ii) Ozone shall be measured in the ambient air by a reference method based upon 40 CFR 50, Appendix D or an equivalent method designated in accordance with 40 CFR 53.

(f) **Lead.**

1. The level of ambient air quality standard of lead and its compounds at ground level shall not exceed 0.15 micrograms per cubic meter, arithmetic mean concentration over a 3-month period.

(i) The standard is attained when the maximum arithmetic 3-month mean concentration for a 3-year period, as determined in accordance with Appendix R of this 40 CFR 50, is less than or equal to 0.15 micrograms per cubic meter.

(ii) The specified standard procedure for measuring ambient air concentrations of lead shall be a reference method based upon 40 CFR 50, Appendix G or an equivalent method designated in accordance with 40 CFR 53.

(g) **Nitrogen Dioxide.**

1. The level of the annual air quality standards for oxides of nitrogen at ground level is 53 ppb, annual average concentration, measured in the ambient air as nitrogen dioxide.

(i) The annual standard is met when the annual average concentration in a calendar year is less than or equal to 53 ppb, as determined in accordance with Appendix S of 40 CFR 50.

(ii) The level of the standard shall be measured by a reference method based on Appendix F or by a FEM designated in accordance with 40 CFR 53.

2. The level of the 1-hour ambient air quality standard for oxides of nitrogen is 100 ppb, 1-hour average concentration, measured in the ambient air as nitrogen dioxide.

(i) The 1-hour standard is met when the three-year average of the annual 98^{th} percentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb, as determined in accordance with Appendix S of 40 CFR 50.

(ii) The level of the standard shall be measured by a reference method based on Appendix F or by a FEM designated in accordance with 40 CFR 53.

(h) **Standard Conditions for Temperature and Pressure.**

1. All measurements of air quality that are expressed as mass per unit volume (e.g., micrograms per cubic meter) other than for particulate matter ($PM_{2.5}$) standards contained in 391-3-1-.02(4)(c)2., and lead standards contained in 391-3-1-.02(4)(f) shall be corrected to a reference temperature of 25 (deg) C and a reference pressure of 760 millimeters of mercury (1,013.2 millibars).

2. Measurements of $PM_{2.5}$ for purposes of comparison to the standards contained in 391-3-1-.02(4)(c)2., and of lead for purposes of comparison to the standards contained in 391-3-1-.02(4)(f) shall be reported based on actual ambient air volume measured at the actual ambient temperature and pressure at the monitoring site during the measurement period.

(5) **Open Burning.**

(a) **No person shall cause**, suffer, allow, or permit open burning in any area of the State except as follows:

1. Reduction of leaf piles, yard debris, or hand-piled natural vegetation on the premises on which they fall by the person in control of the premises, unless prohibited by local ordinance and/or regulation.

2. Carrying out recognized agricultural procedures necessary for production or harvesting of crops, if the agricultural tract, lot, or parcel is less than or equal to five acres.

3. Burning over any agricultural tract, lot, or parcel greater than five acres for purposes of any existing, expanded, or new agricultural operations as such term is defined by O.C.G.A. Section 1-3-3, provided that such burning is consistent with the requirements of the Federal Act and is limited to vegetative material.

4. The "prescribed burning" of any land by the owners or the owner's designee.

5. For recreational purposes or cooking food for immediate human consumption.

6. Fires set for purposes of training fire-fighting personnel when authorized by the appropriate governmental entity.

7. Acquired structure burns provided that an Authorization to Burn certificate has been issued by the Division.

8. Disposal of vegetative debris from storm damage.

9. For weed abatement, disease, and pest prevention.

10. Operation of devices using open flames such as tar kettles, blow torches, welding torches, portable heaters and other flame-making equipment.

11. Open burning for the purpose of land clearing or construction or right-of-way maintenance provided the following conditions are met:

(i) Prevailing winds at the time of the burning are away from the major portion of the area's population;

(ii) The location of the burning is at least 1,000 feet from any occupied structure, or lesser distance if approved by the Division;

(iii) The amount of dirt on or in the material being burned is minimized;

(iv) Heavy oils, asphaltic materials, items containing natural or synthetic rubber, or any materials other than plant growth are not being burned; and

(v) No more than one pile 60 feet by 60 feet, or equivalent, is being burned within a 9-acre area at one time.

12. Disposal of all packaging materials previously containing explosives, in accordance with U.S. Department of Labor Safety Regulations.

13. Open burning of vegetative material for the purpose of land clearing using an air curtain destructor provided the following conditions are met:

(i) Authorization for such open burning is received from the fire department, if required, having local jurisdiction over the open burning location prior to initiation of any open burning at such location;

(ii) The location of the air curtain destructor is at least 300 feet from any occupied structure or public road. Air curtain destructors used solely for utility line clearing or road clearing may be located at a lesser distance upon approval by the Division;

(iii) No more than one air curtain destructor is operated within a ten (10) acre area at one time or there must be at least 1000 feet between any two air curtain destructors;

(iv) Only wood waste consisting of trees, logs, large brush and stumps which are relatively free of soil are burned in the air curtain destructor;

(v) Tires or other rubber products, plastics, heavy oils or asphaltic based or impregnated materials are not used to start or maintain the operation of the air curtain destructor;

(vi) The air curtain destructor is constructed, installed and operated in a manner consistent with good air pollution control practice for minimizing emissions of fly ash and smoke;

(vii) The cleaning out of the air curtain destructor pit is performed in a manner to prevent fugitive dust; and

(viii) Whenever feasible, the air curtain destructor should not be fired before 10:00 a.m. and the fire should be completely extinguished, using water or by covering with dirt, at least one hour before sunset.

(b) **Specific County Restrictions.**

1. In the counties of Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding and Walton, the only legal exceptions to the general prohibition against open burning during the months of May, June, July, August and September shall be:

(i) exceptions numbered 2, 5, 6, 10 and 12 under subparagraph (a) above provided, however, that such burning, whenever feasible, be conducted between 10:00 a.m. and one hour before sunset; and

(ii) exception number 3 under subparagraph (a) above.

2. In the counties of Banks, Barrow, Bibb, Butts, Catoosa, Chattooga, Clarke, Columbia, Crawford, Dawson, Floyd, Gordon, Haralson, Heard, Houston, Jackson, Jasper, Jones, Lamar, Lumpkin, Madison, Meriwether, Monroe, Morgan, Oconee, Peach, Pickens, Pike, Polk, Putnam, Richmond, Troup, Twiggs, Upson, and Walker the only legal exceptions to the general prohibition against open burning during the months of May, June, July, August and September shall be:

(i) exceptions numbered 2, 4, 5, 6, 10 and 12 under subparagraph (a) above provided, however, that such burning, whenever feasible, be conducted between 10:00 a.m. and one hour before sunset; and

(ii) exception number 3 under subparagraph (a) above.

3. [reserved]

4. In counties listed in subparagraphs 1 or 2 above whose total population, as listed in the 2010 Census, exceeds 65,000 (Barrow, Bartow, Bibb, Carroll, Cherokee, Clarke, Clayton, Cobb, Columbia, Coweta, DeKalb, Douglas, Fayette, Floyd, Forsyth, Fulton, Gwinnett, Hall, Henry, Houston, Newton, Paulding, Richmond, Rockdale, Troup, Walker and Walton), the only legal exceptions to the general prohibition against open burning during the months of January, February, March, April, October, November, and December are:

(i) exceptions numbered 1, 2, 4, 5, 6, 7, 10, 12, and 13 under subparagraph (a) above, provided, however, that such burning, whenever feasible, be conducted between 10:00 a.m. and one hour before sunset and does not cause air

pollution in quantities or characteristics or of a duration which is injurious or which unreasonably interferes with the enjoyment of life or use of property in such area of the state as is affected thereby; and

(ii) exception number 3 under subparagraph (a) above.

(c) **Except for a reasonable period** to get a fire started, no smoke the opacity of which is equal to or greater than 40 percent, shall be emitted from any source of open burning listed in subparagraphs (a) and (b) above except as follows. Prescribed burning, agricultural burning and acquired structure burning are not subject to the 40 percent opacity standard in this paragraph.

(d) **The Director** may allow open burning prohibited under paragraphs (a) and (b), upon a determination that such open burning is necessary to protect the public health, safety or welfare of the people of the State of Georgia, or there are no reasonable alternatives to the open burning.

(e) **Prescribed burning** conducted under subparagraph (b)2. is subject to authorization by the Georgia Forestry Commission to include burning restrictions during periods that are conducive to the formation of ozone. Federal facilities which conduct prescribed burning in accordance with subparagraph (b)2. that are not required to obtain authorization from the Georgia Forestry Commission for such burning shall institute measures to ensure that prescribed burning is not conducted during periods conducive to the formation of ozone.

(f) **Definitions.**

1. "Prescribed burning" means the controlled application of fire to existing vegetative fuels under specified environmental conditions and following appropriate precautionary measures, which causes the fire to be confined to a predetermined area and accomplishes one or more planned land management objectives as specified in the Georgia Prescribed Burning Act (Georgia Code Title 12. Conservation and Natural Resources §12-6-146) or to mitigate catastrophic wildfires.

2. [reserved]

3. "Acquired structure burn" is the burning of a house, building or structure for the exclusive purpose of providing training to fire-fighting personnel or arson investigators.

(6) **Source Monitoring.**

(a) **Specific Monitoring and Reporting Requirements for Particular Sources.**

1. Sources, and owners and operators of sources, subject to any of the Standards of Performance for New Stationary Sources of or pursuant to 42 U.S.C. Section 7411, as amended, or National Emission Standards for Hazardous Air Pollutants of or pursuant to U.S.C. Section 7412, as amended, shall meet the monitoring and related requirements specified in the applicable standard, unless the Director specifies additional or more stringent requirements, in which case all requirements must be met.

2. Certain specific sources, as herein designated, shall provide for the continuous monitoring of emissions as prescribed below:

(i) Fossil Fuel-Fired Steam Generators. The owner or operator of any fossil fuel-fired steam generator, except as provided for in subparagraph (iv) of this paragraph, with an annual average capacity factor of greater than 30 percent, as reported to the Federal Power Commission for calendar year 1974, or as otherwise demonstrated to the Director by the owner or operator, shall install, calibrate, operate, and maintain all monitoring equipment necessary for the continuous monitoring of the following:

(I) Opacity, if such steam generator has a heat input greater than 250 million BTUs per hour, except where:

I. Gaseous fuel is the only fuel burned; or

II. Oil or mixture of gas and oil are the only fuels burned and the source is able to comply with the applicable particulate matter and opacity regulations without utilization of particulate matter collection equipment, and the source has never been found, through any administrative or judicial proceedings, to be in violation of any visible emission standard;

(II) Sulfur dioxide, if such steam generator has a heat input greater than 250 million BTUs per hour and has installed sulfur dioxide emission control equipment;

(III) The percent oxygen, or carbon dioxide, in the flue gas as necessary to accurately convert sulfur dioxide continuous emission monitoring data to the units of the emission standard.

(ii) Sulfuric Acid Plants.

(I) The owner or operator of any sulfuric acid plant of greater than 300 tons per day production capacity, the production being expressed as 100 percent acid, shall, except as provided for in subparagraph (iv) of this paragraph, install, calibrate, maintain, and operate a continuous monitoring system for the measurement of sulfur dioxide for each sulfuric acid production facility within such plant.

(iii) Wood Waste Fired Combination Boilers.

(I) The owner or operator of any boiler which fires wood waste or wood waste in combination with fossil fuel(s) with a total heat input equal to or greater than 100 million BTUs per hour shall, except as provided for in subparagraph (iv) of this subparagraph, install, calibrate, operate and maintain a continuous monitoring system for the measurement of opacity;

(II) Boilers subject to this subparagraph (iii) shall comply with the opacity monitoring requirements as specified for fossil fuel fired steam generators. In any rule or subdivision thereof dealing with opacity monitoring requirements for fossil fuel-fired steam generators, where reference is made to "Fossil Fuel Fired Steam Generators" the term "Wood Waste Fired Combination Boilers" should be inserted for the purpose of this subparagraph.

(iv) Exemptions. A facility is exempt from the requirements otherwise imposed by this subparagraph (a)2. if:

(I) It is subject to any of the Standards of Performance for New Stationary Sources promulgated in 40 CFR, Part 60 or National Emission Standards for Hazardous Air Pollutants promulgated in 40 CFR Part 61, pursuant to Section 111 of the Federal Act; or

(II) It is not subject to an applicable emission standard.

(v) Monitoring Equipment.

(I) The monitoring equipment required pursuant to the previous subparagraphs (i) through (iv) shall be demonstrated by the owners or operators of such monitoring equipment to meet the performance specifications specified in the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants**.

(vi) Data Reporting.

(I) The owner or operator of a facility subject to the requirements of this subparagraph (a)2. shall submit a written report for each calendar quarter and, if excess emissions have occurred, the report shall state the nature and cause of the excess emissions, if known, and the corrective action taken. The averaging period used for data reporting shall correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. The required report shall include, as a minimum, the data specified in this subparagraph.

I. For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of each 6-minute average of opacity which is greater than the opacity standard applicable to the source. If more than one opacity standard applies, excess emissions data must be submitted in relation to all such standards.

II. For gaseous measurements, the summary shall consist of emission averages in the units of the applicable standard, for each averaging period during which the applicable standard was exceeded.

III. The data and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. The Director may require proof of continuous monitoring system performance whenever system repairs or adjustments have been made.

IV. When no excess emissions have occurred and the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be included in the report.

V. The owners or operators of sources or facilities subject to this subparagraph (a)2. shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries.

(vii) Data Conversion. The owner or operator of a source subject to this subparagraph (a)2. shall use the following procedures for converting monitoring data to units of the applicable standard:

(I) For fossil fuel-fired steam generators, the procedures of Paragraph 2.1 of the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants** shall be used to convert gaseous emissions monitoring data in ppm to pounds/million BTU where necessary.

(II) For sulfuric acid plants the owner or operator shall:

I. Establish a conversion factor three times daily according to the procedures in Paragraph 2.5 of the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants**.

II. Multiply the conversion factor by the average sulfur dioxide concentration in the flue gases to obtain average sulfur dioxide emissions in lb/ton, and;

III. Report the average sulfur dioxide emission for each averaging period in excess of the applicable emission standard in the quarterly report.

(III) The owner or operator of a source subject to this regulation may employ data reporting or reduction procedures varying from those specified in this subparagraph (a)2.(vii) if such owner or operator shows to the satisfaction of the Director that such procedures are at least as accurate as the procedures identified in this subparagraph. Such procedures may include, but are not limited to, the following:

I. Alternative procedures for computing emission averages that do not require integration of data (e.g., some facilities may demonstrate that the variability of their emissions is sufficiently small to allow accurate reduction of data based upon computing averages from equally spaced data points over the averaging period);

II. Alternative methods of converting pollutant concentration measurements to the units of the emission standards.

(viii) In cases where the owner or operator of a source subject to this paragraph wishes to utilize different, but equivalent, procedures for continuous monitoring systems and/or alternative monitoring and data reporting procedures or other alternative equivalents to comply with the intent of this paragraph then:

(I) The owner or operator must submit:

I. A detailed summary of the limitations prohibiting the installation of a continuous monitor, and;

II. Alternative and/or equivalent emission monitoring and reporting requirements (e.g., periodic manual stack tests) to satisfy the intent of this paragraph.

(II) The use of any alternative or equivalent method for compliance with any requirement of this subparagraph (a)2. shall be subject to approval of the Director.

(ix) Monitor Malfunction.

(I) The requirements of this paragraph shall not apply during any period of monitoring system malfunction, provided that the source owner or operator shows, to the satisfaction of the Director, that the malfunction was unavoidable and is being or was repaired as expeditiously as practicable.

(x) [reserved]

(xi) Kraft Pulp Mills.

(I) On or before March 1, 1984, unless otherwise specified in an alternate compliance schedule as provided for in subparagraph 391-3-1-.02(2)(a)9., the owner or operator of any kraft pulp mill subject to any limitation or requirement of, or under subparagraph (gg) of paragraph 391-3-1-.02(2) shall, except as provided in Part (II) of this subparagraph, install, calibrate, operate, and maintain a system to continuously measure and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged from any lime kiln, recovery furnace, digester system, or multiple-effect evaporator system.

(II) The owner or operator of any kraft pulp mill which incinerates effluent gases emitted from any digester system or multiple-effect evaporator system subject to any limitation or requirement of, or under subparagraph (gg) of paragraph 391-3-1-.02(2) shall install, calibrate, operate, and maintain a system to continuously measure and record the combustion temperature at the point of incineration.

(xii) Fuel Burning Equipment.

(I) The owner or operator of any fuel burning equipment with a maximum design heat input capacity equal to or greater than 100 million BTU/hr subject to the provisions of subparagraph (lll) of paragraph 391-3-1-.02(2) shall install, calibrate, operate, and maintain a continuous emissions monitoring system (CEMS) for the measurement of the concentration of nitrogen oxides (NOx) and the percent oxygen and shall record the output of the system.

(II) For any fuel burning equipment which only combusts gas residual oil with a nitrogen content less that 0.30 percent, or distillate oil or a combination of those fuels, the owner or operator may monitor equipment operating conditions to predict the concentration of nitrogen oxides, (Predictive Emissions Monitoring System) in lieu of the CEMS required in subparagraph (I) provided such system meets the requirements of Section 2.119 of the **Procedures for Testing and Monitoring Sources of Air Pollutants**.

3. All sources, and owners and operators of sources, subject to any limitation of subparagraphs (2)(t) through (2)(aa) [inclusive]; (2)(ii); (2)(jj); (2)(11); (2)(mm); and (2)(tt) [inclusive] shall maintain, as specified by the Director, at the source, for a period of at least two years, records containing the following information for each production line:

(i) Process information, including, but not limited to, hours of operation, method of application, and drying method.

(ii) Coating formulation and analytical data, including, but not limited to, the name of inks or coatings, coating or ink density, VOC content (weight or volume percent), and solids content (volume percent).

(iii) Coating consumption data, including, but not limited to, name of ink or coating used, amount of ink or coating used, name of diluent and amount of diluent used.

(iv) Capture and control equipment data, including, but not limited to, the destruction and removal efficiency, emission test results, and the capture efficiency.

(v) Transfer Efficiency Data, including, but not limited to, baseline transfer efficiency, actual transfer efficiency, and results of efficiency test.

(b) **General Monitoring and Reporting Requirements.**

1. All Sources.

(i) Any person engaged in operations which cause emissions to be released into the atmosphere which may result in air pollution may be required to install, maintain, and use emission monitoring devices, to sample such specific emissions as prescribed by the Director; to make periodic reports on the nature and amounts of emissions and provide such other information as the Director may reasonably require; and to maintain such records as the Director may prescribe so as to determine whether emissions from such operations are in compliance with the provisions of the Act or any rules and regulations promulgated there under.

(ii) Specific types of information and/or equipment installation which may be requested may include, but are not limited to, the following:

(I) Detectors and recorders for continuous measurement and recording of the opacity of emissions;

(II) Composition and analysis of fuels of any nature, the determination of which shall be conducted in accordance with acceptable and appropriate procedures of the American Society for Testing and Materials or by other procedures specified or approved by the Director;

(III) As technology permits, instrumentation for continuously monitoring particulate matter and gaseous emissions;

(IV) Production and process feed rates, process charging rates, burning rates, hours of operation and periodic summaries of this information.

(iii) Records of information requested shall be submitted on forms supplied by the Director, or when forms are not supplied, in a format acceptable to and approved by the Director. The information obtained on request of the Director shall be retained for a period and shall be reported at time intervals to be specified. Records shall be kept current and be available for inspection at the discretion of the Director.

(iv) In the event of any malfunction or breakdown of process, fuel burning, or emission control equipment for a period of four hours or more which results in excessive emissions for a major source, the owner or operator of such major source shall notify the Division by a written report which would describe the cause of the breakdown, the corrective actions taken, and the plans to prevent future occurrences. Unless otherwise specified in a permit or order, the report must be submitted no later than seven (7) days after the occurrence. The information submitted shall be adequate to allow the Director to determine whether the excessive emissions were due to a sudden and unavoidable breakdown. The reporting requirements of this subparagraph (iv) shall be in addition to any other reporting requirement under these rules (Chapter 391-3-1), and such reporting shall in no event serve to excuse, otherwise justify or in any manner affect any potential liability or enforcement action.

(v) All data gathered in the process of enforcing this or other Air Quality Control Rule or Regulation shall be considered public information and shall be made available upon request, except such information which is required to be kept confidential by Ga. Code Ann. Section 12-9-19, as amended.

(vi) Any continuous monitoring system or monitoring device shall be installed, operated, calibrated and maintained and information reported in accordance with the applicable procedures and performance specifications of the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants**. Where no applicable procedure or performance specification for such installation, operation or reporting of data is published therein, the Director shall, as needed, specify or approve an applicable procedure or performance specification prior to operation of the monitoring system or monitoring device.

(7) **Prevention of Significant Deterioration of Air Quality.**

(a) **General Requirements.**

1. The provisions of paragraph (7) shall apply to any source and the owner or operator of any source subject to any requirement under 40 Code of Federal Regulations (hereinafter, CFR) Part 52.21. The subparagraphs of Paragraph (7) that incorporate by reference paragraphs of 40 CFR Part 52.21 are as promulgated on January 17, 2017, unless otherwise specified. The dates associated with the incorporation by reference of federal rules into this paragraph (7) refer to the dates of publication of the promulgated rules in the Federal Register.

2. Definitions: For the purpose of this paragraph, 40 CFR Part 52.21(b) as amended, is hereby incorporated by reference with the following exceptions:

(i) In lieu of the definition of "baseline actual emissions" as specified in paragraph (b)(48) of 40 CFR Part 52.21, the following shall apply:

"Baseline actual emissions" means the rate of emissions, in tons per year, of a regulated NSR pollutant, as determined in accordance with subparagraphs (7)(a)2.(i)(I) through (IV) of this rule.

(I) For any existing electric utility steam generating unit, baseline actual emissions means the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding when the owner or operator begins actual construction of the project. The Director shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

I. The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions. However, fugitive emissions and/or emissions associated with startups, shutdowns, and malfunctions shall or may be excluded in accordance with the following subparagraphs A and B.

A. If fugitive emissions or emissions from startups, shutdowns, and/or malfunctions during the consecutive 24-month period selected by the owner or operator are not quantifiable and are therefore not included in the calculation of baseline actual emissions, then fugitive emissions or emissions from startups, shutdowns, and/or malfunctions, respectively, shall not be included in the calculation of projected actual emissions [as defined in subparagraph (7)(a)2.(ii) of this rule].

B. The owner or operator may elect to omit malfunctions from the calculation of baseline actual emissions. If the owner or operator elects to do so, then malfunctions shall also be omitted from the calculation of projected actual emissions [as defined in subparagraph (7)(a)2.(ii) of this rule].

II. The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24-month period.

III. For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period may be used to determine the baseline actual emissions for the emissions units being changed. A different consecutive 24-month period can be used for each regulated NSR pollutant.

IV. The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, or for which there is inadequate information for adjusting this amount downward to exclude any non-compliant emissions as required by subparagraph (7)(a)2.(i)(I)II. of this rule.

V. If any physical change(s) or change(s) in the method of operation subsequent to the consecutive 24-month period selected by the owner or operator resulted in a permanent change in the basic design parameter [as defined in subparagraph (7)(a)2.(viii) of this rule], not including the voluntary addition of air pollution control equipment or increase in removal or collection efficiency of existing air pollution control equipment, and thus resulted in a corresponding reduction in actual emissions of a regulated NSR pollutant, the baseline actual emissions shall be adjusted downward by a proportional reduction in emissions in tons per year or lbs/unit of production.

VI. The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply, had such major source been required to comply with such limitations during the consecutive 24-month period. However, if an emission limitation is part of a Maximum Available Control Technology (MACT) standard that the Administrator of U.S. EPA has proposed or promulgated under 40 CFR, Part 63, the baseline actual emissions need only be adjusted if the Division has taken credit for such emission reductions in an attainment demonstration or maintenance plan consistent with the requirements of 40 CFR Part 51.165(a)(3)(ii)(G).

(II) For an existing emissions unit (other than an electric utility steam generating unit), baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received by the Division for a permit required under this paragraph or by the reviewing authority for a permit required by a plan, whichever is earlier.

I. The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions. However, fugitive emissions and/or emissions associated with startups, shutdowns, and malfunctions shall or may be excluded in accordance with the following subparagraphs A and B.

A. If fugitive emissions or emissions from startups, shutdowns, and/or malfunctions during the consecutive 24-month period selected by the owner or operator are not quantifiable and are therefore not included in the calculation of baseline actual emissions, then fugitive emissions or emissions from startups, shutdowns, and/or malfunctions, respectively, shall not be included in the calculation of projected actual emissions (as defined in subparagraph (7)(a)2.(ii) of this rule).

B. The owner or operator may elect to omit malfunctions from the calculation of baseline actual emissions. If the owner or operator elects to do so, then malfunctions shall also be omitted from the calculation of projected actual emissions [as defined in subparagraph (7)(a)2.(ii) of this rule].

II. The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24-month period.

III. The average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply, had such major stationary source been required to comply with such limitations during the consecutive 24-month period. However, if an emission limitation is part of a Maximum Achievable Control Technology (MACT) standard that the Administrator of U.S. EPA has proposed or promulgated under 40 CFR, Part 63, the baseline actual emissions need only be adjusted if the Division has taken credit for such emissions reductions in an attainment demonstration or maintenance plan consistent with the requirements of 40 CFR Part 51.165(a)(3)(ii)(G).

IV. For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period may be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24-month period can be used for each regulated NSR pollutant.

V. The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, or for which there is inadequate information for adjusting this amount downward to exclude any non-compliant emissions as required by subparagraph (7)(a)2.(i)(II)II. or III. of this rule.

VI. If any physical change(s) or change(s) in the method of operation subsequent to the consecutive 24-month period selected by the owner or operator resulted in a permanent change in the basic design parameter [as defined in subparagraph (7)(a)2.(viii) of this Rule], not including the voluntary addition of air pollution control equipment or increase in removal or collection efficiency of existing air pollution control equipment, and thus resulted in a corresponding reduction in actual emissions of a regulated NSR pollutant, the baseline actual emissions shall be adjusted downward by a proportional reduction in emissions in tons per year or lbs/unit of production.

(III) For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit's potential to emit [as long as the unit remains a "new emissions unit" as defined in 40 CFR Part 52.21(b)(7)(i)].

(IV) For a PAL for a stationary source, the baseline actual emissions shall be calculated for existing electric utility steam generating units in accordance with the procedures contained in subparagraph (7)(a)2.(i)(I) of this rule, for other existing emissions units in accordance with the procedures contained in subparagraph (7)(a)2.(i)(II) of this rule, and for a new emissions unit in accordance with the procedures contained in subparagraph (7)(a)2.(i)(III) of this rule. For existing emission units, the baseline actual emissions shall be based on any consecutive 24-month period selected by the operator within the appropriate PAL baseline period. For existing electric steam generating units, the PAL baseline period is the 5-year period (or different period allowed by the Director that is more representative or normal source operation) immediately preceding submission of a complete PAL application to the Division. For other existing emission units, the PAL baseline period is the 10-year period immediately preceding submission of a complete PAL permit application to the Division.

(ii) In lieu of the definition of "projected actual emissions" as specified in paragraph (b)(41) of 40 CFR Part 52.21, the following shall apply:

(I) "Projected actual emissions" means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the five years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source.

(II) In determining the projected actual emissions under subparagraph (7)(a)2.(ii)(I) (before beginning actual construction), the owner or operator of the major stationary source:

I. Shall consider all relevant information, including but not limited to, historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans under the approved State Implementation Plan; and

II. Shall include fugitive emissions to the extent quantifiable and emissions associated with startups, shutdowns, and malfunctions. However, fugitive emissions and/or emissions associated with startups, shutdowns, and malfunctions shall or may be excluded in accordance with the following subparagraphs A., B., and C.

A. If projected fugitive emissions or emissions from startups, shutdowns, and/or malfunctions are not quantifiable and are therefore not included in the calculation of projected actual emissions, then fugitive emissions or emissions from startups, shutdowns, and/or malfunctions, respectively, shall not be included in the calculation of baseline actual emissions [as defined in subparagraph (7)(a)2.(i) of this rule].

B. The owner or operator may elect to omit malfunctions from the calculation of projected actual emissions. If the owner or operator elects to do so, then malfunctions shall also be omitted from the calculation of baseline actual emissions [as defined in subparagraph (7)(a)2.(i) of this rule].

C. If the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant and the increase in projected emissions associated with startups, shutdowns, and malfunctions is not proportional to the increase in the emission unit's design capacity or its potential to emit that regulated NSR pollutant, the owner or operator must include with the information required under subparagraph (7)(b)15.(i)(I) of this rule documentation that supports the projected emissions associated with startups, shutdowns, and malfunctions subsequent to completion of the project; and

III. May exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions under subparagraph (7)(a)2.(i) of this rule and that is also unrelated to the particular project, including any increased utilization due to product demand growth (the increase in emissions that may be excluded under this subparagraph shall hereinafter be referred to as "demand growth emissions");

A. If the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant, the owner or operator shall either:

(A) not exclude demand growth emissions, or

(B) must include in the information required under subparagraph (7)(b)15.(i)(I) of this paragraph, documentation that demand growth emissions are emissions that the emissions unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions, are not related to the particular project, and are due to product demand growth; must have documentation supporting the portion of the emissions increase that is due to demand growth; and, following the change, must be able to track the emissions increase due to demand growth; or

IV. In lieu of using the method set out in subparagraphs (7)(a)2.(ii)(II)I. through III. of this rule, may elect to use the emissions unit's potential to emit, in tons per year, as defined under paragraph (b)(4) of 40 CFR Part 52.21.

(iii) The definition of "major stationary source" contained in 40 CFR Part 52.21(b)(1) is hereby incorporated by reference except as follows:

(I) Subparagraph (i)(b) shall read as follows: Notwithstanding the stationary source size specified in paragraph (b)1.(i)(a) of this section, any stationary source which emits, or has the potential to emit, 250 tons-per-year or more of a regulated NSR pollutant; or

(iv) The definition and use of the term "subject to regulation" in 40 CFR Part 52.21 is hereby incorporated by reference; provided, however, that in the event all or any portion of 40 CFR Part 52.21 containing that term is:

(I) declared or adjudged to be invalid or unconstitutional or stayed by the United States Court of Appeals for the Eleventh Circuit or for the District of Columbia Circuit; or

(II) withdrawn, repealed, revoked or otherwise rendered of no force and effect by the United States Environmental Protection Agency, Congress, or Presidential Executive Order.

Such action shall render the regulation as incorporated herein, or that portion thereof that may be affected by such action, as invalid, void, stayed, or otherwise without force and effect for purposes of this rule upon the date such action becomes final and effective; provided, further, that such declaration, adjudication, stay, or other action described herein shall not affect the remaining portions, if any, of the regulation as incorporated herein, which shall remain of full force and effect as if such portion so declared or adjudged invalid or unconstitutional or stayed or otherwise invalidated or effected were not originally a part of this rule. The Board declares that it would have incorporated the remaining parts of the federal regulation if it had known that such portion thereof would be declared or adjudged invalid or unconstitutional or stayed or otherwise rendered of no force and effect;

(v) The definition of "potential to emit" contained in 40 CFR Part 52.21(b)(4), shall be modified as follows:

(I) The phrase "is federally enforceable" shall read "is federally enforceable or enforceable as a practical matter."

(vi) The definition of "allowable emissions" contained in 40 CFR Part 52.21(b)(16), shall be modified as follows:

(I) The phrase "unless the source is subject to federally enforceable limits which restrict the operating rate, or hours of operation, or both" shall read, "unless the source is subject to enforceable limits which restrict the operating rate, or hours of operation, or both."

(II) paragraph (iii) shall read as follows: The emissions rate specified as an enforceable permit condition, including those with a future compliance date.

(vii) The following shall be added to the definition of "major source baseline date" contained in 40 CFR Part 52.21(b)(14):

(I) Baseline dates established prior to April 19, 2006, will remain in effect.

(viii) In lieu of paragraph (b)(33)(iii) of the definition of "replacement unit" as specified in paragraph (b)(33) of 40 CFR Part 52.21, the following shall apply:

The replacement does not alter the basic design parameters of the process unit. Basic design parameters are defined as follows:

(I) Except as provided in subparagraph (7)(a)2.(viii)(III) of this rule, for a process unit at a steam electric generating facility, the owner or operator may select as its basic design parameters either maximum hourly heat input and maximum hourly fuel consumption rate or maximum hourly electric output rate and maximum steam flow rate. When establishing fuel consumption specifications in terms of weight or volume, the minimum fuel quality based on British Thermal Units content shall be used for determining the basic design parameter(s) for a coal-fired electric utility steam generating unit.

(II) Except as provided in subparagraph (7)(a)2.(viii)(III) of this rule, the basic design parameter(s) for any process unit that is not at a steam electric generating facility are maximum rate of fuel or heat input, maximum rate of material input, or maximum rate of product output. Combustion process units will typically use maximum rate of fuel input. For sources having multiple end products and raw materials, the owner or operator should consider the primary product or primary raw material when selecting a basic design parameter.

(III) If the owner or operator believes the basic design parameter(s) in subparagraphs (7)(a)2.(viii)(I) and (II) of this rule is (are) not appropriate for a specific industry or type of process unit, the owner or operator may propose to the Division an alternative basic design parameter(s) for the source's process unit(s). If the Director approves of the use of an alternative basic design parameter(s), he or she shall issue a permit that is legally enforceable that records such basic design parameter(s) and requires the owner or operator to comply with such parameter(s).

(IV) The owner or operator shall use credible information, such as results of historic maximum capability tests, design information from the manufacturer, or engineering calculations, in establishing the magnitude of the basic design parameter(s) specified in subparagraphs (7)(a)2.(viii)(I) and (II) of this rule.

(V) If design information is not available for a process unit, then the owner or operator shall determine the process unit's basic design parameter(s) using the maximum value achieved by the process unit in the 5-year period immediately preceding the planned activity.

(VI) Efficiency of a process unit is not a basic design parameter.

(ix) [reserved]

(x) [reserved]

(xi) In the definition of "net emissions increase" as specified in paragraph (b)(3) of 40 CFR Part 52.21, paragraphs (iii)(b) and (vi)(d), related to increases and decreases at a clean unit, are not adopted.

3. Applicability procedures: 40 CFR Part 52.21(a)(2), as amended, is hereby incorporated and adopted by reference.

4. Except as noted below, the word "Administrator" as used in regulations adopted by reference in this paragraph shall mean the "Director" as defined in 391-3-1-.01(q). For the following provisions adopted by reference in this

paragraph, the word "Administrator" shall mean the Administrator of the U.S. Environmental Protection Agency or, where allowable, his or her designee.

(i) 40 CFR Part 52.21(b)(17), Definition of "Federally Enforceable"

(ii) 40 CFR Part 52.21(b)(37)(i), First Paragraph within the Definition of "Repowering"

(iii) 40 CFR Part 52.21(b)(43), Definition of "Prevention of Significant Deterioration (PSD)"

(iv) 40 CFR Part 52.21(b)(51), Definition of "Reviewing Authority"

(v) 40 CFR Part 52.21(g), Redesignation

(vi) 40 CFR Part 52.21(l), Air Quality Models

(vii) 40 CFR Part 52.21(p)(2), Federal Land Manager

(viii) 40 CFR Part 52.21(o)(3), Visibility Monitoring

(b) **Prevention of Significant Deterioration Standards.**

1. Ambient air increments: 40 CFR Part 52.21(c), as amended, is hereby incorporated and adopted by reference.

2. Ambient air ceilings: 40 CFR Part 52.21(d), as amended, is hereby incorporated and adopted by reference.

3. Restrictions on area classifications: 40 CFR Part 52.21(e), as amended, is hereby incorporated and adopted by reference.

4. Redesignation: 40 CFR Part 52.21(g), as amended, is hereby incorporated and adopted by reference.

5. Stack heights: 40 CFR Part 52.21(h), as amended, is hereby incorporated and adopted by reference.

6. Exemptions: 40 CFR Part 52.21(i), as amended, is hereby incorporated and adopted by reference.

7. Control technology review: 40 CFR Part 52.21(j), as amended, is hereby incorporated and adopted by reference.

8. Source impact analysis: 40 CFR Part 52.21(k), as amended, is hereby incorporated and adopted by reference.

9. Air quality models: 40 CFR Part 52.21(l), as amended, is hereby incorporated and adopted by reference.

10. Air quality analysis: 40 CFR Part 52.21(m), as amended, is hereby incorporated and adopted by reference.

11. Source information: 40 CFR Part 52.21(n), as amended, is hereby incorporated and adopted by reference with the following exception:

(i) The first sentence of paragraph (n)(1) shall read as follows, "With respect to a source or modification to which paragraphs (j), (l), (o) and (p) of this section apply, such information shall include:"

12. Additional impact analyses: 40 CFR Part 52.21(o), as amended, is hereby incorporated and adopted by reference.

13. Sources impacting federal class I areas - additional requirements: 40 CFR Part 52.21(p), as amended, is hereby incorporated and adopted by reference with the following exception:

(i) The beginning of paragraph (p)(8) should read "In the case of a permit issued pursuant to paragraph (p) (6) or (7) of this section."

14. Public participation: 40 CFR Part 52.21(q), as amended, is hereby incorporated and adopted by reference.

15. Source obligation: 40 CFR Part 52.21(r), as amended, is hereby incorporated and adopted by reference with the following exceptions:

(i) In lieu of the provisions of paragraph (r)(6), the following shall apply:

The provisions of this subparagraph 15(i) apply to projects at an existing emissions unit at a major stationary source (other than projects at a source with a PAL) that are required to obtain a permit under the Construction (SIP) Permit requirements of paragraph 391-3-1-.03(1) of these rules and the owner or operator elects to use the method specified in Subparagraph (7)(a)2.(ii)(II)I. through III. of this rule for calculating projected actual emissions.

(I) Before beginning actual construction of the project, the owner or operator shall document and maintain a record of the following information:

I. A description of the project;

II. Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project; and

III. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under Subparagraph (7)(a)2.(ii)(II)III. of this rule and an explanation for why such amount was excluded, and any netting calculations, if applicable.

IV. The records required in subparagraph (7)(b)15.(i)(I) of this rule shall be retained for a period of 10 years following resumption of regular operations after the change, or for a period of 15 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of a regulated NSR pollutant at such emissions unit.

(II) The owner or operator shall provide a copy of the information set out in Subparagraph (7)(b)15.(i)(I) of this rule with the application for construction required under paragraph 391-3-1-.03(1) of these rules.

(III) The owner or operator shall monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any emissions unit identified in subparagraph (7)(b)15.(i)(I)II. of this rule, and calculate and maintain a record of the annual emissions, in tons-per-year on a calendar year basis, for a period of five years following resumption of regular operations after the change, or for a period of ten years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit that regulated NSR pollutant at such emissions unit. These records shall be retained for a period of five years past the end of each calendar year. If an owner or operator is required to or elects to exclude emissions associated with startups, shutdowns, and/or malfunctions from estimations of projected actual emissions for PSD applicability purposes as allowed by subparagraph (7)(a)2.(ii)(II)II. of this rule, the owner or operator may exclude such emissions from the calculation of annual emissions.

(IV) If the owner or operator excluded demand growth emissions from the projected actual emissions for a project and that project is subject to the requirements of subparagraph (7)(a)2.(ii)(II)III.A.(B) of this rule, the owner or operator shall calculate the actual increase in emissions due to demand growth, in tons per year on a calendar year basis, for a period 10 years following resumption of regular operations after the change. These records shall be retained for a period of five years past the end of each calendar year.

(V) The owner or operator shall submit a report to the Division within 60 days after the end of each year during which records must be generated under subparagraphs (7)(b)15.(i)(III) and (IV) of this rule setting out the unit's annual emissions and, if applicable, the unit's actual increase in emissions due to demand growth during the calendar year that preceded submission of the report.

16. Innovative control technology: 40 CFR Part 52.21(v), as amended, is hereby incorporated and adopted by reference.

17. Permit rescission: 40 CFR Part 52.21(w), as amended, is hereby incorporated and adopted by reference with the following exceptions:

(i) Paragraph (1) of 40 CFR Part 52.21(w) shall read as follows: Any permit issued under this section or a prior version of this section shall remain in effect, unless and until it expires under paragraph (r) of this section or is rescinded.

(ii) Paragraph (3) of 40 CFR Part 52.21(w) shall read as follows: The Director may grant an application for rescission if the application shows that this section, as it existed at the time the permit was issued, would not apply to the source or modification.

18. [reserved]

19. [reserved]

20. [reserved]

21. Actuals PALs: 40 CFR, Part 52.21(aa), as amended, is hereby incorporated by reference with the following exceptions:

(i) [reserved]

(ii) In lieu of the public participation requirements for PALs of 40 CFR Part 52.21(aa)(5), PALs for existing major stationary sources shall be established, renewed, or increased through the procedures for Title V Permit issuance, renewal, and reopenings, and revisions specified in subparagraph 391-3-1-.03(10)(e) of these rules.

(iii) In addition to the provisions for setting the 10-year actual PAL level specified in 40 CFR Part 52.21(aa)(6)(i), the PAL level shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above any emission limitation that was legally enforceable during the consecutive 24-month period used to determine the baseline actual emissions for the PAL pollutant.

(iv) In lieu of the provisions of 40 CFR Part 52.21(aa)(6)(ii), the following shall apply:

For newly constructed units (which do not include modifications to existing units) on which actual construction began after the consecutive 24-month period selected for setting the 10-year actuals PAL level, in lieu of adding the baseline emissions as specified in paragraph (aa)(6)(i) of 40 CFR Part 52.21, the emissions must be added to the PAL level as follows:

(I) For an emissions unit on which actual operation commenced less than 36 months prior to submission of a complete PAL permit application, the emissions must be added to the PAL level in an amount equal to the potential to emit of the unit.

(II) For an emissions unit on which actual operation commenced greater than or equal to 36 months and less than 48 months prior to submission of a complete PAL permit application, the emissions must be added in an amount equal to the rate, in tons per year, at which the unit actually emitted the PAL pollutant during any consecutive 12-month period, selected by the owner or operator, that preceded submission of the PAL permit application.

(III) For an emissions unit on which actual operation commenced greater than or equal to 48 months prior to submission of a complete PAL permit application, the emissions must be added in an amount equal to the average rate, in tons per year, at which the unit actually emitted the PAL pollutant during any consecutive 24-month period, selected by the owner or operator, that preceded submission of the PAL permit application.

(v) In addition to the contents of the PAL permit specified in 40 CFR Part 52.21(aa)(7), the PAL permit must contain a requirement that emissions calculations for compliance purposes must include non-compliant emissions that occurred while the source was operating above any emission limitation that was legally enforceable and that were in excess of that allowed by any state or Federal air quality regulation or permit condition.

(vi) In lieu of the provisions of 40 CFR Part 52.21(aa)(8)(ii)(c), the following shall apply:

All reopenings shall be carried out in accordance with the procedures for Title V Permit issuance, renewal, and reopenings, and revisions specified in subparagraph 391-3-1-.03(10)(e) of these rules.

(vii) In lieu of the provisions for PAL adjustment in 40 CFR Part 52.21(aa)(10)(iv), the following shall apply:

PAL adjustment. The Director shall set the PAL level for a renewed PAL permit in accordance with subparagraphs (7)(b)21.(vii)(I) and (II) of this rule. However, in no case may any PAL level fail to comply with subparagraph (7)(b)21.(vii)(III) of this rule.

(I) If the emissions level calculated in accordance with paragraph (aa)(6) of 40 CFR Part 52.21 and subparagraphs (7)(b)21.(iii) and (iv) of this rule is equal to or greater than 80 percent of the PAL level, the Director may renew the PAL at the same level. If the emissions level calculated in accordance with (aa)(6) of 40 CFR Part 52.21 and subparagraphs (7)(b)21.(iii) and (iv) of this rule is less than 80 percent of the PAL level, the Director may renew the PAL at a level determined using the procedures set forth in 40 CFR Part 52.21(aa)(6) and subparagraphs (7)(b)21.(iii) and (iv) of this rule.

(II) The Director may set the PAL at a level that he or she determines to be more representative of the source's baseline actual emissions, or that he or she determines to be more appropriate considering air quality needs, advances in control technology, anticipated economic growth in the area, desire to reward or encourage the source's voluntary emissions reductions, or other factors as specifically identified by the Director in his or her written rationale.

(III) Notwithstanding subparagraphs (7)(b)21.(vii)(I) and (II) of this rule:

I. If the potential to emit of the major stationary source is less than the PAL, the Director shall adjust the PAL to a level no greater than the potential to emit of the source; and

II. The Director shall not approve a renewed PAL level higher than the current PAL, unless the major stationary source has complied with the provisions of paragraph (aa)(11) of 40 CFR Part 52.21 (increasing a PAL).

(viii) The following is added to the list of acceptable general monitoring approaches listed in 40 CFR Part 52.21(aa)(12)(ii).

(I) Mass balance calculations for sulfur dioxide emissions from fuel combustion.

(ix) The mass balance calculation requirements of 40 CFR Part 52.21(aa)(12)(iii) shall apply for mass balance calculations for sulfur dioxide emissions from fuel combustion.

(x) The data relied upon, including, but not limited to, any quality assurance or quality control data, in calculating the monthly and annual PAL pollutant emissions shall not be submitted with the semiannual report as specified in paragraph (aa)(14)(i)(c) of 40 CFR Part 52.21, but shall be retained in permanent form suitable for inspection and submission to the Division. The records shall be retained for at least five years following the end of each calendar year.

(xi) Paragraph 40 CFR Part 52.21(aa)(12)(i)(b) shall read as follows: The PAL monitoring system must employ one of the general monitoring approaches meeting the minimum requirements set forth in paragraph (aa)(12)(ii) of this section and must be approved by the Director.

(8) **New Source Performance Standards.**

(a) **General Requirement.** No person shall construct or operate any facility or source which fails to comply with the New Source Performance Standards contained in 40 Code of Federal Regulations (hereinafter, CFR), Part 60, as amended, including but not limited to (unless specifically excluded below), the subparts hereby adopted through incorporation by reference in paragraph (b) of this subsection.

(b) **New Source Performance Standards.**

1. General Provisions. For purposes of applying New Source Performance Standards, 40 CFR Part 60 Subpart A (excluding 60.4 and 60.9), as amended October 7, 2020, is hereby incorporated and adopted by reference. The word "Administrator" as used in regulations adopted in this paragraph shall mean the Director of EPD.

2. Standards of Performance for Fossil-fuel Fired Steam Generators: 40 CFR Part 60 Subpart D, as amended February 16, 2012, is hereby incorporated and adopted by reference.

3. Standards of Performance for Electric Utility Steam Generating Units: 40 CFR Part 60 Subpart Da, as amended April 6, 2016, is hereby incorporated and adopted by reference.

4. Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units: 40 CFR Part 60 Subpart Db, as amended February 16, 2012, is hereby incorporated and adopted by reference.

5. Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: 40 CFR Part 60 Subpart Dc, as amended February 16, 2012, is hereby incorporated and adopted by reference.

6. Standards of Performance for Incinerators: 40 CFR Part 60 Subpart E, as amended May 10, 2006, is hereby incorporated and adopted by reference.

7. Standards of Performance for Municipal Waste Combustors: 40 CFR Part 60 Subpart Ea, as amended October 17, 2000, is hereby incorporated and adopted by reference.

8. Standards of Performance for Portland Cement Plants: 40 CFR Part 60 Subpart F, as amended July 27, 2015, is hereby incorporated and adopted by reference.

9. Standards of Performance for Nitric Acid Plants: 40 CFR Part 60 Subpart G, as amended May 6, 2014, is hereby incorporated and adopted by reference.

10. Standards of Performance for Sulfuric Acid Plants: 40 CFR Part 60 Subpart H, as amended October 17, 2000, is hereby incorporated and adopted by reference.

11. Standards of Performance for Asphalt Concrete Plants: 40 CFR Part 60 Subpart I, as amended February 14, 1989, is hereby incorporated and adopted by reference.

12. Standards of Performance for Petroleum Refineries: 40 CFR Part 60 Subpart J, as amended December 1, 2015, is hereby incorporated and adopted by reference.

13. Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978: 40 CFR Part 60 Subpart K, as amended October 17, 2000, is hereby incorporated and adopted by reference.

14. Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984: 40 CFR Part 60 Subpart Ka, as amended December 14, 2000, is hereby incorporated and adopted by reference.

15. Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984: 40 CFR Part 60 Subpart Kb, as amended January 19, 2021, is hereby incorporated and adopted by reference.

16. Standards of Performance for Secondary Lead Smelters: 40 CFR Part 60 Subpart L, as amended October 17, 2000, is hereby incorporated and adopted by reference.

17. Standards of Performance for Secondary Brass and Bronze Ingot Production Plants: 40 CFR Part 60 Subpart M, as amended October 17, 2000, is hereby incorporated and adopted by reference.

18. Standards of Performance for Iron and Steel Plants: 40 CFR Part 60 Subpart N, as amended October 17, 2000, is hereby incorporated and adopted by reference.

19. Standards of Performance for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983: 40 CFR Part 60 Subpart Na, as amended October 17, 2000, is hereby incorporated and adopted by reference.

20. Standards of Performance for Sewage Treatment Plants: 40 CFR Part 60 Subpart 0, as amended October 17, 2000, is hereby incorporated and adopted by reference.

21. Standards of Performance for Primary Copper Smelters: 40 CFR Part 60 Subpart P, as amended October 17, 2000, is hereby incorporated and adopted by reference.

22. Standards of Performance for Primary Zinc Smelters: 40 CFR Part 60 Subpart Q, as amended February 14, 1989, is hereby incorporated and adopted by reference.

23. Standards of Performance for Primary Lead Smelters: 40 CFR Part 60 Subpart R, as amended February 14, 1989, is hereby incorporated and adopted by reference.

24. Standards of Performance for Primary Aluminum Reduction Plants: 40 CFR Part 60 Subpart S, as amended October 17, 2000, is hereby incorporated and adopted by reference.

25. Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants: 40 CFR Part 60 Subpart T, as amended August 19, 2015, is hereby incorporated and adopted by reference.

26. Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants: 40 CFR Part 60 Subpart U, as amended August 19, 2015, is hereby incorporated and adopted by reference.

27. Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants: 40 CFR Part 60 Subpart V, as amended August 19, 2015, is hereby incorporated and adopted by reference.

28. Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants: 40 CFR Part 60 Subpart W, as amended August 19, 2015, is hereby incorporated and adopted by reference.

29. Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities: 40 CFR Part 60 Subpart X, as amended August 19, 2015, is hereby incorporated and adopted by reference.

30. Standards of Performance for Coal Preparation Plants: 40 CFR Part 60 Subpart Y, as amended October 8, 2009, is hereby incorporated and adopted by reference.

31. Standards of Performance for Ferroalloy Production Facilities: 40 CFR Part 60 Subpart Z, as amended October 17, 2000, is hereby incorporated and adopted by reference.

32. Standards of Performance for Steel Plants: Electric Arc Furnaces: 40 CFR Part 60 Subpart AA, as amended February 22, 2005, is hereby incorporated and adopted by reference.

33. Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983: 40 CFR Part 60 Subpart AAa, as amended February 22, 2005, is hereby incorporated and adopted by reference.

34. Standards of Performance for Kraft Pulp Mills: 40 CFR Part 60 Subpart BB, as amended September 21, 2006, is hereby incorporated and adopted by reference.

35. Standards of Performance for Glass Manufacturing Plants: 40 CFR Part 60 Subpart CC, as amended October 17, 2000, is hereby incorporated and adopted by reference.

36. Standards of Performance for Grain Elevators: 40 CFR Part 60 Subpart DD, as amended October 17, 2000, is hereby incorporated and adopted by reference.

37. Standards of Performance for Surface Coating of Metal Furniture: 40 CFR Part 60 Subpart EE, as amended October 17, 2000, is hereby incorporated and adopted by reference.

38. Standards of Performance for Stationary Gas Turbines: 40 CFR Part 60 subpart GG, as amended June 30, 2016, is hereby incorporated and adopted by reference.

39. Standards of Performance for Lime Manufacturing Plants: 40 CFR Part 60 subpart HH, as amended October 17, 2000, is hereby incorporated and adopted by reference.

40. Standards of Performance for Lead-Acid Battery Manufacturing Plants: 40 CFR Part 60 subpart KK, as amended October 17, 2000, is hereby incorporated and adopted by reference.

41. Standards of Performance for Metallic Mineral Processing Plants: 40 CFR Part 60 Subpart LL, as amended October 17, 2000, is hereby incorporated and adopted by reference.

42. Standards of Performance for Automobile and Light-Duty Truck Coating Operations: 40 CFR Part 60 Subpart MM, as amended October 17, 2000, is hereby incorporated and adopted by reference.

43. Standards of Performance for Phosphate Rock Plants: 40 CFR Part 60 Subpart NN, as amended October 17, 2000, is hereby incorporated and adopted by reference.

44. Standards of Performance for Ammonium Sulfate Manufacture: 40 CFR Part 60 Subpart PP, as amended October 17, 2000, is hereby incorporated and adopted by reference.

45. Standards of Performance for Graphic Arts Industry: Publication Rotogravure Printing: 40 CFR Part 60 Subpart QQ, as amended April 9, 2004, is hereby incorporated and adopted by reference.

46. Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations: 40 CFR Part 60 Subpart RR, as amended October 17, 2000, is hereby incorporated and adopted by reference.

47. Standards of Performance for Industrial Surface Coating: Large Appliances: 40 CFR Part 60 Subpart SS, as amended October 17, 2000, is hereby incorporated and adopted by reference.

48. Standards of Performance for Metal Coil Surface Coating: 40 CFR Part 60 Subpart TT, as amended October 17, 2000, is hereby incorporated and adopted by reference.

49. Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture: 40 CFR Part 60 Subpart UU, as amended October 17, 2000, is hereby incorporated and adopted by reference.

50. Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and On or Before November 7, 2006: 40 CFR Part 60 Subpart VV, as amended June 2, 2008, is hereby incorporated and adopted by reference.

51. Standards of Performance for Beverage Can Surface Coating Industry: 40 CFR Part 60 Subpart WW, as amended October 17, 2000, is hereby incorporated and adopted by reference.

52. Standards of Performance for Bulk Gasoline Terminals: 40 CFR Part 60 Subpart XX, as amended December 19, 2003, is hereby incorporated and adopted by reference.

53. Standards of Performance for Rubber Tire Manufacturing Industry: 40 CFR Part 60 Subpart BBB, as amended June 30, 2016, is hereby incorporated and adopted by reference.

54. Standards of Performance for Volatile Organic Compound (VOC) Emission from Polymer Manufacturing Industry: 40 CFR Part 60 Subpart DDD, as amended June 30, 2016, is hereby incorporated and adopted by reference.

55. Standards of Performance for Flexible Vinyl and Urethane Printing and Coating: 40 CFR Part 60 Subpart FFF, as amended October 17, 2000, is hereby incorporated and adopted by reference.

56. Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and On or Before November 7, 2006: 40 CFR Part 60 Subpart GGG, as amended June 2, 2008, is hereby incorporated and adopted by reference.

57. Standards of Performance for Synthetic Fiber Production Facilities: 40 CFR Part 60 Subpart HHH, as amended October 17, 2000, is hereby incorporated and adopted by reference.

58. Standards of Performance for Volatile Organic Compounds (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes: 40 CFR Part 60 Subpart III, as amended June 30, 2016, is hereby incorporated and adopted by reference.

59. Standards of Performance for Petroleum Dry Cleaners: 40 CFR Part 60 Subpart JJJ, as amended October 17, 2000, is hereby incorporated and adopted by reference.

60. Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants: 40 CFR Part 60 Subpart KKK, as amended August 16, 2012, is hereby incorporated and adopted by reference.

61. Standards of Performance for Onshore Natural Gas Processing: 40 CFR Part 60 Subpart LLL, as amended June 30, 2016, is hereby incorporated and adopted by reference.

62. Standards of Performance for Volatile Organic Compounds (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operation: 40 CFR Part 60 Subpart NNN, as amended June 30, 2016, is hereby incorporated and adopted by reference.

63. Standards of Performance for Nonmetallic Mineral Processing Plants: 40 CFR Part 60 Subpart OOO, as promulgated April 28, 2009, is hereby incorporated and adopted by reference.

64. Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants: 40 CFR Part 60 Subpart PPP, as amended October 17, 2000, is hereby incorporated and adopted by reference.

65. Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems: 40 CFR Part 60 Subpart QQQ, as amended October 17, 2000, is hereby incorporated and adopted by reference.

66. Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Process: 40 CFR Part 60 Subpart RRR, as amended December 14, 2000, is hereby incorporated and adopted by reference.

67. Standards of Performance for Magnetic Tape Coating: 40 CFR Part 60 Subpart SSS, as amended February 12, 1999, is hereby incorporated and adopted by reference.

68. Standards of Performance for Plastic Parts for Business Machine Coatings: 40 CFR Part 60 Subpart TTT, as amended October 17, 2000, is hereby incorporated and adopted by reference.

69. Standards of Performance for Calciners and Dryers in Mineral Industries: 40 CFR Part 60 Subpart UUU, as amended October 17, 2000, is hereby incorporated and adopted by reference.

70. Standards of Performance for Polymeric Coating of Supporting Substrates Facilities: 40 CFR Part 60 Subpart VVV, as promulgated September 11, 1989, is hereby incorporated and adopted by reference.

71. Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced after September 20, 1994: 40 CFR Part 60 Subpart Eb, as amended May 10, 2006, is hereby incorporated and adopted by reference.

72. Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification on or After May 30, 1991, but Before July 18, 2014: 40 CFR Part 60 Subpart WWW, as amended October 13, 2020, is hereby incorporated and adopted by reference.

73. Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators: 40 CFR Part 60 Subpart Ec, as amended September 6, 2013, is hereby incorporated and adopted by reference.

74. Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001: 40 CFR Part 60 Subpart AAAA, as promulgated December 6, 2000, is hereby incorporated and adopted by reference.

75. Standards of Performance for Commercial and Industrial Solid Waste Incineration Units: 40 CFR Part 60 Subpart CCCC, as amended October 7, 2020, is hereby incorporated and adopted by reference.

76. Standards of Performance for Other Solid Waste Incinerator Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced On or After June 16, 2006: 40 CFR Part 60 Subpart EEEE, as amended November 24, 2006, is hereby incorporated and adopted by reference.

77. Standards of Performance for Stationary Compression Ignition Internal Combustion Engines: 40 CFR Part 60 Subpart IIII, as amended August 10, 2022, is hereby incorporated and adopted by reference.

78. Standards of Performance for Stationary Combustion Turbines: 40 CFR Part 60 Subpart KKKK, as amended October 7, 2020, is hereby incorporated and adopted by reference.

79. Standards of Performance for Stationary Spark Ignition Internal Combustion Engines: 40 CFR Part 60 Subpart JJJJ, as amended August 10, 2022, is hereby incorporated and adopted by reference.

80. Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006: 40 CFR Part 60 Subpart VVa, as amended August 16, 2012, is hereby incorporated and adopted by reference.

81. Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006: 40 CFR Part 60 Subpart GGGa, as amended June 2, 2008, is hereby incorporated and adopted by reference.

82. Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007: 40 CFR Part 60 Subpart Ja, as amended November 26, 2018, is hereby incorporated and adopted by reference.

83. Standards of Performance for New Sewage Sludge Incineration Units: 40 CFR Part 60 Subpart LLLL, as promulgated March 21, 2011, is hereby incorporated and adopted by reference.

84. Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and on or Before September 18, 2015: 40 CFR Part 60 Subpart OOOO, as amended September 14, 2020, is hereby incorporated and adopted by reference.

85. Standard of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013: 40 CFR Part 60 Subpart BBa, as amended November 5, 2020, is hereby incorporated and adopted by reference.

86. Standards of Performance for New Residential Wood Heaters: 40 CFR Part 60 Subpart AAA, as amended October 7, 2020, is hereby incorporated and adopted by reference.

87. Subpart PPPP - [reserved]

88. Standards of Performance for New Residential Hydronic Heaters and Forced-Air Furnaces: 40 CFR Part 60 Subpart QQQQ, as amended October 7, 2020, is hereby incorporated and adopted by reference.

89. Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014: 40 CFR Part 60 Subpart XXX, as amended February 14, 2022, is hereby incorporated and adopted by reference.

90. Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015: 40 CFR Part 60 Subpart OOOOa, as amended September 15, 2020, is hereby incorporated and adopted by reference.

(9) **Emission Standards for Hazardous Air Pollutants.**

(a) **General Requirements.** The provisions of this section shall apply to any stationary source and to the owner or operator of any stationary source for which a standard is prescribed under 40 Code of Federal Regulations (hereinafter CFR), Parts 61 and 63, including, but not limited to (unless specifically excluded below) the subparts hereby adopted through incorporation by reference in subsection (b) of this section. For purposes of applying emission standards for hazardous air pollutants, 40 CFR, Parts 61 and 63 (excluding 61.04 and 61.16), as amended, are hereby incorporated by reference. The word "Administrator" as used in regulations adopted in this section shall mean the Director of EPD.

(b) **Emission Standards for Hazardous Air Pollutants.**

1. Emission Standard for Beryllium: 40 CFR Part 61 Subpart C, as amended October 17, 2000, is hereby incorporated and adopted by reference.

2. Emission Standard for Beryllium Rocket Motor Firing: 40 CFR Part 61 Subpart D, as amended October 17, 2000, is hereby incorporated and adopted by reference.

3. Emission Standard for Mercury: 40 CFR Part 61 Subpart E, as amended October 17, 2000, is hereby incorporated and adopted by reference.

4. Emission Standard for Vinyl Chloride: 40 CFR Part 61 Subpart F, as amended October 17, 2000, is hereby incorporated and adopted by reference.

5. Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene: 40 CFR Part 61 Subpart J, as amended December 14, 2000, is hereby incorporated and adopted by reference.

6. Emission Standard for Benzene Emissions from Coke Byproduct Recovery Plants: 40 CFR Part 61 Subpart L, as amended October 17, 2000, is hereby incorporated and adopted by reference.

7. Emission Standard for Asbestos (Including Work Practices): 40 CFR Part 61 Subpart M, as amended June 10, 2019, is hereby incorporated and adopted by reference.

8. Emission Standard for Inorganic Arsenic Emissions from Glass Manufacturing Plants: 40 CFR Part 61 Subpart N, as amended October 17, 2000, is hereby incorporated and adopted by reference.

9. Emission Standard for Inorganic Arsenic Emissions from Primary Copper Smelters: 40 CFR Part 61 Subpart O, as amended October 17, 2000, is hereby incorporated and adopted by reference.

10. Emission Standard for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities: 40 CFR Part 61 Subpart P, as amended October 3, 1986, is hereby incorporated and adopted by reference.

11. Emission Standard for Equipment Leaks (Fugitive Emission Sources) [of VHAP]: 40 CFR Part 61 Subpart V, as amended December 14, 2000, is hereby incorporated and adopted by reference.

12. Emission Standard for Benzene Emissions from Benzene Storage Vessels: 40 CFR Part 61 Subpart Y, as amended December 14, 2000, is hereby incorporated and adopted by reference.

13. Emission Standard for Benzene Emissions from Benzene Transfer Operations: 40 CFR Part 61 Subpart BB, as amended December 14, 2000, is hereby incorporated and adopted by reference.

14. Emission Standard for Benzene Waste Operations: 40 CFR Part 61 Subpart FF, as amended December 4, 2003, is hereby incorporated and adopted by reference.

15. General Provisions. For purposes of applying Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart A, as amended November 10, 2022, [excluding 63.13, and 63.15(a)(2)] is hereby incorporated and adopted by reference, subject to the following provisions:

(i) The definition of "Potential to Emit" in 40 CFR Part 63.2 shall be modified as follows:

(I) The phrase "is federally enforceable" shall read "is federally enforceable or enforceable as a practical matter."

16. Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Paragraph 112(g): 40 CFR Parts 63.40 through 63.44, as amended June 30, 1999, is hereby incorporated and adopted by reference, subject to the following provisions:

(i) Terms used in this paragraph shall have the meaning given to them in the Clean Air Act, 40 CFR Part 63 Subparts A and B, and the Georgia Air Quality Act.

(ii) The "Effective Date of Paragraph 112(g)(2)(B)," as defined in 40 CFR Part 63.41, shall be June 29, 1998.

(iii) The "Notice of MACT Approval," as defined in 40 CFR Part 63.41, shall be the air construction permit issued by the Division.

(iv) The "Permitting Authority," as defined in 40 CFR Part 63.41, shall be the Division.

(v) In lieu of the administrative procedures for review of the Notice of MACT Approval, as set forth in 40 CFR Parts 63.43(f)(1) through (5), the Division will act in accordance with the permitting requirements as set forth in Chapter 391-3-1-.03 Permits, as amended, and administrative procedures for preconstruction review and approval established by the Division.

(vi) In lieu of the opportunity for public comment on the Notice of MACT Approval, as set forth in 40 CFR Part 63.43(h), the Division will provide opportunity for public comment on the Notice of MACT Approval pursuant to Chapter 391-3-1-.03(2)(i).

(vii) The Notice of MACT Approval shall become effective upon issuance of the air construction permit by the Division.

17. Requirements for Control Technology Determinations for Major Sources in Accordance with the Clean Air Act sections 112(j): 40 CFR Part 63 Subpart B, Sections 63.50 through 63.56, as amended July 11, 2005, is hereby incorporated and adopted by reference.

18. [reserved]

19. Compliance Extensions for Early Reductions: 40 CFR Part 63 Subpart D, as amended November 21, 1994, is hereby incorporated and adopted by reference.

20. Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry: 40 CFR Part 63 Subpart F, as amended November 19, 2020, is hereby incorporated and adopted by reference.

21. Emission Standards for Organic Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater: 40 CFR Part 63 Subpart G, as amended November 19, 2020, is hereby incorporated and adopted by reference. Only procedures listed in 63.112(e) of 40 CFR Part 63 Subpart G, shall be used to comply with the emission standard in 63.112(a) unless otherwise specifically approved by the Director.

22. Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks: 40 CFR Part 63 Subpart H, as amended November 19, 2020, is hereby incorporated and adopted by reference.

23. Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks: 40 CFR Part 63 Subpart I, as amended June 23, 2003, is hereby incorporated and adopted by reference.

24. Emission Standards for Polyvinyl Chloride and Copolymers Production: 40 CFR Part 63 Subpart J, as amended November 19, 2020, is hereby incorporated and adopted by reference.

25. [reserved]

26. Emission Standards for Coke Oven Batteries: 40 CFR Part 63 Subpart L, as amended November 19, 2020, is hereby incorporated and adopted by reference.

27. Perchloroethylene Air Emission Standards for Dry Cleaning Facilities: 40 CFR Part 63 Subpart M, as amended November 19, 2020, is hereby incorporated and adopted by reference.

28. Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks: 40 CFR Part 63 Subpart N, as amended November 19, 2020, is hereby incorporated and adopted by reference.

29. Ethylene Oxide Emissions Standards for Sterilization Facilities: 40 CFR Part 63 Subpart O, as amended November 19, 2020, is hereby incorporated and adopted by reference.

30. [reserved]

31. Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers: 40 CFR Part 63 Subpart Q, as amended November 19, 2020, is hereby incorporated and adopted by reference.

32. Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations): 40 CFR Part 63 Subpart R, as amended December 4, 2020, is hereby incorporated and adopted by reference.

33. Emission Standards for Pulp & Paper Industries: 40 CFR Part 63 Subpart S, as amended November 19, 2020, is hereby incorporated and adopted by reference.

34. Emission Standards for Halogenated Solvent Cleaning: 40 CFR Part 63 Subpart T, as amended November 19, 2020, is hereby incorporated and adopted by reference.

35. Emission Standards for Hazardous Air Pollutant Emissions: Group I Polymers and Resins: 40 CFR Part 63 Subpart U, as amended November 19, 2020, is hereby incorporated and adopted by reference.

36. [reserved]

37. Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production: 40 CFR Part 63 Subpart W, as amended November 19, 2020, is hereby incorporated and adopted by reference.

38. Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting: 40 CFR Part 63 Subpart X, as amended November 19, 2020, is hereby incorporated and adopted by reference.

39. Emission Standards for Marine Tank Vessel Loading Operations: 40 CFR Part 63 Subpart Y, as amended November 19, 2020, is hereby incorporated and adopted by reference.

40. [reserved]

41. Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants: 40 CFR Part 63 Subpart AA, as amended November 19, 2020, is hereby incorporated and adopted by reference.

42. Emission Standards for Hazardous Air Pollutants from Phosphate Fertilizers Production Plants: 40 CFR Part 63 Subpart BB, as amended November 19, 2020, is hereby incorporated and adopted by reference.

43. Emission Standards for Hazardous Air Pollutants from Petroleum Refineries: 40 CFR Part 63 Subpart CC, as amended November 19, 2020, is hereby incorporated and adopted by reference. Only procedures listed in 63.642(k) of 40 CFR Part 63 Subpart CC shall be used to comply with the emission standard in 63.642(g).

44. Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations: 40 CFR Part 63 Subpart DD, as amended November 19, 2020, is hereby incorporated and adopted by reference.

45. Emission Standards for Magnetic Tape Manufacturing Operations: 40 CFR Part 63 Subpart EE, as amended December 28, 2020, is hereby incorporated and adopted by reference.

46. [reserved]

47. Emission Standards for Aerospace Manufacturing and Rework Facilities: 40 CFR Part 63 Subpart GG, as amended November 19, 2020, is hereby incorporated and adopted by reference.

48. Emission Standards for Hazardous Air Pollutants for Source Categories: Oil & Natural Gas Production Facilities: 40 CFR Part 63 Subpart HH, as amended November 19, 2020, is hereby incorporated and adopted by reference.

49. Emission Standards for Shipbuilding and Ship Repair (Surface Coating): 40 CFR Part 63 Subpart II, as amended November 19, 2020, is hereby incorporated and adopted by reference.

50. Emission Standards for Wood Furniture Manufacturing Operations: 40 CFR Part 63 Subpart JJ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

51. Emission Standards for the Printing and Publishing Industry: 40 CFR Part 63 Subpart KK, as amended November 19, 2020, is hereby incorporated and adopted by reference.

52. Emission Standards for Hazardous Air Pollutants for Source Categories: Primary Aluminum Reduction Plants: 40 CFR Part 63 Subpart LL, as amended November 19, 2020, is hereby incorporated and adopted by reference.

53. Emission Standards for Hazardous Air Pollutants for Source Categories: Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills: 40 CFR Part 63 Subpart MM, as amended November 19, 2020, is hereby incorporated and adopted by reference.

54. Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing at Area Sources: 40 CFR Part 63 Subpart NN, as amended July 29, 2015, is hereby incorporated and adopted by reference.

55. Emission Standards for Tanks--Level 1: 40 CFR Part 63 Subpart OO, as amended June 23, 2003, is hereby incorporated and adopted by reference.

56. Emission Standards for Containers: 40 CFR Part 63 Subpart PP, as amended June 23, 2003, is hereby incorporated and adopted by reference.

57. Emission Standards for Surface Impoundments: 40 CFR Part 63 Subpart QQ, as amended June 23, 2003, is hereby incorporated and adopted by reference.

58. Emission Standards for Individual Drain Systems: 40 CFR Part 63 Subpart RR, as amended June 23, 2003, is hereby incorporated and adopted by reference.

59. Emission Standards for Hazardous Air Pollutants from: Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process: 40 CFR Part 63 Subpart SS, as amended July 6, 2020, is hereby incorporated and adopted by reference.

60. Emission Standards for Hazardous Air Pollutants from Equipment Leaks--Control Level 1: 40 CFR Part 63 Subpart TT, as amended July 12, 2002, is hereby incorporated and adopted by reference.

61. Emission Standards for Hazardous Air Pollutants from Equipment Leaks--Control Level 2 Standards: 40 CFR Part 63 Subpart UU, as amended July 12, 2002, is hereby incorporated and adopted by reference.

62. Emission Standards for Oil-Water Separators and Organic-Water Separators: 40 CFR Part 63 Subpart VV, as amended June 23, 2003, is hereby incorporated and adopted by reference.

63. Emission Standards for Hazardous Air Pollutants from Storage Vessels (Tanks)--Control Level 2: 40 CFR Part 63 Subpart WW, as amended July 12, 2002, is hereby incorporated and adopted by reference.

64. Emission Standards for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations: 40 CFR Part 63 Subpart XX, as amended July 6, 2020, is hereby incorporated and adopted by reference.

65. Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards: 40 CFR Part 63 Subpart YY, as amended November 19, 2021, is hereby incorporated and adopted by reference.

66. [reserved]

67. [reserved]

68. [reserved]

69. Emission standards for Hazardous Air Pollutants for Source Categories: Steel Pickling -- HCl Process Facilities and Hydrochloric Acid Regeneration Plants: 40 CFR Part 63 Subpart CCC, as amended November 19, 2020, is hereby incorporated and adopted by reference.

70. Emission Standards for Hazardous Air Pollutants for Source Categories: Mineral Wool Production: 40 CFR Part 63 Subpart DDD, as amended December 28, 2020, is hereby incorporated and adopted by reference.

71. Emission Standards for Hazardous Air Pollutants for Source Categories: Hazardous Waste Combustors: 40 CFR Part 63 Subpart EEE, as amended November 19, 2020, is hereby incorporated and adopted by reference.

72. [reserved]

73. Emission Standards for Hazardous Air Pollutants for Source Categories: Pharmaceuticals Production: 40 CFR Part 63 Subpart GGG, as amended November 19, 2020, is hereby incorporated and adopted by reference.

74. Emission Standards for Hazardous Air Pollutants for Source Categories: Natural Gas Transmission and Storage Facilities: 40 CFR Part 63 Subpart HHH, as amended November 19, 2020, is hereby incorporated and adopted by reference.

75. Emission Standards for Hazardous Air Pollutants for Source Categories: Flexible Polyurethane Foam Production: 40 CFR Part 63 Subpart III, as amended November 19, 2020, is hereby incorporated and adopted by reference.

76. Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins: 40 CFR Part 63 Subpart JJJ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

77. [reserved]

78. Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry: 40 CFR Part 63 Subpart LLL, as amended November 19, 2020, is hereby incorporated and adopted by reference.

79. Emission Standards for Hazardous Air Pollutants for Source Categories: Pesticide Active Ingredient Production: 40 CFR Part 63 Subpart MMM, as amended November 19, 2020, is hereby incorporated and adopted by reference.

80. Emission Standards for Hazardous Air Pollutants for Source Categories: Wool Fiberglass Manufacturing: 40 CFR Part 63 Subpart NNN, as amended December 28, 2020, is hereby incorporated and adopted by reference.

81. Emission Standards for Hazardous Air Pollutant Emissions: Manufacture of Amino/Phenolic Resins: 40 CFR Part 63 Subpart OOO, as amended November 19, 2020, is hereby incorporated and adopted by reference.

82. Emission Standards for Hazardous Air Pollutants for Source Categories: Polyether Polyols Production: 40 CFR Part 63 Subpart PPP, as amended November 19, 2020, is hereby incorporated and adopted by reference.

83. Emission Standards for Hazardous Air Pollutants for Primary Copper Smelting: 40 CFR Part 63 Subpart QQQ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

84. Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production: 40 CFR Part 63 Subpart RRR, as amended November 19, 2020, is hereby incorporated and adopted by reference.

85. [reserved]

86. Emission Standards for Hazardous Air Pollutants for Source Categories: Primary Lead Smelting: 40 CFR Part 63 Subpart TTT, as amended November 19, 2020, is hereby incorporated and adopted by reference.

87. Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units: 40 CFR Part 63 Subpart UUU, as amended November 19, 2020, is hereby incorporated and adopted by reference.

88. Emission Standards for Hazardous Air Pollutants for Source Categories: Publicly Owned Treatment Works: 40 CFR Part 63 Subpart VVV, as amended November 19, 2020, is hereby incorporated and adopted by reference.

89. [reserved]

90. Emission Standards for Hazardous Air Pollutants for Source Categories: Ferroalloys Production: Ferromanganese and Silicomanganese: 40 CFR Part 63 Subpart XXX, as amended November 19, 2020, is hereby incorporated and adopted by reference.

91. [reserved]

92. [reserved]

93. Emission Standards for Hazardous Air Pollutants for Source Categories: Municipal Solid Waste Landfills: 40 CFR Part 63 Subpart AAAA, as amended February 14, 2022, is hereby incorporated and adopted by reference.

94. [reserved]

95. Emission Standards for Hazardous Air Pollutants for Source Categories: Manufacturing of Nutritional Yeast: 40 CFR Part 63 Subpart CCCC, as amended October 16, 2017, is hereby incorporated and adopted by reference.

96. Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products: 40 CFR Part 63 Subpart DDDD, as amended November 19, 2020, is hereby incorporated and adopted for reference.

97. Emission Standards for Hazardous Air Pollutants: Organic Liquid Distribution (non-gasoline): 40 CFR Part 63 Subpart EEEE, as amended November 19, 2020, is hereby incorporated and adopted for reference.

98. Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing: 40 CFR Part 63 Subpart FFFF, as amended November 19, 2020, is hereby incorporated and adopted by reference.

99. Emission Standards for Hazardous Air Pollutants for Source Categories: Vegetable Oil Production: 40 CFR Part 63 Subpart GGGG, as amended November 19, 2020, is hereby incorporated and adopted by reference.

100. Emission Standards for Hazardous Air Pollutants for Wet Formed Fiberglass Mat Production: 40 CFR Part 63 Subpart HHHH, as amended November 19, 2020, is hereby incorporated and adopted by reference.

101. Emission Standards for Hazardous Air Pollutants: Surface Coating of Automobiles and Light-Duty Trucks: 40 CFR Part 63 Subpart IIII, as amended November 19, 2021, is hereby incorporated and adopted by reference.

102. Emission Standards for Hazardous Air Pollutants for Paper and Other Web Coatings: 40 CFR Part 63 Subpart JJJJ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

103. Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans: 40 CFR Part 63 Subpart KKKK, as amended November 19, 2021, is hereby incorporated and adopted by reference.

104. [reserved]

105. Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products: 40 CFR Part 63 Subpart MMMM, as amended November 19, 2020, is hereby incorporated and adopted by reference.

106. Emission Standards for Hazardous Air Pollutants: Surface Coating of Large Appliances: 40 CFR Part 63 Subpart NNNN, as amended November 19, 2020, is hereby incorporated and adopted by reference.

107. Emission Standards for Hazardous Air Pollutants: Printing, Coating, and Dyeing of Fabrics and Other Textiles: 40 CFR Part 63 Subpart OOOO, as amended November 19, 2020, is hereby incorporated and adopted by reference.

108. Emission Standards for Hazardous Air Pollutants: Surface Coating of Plastic Parts and Products: 40 CFR Part 63 Subpart PPPP, as amended November 19, 2020, is hereby incorporated and adopted by reference.

109. Emission Standards for Hazardous Air Pollutants: Surface Coating of Wood Building Products: 40 CFR Part 63 Subpart QQQQ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

110. Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Furniture: 40 CFR Part 63, Subpart RRRR, as amended November 19, 2020, is hereby incorporated and adopted by reference.

111. Emission Standards for Hazardous Air Pollutants for Metal Coil Surface Coating Operations: 40 CFR Part 63 Subpart SSSS, as amended November 19, 2020, is hereby incorporated and adopted by reference.

112. Emission Standards for Hazardous Air Pollutants for Leather Finishing Operations: 40 CFR Part 63 Subpart TTTT, as amended November 19, 2020, is hereby incorporated and adopted by reference.

113. Emission Standards for Hazardous Air Pollutants for Cellulose Products Manufacturing: 40 CFR Part 63 Subpart UUUU, as amended November 19, 2020, is hereby incorporated and adopted by reference.

114. Emission Standards for Hazardous Air Pollutants for Source Categories: Boat Manufacturing: 40 CFR Part 63 Subpart VVVV, as amended November 19, 2021, is hereby incorporated and adopted by reference.

115. Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production: 40 CFR Part 63 Subpart WWWW, as amended November 19, 2020, is hereby incorporated and adopted by reference.

116. Emission Standards for Hazardous Air Pollutants for Tire Manufacturing: 40 CFR Part 63 Subpart XXXX, as amended November 19, 2020, is hereby incorporated and adopted by reference.

117. Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines: 40 CFR Part 63 Subpart YYYY, as amended March 9, 2022, is hereby incorporated and adopted by reference.

118. Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines: 40 CFR Part 63 Subpart ZZZZ, as amended August 10, 2022, is hereby incorporated and adopted by reference.

119. Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants: 40 CFR Part 63 Subpart AAAAA, as amended December 28, 2020, is hereby incorporated and adopted by reference.

120. Emission Standards for Hazardous Air Pollutants: Semiconductor Manufacturing: 40 CFR Part 63 Subpart BBBBB, as amended November 19, 2020, is hereby incorporated and adopted by reference.

121. Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks: 40 CFR Part 63 Subpart CCCCC, as amended November 19, 2020, is hereby incorporated and adopted by reference.

122. Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters: 40 CFR Part 63 Subpart DDDDD, as amended October 6, 2022, is hereby incorporated and adopted by reference.

123. Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries: 40 CFR Part 63 Subpart EEEEE, as amended November 19, 2020, is hereby incorporated and adopted by reference.

124. Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing: 40 CFR Part 63 Subpart FFFFF, as amended November 19, 2020, is hereby incorporated and adopted by reference.

125. Emission Standards for Hazardous Air Pollutants: Site Remediation: 40 CFR Part 63 Subpart GGGGG, as amended December 22, 2022, is hereby incorporated and adopted by reference.

126. Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing: 40 CFR Part 63 Subpart HHHHH, as amended November 25, 2020, is hereby incorporated and adopted by reference.

127. Emission Standards for Hazardous Air Pollutants for Mercury Cell Chlor-Alkali Plants: 40 CFR Part 63 Subpart IIIII, as amended May 6, 2022, is hereby incorporated and adopted by reference.

128. Emission Standards for Hazardous Air Pollutants: Brick and Structural Clay Products Manufacturing: 40 CFR Part 63 Subpart JJJJJ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

129. Emission Standards for Hazardous Air Pollutants for Clay Ceramics Manufacturing: 40 CFR Part 63 Subpart KKKKK, as amended November 19, 2021, is hereby incorporated and adopted by reference.

130. Emission Standards for Hazardous Air Pollutants: Asphalt Processing and Asphalt Roofing Manufacturing: 40 CFR Part 63 Subpart LLLLL, as amended November 19, 2020, is hereby incorporated and adopted by reference.

131. Emission Standards for Hazardous Air Pollutants: Flexible Polyurethane Foam Fabrication Operations: 40 CFR Part 63 Subpart MMMMM, as amended November 18, 2021, is hereby incorporated and adopted by reference.

132. Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production: 40 CFR Part 63 Subpart NNNNN, as amended November 19, 2020, is hereby incorporated and adopted by reference.

133. [reserved]

134. Emission Standards for Hazardous Air Pollutants: Engine Test Cells/Stands: 40 CFR Part 63 Subpart PPPPP, as amended November 19, 2020, is hereby incorporated and adopted by reference.

135. Emission Standards for Hazardous Air Pollutants for Friction Materials Manufacturing Facilities: 40 CFR Part 63 Subpart QQQQQ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

136. Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing: 40 CFR Part 63 Subpart RRRRR, as amended November 19, 2020, is hereby incorporated and adopted by reference.

137. Emission Standards for Hazardous Air Pollutants for Refractory Products Manufacturing: 40 CFR Part 63 Subpart SSSSS, as amended November 19, 2021, is hereby incorporated and adopted by reference.

138. Emission Standards for Hazardous Air Pollutants for Primary Magnesium Manufacturing: 40 CFR Part 63 Subpart TTTTT, as amended November 19, 2020, is hereby incorporated and adopted by reference.

139. Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units: 40 CFR Part 63 Subpart UUUUU, as amended September 9, 2020, is hereby incorporated and adopted by reference.

140. [reserved]

141. Emission Standards for Hospital Ethylene Oxide Sterilizers: 40 CFR Part 63 Subpart WWWWW, as amended November 19, 2020, is hereby incorporated and adopted by reference.

142. [reserved]

143. Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities: 40 CFR Part 63 Subpart YYYYY, as amended June 24, 2015, is hereby incorporated and adopted by reference.

144. Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources: 40 CFR Part 63 Subpart ZZZZZ, as amended September 10, 2020, is hereby incorporated and adopted by reference.

145. [reserved]

146. Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Bulk Terminals, Bulk Plants, and Pipeline Facilities: 40 CFR Part 63 Subpart BBBBBB, as amended November 19, 2020, is hereby incorporated and adopted by reference.

147. Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities: 40 CFR Part 63 Subpart CCCCCC, as amended November 19, 2020, is hereby incorporated and adopted by reference.

148. Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production Area Sources: 40 CFR Part 63 Subpart DDDDDD, as amended February 4, 2015, is hereby incorporated and adopted by reference.

149. Emission Standards for Hazardous Air Pollutants for Primary Copper Smelting Area Sources: 40 CFR Part 63 Subpart EEEEEE, as amended July 3, 2007, is hereby incorporated and adopted by reference.

150. Emission Standards for Hazardous Air Pollutants for Secondary Copper Smelting Area Sources: 40 CFR Part 63 Subpart FFFFFF, as amended July 3, 2007, is hereby incorporated and adopted by reference.

151. Emission Standards for Hazardous Air Pollutants for Primary Nonferrous Metals Area Sources - Zinc, Cadmium, and Beryllium: 40 CFR Part 63 Subpart GGGGGG, as promulgated January 23, 2007, is hereby incorporated and adopted by reference.

152. Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources: 40 CFR Part 63 Subpart HHHHHH, as amended November 10, 2022, is hereby incorporated and adopted by reference.

153. [reserved]

154. Emission Standards for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers, Area Sources: 40 CFR Part 63 Subpart JJJJJJ, as amended September 14, 2016, is hereby incorporated and adopted by reference.

155. [reserved]

156. Emission Standards for Hazardous Air Pollutants for Acrylic and Modacrylic Fibers Production Area Sources: 40 CFR Part 63 Subpart LLLLLL, as amended March 26, 2008, is hereby incorporated and adopted by reference.

157. Emission Standards for Hazardous Air Pollutants for Carbon Black Production Area Sources: 40 CFR Part 63 Subpart MMMMMM, as amended March 26, 2008, is hereby incorporated and adopted by reference.

158. Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources: Chromium Compounds: 40 CFR Part 63 Subpart NNNNNN, as amended March 26, 2008, is hereby incorporated and adopted by reference.

159. Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources: 40 CFR Part 63 Subpart OOOOOO, as amended November 18, 2021, is hereby incorporated and adopted by reference.

160. Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources: 40 CFR Part 63 Subpart PPPPPP, as amended November 19, 2020, is hereby incorporated and adopted by reference.

161. Emission Standards for Hazardous Air Pollutants for Wood Preserving Area Sources: 40 CFR Part 63 Subpart QQQQQQ, as amended November 19, 2020, is hereby incorporated and adopted by reference.

162. Emission Standards for Hazardous Air Pollutants for Clay Ceramics Manufacturing Area Sources: 40 CFR Part 63 Subpart RRRRRR, as amended November 19, 2020, is hereby incorporated and adopted by reference.

163. Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources: 40 CFR Part 63 Subpart SSSSSS, as promulgated December 26, 2007, is hereby incorporated and adopted by reference.

164. Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources: 40 CFR Part 63 Subpart TTTTTT, as amended November 19, 2020, is hereby incorporated and adopted by reference.

165. [reserved]

166. Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources: 40 CFR Part 63 Subpart VVVVVV, as amended December 21, 2012, is hereby incorporated and adopted by reference.

167. Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations: 40 CFR Part 63 Subpart WWWWWW, as amended November 19, 2020, is hereby incorporated and adopted by reference.

168. Emission Standards for Hazardous Air Pollutants: Area Source Standards for Nine Metal Fabrication and Finishing Source Categories: 40 CFR Part 63 Subpart XXXXXX, as amended November 19, 2020, is hereby incorporated and adopted by reference.

169. Emission Standards for Hazardous Air Pollutants for Area Sources: Ferroalloys Production Facilities: 40 CFR Part 63 Subpart YYYYYY, as amended November 19, 2020, is hereby incorporated and adopted by reference.

170. Emission Standards for Hazardous Air Pollutants: Area Source Standards for Aluminum, Copper, and Other Nonferrous Foundries: 40 CFR Part 63 Subpart ZZZZZZ, as amended September 10, 2009, is hereby incorporated and adopted by reference.

171. Emission Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing: 40 CFR Part 63 Subpart AAAAAAA, as amended November 19, 2020, is hereby incorporated and adopted by reference.

172. Emission Standards for Hazardous Air Pollutants for Area Sources: Chemical Preparations Industry: 40 CFR Part 63 Subpart BBBBBBB, as amended November 19, 2020, is hereby incorporated and adopted by reference.

173. Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing: 40 CFR Part 63 Subpart CCCCCCC, as amended November 19, 2020, is hereby incorporated and adopted by reference.

174. Emission Standards for Hazardous Air Pollutants: Area Source Standards for Prepared Feeds Manufacturing: 40 CFR Part 63 Subpart DDDDDDD, as amended December 23, 2011, is hereby incorporated and adopted by reference.

175. Emission Standards for Hazardous Air Pollutants: Gold Mine Ore Processing and Production Area Source Category: 40 CFR Part 63 Subpart EEEEEEE, as promulgated February 17, 2011, is hereby incorporated and adopted by reference.

176. [reserved]

177. [reserved]

178. Emission Standards for Hazardous Air Pollutants: Polyvinyl Chloride and Copolymers Production: 40 CFR Part 63 Subpart HHHHHHH, as amended November 19, 2020, is hereby incorporated and adopted by reference.

(10) **Chemical Accident Prevention Provisions.**

(a) **General Requirements.**

1. The provisions of this section (10) shall apply to any stationary source and to the owner or operator of any stationary source subject to any requirement under 40 Code of Federal Regulations (hereinafter CFR), Parts 68, as amended. The word "Administrator" as used in regulations adopted in this section shall mean the Director of EPD.

2. Definitions: For the purpose of this section, 40 CFR, Section 68.3, as amended, is hereby incorporated and adopted by reference.

(b) **Chemical Accident Prevention Standards.**

1. General: 40 CFR 68, Subpart A, as amended, is hereby incorporated and adopted by reference.

2. Hazard Assessment, 40 CFR 68, Subpart B, as amended, is hereby incorporated and adopted by reference.

3. Program 2 Prevention Program, 40 CFR 68, Subpart C, as amended, is hereby incorporated and adopted by reference.

4. Program 3 Prevention Program, 40 CFR 68, Subpart D, as amended, is hereby incorporated and adopted by reference.

5. Emergency Response, 40 CFR 68, Subpart E, as amended, is hereby incorporated and adopted by reference.

6. Regulated Substances for Accidental Release Prevention, 40 CFR 68, Subpart F, as amended, is hereby incorporated and adopted by reference.

7. Risk Management Plan, 40 CFR 68, Subpart G, as amended, is hereby incorporated and adopted by reference.

8. Other Requirements, 40 CFR 68, Subpart H, as amended, is hereby incorporated and adopted by reference.

(11) **Compliance Assurance Monitoring**

(a) **General Requirements.** The provisions of this section (11) shall apply to any stationary source and to the owner or operator of any stationary source subject to any requirement under 40 CFR Part 64 as amended, which is incorporated and adopted herein by reference.

(b) **The word "Administrator"** as used in regulations adopted in this section shall mean the Director of EPD.

(12) **Cross State Air Pollution Rule NOx Annual Trading Program**

(a) **General Requirements.** The provisions of this paragraph (12) except as provided in sub-paragraphs (f) and (g) shall apply to any source and the owner and operator of any such source subject to any requirements under 40 Code of Federal Regulations (hereinafter, 40 CFR), Part 97 Subpart AAAAA, as amended (at 81 FR 74604-07, October 26, 2016). The term "Permitting Authority" as used in regulations adopted in this paragraph shall mean, for a unit located in Georgia, the Environmental Protection Division of the Georgia Department of Natural Resources. For a unit located outside the State of Georgia participating in the trading program, the "Permitting Authority" is as defined in 40 CFR Part 97.402.

(b) **General Provisions.** 40 CFR Part 97.401 through 40 CFR Part 97.408, as amended is hereby incorporated and adopted by reference.

(c) **Designated Representative.** 40 CFR Part 97.413 through 40 CFR Part 97.418, as amended is hereby incorporated and adopted by reference.

(d) **[reserved]**

(e) **[reserved]**

(f) **Allowance Allocations.** 40 CFR Part 97.411 through 40 CFR Part 97.412, as amended is hereby incorporated and adopted by reference with the following exceptions: 40 CFR 97.411(b)(2), 40 CFR 97.411(c)(5)(iii) and 97.412(b).

For purposes of this paragraph (12), the Georgia NOx Annual trading budget and new unit set-aside for allocations of CSAPR NOx Annual allowances, and the variability limit for the Georgia NOx Annual trading budget, for the control periods in 2017 and thereafter are as follows:

1. The NOx Annual trading budget is 53,738 tons.

2. The new unit set-aside is 1,075 tons.

3. The variability limit is 9,673 tons.

4. The Georgia NOx Annual trading budget in this subparagraph includes any tons in the new unit set-aside but does not include any tons in the variability limit.

(g) **Allowance Tracking System.** 40 CFR Part 97.420 through 40 CFR Part 97.421 and 40 CFR Part 97.424 through 40 CFR Part 97.428, as amended is hereby incorporated and adopted by reference with the following exceptions: 40 CFR 97.421(h) and 40 CFR 97.421(j).

(h) **Allowance Transfers.** 40 CFR Part 97.422 through 40 CFR Part 97.423, as amended is hereby incorporated and adopted by reference.

(i) **Monitoring and Reporting.** 40 CFR Part 97.430 through 40 CFR Part 97.435, as amended is hereby incorporated and adopted by reference.

(13) **Cross State Air Pollution Rule SO_2 Annual Trading Program**

(a) **General Requirements.** The provisions of this paragraph (13) except as provided in sub-paragraphs (f) and (g) shall apply to any source and the owner and operator of any such source subject to any requirements under 40 Code of Federal Regulations (hereinafter, 40 CFR), Part 97 Subpart DDDDD, as amended (at 81 FR 74618-21, October 26, 2016). The term "Permitting Authority" as used in regulations adopted in this paragraph shall mean, for a unit located in Georgia, the Environmental Protection Division of the Georgia Department of Natural Resources. For a unit located outside the State of Georgia participating in the trading program, the "Permitting Authority" is as defined in 40 CFR Part 97.702.

(b) **General Provisions.** 40 CFR Part 97.701 through 40 CFR Part 97.708, as amended is hereby incorporated and adopted by reference.

(c) **Designated Representative.** 40 CFR Part 97.713 through 40 CFR Part 97.718, as amended is hereby incorporated and adopted by reference.

(d) **[reserved]**

(e) **[reserved]**

(f) **Allowance Allocations.** 40 CFR Part 97.711 through 40 CFR Part 97.712, as amended is hereby incorporated and adopted by reference with the following exceptions: 40 CFR 97.711(b)(2), 40 CFR 97.711(c)(5)(iii) and 97.712(b).

For purposes of this paragraph (13), the Georgia SO_2 Group 2 trading budget and new unit set-aside for allocations of CSAPR SO_2 Group 2 allowances, and the variability limit for the Georgia SO_2 Group 2 trading budget, for the control periods in 2017 and thereafter are as follows:

1. The SO_2 Group 2 trading budget is 135,565 tons.

2. The new unit set-aside is 2,711 tons.

3. The variability limit is 24,402 tons.

4. The Georgia SO_2 Group 2 trading budget in this subparagraph includes any tons in the new unit set-aside but does not include any tons in the variability limit.

(g) **Allowance Tracking System.** 40 CFR Part 97.720 through 40 CFR Part 97.721 and 40 CFR Part 97.724 through 40 CFR Part 97.728, as amended is hereby incorporated and adopted by reference with the following exceptions: 40 CFR 97.721(h) and 40 CFR 97.721(j).

(h) **Allowance Transfers.** 40 CFR Part 97.722 through 40 CFR Part 97.723, as amended is hereby incorporated and adopted by reference.

(i) **Monitoring and Reporting.** 40 CFR Part 97.730 through 40 CFR Part 97.735, as amended is hereby incorporated and adopted by reference.

(14) **Cross State Air Pollution Rule NOx Ozone Season Trading Program**

(a) **General Requirements.** The provisions of this paragraph (14) except as provided in sub-paragraphs (f) and (g) shall apply to any source and the owner and operator of any such source subject to any requirements under 40 Code of Federal Regulations (hereinafter, 40 CFR), Part 97 Subpart BBBBB as amended (at 81 FR 74607-14, October 26, 2016). The term "Permitting Authority" as used in regulations adopted in this paragraph shall mean, for a unit located in Georgia, the Environmental Protection Division of the Georgia Department of Natural Resources. For a unit located outside the State of Georgia participating in the trading program, the "Permitting Authority" is as defined in 40 CFR Part 97.502.

(b) **General Provisions.** 40 CFR Part 97.501 through 40 CFR Part 97.508, as amended is hereby incorporated and adopted by reference.

(c) **Designated Representative.** 40 CFR Part 97.513 through 40 CFR Part 97.518, as amended is hereby incorporated and adopted by reference.

(d) **[reserved]**

(e) **[reserved]**

(f) **Allowance Allocations.** 40 CFR Part 97.511 through 40 CFR Part 97.512, as amended is hereby incorporated and adopted by reference with the following exceptions: 40 CFR 97.511(b)(2), 40 CFR 97.511(c)(5)(iii) and 97.512(b).

For purposes of this paragraph (14), the Georgia NOx Ozone Season Group 1 trading budget and new unit set-aside for allocations of CSAPR NOx Ozone Season Group 1 allowances, and the variability limit for the Georgia NOx Ozone Season Group 1 trading budget, for the control periods in 2017 and thereafter are as follows:

1. The NOx Ozone Season Group 1 trading budget is 24,041 tons.

2. The new unit set-aside is 481 tons.

3. The variability limit is 5,049 tons.

4. The Georgia NOx Ozone Season Group 1 trading budget in this subparagraph includes any tons in the new unit set-aside but does not include any tons in the variability limit.

(g) **Allowance Tracking System.** 40 CFR Part 97.520 through 40 CFR Part 97.521 and 40 CFR Part 97.524 through 40 CFR Part 97.528, as amended is hereby incorporated and adopted by reference with the following exceptions: 40 CFR 97.521(h) and 40 CFR 97.521(j).

(h) **Allowance Transfers.** 40 CFR Part 97.522 through 40 CFR Part 97.523, as amended is hereby incorporated and adopted by reference.

(i) **Monitoring and Reporting.** 40 CFR Part 97.530 through 40 CFR Part 97.535, as amended is hereby incorporated and adopted by reference.

Cite as Ga. Comp. R. & Regs. R. 391-3-1-.02

AUTHORITY: O.C.G.A. § 12-9-1 *et seq.*, as amended.

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Amended: F. Oct. 27, 1980; eff. Nov. 16, 1980.

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Amended: F. Dec. 9, 1986; eff. Dec. 29, 1986.

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Amended: F. Dec. 9, 2010; eff. Dec. 29, 2010.

Amended: F. Aug. 24, 2011; eff. Sept. 13, 2011.

Amended: F. Feb. 16, 2012; eff. Mar. 7, 2012.

Amended: F. July 20, 2012; eff. Aug. 9, 2012.

Amended: F. Aug. 31, 2012; eff. Sept. 20, 2012.

Amended: F. May 2, 2013; eff. May 22, 2013.

Amended: F. May 24, 2013; eff. June 13, 2013.

Amended: F. July 12, 2013; eff. Aug. 1, 2013.

Amended: F. Apr. 14, 2014; eff. May 4, 2014.

Amended: F. Sept. 24, 2014; eff. Oct. 14, 2014.

Amended: F. July 14, 2015; eff. Aug. 3, 2015.

Amended: F. Nov. 18, 2015; eff. Dec. 8, 2015.

Note: Correction of non-substantive typographical errors, duplicate "ii" in subparagraphs (w) 3., 4. and (y) 4. changed to "iii", duplicate subparagraph "(aaaa)(3)(c)" deleted. Eff. Dec. 16, 2015.

Amended: F. July 25, 2016; eff. August 14, 2016.

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Amended: F. June 30, 2017; eff. July 20, 2017.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.

Amended: F. July 3, 2018; eff. July 23, 2018.

Amended: F. Oct. 9, 2018; eff. Oct. 29, 2018.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Sept. 6, 2019; eff. Sept. 26, 2019.

Note: Correction of non-substantive typographical errors in subparagraphs (2)(d), (2)(ii), (2)(rr) as requested by the Agency. Effective Nov. 1, 2019.

Amended: F. July 9, 2020; eff. July 29, 2020.

Amended: (i.e., paragraphs (2)(rr), (6), (8), and (9); paragraph (2)(ggg), as specified by the Agency.) F. Oct. 5, 2021; eff. Oct. 25, 2021.

Amended: (i.e., paragraphs (4), (5), (8), and (9), as specified by the Agency.) F. Aug. 30, 2022; eff. Sept. 19, 2022.

Amended: F. May 30, 2023; eff. June 19, 2023.

Note: Rule 391-3-1-.02, correction of administrative typographical error in Rule History, *"**Amended:** (i.e., paragraphs (1), (6)(j), (8), (9)(b), (9)(k), (10)(c), (11)(b)7., (13), as specified by the Agency.) F. May 30, 2023; eff. June 19, 2023."* corrected to *"**Amended:** F. May 30, 2023; eff. June 19, 2023."* Effective June 19, 2023.

Amended: (i.e., paragraphs (2)(a), (2)(ss), (8), and (9), as specified by the Agency.) F. Aug. 28, 2023; eff. Sept. 17, 2023.

Amended: F. Apr. 1, 2024; eff. Apr. 21, 2024.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-3. ENVIRONMENTAL PROTECTION

Subject 391-3-5. RULES FOR SAFE DRINKING WATER

391-3-5-.39 [Effective 5/12/2024] Public Water System Classification

(1) **Purpose**. In accordance with Section 10 of the Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act (O.C.G.A. Section 43-51-1) the following classifications shall be considered as minimum levels, and the Division may classify any system or plant at a higher level if the complexity of the system or plant warrants such higher classification in the judgment of the Division. Any system or plant not fitting any of the following standard descriptions shall be classified individually according to the judgment of the Division. Where water is supplied to a distribution system from two or more sources, the classification may be set by the Division.

(2) **Minimum Classifications.** The following classifications shall be considered as minimum levels:

Public Water System Classification for Community and Non-transient Non-community Systems [(1)]

System Size	Class I	Class II	Class III	Class IIIG	Class IV
Surface water with conventional treatment plant	5.0 MGD or greater	4.99 MGD or less	n/a	n/a	n/a
Surface water with package or non-conventional treatment plant	1.0 MGD or greater	0.99 MGD or less	n/a	n/a	n/a
Surface water with approved high-rate filtration	3.0 gpm/sq.ft. or greater	Less than 3.0 gpm/sq.ft.	n/a	n/a	n/a
Groundwater under the direct influence of surface water	1.0 MGD or greater	Greater than 0.1 MGD to 0.99 MGD	0.1 MGD or less	n/a	n/a
Groundwater	50,000 or greater population	10,000 to 49,999 population	1,000 to 9,999 population	1,000 to 9,999 population	25 to 999 population
Distribution Systems	Certification is required for the operator of public water distribution systems.				

Note: [(1)] MGD is million gallons per day; gpm/sq.ft. is gallons per minute per square-foot filter surface area; n/a is not applicable.

(3) **Groundwater** Transient Non-community Water Systems. All Transient Non-community water systems with groundwater sources must have at least a Class IV operator certification.

(4) **Surface Water** Transient Non-community Water Systems. Certification of Transient Non-community water systems with surface water will be specified in their permit to operate a public water system.

(5) **Higher Classification**. When the complexity of water treatment warrants it, a higher classification may be required and specified in the permit to operate a public water system.

Cite as Ga. Comp. R. & Regs. R. 391-3-5-.39

AUTHORITY: O.C.G.A. § 12-5-170 ***et seq*.**

HISTORY: Original Rule entitled "Consideration of an Exemption Request" adopted. F. July 5, 1977; eff. July 26, 1977, as specified by Rule 391-3-5-.47.

Repealed: New Rule entitled "Public Water System Classification" adopted. F. May 12, 1989; eff. June 1, 1989.

Amended: F. Sept. 26, 1997; eff. Oct. 16, 1997.

Amended: F. Sept. 29, 2000; eff. Oct. 19, 2000.

Amended: F. Jan. 8, 2014; eff. Jan. 28, 2014.

Amended: F. Apr. 22, 2024; eff. May 12, 2024.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-3. ENVIRONMENTAL PROTECTION

Subject 391-3-17. RADIOACTIVE MATERIALS

391-3-17-.03 Standards for Protection Against Radiation

(1) **General Provisions**

(a) Purpose.

This Rule, 391-3-17-.03, establishes standards for protection against ionizing radiation resulting from activities conducted pursuant to licenses issued by the Director. The requirements in this Rule are designed to control the receipt, possession, use, transfer, and disposal of sources of radiation by any licensee so that the total dose to an individual, including doses resulting from all sources of radiation other than background radiation, does not exceed the standards for protection against radiation prescribed in this Rule. However, nothing in this Rule shall be construed as limiting actions that may be necessary to protect health and safety.

(b) Scope.

This Rule applies to persons licensed by the Director on or after January 1, 1994, to receive, possess, use, transfer, or dispose of sources of radiation. The limits in this Rule do not apply to doses due to background radiation, to exposure of patients to radiation for the purpose of medical diagnosis or therapy, or to voluntary participation in medical research programs.

(2) **Definitions**

The definitions set forth for certain terms under 391-3-17-.01 are applicable to those terms as used in this Rule, unless the term is otherwise defined herein. As used in this Rule:

(a) "Air-purifying respirator" means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

(b) "Assigned protection factor" (APF) means the expected workplace level of respiratory protection that would be provided by a properly functioning respirator or a class of respirators to properly fitted and trained users. Operationally, the inhaled concentration can be estimated by dividing the ambient airborne concentration by the APF.

(c) "Atmosphere-supplying respirator" means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

(d) "Annual limit on intake" (ALI) means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of five rem (0.05 Sv) or a committed dose equivalent of 50 rem (0.5 Sv) to any individual organ or tissue. ALI values for intake by ingestion and by inhalation of selected radionuclides are given in Table I, Columns 1 and 2, of Appendix B to 10 CFR 20.

(e) "Chelating agent" means amine polycarboxylic acids, hydroxycarboxylic acids, gluconic acid, and polycarboxylic acids.

(f) "Chemical description" means a description of the principal chemical characteristics of a low-level radioactive waste.

(g) "Class" means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which apply to a range of clearance half-times: for Class D (Days), of less than ten days; for Class W (Weeks), from ten to 100 days; and for Class Y (Years), of greater than 100 days. For purposes of this Chapter, "lung class" and "inhalation class" are equivalent terms.

(h) "Computer-readable medium" means that the Division's computer can transfer the information from the medium into its memory.

(i) "Consignee" means the designated receiver of the shipment of low-level radioactive waste.

(j) "Constraint (dose constraint)" means a value above which specified licensee actions are required.

(k) "Critical Group" means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

(l) "Declared pregnant woman" means any woman who has voluntarily informed the licensee, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

(m) "Decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of the license.

(n) "Decontamination facility" means a facility operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license whose principal purpose is decontamination of equipment or materials to accomplish recycle, reuse, or other waste management objectives, and, for purposes of this part, is not considered to be a consignee for LLW shipments.

(o) "Demand respirator" means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

(p) "Derived air concentration" (DAC) means the concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work (inhalation rate of 1.2 cubic meters of air per hour), results in an intake of one ALI. DAC values are given in Table I, Column 3 of Appendix B to 10 CFR 20.

(q) "Derived air concentration-hour" (DAC-hour) means the product of the concentration of radioactive material in air, expressed as a fraction or multiple of the derived air concentration for each radionuclide, and the time of exposure to that radionuclide, in hours. A licensee may take 2,000 DAC-hours to represent one ALI, equivalent to a committed effective dose equivalent of five rem (0.05 Sv).

(r) "Disposable respirator" means a respirator for which maintenance is not intended and that is designed to be discarded after excessive breathing resistance, sorbent exhaustion, physical damage, or end-of-service-life renders it unsuitable for use. Examples of this type of respirator are a disposable half-mask respirator or a disposable escape-only self-contained breathing apparatus (SCBA).

(s) "Disposal container" means a container principally used to confine low-level radioactive waste during disposal operations at a land disposal facility (also see "high integrity container"). Note that for some shipments, the disposal container may be the transport package.

(t) "Distinguishable from background" means that the detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

(u) "Dosimetry processor" means a person that processes and evaluates individual monitoring equipment devices in order to determine the radiation dose delivered to the monitoring devices.

(v) "EPA identification number" means the number received by a transporter following application to the Administrator of EPA as required by 40 CFR part 263.

(w) "Filtering facepiece" (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium, not equipped with elastomeric sealing surfaces and adjustable straps.

(x) "Fit factor" means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

(y) "Fit test" means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

(z) "Generator" means a licensee operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license who (1) is a waste generator or (2) is the licensee to whom waste can be attributed within the context of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (e.g., waste generated as a result of decontamination or recycle activities).

(aa) "Helmet" means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

(bb) "High integrity container (HIC)" means a container commonly designed to meet the structural stability requirements of Rule 391-3-17-.03(13)(g), and to meet Department of Transportation requirements for a Type A package.

(cc) "Hood" means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

(dd) "Land disposal facility" means the land, buildings and structures, and equipment that are intended to be used for the disposal of radioactive waste. For purposes of this Rule, a "geologic repository" as defined in 10 CFR Part 60 is not considered a "land disposal facility."

(ee) "Lens dose equivalent" (LDE) means the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm^2).

(ff) "Loose-fitting facepiece" means a respiratory inlet covering that is designed to form a partial seal with the face.

(gg) "Nationally tracked source" means a sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of any radioactive material listed in Table 3 of 391-3-17-.03(15). In this context a sealed source is defined as radioactive material that is sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

(hh) "Negative pressure respirator" (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

(ii) "Nonstochastic effect" means a health effect, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect. For purposes of this Chapter, "deterministic effect" is an equivalent term.

(jj) "Positive pressure respirator" means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

(kk) "Physical description" means the items called for on NRC Form 541 or equivalent form to describe a low-level radioactive waste.

(ll) "Planned special exposure" means an infrequent exposure to radiation separate from and in addition to the annual occupational dose limits.

(mm) "Powered air-purifying respirator" (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

(nn) "Pressure demand respirator" means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

(oo) "Qualitative fit test" (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

(pp) "Quantitative fit test" (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

(qq) "Reference man" means a hypothetical aggregation of human physical and physiological characteristics determined by international consensus. These characteristics may be used by researchers and public health workers to standardize results of experiments and to relate biological insult to a common base.

(rr) "Residual radioactivity" means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of Rule .03 of this Chapter.

(ss) "Residual waste" means low-level radioactive waste resulting from processing or decontamination activities that cannot be easily separated into distinct batches attributable to specific waste generators. This waste is attributable to the processor or decontamination facility, as applicable.

(tt) "Respiratory protective device" means an apparatus, such as a respirator, used to reduce an individual's intake of airborne radioactive materials.

(uu) "Self-contained breathing apparatus" (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

(vv) "Sanitary sewerage" means a system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee.

(ww) "Shipper" means the licensed entity (i.e., the waste generator, waste collector, or waste processor) who offers low-level radioactive waste for transportation, typically consigning this type of waste to a licensed waste collector, waste processor, or land disposal facility operator.

(xx) "Shipping paper" means NRC Form 540 and, if required, NRC Form 540A or equivalent forms which include the information required by DOT in 49 CFR Part 172.

(yy) "Source material" means

1. Uranium or thorium, or any combination thereof, in any physical or chemical form; or

2. Ores that contain by weight one-twentieth of one percent (0.05 percent) or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

(zz) "Stochastic effect" means a health effect that occurs randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects. For purposes of this Chapter, "probabilistic effect" is an equivalent term.

(aaa) "Supplied-air respirator" (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

(bbb) "Tight-fitting facepiece" means a respiratory inlet covering that forms a complete seal with the face.

(ccc) "Uniform Low-Level Radioactive Waste Manifest" or "Uniform Manifest" means the combination of NRC Forms 540, 541, and if necessary, 542, and their respective continuation sheets as needed, or equivalent forms.

(ddd) "User seal check" (fit check) means an action conducted by the respirator user to determine if the respirator is properly seated to the face. Examples include negative pressure check, positive pressure check, irritant smoke check, or isoamyl acetate check.

(eee) "Very high radiation area" means an area, accessible to individuals, in which radiation levels from radioactive materials external to the body could result in an individual receiving an absorbed dose in excess of 500 rads (5 Gray) in one hour at one meter from a source of radiation or from any surface that the radiation penetrates. [1]

(fff) "Waste collector" means an entity, operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license, whose principal purpose is to collect and consolidate waste generated by others, and to transfer this waste, without processing or repackaging the collected waste, to another licensed waste collector, licensed waste processor, or licensed land disposal facility.

(ggg) "Waste description" means the physical, chemical and radiological description of a low-level radioactive waste as called for on NRC Form 541 or equivalent form.

(hhh) "Waste generator" means an entity, operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license, who (1) possesses any material or component that contains radioactivity or is radioactively contaminated for which the licensee foresees no further use, and (2) transfers this material or component to a licensed land disposal facility or to a licensed waste collector or processor for handling or treatment prior to disposal. A licensee performing processing or decontamination services may be a "waste generator" if the transfer of low-level radioactive waste from its facility is defined as "residual waste."

(iii) "Waste processor" means an entity, operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license, whose principal purpose is to process, repackage, or otherwise treat low-level radioactive material or waste generated by others prior to eventual transfer of waste to a licensed low-level radioactive waste land disposal facility.

(jjj) "Waste type" means a waste within a disposal container having a unique physical description (i.e., a specific waste descriptor code or description; or a waste sorbed on or solidified in a specifically defined media).

(kkk) "Weighting factor" (w_T) for an organ or tissue (T) means the proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of w_T are:

ORGAN DOSE WEIGHTING FACTORS

Organ or Tissue	w_T
Gonads	0.25
Breast	0.15
Red bone marrow	0.12
Lung	0.12
Thyroid	0.03
Bone surfaces	0.03
Remainder	0.30[a]
Whole Body	1.00[b]

[a] 0.30 results from 0.06 for each of five "remainder" organs, excluding the skin and the lens of the eye, that receive the highest doses.

[b] For the purpose of weighting the external whole body dose, for adding it to the internal dose, a single weighting factor, $w_T = 1.0$, has been specified. The use of other weighting factors for external exposure will be approved on a case-by-case basis until such time as specific guidance is issued.

(3) **Implementation**

(a) Any existing license condition that is more restrictive than this Rule remains in force until there is an amendment or renewal of the license.

(b) If a license condition exempts a licensee from a provision of Rule 391-3-17-.03 in effect on or before January 1, 1994, it also exempts the licensee from the corresponding provision of this Rule.

(c) If a license condition cites provisions of Rule 391-3-17-.03 in effect prior to January 1, 1994, which do not correspond to any provisions of this Rule, the license condition remains in force until there is an amendment or renewal of the license that modifies or removes this condition.

(4) **Radiation Protection Programs**

(a) Each licensee shall develop, document, and implement a Radiation Protection Program sufficient to ensure compliance with the provisions of this Rule. See (14)(b) of this Rule for record-keeping requirements relating to these Programs.

(b) The licensee shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).

(c) The licensee shall, at least annually, review the Radiation Protection Program content and implementation.

(d) To implement the ALARA requirements of .03(4)(b), and notwithstanding the requirements in .03(5)(i) of this rule, a constraint on air emissions of radioactive material to the environment, excluding Radon-222 and its daughters, shall be established by licensees such that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of ten (10) mrem (0.1 mSv) per year from these emissions. If a licensee subject to this requirement exceeds this dose constraint, the licensee shall report the exceedance as provided in .03(15)(c) and promptly take appropriate corrective action to ensure against recurrence.

(5) **Occupational Dose Limits and Dose Limits for Individual Members of the Public**

(a) Occupational Dose Limits for Adults.

1. The licensee shall control the occupational dose to individual adults, except for planned special exposures pursuant to (5)(f) of this Rule, in accordance with the following dose limits:

(i) An annual limit, which is the more limiting of:

(I) The total effective dose equivalent being equal to five (5) rem (0.05 Sv); or

(II) The sum of the deep dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 50 rem (0.50 Sv).

(ii) The annual limits to the lens of the eye, to the skin of the whole body, and to the skin of the extremities, which are:

(I) A lens dose equivalent of 15 rem (0.15 Sv); and

(II) A shallow dose equivalent of 50 rem (0.50 Sv) to the skin of the whole body or to the skin of any extremity.

2. Doses received in excess of the annual limits, including doses received during accidents, emergencies, and planned special exposures, shall be subtracted from the limits for planned special exposures that the individual may receive during the current year and during the individual's lifetime, listed in (5)(f)5.(i) and (ii) of this Rule.

3. When the external exposure is determined by measurement with an external personal monitoring device, the deep-dose equivalent must be used in place of the effective dose equivalent, unless the effective dose equivalent is determined by a dosimetry method approved by the NRC. The assigned deep dose equivalent shall be for the portion of the body receiving the highest exposure. The assigned shallow dose equivalent shall be the dose averaged over the contiguous ten (10) square centimeters of skin receiving the highest exposure.

4. The deep dose equivalent, lens dose equivalent, and shallow dose equivalent may be assessed from surveys or other radiation measurements for the purpose of demonstrating compliance with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure or the results of individual monitoring are unavailable.

5. Derived air concentration (DAC) and annual limit on intake (ALI) values are specified in Table I of Appendix B to 10 CFR 20 and may be used to determine the individual's dose and to demonstrate compliance with the occupational dose limits. See (14)(g) of this Rule for maintaining records of these exposures.

6. Notwithstanding the annual dose limits, the licensee shall limit the soluble uranium intake by an individual to ten milligrams in a week in consideration of chemical toxicity. See footnote 3 of Appendix B 10 CFR 20.

7. The licensee shall reduce the dose that an individual may be allowed to receive in the current year by the amount of occupational dose received while employed by any other person during the current year. See (5)(e) of this Rule.

(b) Compliance with Requirements for Summation of External and Internal Doses.

1. General Requirements. If the licensee is required to monitor pursuant to both (8)(b)1. and 2. of this Rule, the licensee shall demonstrate compliance with the dose limits by summing external and internal doses. If the licensee is required to monitor only pursuant to (8)(b)1. of this Rule or only pursuant to (8)(b)2. of this Rule, then summation is not required to demonstrate compliance with the dose limits. The licensee must demonstrate compliance with the requirements for summation of external and internal doses pursuant to (5)(b)2., 3., and 4. of this Rule. The dose equivalents for the lens of the eye, the skin, and the extremities are not included in the summation, but are subject to separate limits.

2. Intake by Inhalation. If the only intake of radionuclides is by inhalation, the total effective dose equivalent limit is not exceeded if the sum of the deep dose equivalent divided by the total effective dose equivalent limit and one of the following does not exceed unity:

(i) The sum of the fractions of the inhalation ALI for each radionuclide;

(ii) The total number of derived air concentration-hours (DAC-hours) for all radionuclides divided by 2,000; or

(iii) The sum of the calculated committed effective dose equivalents to all significantly irradiated organs or tissues (T) calculated from bioassay data using appropriate biological models and expressed as a fraction of the annual limit. For purposes of this requirement, an organ or tissue is deemed to be significantly irradiated if, for that organ or tissue, the product of the weighting factors, w_T, and the committed dose equivalent, $H_{T,50}$, per unit intake is greater than ten percent of the maximum weighted value of H_{50} (i.e., $w_T H_{T,50}$), per unit intake for any organ or tissue.

3. Intake by Oral Ingestion. If the occupationally-exposed individual receives an intake of radionuclides by oral ingestion greater than ten percent of the applicable oral ALI, the licensee shall account for this intake and include it in demonstrating compliance with the limits.

4. Intake through Wounds or Absorption through Skin. The licensee shall evaluate and, to the extent practical, account for intakes through wounds or skin absorption. The intake through intact skin has been included in the calculation of DAC for hydrogen-3 and does not need to be evaluated or accounted for pursuant to (5)(b)4. of this Rule.

(c) Determination of External Dose from Airborne Radioactive Material.

1. Licensees shall, when determining the dose from airborne radioactive material, include the contribution to the deep dose equivalent, lens dose equivalent, and shallow dose equivalent from external exposure to the radioactive cloud. See Appendix B, footnotes 1 and 2, of 10 CFR 20.

2. Airborne radioactivity measurements and DAC values shall not be used as the primary means to assess the deep dose equivalent when the airborne radioactive material includes radionuclides other than noble gases or if the cloud of airborne radioactive material is not relatively uniform. The determination of the deep dose equivalent to an individual shall be based upon measurements using instruments or individual monitoring devices.

(d) Determination of Internal Exposure.

1. For purposes of assessing the dose used to determine compliance with occupational dose equivalent limits, the licensee shall, when required under (8)(b) of this Rule, take suitable and timely measurements of:

(i) Concentrations of radioactive materials in air in work areas during operations;

(ii) Quantities of radionuclides in the body;

(iii) Quantities of radionuclides excreted from the body; or

(iv) Combinations of these measurements.

2. Unless respiratory protective equipment is used, as provided in (10)(d) of this Rule, or the assessment of intake is based on bioassays, the licensee shall assume that an individual inhales radioactive material at the airborne concentration in which the individual is present.

3. When specific information on the physical and biochemical properties of the radionuclides taken into the body or the behavior of the material in an individual is known, the licensee may:

(i) Use that information to calculate the committed effective dose equivalent, and, if used, the licensee shall document that information in the individual's record;

(ii) Upon prior approval of the Division, adjust the DAC or ALI values to reflect the actual physical and chemical characteristics of airborne radioactive material, for example, aerosol size distribution or density; and

(iii) Separately assess the contribution of fractional intakes of Class D, W, or Y compounds of a given radionuclide to the committed effective dose equivalent. See Appendix B of 10 CFR 20.

4. If the licensee chooses to assess intakes of Class Y material using the measurements given in (5)(d)1.(ii) or (iii) of this Rule, the licensee may delay the recording and reporting of the assessments for periods up to seven months, unless otherwise required by (15)(b) or (15)(c) of this Rule. This delay permits the licensee to make additional measurements basic to the assessments.

5. If the identity and concentration of each radionuclide in a mixture are known, the fraction of the DAC applicable to the mixture for use in calculating DAC-hours shall be either:

(i) The sum of the ratios of the concentration to the appropriate DAC value (i.e., D, W, or Y) from Appendix B of 10 CFR 20, for each radionuclide in the mixture; or

(ii) The ratio of the total concentration for all radionuclides in the mixture to the most restrictive DAC value for any radionuclide in the mixture.

6. If the identity of each radionuclide in a mixture is known, but the concentration of one or more of the radionuclides in the mixture is not known, the DAC for the mixture shall be the most restrictive DAC of any radionuclide in the mixture.

7. When a mixture of radionuclides in the air exists, a licensee may disregard certain radionuclides in the mixture if:

(i) The licensee uses the total activity of the mixture in demonstrating compliance with the dose limits in (5)(a) of this Rule and in complying with the monitoring requirements in (8)(b)2. of this Rule;

(ii) The concentration of any radionuclide disregarded is less than ten percent of its DAC; and

(iii) The sum of these percentages for all of the radionuclides disregarded in the mixture does not exceed 30 percent.

8. When determining the committed effective dose equivalent, the following information may be considered:

(i) In order to calculate the committed effective dose equivalent, the licensee may assume that the inhalation of one ALI, or an exposure of 2,000 DAC-hours, results in a committed effective dose equivalent of five rem (0.05Sv) for radionuclides that have their ALIs or DACs based on the committed effective dose equivalent;

(ii) When the ALI (and the associated DAC) is determined by the non-stochastic organ dose limit of 50 rem (0.50 Sv), the intake of radionuclides that would result in a committed effective dose equivalent of five rem (0.05 Sv), (i.e., the stochastic ALI) is listed in parentheses in Table I of Appendix B of 10 CFR 20. In this case, the licensee may, as a simplifying assumption, use the stochastic ALIs to determine the committed effective dose equivalent. However, if the licensee uses the stochastic ALIs, the licensee shall also demonstrate that the limit in (5)(a)1.(i)(II) of this Rule is not exceeded.

(e) Determination of Prior Occupational Dose.

1. For each individual who is likely to receive, in a year, an occupational dose requiring monitoring pursuant to (8)(b) of this Rule, the licensee shall:

(i) Determine the occupational radiation dose received during the current year; and

(ii) Attempt to obtain the records of lifetime cumulative occupational radiation dose.

2. Prior to permitting an individual to participate in a planned special exposure, the licensee shall determine:

(i) The internal and external doses from all previous planned special exposures; and

(ii) All doses in excess of the limits, including doses received during accidents and emergencies, received during the lifetime of the individual.

3. In complying with the requirements of (5)(e)1. of this Rule, a licensee may:

(i) Accept, as a record of the occupational dose that the individual received during the current year, a written signed statement from the individual, or from the individual's most recent employer for work involving radiation exposure, that discloses the nature and the amount of any occupational dose that the individual may have received during the current year;

(ii) Accept, as the record of lifetime cumulative radiation dose, an up-to-date Division Form "Occupational Radiation Exposure History" or equivalent, signed by the individual and countersigned by an appropriate official of the most recent employer for work involving radiation exposure, or the individual's current employer if the individual is not employed by the licensee; and

(iii) Obtain the individual's dose equivalent from the most recent employer for work involving radiation exposure, or the individual's current employer if the individual is not employed by the licensee, by telephone, telegram, electronic media, facsimile, or letter. The licensee shall request a written verification of the dose data if the authenticity of the transmitted report cannot be established.

4. The licensee shall record the exposure history, as required by (5)(e)1. of this Rule, on Division Form "Occupational Radiation Exposure History" or other clear and legible record, and all of the information required on that form. The form or record shall show each period in which the individual received occupational exposure to radiation or radioactive material and shall be signed by the individual who received the exposure. For each period for which the licensee obtains, the licensee shall use the dose shown in the report in preparing the Division Form "Occupational Radiation Exposure History" or equivalent form. For any period in which the licensee does not obtain a report, the licensee shall place a notation on the "Occupational Radiation Exposure History" or equivalent form indicating the periods of time for which data are not available.

5. Licensees are not required to partition historical dose between external dose equivalents and internal committed dose equivalents of radionuclides assessed under the Regulations in effect before January 1, 1994. Further, occupational exposure histories obtained and recorded on Division Form "Occupational Radiation Exposure History" or equivalent before January 1, 1994, might not have included effective dose equivalent but may be used in the absence of specific information on the intake of radionuclides by the individual.

6. If the licensee is unable to obtain a complete record of an individual's current and previously accumulated occupational dose, the licensee shall assume:

(i) In establishing administrative controls under (5)(a)7. of this Rule, for the current year, that the allowable dose limit for the individual is reduced by 1.25 rem (12.5 mSv) for each quarter for which records were unavailable and the individual was engaged in activities that could have resulted in occupational radiation exposure; and

(ii) That the individual is not available for planned special exposures.

7. The licensee shall retain the records on Division Form "Occupational Radiation Exposure History" or equivalent until the Director terminates each pertinent license requiring this record. The licensee shall retain records used in preparing Division Form "Occupational Radiation Exposure History" or equivalent for three years after the record is made.

(f) Planned Special Exposures. A licensee may authorize an adult worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in (5)(a) of this Rule provided that each of the following conditions is satisfied:

1. The licensee authorizes a planned special exposure only in an exceptional situation when alternatives that might avoid the higher exposure estimated to result from the planned special exposure are unavailable or impractical (i.e., industrial radiography source retrieval for an area that cannot be evacuated).

2. The management official of the licensee (and employer if the employer is not the licensee) specifically authorizes the planned special exposure, in writing, before the exposure occurs.

3. Before a planned special exposure, the licensee ensures that each individual involved is:

(i) Informed of the purpose of the planned operation;

(ii) Informed of the estimated doses and associated potential risks and specific radiation levels or other conditions that might be involved in performing the task; and

(iii) Instructed in the measures to be taken to keep the dose ALARA considering other risks that may be present.

4. Prior to permitting an individual to participate in a planned special exposure, the licensee ascertains prior doses as required by (5)(e)2. of this Rule during the lifetime for each individual involved.

5. Subject to (5)(a)2. of this Rule, the licensee shall not authorize a planned special exposure that would cause an individual to receive a dose from all planned special exposures and all doses in excess of the limits to exceed:

(i) The numerical values of any of the dose limits in (5)(a)1. of this Rule in any year; and

(ii) Five times the annual dose limits in (5)(a)1. of this Rule during the individual's lifetime.

6. The licensee maintains records of the conduct of a planned special exposure in accordance with (14)(f) of this Rule and submits a written report in accordance with (15)(d) of this Rule.

7. The licensee records the best estimate of the dose resulting from the planned special exposure in the individual's record and informs the individual, in writing, of the dose within 30 days after the date of the planned special exposure. The dose from planned special exposures shall not be considered in controlling the future occupational dose of the individual pursuant to (5)(a)1. of this Rule but shall be included in evaluations required by (5)(f)1. and (5)(f)5. of this Rule.

(g) Occupational Dose Limits for Minors. The annual occupational dose limits for minors are ten percent of the annual occupational dose limits specified for adult workers in (5)(a) of this Rule.

(h) Dose to an Embryo/Fetus.

1. The licensee shall ensure that the dose equivalent to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv). For record-keeping requirements, see (14)(g) of this Rule.

2. The licensee shall make efforts to avoid substantial variation [2] above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in (5)(h)1. of this Rule.

3. The dose equivalent to an embryo/fetus shall be taken as the sum of:

(i) The deep-dose equivalent to the declared pregnant woman; and

(ii) The dose equivalent to the embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman.

4. If by the time the woman declares pregnancy to the licensee the dose equivalent to the embryo/fetus is found to have exceeded 0.50 rem (5.0 mSv), or is within 0.05 rem (0.5 mSv) of this dose equivalent, the licensee shall be deemed to be in compliance with (5)(h)1. of this Rule if the additional dose equivalent to the embryo/fetus does not exceed 0.05 rem (0.5 mSv) during the remainder of the pregnancy.

(i) Radiation Dose Limits for Individual Members of the Public.

1. Each licensee shall conduct operations so that:

(i) Except as provided in (5)(i)1.(iii) the total effective dose equivalent to individual members of the public from the licensed operation does not exceed 0.1 rem (1 mSv) in a year, exclusive of the dose contributions from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Rule .05(37), from voluntary participation in medical research programs, and from the licensee's disposal of radioactive material into sanitary sewerage in accordance with (13)(c) of this Rule; and

(ii) The dose in any unrestricted area from external sources, exclusive of the dose contributions from individuals administered radioactive material and released in accordance with Rule .05(37), does not exceed 0.002 rem (0.02 mSv) in any one hour.

(iii) The total effective dose equivalent to individual members of the public from infrequent exposure to radiation from radiation machines does not exceed 0.5 rem (5 mSv).

2. A licensee or license applicant may apply for prior Division authorization to operate up to an annual dose limit for an individual member of the public of 0.5 rem (5 mSv). The licensee or license applicant shall include the following information in this application:

(i) Demonstration of the need for and the expected duration of operations in excess of the limit in (5)(i)1. of this Rule;

(ii) The licensee's program to assess and control dose within the 0.5 rem (5 mSv) annual limit; and

(iii) The procedure to be followed to maintain the dose as low as is reasonably achievable (ALARA).

3. In addition to the requirements of this Rule, a licensee subject to the provisions of the U.S. Environmental Protection Agency's (EPA) generally applicable environmental radiation standards in 40 CFR Part 190 shall comply with those standards.

4. The Division may impose additional restrictions on radiation levels in unrestricted areas and on the total quantity of radionuclides that a licensee may release in effluents in order to restrict the collective dose.

(j) Compliance with Dose Limits for Individual Members of the Public.

1. The licensee shall make or cause to be made, as appropriate, surveys of radiation levels in unrestricted areas and radioactive materials in effluents released to unrestricted areas to demonstrate compliance with the dose limits for individual members of the public in (5)(i) of this Rule.

2. A licensee shall show compliance with the annual dose limit in (5)(i) of this Rule by:

(i) Demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed operation does not exceed the annual dose limit; or

(ii) Demonstrating that:

(I) The annual average concentrations of radioactive material released in gaseous and liquid effluents at the boundary of the unrestricted area do not exceed the values specified in Table II of Appendix B of 10 CFR 20.

(II) If an individual were continually present in an unrestricted area, the dose from external sources would not exceed 0.002 rem (0.02 mSv) in one hour and 0.05 rem (0.50 mSv) in one year.

3. Upon approval from the Division, the licensee may adjust the effluent concentration values in Appendix B, Table II of 10 CFR 20, for members of the public, to take into account the actual physical and chemical characteristics of the effluents (e.g., aerosol size distribution, solubility, density, radioactive decay equilibrium, and chemical form).

(6) **Testing for Leakage or Contamination of Sealed Sources**

(a) The licensee in possession of any sealed source shall assure that:

1. Each sealed source, other than hydrogen-3, with a half-life greater than 30 days and in any form other than gas, shall be tested for leakage or contamination as follows:

(i) Prior to initial use;

(ii) Unless otherwise authorized by the Division, at intervals not to exceed six months, except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months;

(iii) At any other time there is reason to suspect that a sealed source might have been damaged or might be leaking, it shall be tested for leakage before further use; and

(iv) In the absence of a certificate from a transferor indicating that a test for leakage has been made within six months prior to the transfer, the sealed source shall not be put into use until tested and the results received.

2. Tests for leakage for all sealed sources, except those manufactured to contain radium, shall be capable of detecting the presence of 0.005 µCi (185 Bq) of radioactive material on a test sample. Test samples shall be taken from the sealed source or from the surfaces of the container in which the sealed source is stored or mounted on which one might expect contamination to accumulate. For sealed sources contained in a device, test samples are obtained when the source is in the "off" position.

3. Tests for leakage for sources manufactured to contain radium shall be capable of detecting an absolute leakage rate of 0.001 µCi (37 Bq) of radon-222 in a 24-hour period when the collection efficiency for radon-222 and its daughters has been determined with respect to collection method, volume, and time.

4. Test samples shall also be taken from the interior surfaces of the container in which sealed sources of radium are stored. This test shall be capable of detecting the presence of 0.005 µCi (185 Bq) of a radium daughter that has a half-life greater than four days.

5. Notwithstanding the periodic test for leakage required, any sealed source is exempt from such tests for leakage when the sealed source contains 100 µCi (3.7 MBq) or less of beta- or gamma-emitting material or ten µCi (370 kBq) or less of alpha-emitting material.

(b) Tests for leakage or contamination shall be performed by persons specifically authorized by the Director or Division, an Agreement State, or the U.S. Nuclear Regulatory Commission to perform such services.

(c) The following shall be considered evidence that the sealed source is leaking:

1. The presence of 0.005 µCi (185 Bq) or more of removable contamination on any test sample. If the test of a sealed source, other than radium, reveals the presence of 0.005 µCi (185 Bq) or more of removable contamination, the licensee shall immediately withdraw the sealed source from use, take action to prevent the spread of contamination, and cause the sealed source to be decontaminated and repaired or to be disposed of in accordance with this Rule.

2. Leakage of 0.001 µCi (37 Bq) of radon-222 per 24 hours for sealed sources manufactured to contain radium. If the test of a sealed source manufactured to contain radium reveals the presence of removable contamination resulting from the decay of 0.005 µCi (185 Bq) or more of radium-226, the licensee shall immediately withdraw the sealed source from use, take action to prevent the spread of contamination, and cause the sealed source to be decontaminated and repaired or to be disposed of in accordance with this Rule.

(d) Records of test results for sealed sources shall be made pursuant to (14)(d).

(e) Reports of test results for leaking or contaminated sealed sources shall be made pursuant to (15)(g) of this Rule.

(7) **Radiological Requirements for License Termination**

(a) General provisions and scope.

1. The requirements in this section apply to the decommissioning of facilities licensed under Rule .02(8)(g), (Licensing of Radioactive Materials. Amended);

2. The requirements in this section do not apply to sites which:

(i) Have been decommissioned prior to April 18, 2002 in accordance with requirements identified in .03(7) and Rule .02 of this Chapter; or

(ii) Have previously submitted and received Division approval on a decommissioning plan by April 18, 2002.

3. After a site has been decommissioned and the license terminated in accordance with the requirements in this section, the Division will require additional cleanup only if, based on new information, it determines that the requirements of this section were not met and residual radioactivity remaining at the site could result in significant threat to public health and safety.

4. When calculating TEDE to the average member of the critical group the licensee shall determine the peak annual TEDE dose expected within the first 1,000 years after decommissioning.

(b) Radiological requirements for unrestricted use. A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.

(c) Alternate requirements for license termination.

1. The Director may terminate a license using alternate requirements greater than the dose requirements of .03(7)(b) if the licensee:

(i) Provides assurance that public health and safety would continue to be protected, and that it is unlikely that the dose from all man-made sources combined, other than medical, would be more than the 100 mrem/year (1 mSv/year) limit of .03(5)(i), by submitting an analysis of possible sources of exposure;

(ii) Reduces doses to ALARA levels, taking into consideration any detriments such as traffic accidents expected to potentially result from decontamination and waste disposal;

(iii) Has provided sufficient financial assurance in the form of a trust fund to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site; and

(iv) Has submitted a decommissioning plan to the Division indicating the licensee's intent to decommission in accordance with requirements of Rule .02(18)(d), and specifying that the licensee proposes to decommission by use of alternate requirements. The licensee shall document in the decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and addressed, as appropriate, following analysis of that advice. In seeking such advice, the licensee shall provide for:

(I) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(II) An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(III) A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

2. The use of alternate requirements to terminate a license requires the approval of the Director after consideration of the Division's recommendations that will address any comments provided by the U.S. Environmental Protection Agency (EPA) and any public comments submitted in accordance with (7)(d) of this rule.

(d) Public notification and public participation. Upon the receipt of a decommissioning plan from the licensee, or a proposal by the licensee for release of a site in accordance with (7)(c) of this Rule, or whenever the Division deems such notice to be in the public interest, the Division will:

1. Notify and solicit comments from:

(i) Local and State governments in the vicinity of the site and any Indian Nation or other indigenous people that have treaty or statutory rights that could be affected by the decommissioning; and

(ii) The EPA for cases where the licensee proposes to release a site in accordance with (7)(c).

2. Publish a notice in the local newspaper(s), letters to State or local organizations, or other appropriate forum, that is readily accessible to individuals in the vicinity of the site, and solicit comments from affected parties.

(e) Minimization of contamination.

1. Applicants for licenses, other than renewals, after April 18, 2002, shall describe in the application how facility design and procedures for operation will minimize, to the extent practical, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practical, the generation of radioactive waste.

2. Licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in .03(4) and radiological criteria for license termination in .03(7) of this Rule.

(8) **Surveys and Monitoring**

(a) General.

1. Each licensee shall make, or cause to be made, surveys of areas, including the subsurface, that:

(i) May be necessary for the licensee to demonstrate compliance with this Rule; and

(ii) Are reasonable under the circumstances to evaluate:

(I) The magnitude and extent of radiation levels;

(II) Concentrations or quantities of residual radioactivity; and

(III) The potential radiological hazards of the radiation levels and residual radioactivity detected.

2. Notwithstanding .03(14)(c)1, records from surveys describing the location and amount of subsurface residual radioactivity identified at the site must be kept with records important for decommissioning, and such records must be retained in accordance with .02(8)(g)8, as applicable.

3. The licensee shall ensure that instruments and equipment used for quantitative radiation measurements (e.g., dose rate and effluent monitoring) are calibrated periodically, at least annually, for the radiation measured except when a more frequent interval is specified in other applicable parts of these Rules or a license condition.

4. All personnel dosimeters, except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to any extremity, that require processing to determine the radiation dose and that are used by licensees to comply with (5)(a) of this Rule, with other applicable provisions of this Chapter, or with conditions specified in a license shall be processed and evaluated by a qualified dosimetry processor. A dosimetry processor is qualified if it:

(i) Holds current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology; and

(ii) Is approved in this accreditation process for the type of radiation or radiations included in the NVLAP program that most closely approximates the type of radiation or radiations for which the individual wearing the dosimeter is monitored.

5. The licensee shall ensure that adequate precautions are taken to prevent a deceptive exposure of an individual monitoring device.

(b) Conditions Requiring Individual Monitoring of External and Internal Occupational Dose. Each licensee shall monitor exposures to sources of radiation and radioactive material at levels sufficient to demonstrate compliance with the occupational dose limits of this Rule. As a minimum:

1. Each licensee shall monitor occupational exposure to radiation and shall supply and require the use of individual monitoring devices by:

(i) Adults likely to receive, in one year from sources external to the body, a dose in excess of ten percent of the limits in (5)(a)1. of this Rule;

(ii) Minors likely to receive, in one year from radiation sources external to the body, a deep dose equivalent in excess of 0.1 rem (1mSv), a lens dose equivalent in excess of 0.15 rem (1.5 mSv), or a shallow dose equivalent to the skin or to extremities in excess of 0.5 rem (5mSv);

(iii) Declared pregnant women likely to receive during the entire pregnancy, from radiation sources external to the body, a deep dose equivalent in excess of 0.1 rem (1 mSv); [3] and

(iv) Individuals entering a high or very high radiation area.

2. Each licensee shall monitor, to determine compliance with (5)(d) of this Rule, the occupational intake of radioactive material by, and assess the committed effective dose equivalent to:

(i) Adults likely to receive, in one year, an intake in excess of ten percent (10%) of the applicable ALI in Table I, Columns 1 and 2, of Appendix B of 10 CFR 20; and

(ii) Minors likely to receive, in one year, a committed effective dose equivalent in excess of 0.05 rem (0.50 mSv).

(iii) Declared pregnant women likely to receive, during the entire pregnancy, a committed effective dose equivalent in excess of 0.1 rem (1 mSv).

(9) **Control Of Exposure From External Sources In Restricted Areas**

(a) Control of Access to High Radiation Areas.

1. The licensee shall ensure that each entrance or access point to a high radiation area has one or more of the following features:

(i) A control device that, upon entry into the area, causes the level of radiation to be reduced below that level at which an individual might receive a deep dose equivalent of 0.1 rem (1 mSv) in one hour at 30 centimeters from the source of radiation or from any surface that the radiation penetrates;

(ii) A control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or

(iii) Entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry.

2. In place of the controls required by (9)(a)1. of this Rule, the licensee may substitute continuous direct or electronic surveillance that is capable of preventing unauthorized entry.

3. The licensee may apply to the Division for approval of alternative methods for controlling access to high radiation areas.

4. The licensee shall establish the controls required by (9)(a)1. and (9)(a)3. of this Rule in a way that does not prevent individuals from leaving a high radiation area.

5. The licensee is not required to control each entrance or access point to a room or other area that is a high radiation area solely because of the presence of radioactive materials prepared for transport and packaged and labeled in accordance with the regulations of the U.S. Department of Transportation provided that:

(i) The packages do not remain in the area longer than three days; and

(ii) The dose rate at one meter from the external surface of any package does not exceed 0.01 rem (0.1 mSv) per hour.

6. The licensee is not required to control entrance or access to rooms or other areas in hospitals solely because of the presence of patients containing radioactive material, provided that there are personnel in attendance who will take the necessary precautions to prevent the exposure of individuals to radiation or radioactive material in excess of the established limits in this Rule and to ensure operation within the ALARA provisions of the licensee's Radiation Protection Program.

7. The licensee is not required to control entrance or access to rooms or other areas containing sources of radiation capable of producing a high radiation area if the licensee has met all the specific requirements for access and control specified in other applicable Rules, such as 391-3-17-.04 for industrial radiography.

(b) Control of Access to Very High Radiation Areas.

1. In addition to the requirements in (9)(a) of this Rule, the licensee shall institute additional measures to ensure that an individual is not able to gain unauthorized or inadvertent access to areas in which radiation levels could be encountered at 500 rads (5 Gy) or more in one hour at one meter from a source of radiation or any surface through which the radiation penetrates. This requirement does not apply to rooms or areas in which diagnostic x-ray systems are the only source of radiation, or to non-self-shielded irradiators.

2. The licensee is not required to control entrance or access to rooms or other areas containing sources of radiation capable of producing a very high radiation area as defined in this Rule if the licensee has met all the specific requirements for access and control specified in other applicable Rules, such as 391-3-17-.04 for industrial radiography.

(10) **Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas**

(a) Use of Process or Other Engineering Controls. The licensee shall use, to the extent practicable, process or other engineering controls (e.g., containment, decontamination, or ventilation) to control the concentrations of radioactive material in air.

(b) Use of Other Controls. When it is not practical to apply process or other engineering controls to control the concentrations of radioactive material in air to values below those that define an airborne radioactivity area, the licensee shall, consistent with maintaining the total effective dose equivalent ALARA, increase monitoring and limit intakes by one or more of the following means:

1. Control of access;

2. Limitation of exposure times;

3. Use of respiratory protection equipment; or

4. Other controls.

(c) If the licensee performs an ALARA analysis to determine whether or not respirators should be used, the licensee may consider safety factors other than radiological factors. The licensee should also consider the impact of respirator use on workers' industrial health and safety.

(d) Use of Individual Respiratory Protection Equipment.

1. If the licensee uses respiratory protection equipment to limit intakes pursuant to (10)(b) of this Rule:

(i) Except as provided in (10)(d)1.(ii) of this Rule, the licensee shall use only respiratory protection equipment that is tested and certified by or had certification extended by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH/MSHA).

(ii) The licensee may use equipment that has not been tested or certified by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration or had certification extended by NIOSH/MSHA or for which there is no schedule for testing or certification, provided the licensee has submitted to the Division and the Division has approved an application for authorized use of that equipment, including a demonstration by testing, or a demonstration on the basis of reliable test information, that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use.

(iii) The licensee shall implement and maintain a respiratory protection program that includes:

(I) Air sampling sufficient to identify the potential hazard, permit proper equipment selection, and estimate exposures;

(II) Surveys and bioassays, as appropriate, to evaluate actual intakes;

(III) Testing of respirators for operability (user seal check for face sealing devices and functional check for others) immediately prior to each use;

(IV) Written procedures regarding: respirator selection; fit testing; breathing air quality; inventory control; storage, issuance, maintenance, repair, and quality assurance of respiratory protection equipment, including testing for operability immediately prior to each use; supervision and training of personnel; monitoring, including air sampling and bioassays; and record-keeping; and

(V) Determination by a physician prior to initial fitting of face sealing respirators; before the first use of non-face sealing respirators; and either every 12 months thereafter or periodically at a frequency determined by a physician, that the individual user is medically fit to use the respiratory protection equipment.

(VI) Fit testing, with fit factor "ten times the APF for negative pressure devices", and a fit factor "500 for any positive pressure, continuous flow, and pressure-demand devices", before the first field use of tight fitting, face-sealing respirators and periodically thereafter at a frequency not to exceed one year. Fit testing must be performed with the facepiece operating in the negative pressure mode.

(iv) The licensee shall advise each respirator user that the user may leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other conditions that might require such relief.

(v) The licensee shall also consider limitations appropriate to the type and mode of use. When selecting respiratory devices the licensee shall provide for vision correction, adequate communication, low temperature work environments, and the concurrent use of other safety or radiological protection equipment. The licensee shall use equipment in such a way as not to interfere with the proper operation of the respirator.

(vi) Standby rescue persons are required whenever one-piece atmosphere-supplying suits, or any combination of supplied air respiratory protection device and personnel protective equipment are used from which an unaided individual would have difficulty extricating himself. The standby persons must be equipped with respiratory protection devices or other apparatus appropriate for the potential hazards. The standby rescue persons shall observe or otherwise maintain continuous communication with the workers (visual, voice, signal line, telephone, radio, or other suitable means), and be immediately available to assist them in case of a failure of the air supply or for any other reason that requires relief from distress. A sufficient number of standby rescue persons must be immediately available to assist all users of this type of equipment and to provide effective emergency rescue if needed.

(vii) Atmosphere-supplying respirators must be supplied with respirable air of grade D quality or better as defined by the Compressed Gas Association in publication G-7.1, "Commodity Specification for Air," 1997 and included in the regulations of the Occupational Safety and Health Administration (29 CFR 1910.134(i)(1)(ii)(A) through (E). Grade D quality air criteria include:

(I) Oxygen content (v/v) of 19.5-23.5%;

(II) Hydrocarbon (condensed) content of five (5) milligrams per cubic meter of air or less;

(III) Carbon monoxide (CO) content of ten (10) ppm or less;

(IV) Carbon dioxide content of 1,000 ppm or less; and

(V) Lack of noticeable odor.

(viii) The licensee shall ensure that no objects, materials or substances, such as facial hair, or any conditions that interfere with the face to facepiece seal or valve function, and that are under the control of the respirator wearer, are present between the skin of the wearer's face and the sealing surface of a tight-fitting respirator facepiece.

(ix) In estimating the dose to individuals from intake of airborne radioactive materials, the concentration of radioactive material in the air that is inhaled when respirators are worn is initially assumed to be the ambient concentration in air without respiratory protection, divided by the assigned protection factor. If the dose is later found to be greater than the estimated dose, the corrected value must be used. If the dose is later found to be less than the estimated dose, the corrected value may be used.

(e) Further Restrictions on the Use of Respiratory Protection Equipment. The Division may impose restrictions in addition to those in (10)(b) and (10)(c) of this Rule and Appendix A to 10 CFR 20, in order to:

1. Ensure that the respiratory protection program of the licensee is adequate to limit doses to individuals from intakes of airborne radioactive materials consistent with maintaining total effective dose equivalent ALARA; and

2. Limit the extent to which a licensee may use respiratory protection equipment instead of process or other engineering controls.

(f) Application for use of higher assigned protection factors. The licensee shall obtain authorization from the Division before using assigned protection factors in excess of those specified in Appendix A to 10 CFR Part 20. The Division may authorize a licensee to use higher assigned protection factors on receipt of an application that:

1. Describes the situation for which a need exists for higher protection factors; and

2. Demonstrates that the respiratory protection equipment provides these higher protection factors under the proposed conditions of use.

(11) **Storage and Control of Licensed Material**

(a) Security and Control of Licensed Radioactive Material. The licensee shall secure licensed materials from unauthorized removal or access.

(b) Control of material sources of radiation not in storage. The licensee shall maintain constant surveillance and use devices or administrative procedures to prevent unauthorized use of licensed radioactive material that is in an unrestricted area and that is not in storage or in a patient.

(12) **Precautionary Procedures**

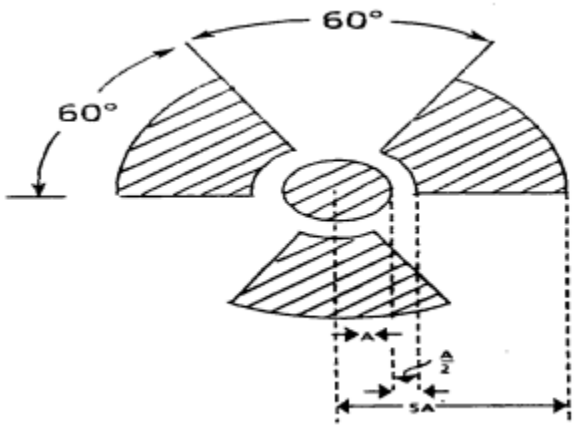
(a) Caution Signs.

1. Standard Radiation Symbol. Unless otherwise authorized by the Division, the symbol prescribed by (12)(a) of this Rule uses the colors magenta (or purple or black) on yellow background. The symbol prescribed is the three-bladed design as follows:

(i) Cross-hatched area is to be magenta, purple, or black; and

(ii) The background is to be yellow.

2. Exception to Color Requirements for Standard Radiation Symbol. Notwithstanding the requirements of (12)(a)1. of this Rule, licensees are authorized to label sources, source holders, or device components containing sources of radiation that are subjected to high temperatures with conspicuously etched or stamped radiation caution symbols without a color requirement.



3. In addition to the contents of signs and labels prescribed in this Rule, the licensee shall provide, on or near the required signs and labels, additional information, as appropriate, to make individuals aware of potential radiation exposures and to minimize the exposures.

(b) Posting Requirements.

1. Posting of Radiation Areas. The licensee shall post each radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIATION AREA."

2. Posting of High Radiation Areas. The licensee shall post each high radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, HIGH RADIATION AREA" or "DANGER, HIGH RADIATION AREA." The licensee may satisfy this requirement by posting the sign at the boundary of the high radiation area.

3. Posting of Very High Radiation Areas. The licensee shall post each very high radiation area with a conspicuous sign or signs bearing the radiation symbol and words "GRAVE DANGER, VERY HIGH RADIATION AREA."

4. Posting of Airborne Radioactivity Areas. The licensee shall post each airborne radioactivity area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, AIRBORNE RADIOACTIVITY AREA" or "DANGER, AIRBORNE RADIOACTIVITY AREA."

5. Posting of Areas or Rooms in which Licensed Material is Used or Stored. The licensee shall post each area or room in which there is used or stored an amount of licensed material exceeding ten times the quantity of such material specified in Appendix C of 10 CFR Part 20 with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL(S)" or "DANGER, RADIOACTIVE MATERIAL(S)".

(c) Exceptions to Posting Requirements.

1. A licensee is not required to post caution signs in areas or rooms containing sources of radiation for periods of less than eight hours, if all of the following conditions are met:

(i) The sources of radiation are constantly attended during these periods by an individual who takes the precautions necessary to prevent the exposure of individuals to sources of radiation in excess of the limits established in this Rule; and

(ii) The area or room is subject to the licensee's control.

2. Rooms or other areas in hospitals that are occupied by patients are not required to be posted with caution signs pursuant to (12)(b) of this Rule provided that the patient could be released from licensee control pursuant to Rule 391-3-17-.05.

3. A room or area is not required to be posted with a caution sign pursuant to (12)(b) of this Rule because of the presence of a sealed source provided that the radiation level at 30 centimeters from the surface of the source container or housing does not exceed 0.005 rem (0.05 mSv) per hour.

(d) Labeling Containers and Radiation Machines.

1. The licensee shall ensure that each container of licensed material bears a durable, clearly visible label bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL." The label shall also provide information such as the radionuclides present, an estimate of the quantity of radioactivity, the date for which the activity is estimated, radiation levels, kinds of materials, and mass enrichment, to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.

2. Each licensee shall, prior to removal or disposal of empty uncontaminated containers to unrestricted areas, remove or deface the radioactive material label or otherwise clearly indicate that the container no longer contains radioactive materials.

(e) Exemptions to Labeling Requirements. A licensee is not required to label:

1. Containers holding licensed material in quantities less than the quantities listed in Appendix C of 10 CFR 20;

2. Containers holding licensed material in concentrations less than those specified in Table III of Appendix B of 10 CFR 20;

3. Containers attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the limits established by this Rule;

4. Containers when they are in transport and packaged and labeled in accordance with the regulations of the U.S. Department of Transportation [4];

5. Containers that are accessible only to individuals authorized to handle or use them or to work in the vicinity of the containers, if the contents are identified to these individuals by a readily available written record. Examples of containers of this type are containers in locations such as water-filled canals, storage vaults, or hot cells. The record shall be retained as long as the containers are in use for the purpose indicated on the record; or

6. Installed manufacturing or process equipment, such as chemical process equipment, piping, and tanks.

(f) Procedures for Receiving and Opening Packages.

1. Each licensee who is authorized to receive a package containing quantities of radioactive material in excess of a Type A quantity, as defined in Rule 391-3-17-.06(3), shall make arrangements to receive:

(i) The package when the carrier offers it for delivery; or

(ii) The notification of the arrival of the package at the carrier's terminal and to take possession of the package expeditiously.

2. Each licensee shall:

(i) Monitor the external surfaces of a labeled [5] package for radioactive contamination unless the package contains only radioactive material in the form of gas or in "special form" as defined in Rule 391-3-17-.01(2);

(ii) Monitor the external surfaces of a labeled package for radiation levels unless the package contains quantities of radioactive material that are less than or equal to the Type A quantity, as defined in Rule 391-3-17-.06(3), and the radioactive material is in the form of a gas or in special form as defined in Rule 391-3-17-.01(2); and

(iii) Monitor all packages known to contain radioactive material for radioactive contamination and radiation levels if the package has evidence of potential contamination, such as packages that are crushed, wet, or damaged.

3. The licensee shall perform the monitoring required by (12)(f)2. of this Rule as soon as practicable after receipt of the package, but not later than three hours after the package is received at the licensee's facility if it is received during the licensee's normal working hours, or not later than three hours from the beginning of the next working day if it is received after working hours.

4. The licensee shall immediately notify the final delivery carrier, the NRC Headquarters Operations Center and the Division by telephone, telegram, mailgram, or facsimile, when:

(i) Removable radioactive surface contamination exceeds the limits of Rule 391-3-17-.06(16)(i); or

(ii) External radiation levels exceed the limits of Rule 391-3-17-.06(14).

5. Each licensee shall:

(i) Establish, maintain, and retain written procedures for safely opening packages in which radioactive material is received; and

(ii) Ensure that the procedures are followed and that special instructions for the type of package being opened are followed.

6. Licensees transferring special form sources in vehicles owned or operated by the licensee to and from a work site are exempt from the contamination monitoring requirements of (12)(f)2. of this Rule, but are not exempt from the monitoring requirement in (12)(f)2. of this Rule for measuring radiation levels to ensure that the source is still properly lodged in its shield.

(13) **Waste Disposal**

(a) General Requirements.

1. A licensee shall dispose of licensed material only:

(i) By transfer to an authorized recipient as provided in (13)(i) of this Rule and in Rule 391-3-17-.02(19), or to the U.S. Department of Energy;

(ii) By decay in storage;

(iii) By release in effluents within the limits in (5)(i) of this Rule; or

(iv) As authorized pursuant to (13)(b), (13)(c), (13)(d), (13)(e), or (13)(k) of this Rule.

2. A person shall be specifically licensed by the Director, the U.S. Nuclear Regulatory Commission or an Agreement State to receive waste containing licensed material from other persons for:

(i) Treatment prior to disposal;

(ii) Treatment or disposal by incineration;

(iii) Decay in storage;

(iv) Disposal at a land disposal facility licensed pursuant to 10 CFR Part 61, or equivalent regulations of an Agreement State; or

(v) Storage until transferred to a disposal facility authorized to receive the waste.

(b) Method for Obtaining Approval of Proposed Disposal Procedures. A licensee or applicant for a license may apply to the Division for approval of proposed procedures not otherwise authorized in this Chapter to dispose of licensed material generated in the licensee's operations. Each application shall include:

1. A description of the waste containing licensed material to be disposed of, including the physical and chemical properties that have an impact on risk evaluation, and the proposed manner and conditions of waste disposal;

2. An analysis and evaluation of pertinent information on the nature of the environment;

3. The nature and location of other potentially affected facilities; and

4. Analyses and procedures to ensure that doses are maintained ALARA and within the dose limits in this Rule.

(c) Disposal by Release into Sanitary Sewerage.

1. A licensee may discharge licensed material into sanitary sewerage if each of the following conditions is satisfied:

(i) The material is readily soluble, or is readily dispersible biological material, in water;

(ii) The quantity of licensed radioactive material that the licensee releases into the sewer in one month divided by the average monthly volume of water released into the sewer by the licensee does not exceed the concentration listed in Table III of Appendix B of 10 CFR 20;

(iii) If more than one radionuclide is released, the following conditions must also be satisfied:

(I) The licensee shall determine the fraction of the limit in Table III of Appendix B of 10 CFR 20, represented by discharges into sanitary sewerage by dividing the actual monthly average concentration of each radionuclide released by the licensee into the sewer by the concentration of that radionuclide listed in Table III of Appendix B of 10 CFR 20; and

(II) The sum of the fractions for each radionuclide required by (13)(c)1.(iii)(I) of this Rule does not exceed unity; and

(iv) The total quantity of licensed radioactive material that the licensee releases into the sanitary sewerage system in a year does not exceed five Ci (185 GBq) of hydrogen-3, one Ci (37 GBq) of carbon-14, and one Ci (37 GBq) of all other radioactive materials combined.

2. Excreta from individuals undergoing medical diagnosis or therapy with radioactive material are not subject to the limitations contained in (13)(c)1. of this Rule.

(d) Treatment or Disposal by Incineration. A licensee may treat or dispose of licensed material by incineration only in the forms and concentrations specified in (13)(e) of this Rule or as specifically approved by the Division pursuant to (13)(b) of this Rule.

(e) Disposal of Specific Wastes.

1. A licensee may dispose of the following licensed material as if it were not radioactive:

(i) 0.05 µCi (1.85 kBq) or less of hydrogen-3, carbon-14, or iodine-125 per gram of medium used for liquid scintillation counting; and

(ii) 0.05 µCi (1.85 kBq) or less of hydrogen-3, carbon-14, or iodine-125 per gram of animal tissue, averaged over the weight of the entire animal.

2. A licensee shall not dispose of tissue under (13)(e)1.(ii) of this Rule in a manner that would permit its use either as food for humans or as animal feed.

3. The licensee shall maintain records in accordance with (14)(i) of this Rule.

(f) Classification of Radioactive Waste for Near-Surface Disposal.

1. Considerations. Determination of the classification of radioactive waste involves two considerations. First, consideration must be given to the concentration of long-lived radionuclides (and their shorter-lived precursors) whose potential hazard will persist long after such precautions as institutional controls, improved waste form, and deeper disposal have ceased to be effective. These precautions delay the time when long-lived radionuclides could cause exposures. In addition, the magnitude of the potential dose is limited by the concentration and availability of the radionuclide at the time of exposure. Second, consideration must be given to the concentration of shorter-lived radionuclides for which requirements on institutional controls, waste form, and disposal methods are effective.

2. Classes of waste.

(i) Class A waste is waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste must meet the minimum requirements set forth in (13)(g)1. of this Rule. If Class A waste also meets the stability requirements set forth in (13)(g)2. of this Rule, it is not necessary to segregate the waste for disposal.

(ii) Class B waste is waste that must meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste must meet both the minimum and stability requirements set forth in (13)(g) of this Rule.

(iii) Class C waste is waste that not only must meet more rigorous requirements on waste form to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion. The physical form and characteristics of Class C waste must meet both the minimum and stability requirements set forth in (13)(g) of this Rule.

3. Classification determined by long-lived radionuclides. If the waste contains only radionuclides listed in Table 1, classification shall be determined as follows:

(i) If the concentration does not exceed 0.1 times the value in Table 1, the waste is Class A.

(ii) If the concentration exceeds 0.1 times the value in Table 1, the waste is Class C.

(iii) If the concentration exceeds the value in Table 1, the waste is not generally acceptable for near-surface disposal.

(iv) For wastes containing mixtures of radionuclides listed in Table 1, the total concentration shall be determined by the sum of fractions rule described in (13)(f)7. of this Rule.

Table 1

Radionuclide	Concentration (Curies/cubic meter)
C-14	8
C-14 in activated metal	80
Ni-59 in activated metal	220
Nb-94 in activated metal	0.2
Tc-99	3
I-129	0.08
Alpha-emitting transuranic radionuclides with half-life greater than five years	100 [(a)]
Pu-241	3,500 [(a)]
Cm-242	20,000 [(a)]
Ra-226	100 [(a)]

[(a)] Units are in nanocuries per gram.

4. Classification determined by short-lived radionuclides. If the waste does not contain any of the radionuclides listed in Table 1, classification shall be determined based on the concentrations shown in Table 2. If a nuclide is not listed in Table 2, it does not need to be considered in determining the waste class.

(i) If the concentration does not exceed the value in Column 1, the waste is Class A.

(ii) If the concentration exceeds the value in Column 1, but does not exceed the value in Column 2, the waste is Class B.

(iii) If the concentration exceeds the value in Column 2, but does not exceed the value in Column 3, the waste is Class C.

(iv) If the concentration exceeds the value in Column 3, the waste is not generally acceptable for near-surface disposal.

(v) For wastes containing mixtures of the radionuclides listed in Table 2, the total concentration shall be determined by the sum of fractions rule described in (13)(f)7. of this Rule.

Table 2

Radionuclide	Concentration (Curies/ cubic meter)		
	Column 1	Column 2	Column 3
Total of all radionuclides with less than five year half-life	700	(b)	(b)
H-3	40	(b)	(b)
Co-60	700	(b)	(b)
Ni-63	3.5	70	700
Ni-63 in activated metal	35	700	7000
Sr-90	0.04	150	7000
Cs-137	1	44	4600

(b) There are no limits established for these radionuclides in Class B or C wastes. Practical considerations such as the effects of external radiation and internal heat generation on transportation, handling, and disposal will limit the concentrations for these wastes. These wastes shall be Class B unless the concentrations of other radionuclides in Table 2 determine the waste to be Class C independent of these radionuclides.

5. Classification determined by both long- and short-lived radionuclides. If the waste contains a mixture of radionuclides, some of which are listed in Table 1 and some of which are listed in Table 2, classification shall be determined as follows:

(i) If the concentration of a radionuclide listed in Table 1 is less than 0.1 times the value listed in Table 1, the class shall be that determined by the concentration of radionuclides listed in Table 2.

(ii) If the concentration of a radionuclide listed in Table 1 exceeds 0.1 times the value listed in Table 1, the waste shall be Class C, provided the concentration of radionuclides listed in Table 2 does not exceed the value shown in Column 3 of Table 2.

6. Classification of wastes with radionuclides other than those listed in Tables 1 and 2. If the waste does not contain any radionuclides listed in either Table 1 or 2, it is Class A.

7. The sum of the fractions rule for mixtures of radionuclides. For determining classification for waste that contains a mixture of radionuclides, it is necessary to determine the sum of fractions by dividing each radionuclide's concentration by the appropriate limit and adding the resulting values. The appropriate limits must all be taken from the same column of the same table. The sum of the fractions for the column must be less than 1.0 if the waste class is to be determined by that column. Example: A waste contains Sr-90 in a concentration of 50 Ci/m^3 and Cs-137 in a concentration of 22 Ci/m^3. Since the concentrations both exceed the values in Column 1, Table 2, they must be compared to Column 2 values. For Sr-90 fraction, 50/150 = 0.33; for Cs-137 fraction, 22/44 = 0.5; the sum of the fractions = 0.83. Since the sum is less than 1.0, the waste is Class B.

8. Determination of concentrations in wastes. The concentration of a radionuclide may be determined by indirect methods such as the use of scaling factors, which relate the inferred concentration of one radionuclide to another that is measured, or radionuclide material accountability, if there is reasonable assurance that the indirect methods can be correlated with actual measurements. The concentration of a radionuclide may be averaged over the volume of the waste or weight of the waste if the units are expressed as nanocuries per gram.

(g) Radioactive Waste Characteristics.

1. The following are minimum requirements for all classes of waste and are intended to facilitate handling and provide protection of health and safety of personnel at the disposal site:

(i) Wastes shall be packaged in conformance with the conditions of the license issued to the site operator to which the waste will be shipped. Where the conditions of the site license are more restrictive than the provisions of this Chapter, the site license conditions shall govern.

(ii) Wastes shall not be packaged for disposal in cardboard or fiberboard boxes.

(iii) Liquid waste shall be packaged in sufficient absorbent material to absorb twice the volume of the liquid.

(iv) Solid wastes containing liquid shall contain as little free-standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume.

(v) Wastes shall not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures or of explosive reaction with water.

(vi) Wastes shall not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous wastes packaged in accordance with (13)(g)1.(viii) of this Rule.

(vii) Pyrophoric materials contained in wastes shall be treated, prepared, and packaged to be nonflammable.

(viii) Wastes in a gaseous form shall be packaged at an absolute pressure that does not exceed 1.5 atmospheres at 20 degrees Celsius. Total activity shall not exceed 100 Curies (3.7 TBq) per container.

(ix) Wastes containing hazardous, biological, pathogenic, or infectious material shall be treated to reduce to the maximum extent practicable the potential hazard from the non-radiological materials.

2. The following requirements are intended to provide stability of the waste. Stability is intended to ensure that the waste does not degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste.

(i) Waste shall have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form under the expected disposal conditions such as the weight of overburden and compaction equipment, the presence of moisture and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.

(ii) Notwithstanding the provisions in (13)(g)1.(iii) and (iv) of this Rule, liquid wastes, or wastes containing liquid, shall be converted into a form that contains as little freestanding and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5 percent of the volume of the waste for waste processed to a stable form.

(iii) Void spaces within the waste and between the waste and its package shall be reduced to the extent practicable.

(h) Labeling. Each package of waste shall be clearly labeled to identify whether it is Class A, Class B, or Class C waste in accordance with (13)(f) of this Rule.

(i) Transfer for Disposal and Manifest.

1. A waste generator, collector, or processor who transports, or offers for transportation, low-level radioactive waste intended for ultimate disposal at a licensed low-level radioactive waste land disposal facility must prepare a

Manifest reflecting information requested on applicable NRC Forms 540 or equivalent forms (Uniform Low-Level Radioactive Waste Manifest (Shipping Paper)) and 541 (Uniform Low-Level Radioactive Waste Manifest (Container and Waste Description)) and if necessary, on an applicable NRC Form 542 or equivalent form (Uniform Low-Level Radioactive Waste Manifest (Manifest Index and Regional Compact Tabulation)). NRC Forms 540 and 540A or equivalent forms must be completed and must physically accompany the pertinent low-level radioactive waste shipment. Upon agreement between shipper and consignee, NRC Forms 541 and 541A and 542 and 542A or equivalent forms may be completed, transmitted, and stored in electronic media with the capability for producing legible, accurate, and complete records on the respective forms. Licensees are not required by the Division to comply with the manifesting requirements of this Chapter when they ship:

(i) LLW for processing and expect its return (i.e., for storage under their license) prior to disposal at a licensed land disposal facility;

(ii) LLW that is being returned to the licensee who is the "waste generator" or "generator," as defined in this Rule; or

(iii) Radioactively contaminated material to a "waste processor" that becomes the processor's residual waste.

For guidance in completing these forms, refer to the instructions that accompany the forms. Copies of manifests required by this Rule may be legible carbon copies, photocopies, or computer printouts that reproduce the data in the format of the uniform manifest. NRC Forms 541 and 541A and 542 and 542A or equivalent forms and the accompanying instructions, in hard copy, may be obtained from Radioactive Materials Program, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354, or current address.

This Rule includes information requirements of the Department of Transportation, as codified in 49 CFR Part 172. Information on hazardous, medical, or other waste, required to meet EPA regulations, as codified in 40 CFR Parts 259, 261 or elsewhere, is not addressed in this Rule, and must be provided on the required EPA forms. However, the required EPA forms must accompany the Uniform Low-Level Radioactive Waste Manifest required by this Rule.

2. General Information. The shipper of the low-level radioactive waste shall provide the following information on the uniform manifest:

(i) The name, facility address, and telephone number of the licensee shipping the waste;

(ii) An explicit declaration indicting whether the shipper is acting as a waste generator, collector, processor, or a combination of these identifiers for purposes of the manifested shipment; and

(iii) The name, address, and telephone number, or the name and EPA identification number for the carrier transporting the waste.

3. Shipment Information. The shipper of the radioactive waste shall provide the following information regarding the waste shipment on the uniform manifest:

(i) The date of the waste shipment;

(ii) The total number of packages/disposal containers;

(iii) The total disposal volume and disposal weight in the shipment;

(iv) The total radionuclide activity in the shipment;

(v) The activity of each of the radionuclides H-3, C-14, Tc-99, and I-129 contained in the shipment; and

(vi) The total masses of U-233, U-235, and plutonium in the form of special nuclear material, and the total mass of uranium and thorium in the form of source material.

4. Disposal Container and Waste Information. The shipper of the radioactive waste shall provide the following information on the uniform manifest regarding the waste and each disposal container of waste in the shipment:

(i) An alphabetic or numeric identification that uniquely identifies each disposal container in the shipment;

(ii) A physical description of the disposal container, including the manufacturer and model of any high integrity container;

(iii) The volume displaced by the disposal container;

(iv) The gross weight of the disposal container, including the waste;

(v) For waste consigned to a disposal facility, the maximum radiation level at the surface of each disposal container;

(vi) A physical and chemical description of the waste;

(vii) The total weight percentage of chelating agent for any waste containing more than 0.1 percent chelating agent by weight, plus the identity of the principal chelating agent;

(viii) The approximate volume of waste within a container;

(ix) The sorbing or solidification media, if any, and the identity of the solidification media vendor and brand name;

(x) The identities and activities of individual radionuclides contained in each container, the masses of U-233, U-235, and plutonium in the form of special nuclear material, and the masses of uranium and thorium in the form of source material. For discrete waste types (i.e., activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides associated with a disposal container shall be reported;

(xi) The total radioactivity within each container; and

(xii) For wastes consigned to a disposal facility, the classification of the waste pursuant to (13)(f). Waste not meeting the structural stability requirements of (13)(g)2. must be identified.

5. Uncontainerized Waste Information. The shipper of the radioactive waste shall provide the following information on the uniform manifest regarding a waste shipment delivered without a disposal container:

(i) The approximate volume and weight of the waste;

(ii) A physical and chemical description of the waste;

(iii) The total weight percentage of chelating agent if the chelating agent exceeds 0.1 percent by weight, plus the identity of the principal chelating agent;

(iv) For waste consigned to a disposal facility, the classification of the waste pursuant to (13)(f) of this Rule. Waste not meeting the structural stability requirements of (13)(g)2. of this Rule must be identified;

(v) The identities and activities of individual radionuclides contained in the waste, the masses of U-233, U-235, and plutonium in the form of special nuclear material, and the masses of uranium and thorium in the form of source material; and

(vi) For wastes consigned to a disposal facility, the maximum radiation levels at the surface of the waste.

6. Multi-Generator Disposal Container Information. This section applies to disposal containers enclosing mixtures of waste originating from different generators. (Note: The origin of the LLW resulting from a processor's activities may be attributable to one or more "generators" (including "waste generators") as defined in this Chapter). It also

applies to mixtures of wastes shipped in an uncontainerized form, for which portions of the mixture within the shipment originate from different generators.

(i) For homogeneous mixtures of waste, such as incinerator ash, provide the waste description applicable to the mixture and the volume of the waste attributed to each generator.

(ii) For heterogeneous mixtures of waste, such as the combined products from a large compactor, identify each generator contributing waste to the disposal container, and, for discrete waste types (i.e., activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides contained on these waste types within the disposal container. For each generator, provide the following:

(I) The volume of waste within the disposal container;

(II) A physical and chemical description of the waste, including the solidification agent, if any;

(III) The total weight percentage of chelating agents for any disposal container containing more than 0.1 percent chelating agent by weight, plus the identity of the principal chelating agent;

(IV) The sorbing or solidification media, if any, and the identity of the solidification media vendor and brand name if the media is claimed to meet stability requirements of (13)(g)2. of this Rule; and

(V) Radionuclide identities and activities contained in the waste, the masses of U-233, U-235, and plutonium in the form of special nuclear material, and the masses of uranium and thorium in the form of source material if contained in the waste.

7. An authorized representative of the waste generator, processor, or collector shall certify by signing and dating the shipment manifest that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the Division. A collector in signing the certification is certifying that nothing has been done to the collected waste which would invalidate the waste generator's certification.

8. Control and Tracking. Any licensee who transfers radioactive waste to a land disposal facility or a licensed waste collector shall comply with all of the following requirements. Any licensee who transfers waste to a licensed waste processor for waste treatment or repackaging shall comply with the requirements of (13)(i)8.(iv) through (ix). A licensee shall:

(i) Prepare all wastes so that the waste is classified according to (13)(f) and meets waste characteristics requirements in (13)(g);

(ii) Label each disposal container (or transport package if potential radiation hazards preclude labeling of the individual disposal container) of waste to identify whether it is Class A waste, Class B waste, Class C waste, or greater than Class C waste, in accordance with (13)(f);

(iii) Conduct a quality assurance program to assure compliance with (13)(f) and (13)(g) (the program must include management evaluation of audits);

(iv) Prepare the NRC Forms 540 and 540A or Equivalent Forms, "Uniform Low-Level Radioactive Waste Manifest" as required by this Section;

(v) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either:

(I) Receipt of the manifest precedes the LLW shipment, or

(II) The manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or

(III) Both (I) and (II) is also acceptable.

(vi) Include NRC Form 540 (and NRC 540A, if required) or Equivalent Forms with the shipment regardless of the option in (13)(i)8.(v);

(vii) Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 or Equivalent Form;

(viii) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required by Rule 391-3-17-.02; and

(ix) For any shipments or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with (13)(i)12.

9. Any waste collector licensee who handles only prepackaged waste shall:

(i) Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540 or Equivalent Form.

(ii) Prepare a new manifest to reflect consolidated shipments that meet the requirements of this section. The waste collector shall ensure that, for each container of waste in the shipment, the manifest identifies the generator of that container of waste;

(iii) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either:

(I) Receipt of the manifest precedes the LLW shipment, or

(II) The manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or

(III) Both (I) and (II) is also acceptable;

(iv) Include NRC Form 540 (and NRC From 540A, if required) or Equivalent Forms, with the shipment regardless of the option chosen in (13)(i)9.(iii);

(v) Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 or Equivalent Form;

(vi) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgment of receipt;

(vii) For any shipments or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with (13)(i)12.; and

(viii) Notify the shipper and the Division when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

10. Any licensed waste processor who treats or repackages waste shall:

(i) Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540 or Equivalent Form;

(ii) Prepare a new manifest that meets the requirements of this section. Preparation of the new manifest reflects that the processor is responsible for meeting these requirements. For each container of waste in the shipment, the

manifest shall identify the waste generators, the preprocessed waste volume, and other information as required in (13)(i)6.;

(iii) Prepare all wastes so that the waste is classified according to (13)(f) and meets the waste characteristics requirements in (13)(g);

(iv) Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with (13)(f) and (13)(h);

(v) Conduct a quality assurance program to assure compliance with (13)(f) and (13)(g) (the program shall include management evaluation of audits);

(vi) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either:

(I) Receipt of the manifest precedes the LLW shipment, or

(II) The manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or

(III) Both (I) and (II) is also acceptable;

(vii) Include NRC Form 540 (and NRC Form 540A if required) or Equivalent Forms, with the shipment regardless of the option chosen in (13)(i)10.(vi);

(viii) Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 or Equivalent Form;

(ix) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required by Rule 391-3-17-.02;

(x) For any shipment or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with (13)(i)12.; and

(xi) Notify the shipper and the Division when any shipment, or any part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

11. The land disposal facility operator shall:

(i) Acknowledge receipt of the waste within one week of receipt by returning, as a minimum, a signed copy of NRC Form 540 or Equivalent Form to the shipper. The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. If any discrepancy exists between materials listed on the Uniform Low-Level Radioactive Waste Manifest and materials received, copies or electronic transfer of the affected forms must be returned indicating that discrepancy.

(ii) Maintain copies of all completed manifests and electronically store the information until the Director terminates the license; and

(iii) Notify the shipper and the Division when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

12. Any shipments or part of a shipment for which acknowledgment is not received within the times set forth in this section must:

(i) Be investigated by the shipper if the shipper has not received notification or receipt within 20 days after transfer; and

(ii) Be traced and reported. The investigation shall include tracing the shipment and filing a report with the Division. Each licensee who conducts a trace investigation shall file a written report with the Division within two weeks of completion of the investigation.

13. The requirements of this section are to:

(i) Control transfers of low-level radioactive waste by any waste generator, waste collector, or waste processor licensee, as defined in this section, who ships low-level waste either directly, or indirectly through a waste collector or waste processor, to a licensed low-level waste land disposal facility (as defined in 10 CFR 61);

(ii) Establish a manifest tracking system; and

(iii) Supplement existing requirements concerning transfers and recordkeeping for those wastes.

14. Any licensee shipping radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on NRC's Uniform Low-Level Radioactive Waste Manifest and transfer this recorded manifest information to the intended consignee in accordance with (13)(i)1. through 12. of this Rule.

15. Each shipment manifest must include a certification by the waste generator as specified in (13)(i)7. of this Rule.

16. Each person involved in the transfer for disposal and disposal of waste, including the waste generator, waste collector, waste processor, and disposal facility operator, shall comply with the requirements specified in (13)(i)8. of this Rule

17. Any licensee shipping byproduct material as defined in paragraphs (3) and (4) of the definition of *Byproduct material* set forth in Rule .01(2)(o), intended for ultimate disposal at a land disposal facility licensed under 10 CFR 61 must document the information required on the NRC's Uniform Low-Level Radioactive Waste Manifest and transfer this recorded manifest information to the intended consignee in accordance with (13)(i)1. through 12. of this Rule.

(j) Compliance with Environmental and Health Protection Regulations. Nothing in this Rule relieves the licensee from complying with other applicable Federal, State, and local regulations governing other toxic or hazardous properties of materials that may be disposed of pursuant to this Rule.

(k) Disposal of Certain Byproduct Material

1. Licensed material as defined in Rule .01(2)(o)3. and 4. of the definition of Byproduct material may be disposed of in accordance with .03(13) of this chapter, even though it is not defined as low-level radioactive waste. Therefore, any licensed byproduct material being disposed of at a facility, or transferred for ultimate disposal at a facility licensed under .03(13) of this chapter, must meet the requirements of Rule .03(13)(i).

2. A licensee may dispose of byproduct material, as defined in Rule .01(2)(o)3. and 4. of the definition of Byproduct, at a disposal facility authorized to dispose of such material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005.

(14) **Records**

(a) General Provisions.

1. Each licensee shall use the units of Curie, rad, rem, and dpm, including multiples and subdivisions and shall clearly indicate the units of all quantities on records required by this Rule.

2. In the records required by this rule, the licensee may record quantities in SI units in parentheses following each of the units specified in (14)(a)1. However, all quantities must be recorded as stated in (14)(a)1.

3. The licensee shall make a clear distinction among the quantities entered on the records required by this Rule, such as total effective dose equivalent, shallow dose equivalent, lens dose equivalent, deep dose equivalent, total organ dose equivalent, or committed effective dose equivalent.

(b) Records of Radiation Protection Programs.

1. Each licensee shall maintain records of the Radiation Protection Program required pursuant to (4) of this Rule, including:

(i) The provisions of the Program; and

(ii) Audits and other reviews of Program content and implementation.

2. The licensee shall retain the records required by (14)(b)1.(i) of this Rule until the Director terminates each pertinent license requiring the record. The licensee shall retain each of the records required by (14)(b)1.(ii) of this Rule for three years after the record is made.

(c) Records of Surveys.

1. Each licensee shall maintain records showing the results of surveys and calibrations required by (8)(a) and (12)(f)2. of this Rule. The licensee shall retain each of these records for three years after the record is made.

2. The licensee shall retain each of the following records until the Director terminates each pertinent license requiring the record:

(i) Records of the results of surveys to determine the dose from external sources of radiation used, in the absence of or in combination with individual monitoring data, in the assessment of individual dose equivalents;

(ii) Records of the results of measurements and calculations used to determine individual intakes of radioactive material and used in the assessment of internal dose;

(iii) Records showing the results of air sampling, surveys, and bioassays required pursuant to (10)(d)1.(iii)(I) and (II) of this Rule; and

(iv) Records of the results of measurements and calculations used to evaluate the release of radioactive effluents to the environment.

3. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provision with the Division for their transfer to the Division.

(d) Records of Tests for Leakage or Contamination of Sealed Sources. Records of tests for leakage or contamination of sealed sources required by (6) of this Rule shall be kept in units of microcuries or becquerels and maintained for inspection by the Division for three years after the record is made.

(e) Records of Prior Occupational Dose.

1. The licensee shall retain the records of prior occupational dose and of exposure history as specified in (5)(e) of this Rule on Division Form "Occupational Radiation Exposure History" or equivalent until the Director terminates each pertinent license requiring this record. The licensee shall retain records used in preparing Division Form "Occupational Radiation Exposure History" for three years after the record is made.

2. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provision with the Division for their transfer to the Division.

(f) Records of Planned Special Exposures.

1. For each use of the provisions of (5)(e) of this Rule for planned special exposures, the licensee shall maintain records that describe:

(i) The exceptional circumstances requiring the use of a planned special exposure;

(ii) The name of the management official who authorized the planned special exposure and a copy of the signed authorization;

(iii) What actions were necessary;

(iv) Why the actions were necessary;

(v) What precautions were taken to assure that doses were maintained ALARA;

(vi) What individual and collective doses were expected to result; and

(vii) The doses actually received in the planned special exposure.

2. The licensee shall retain the records until the Director terminates each pertinent license requiring these records.

3. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provision with the Division for their transfer to the Division.

(g) Records of Individual Monitoring Results.

1. Record-keeping Requirement. Each licensee shall maintain records of doses received by all individuals for whom monitoring was required pursuant to (8)(b) of this Rule and records of doses received during planned special exposures, accidents, and emergency conditions. Assessments of dose equivalent and records made using units in effect before January 1, 1994, need not be changed. These records shall include when applicable:

(i) The deep dose equivalent to the whole body, lens dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities;

(ii) The estimated intake of radionuclides (see (5)(b) of this Rule);

(iii) The committed effective dose equivalent assigned to the intake of radionuclides;

(iv) The specific information used to calculate the committed effective dose equivalent pursuant to (5)(d)3. of this Rule;

(v) The total effective dose equivalent when required by (5)(b) of this Rule; and

(vi) The total of the deep dose equivalent and the committed dose to the organ receiving the highest total dose.

2. Record-keeping Frequency. The licensee shall make entries of the records specified in (14)(g)1. of this Rule at intervals not to exceed one year.

3. Record-keeping Format. The licensee shall maintain the records specified in (14)(g)1. of this Rule on Division Form "Occupational Radiation Exposure History" in accordance with the instructions or in clear and legible records containing all the information required by the Division Form.

4. The licensee shall maintain the records of dose to an embryo/fetus with the records of dose to the declared pregnant woman. The declaration of pregnancy, including the estimated date of conception, shall also be kept on file, but may be maintained separately from the dose records.

5. The licensee shall retain each required form or record until the Director terminates each pertinent license requiring the record.

6. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provisions with the Division for their transfer to the Division.

7. Privacy Protection. The records required pursuant to (14)(g) should be protected from public disclosure because of their personal privacy nature.

(h) Records of Dose to Individual Members of the Public.

1. Each licensee shall maintain records sufficient to demonstrate compliance with the dose limit for individual members of the public. See (5)(i) of this Rule.

2. The licensee shall retain the records required by (14)(h)1. of this Rule until the Director terminates each pertinent license requiring the record.

(i) Records of Waste Disposal.

1. Each licensee shall maintain records of the disposal of licensed materials made pursuant to (13)(b), (13)(c), (13)(d), (13)(e), and (13)(k) of this Rule and of disposal of licensed materials by burial in soil, including burials authorized before July 12, 1982. [6]

2. The licensee shall retain the records required by (14)(i) of this Rule until the Director terminates each pertinent license requiring the record.

(j) Records of Testing Entry Control Devices for Very High Radiation Areas.

1. Each licensee shall maintain records of tests made on entry control devices for very high radiation areas. These records must include the date, time, and results of each such test of function.

2. The licensee shall retain the records required by (14)(j)1. of this Rule for three years after the record is made.

(k) Form of Records. Each record required by this Rule shall be legible throughout the specified retention period. The record shall be the original or a reproduced copy or a microform, provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period; or the record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records, such as letters, drawings, and specifications, shall include all pertinent information, such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(15) **Reports**

(a) Reports of Stolen, Lost, or Missing Licensed Sources of Radiation.

1. Telephone. Each licensee shall report to the Division and the NRC Headquarters Operation Center by telephone as follows:

(i) Immediately after its occurrence becomes known to the licensee, stolen, lost, or missing licensed radioactive material in an aggregate quantity equal to or greater than 1,000 times the quantity specified in Appendix C of 10

CFR 20, under such circumstances that it appears to the licensee that an exposure could result to individuals in unrestricted areas; or

(ii) Within 30 days after its occurrence becomes known to the licensee, lost, stolen or missing licensed radioactive material in an aggregate quantity greater than ten times the quantity specified in Appendix C of 10 CFR 20 that is still missing.

2. Written. Each licensee who is required to make a report pursuant to (15)(a)1. of this Rule shall, within 30 days after making the telephone report, make a written report to the Division and the NRC Headquarters Operation Center setting forth the following information:

(i) A description of the licensed source of radiation involved, including, for radioactive material, the kind, quantity, and chemical and physical form;

(ii) A description of the circumstances under which the loss or theft occurred;

(iii) A statement of disposition, or probable disposition, of the licensed material or source of radiation involved;

(iv) Exposures of individuals to radiation, the circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas;

(v) Actions that have been taken, or will be taken, to recover the source of radiation; and

(vi) Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed sources of radiation.

3. Subsequent to filing the written report, the licensee shall also report additional substantive information on the loss or theft within 30 days after the licensee learns of such information.

4. The licensee shall prepare any report filed with the Division and the NRC Headquarters Operation Center pursuant to (15)(a) of this Rule so that names of individuals who may have received exposure to radiation are stated in a separate and detachable portion of the report.

(b) Notification of Incidents.

1. Immediate notification. Each licensee shall:

(i) Notify the Division and the NRC Headquarters Operation Center as soon as possible but not later than four hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits (events may include fires, explosions, toxic gas releases, etc.).

(ii) Notwithstanding any other requirements for notification, immediately report, to the Division, any event involving radioactive material or sources of radiation possessed by the licensee that may have caused or threatens to cause any of the following conditions:

(I) An individual to receive:

I. A total effective dose equivalent of 25 rem (0.25 Sv) or more; or

II. A lens dose equivalent of 75 rem (0.75 Sv) or more; or

III. A shallow-dose equivalent to the skin or extremities of 250 rad (2.5 Gy) or more; or

(II) The release of radioactive material, inside or outside a restricted area, so that had an individual been present for 24 hours, the individual could have received an intake five times the annual limit on intake (the provisions of this

paragraph do not apply to locations where personnel are not normally stationed during routine operations, such as hot cells or process enclosures).

2. Twenty-four hour report. Each licensee shall notify the Division and the NRC Headquarters Operation Center within 24 hours after the discovery of any of the following events involving licensed material:

(i) An unplanned contamination event that:

(I) Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(II) Involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR Part 20 for the material; and

(III) Has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.

(ii) An event in which equipment is disabled or fails to function as designed when:

(I) The equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(II) The equipment is required to be available and operable when it is disabled or fails to function; and

(III) No redundant equipment is available and operable to perform the required safety function.

(iii) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body;

(iv) An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:

(I) The quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR Part 20 for the material; and

(II) The damage affects the integrity of the licensed material or its container.

(v) Notwithstanding any other requirements for notification, within 24 hours report, to the Division and the NRC Headquarters Operation Center any event involving radioactive material or sources of radiation possessed by the licensee that may have caused or threatens to cause any of the following conditions:

(I) An individual to receive, in a period of 24 hours:

I. A total effective dose equivalent exceeding 5 rems (0.05 Sv); or

II. A lens dose equivalent exceeding 15 rems (0.15 Sv); or

III. A shallow-dose equivalent to the skin or extremities exceeding 50 rems (0.5 Sv); or

(II) The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake in excess of one occupational annual limit on intake (the provisions of this paragraph do not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures).

3. Preparation and submission of reports. Reports made by licensees in response to the requirements of this paragraph must be made as follows:

(i) Licensees shall make reports required by (15)(b)1. and 2. by telephone to the Division and the NRC Headquarters Operation Center. To the extent that the information is available at the time of notification, the information provided in these must include:

(I) The caller's name, position title, and call back telephone number;

(II) Date, time, and the exact location of the event;

(III) Description of the event, including:

I. Radiological or chemical hazards involved, including isotopes, quantities, and chemical and physical form of any material released;

II. Actual or potential health and safety consequences to the workers, the public, and the environment, including relevant chemical and radiation data for actual personnel exposures to radiation or radioactive materials or hazardous chemicals produced from licensed materials (e.g., level of radiation exposure, concentration of chemicals, and duration of exposure);

III. The sequence of occurrences leading to the event, including degradation or failure of structures, systems, equipment, components, and activities of personnel relied on to prevent potential accidents or mitigate their consequences; and

IV. Whether the remaining structures, systems, equipment, components, and activities of personnel relied on to prevent potential accidents or mitigate their consequences are available and reliable to perform their function;

(IV) External conditions affecting the event;

(V) Additional actions taken by the licensee in response to the event;

(VI) Status of the event (e.g., whether the event is on-going or was terminated);

(VII) Current and planned site status, including any declared emergency class;

(VIII) Notifications, related to the event, that were made or are planned to any local, State, or other Federal agencies;

(IX) Status of any press releases, related to the event, that were made or are planned.

(ii) Written report. Each licensee who makes a report required by (15)(b)1. and 2. shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other regulations may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. These written reports must be sent to the Radioactive Materials Program, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354 or current mailing address and USNRC, Region II, 245 Peachtree Center Avenue, NE., Suite 1200, Atlanta, GA 30303-1257. The written report must include the following:

(I) Complete applicable information required by (b)3.(i);

(II) A description of the event, including the probable cause, all factors that contributed to the event, and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned; and

(III) Corrective actions taken or planned to prevent occurrence of similar or identical events in the future and the results of any evaluations or assessments.

4. The licensee shall prepare each report filed with the Division and the NRC Headquarters Operation Center pursuant to (15)(b) of this Rule so that names of individuals who have received exposure to sources of radiation are stated in a separate and detachable portion of the report.

5. Licensees shall make the required by (15)(b)1. and 2. of this Rule by telephone to the Division, and shall confirm the initial contact by telegram, mailgram, or facsimile to the Division.

6. The provisions of (15)(b) of this Rule do not apply to doses that result from planned special exposures, provided such doses are within the limits for planned special exposures and are reported pursuant to (15)(d) of this Rule.

(c) Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Limits.

1. Reportable Events. In addition to the notification required by (15)(b) of this Rule, each licensee shall submit a written report to the Division within 30 days after learning of any of the following occurrences:

(i) Incidents for which notification is required by (15)(b) of this Rule;

(ii) Doses in excess of any of the following:

(I) The occupational dose limits for adults in (5)(a) of this Rule;

(II) The occupational dose limits for a minor in (5)(g) of this Rule;

(III) The limits for an embryo/fetus of a declared pregnant woman in (5)(h) of this Rule;

(IV) The limits for an individual member of the public in (5)(i) of this Rule;

(V) Any applicable limit in the license; or

(VI) The ALARA constraints for air emissions established under .03(4)(d).

(iii) Levels of radiation or concentrations of radioactive material in:

(I) A restricted area in excess of applicable limits in the license; or

(II) An unrestricted area in excess of ten times the applicable limit set forth in this Rule or in the license, whether or not the exposure of any individual in excess of the limits in (5)(i) of this Rule is involved; or

(iv) For licensees subject to the provisions of U.S. Environmental Protection Agency's generally applicable environmental radiation standards in 40 CFR 190, levels of radiation or releases of radioactive material in excess of those standards, or of license conditions related to those standards [7].

2. Contents of Reports.

(i) Each report required by (15)(c)1. of this Rule shall describe the extent of exposure of individuals to radiation and radioactive material, including, as appropriate:

(I) Estimates of each individual's dose;

(II) The levels of radiation and concentrations of radioactive material involved;

(III) The cause of the elevated exposures, dose rates, or concentrations; and

(IV) Corrective steps taken or planned to ensure against a recurrence, including the schedule for achieving conformance with applicable limits, ALARA constraints, generally applicable environmental standards, and associated license conditions.

(ii) Each report filed pursuant to (14)(c)1. of this Rule shall include for each occupationally exposed individual: the name, Social Security account number, and date of birth. With respect to the limit for the embryo/fetus in (5)(h) of this Rule, the identification should be that of the declared pregnant woman. The report shall be prepared so that this information is stated in a separate and detachable portion of the report.

3. All licensees who make pursuant to (15)(c)1. of this Rule shall submit the report in writing to the Division.

(d) Reports of Planned Special Exposures. The licensee shall submit a written report to the Division within 30 days following any planned special exposure conducted in accordance with (5)(f) of this Rule, informing the Division that a planned special exposure was conducted and indicating the date that the planned special exposure occurred and the information required by (14)(g) of this Rule.

(e) Reports to Individuals of Exceeding Dose Limits. When a licensee is required, pursuant to the provisions of (15)(c), (15)(d), or (15)(f), to report to the Division any exposure of an identified occupationally exposed individual, or an identified member of the public to radiation or radioactive material, the licensee shall also provide a copy of the report submitted to the Division to the individual. This report must be transmitted at a time no later than the transmittal to the Division.

(f) Notifications and Reports to Individuals.

1. Requirements for notification and to individuals of exposure to radiation or radioactive material are specified in Rule 391-3-17-.07(4).

2. When a licensee is required pursuant to (15)(c) of this Rule to report to the Division any exposure of an identified occupationally exposed individual or identified member of the public to radiation or radioactive material, the licensee shall also provide the individual a report on his or her exposure data included in the report to the Division. This report shall be transmitted at a time not later than the transmittal to the Division, and shall comply with the provisions of Rule 391-3-17-.07(4)(a).

(g) Reports of Leaking or Contaminated Sealed Sources. If the test for leakage or contamination required pursuant to Rule .03(6) indicates that the sealed source is leaking or contaminated, a report of the test shall be filed within five days with the Division describing the equipment involved, the test results, and the corrective action taken.

(h) [Reserve]

(i) Serialization of Nationally Tracked Sources.

1. Each licensee who manufactures a nationally tracked source after February 6, 2007 shall assign a unique serial number to each nationally tracked source. Serial numbers must be composed only of alpha-numeric characters.

(j) Reports of Transactions Involving Nationally Tracked Sources.

1. Each licensee who manufactures, transfers, receives, disassembles, or disposes of a nationally-tracked source shall complete and submit a National Source Tracking Transaction Report as specified below for each type of transaction.

2. Each licensee who manufactures a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The manufacturer, model, and serial number of the source;

(iv) The radioactive material in the source;

(v) The initial source strength in becquerels (curies) at the time of manufacture; and

(vi) The manufacture date of the source.

3. Each licensee that transfers a nationally tracked source to another person shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The name and license number of the recipient facility and shipping address;

(iv) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(v) The radioactive material in the source;

(vi) The initial or current source strength in becquerels (curies);

(vii) The date for which the source strength is reported;

(viii) The shipping date;

(ix) The estimated arrival date; and

(x) For nationally tracked sources transferred as waste under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification of the container with the nationally tracked source.

4. Each licensee that receives a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The name, address and license number of the person that provided the source;

(iv) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(v) The radioactive material in the source;

(vi) The initial or current source strength in becquerels (curies);

(vii) The date for which the source strength is reported;

(viii) The date of receipt; and

(ix) For material received under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification with the nationally tracked source.

5. Each licensee that disassembles a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(iv) The radioactive material in the source;

(v) The initial or current source strength in becquerels (curies);

(vi) The date for which the source strength is reported; and

(vii) The disassemble date of the source.

6. Each licensee who disposes a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The waste manifest number;

(iv) The container identification with the nationally tracked source;

(v) The date of disposal; and

(vi) The method of disposal.

7. The reports discussed in (15)(j)2.-6. above must be submitted by the close of the next business day after the transaction. A single report may be submitted for multiple sources and transactions. The reports must be submitted to the National Source Tracking System by using:

(i) The on-line National Source Tracking System;

(ii) Electronically using a computer-readable format;

(iii) By facsimile;

(iv) By mail to the address on the National Sources Tracking Transaction Report Form (NRC Form 748); or

(v) By telephone with follow-up by facsimile or mail.

8. Each licensee shall correct any error in previously filed reports or file a new report for any missed transaction within five (5) business days of the discovery of the error or missed transaction. Such errors may be detected by a variety of methods such as administrative reviews or by physical inventories required by regulation. In addition, each licensee shall reconcile the inventory of nationally tracked sources possessed by the licensee against that licensee's data in the National Source Tracking System. The reconciliation must be conducted during the month of January in each year. The reconciliation process must include resolving any discrepancies between the National Source Tracking System and the actual inventory by filing the reports identified in (15)(j)2.-6. of this paragraph. By January 31 of each year, each licensee must submit to the National Source Tracking System confirmation that the data in the National Source Tracking System is correct.

Table 3: Nationally Tracked Source Thresholds

Radioactive Material	Category 1 (TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Actinium-227	20	540	0.2	5.4
Americium-241	60	1,600	0.6	16
Americium-241/Beryllium	60	1,600	0.6	16
Californium-252	20	540	0.2	5.4
Cobalt-60	30	810	0.3	8.1
Curium-244	50	1,400	0.5	14
Cesium-137	100	2,700	1	27
Gadolinium-153	1,000	27,000	10	270
Iridium-192	80	2,200	0.8	22
Plutonium-238	60	1,600	0.6	16
Plutonium-238/Beryllium	60	1,600	0.6	16
Polonium-210	60	1,600	0.6	16
Promethium-147	40,000	1,100,000	400	11,000
Radium-226	40	1,100	0.4	11
Selenium-75	200	5,400	2	54
Strontium-90	1,000	27,000	10	270
Thorium-228	20	540	0.2	5.4
Thorium-229	20	540	0.2	5.4
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81

The Terabecquerel (TBq) values are the regulatory standard. The Curie (Ci) values specified are obtained by converting from the TBq value. The Curie values are provided for practical usefulness only and are rounded after conversion.

(16) **Exemptions and Additional Requirements**

(a) Vacating Premises. Each specific licensee shall, no less than 30 days before vacating or relinquishing possession or control of premises which may have been contaminated with radioactive material as a result of his activities, notify the Division in writing of his intent to vacate. When deemed necessary by the Division, the licensee shall decontaminate the premises in such a manner as the Division may specify.

(b) Orders. The Director may, by order, impose upon any licensee such requirements, issued in furtherance of this rule, as it deems appropriate or necessary to protect health or minimize danger to life or property.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.03

AUTHORITY: O.C.G.A. § 31-13-1 *et seq.*, as amended.

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Amended: F. Feb. 24, 1994; eff. Mar. 16, 1994.

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Amended: F. Mar. 29, 2002; eff. Apr. 18, 2002.

Amended: F. May 30, 2003; eff. July 1, 2003, as specified by the Agency.

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Amended: F. Apr. 11, 2016; eff. May 1, 2016.

Amended: New title "Standards for Protection Against Radiation." F. May 11, 2016; eff. May 31, 2016.

Amended: F. Dec. 14, 2017; eff. Jan. 3, 2018.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Amended: F. Apr. 1, 2024; eff. Apr. 21, 2024.

Footnotes:
[1] For very high doses received at high dose rates, units of absorbed dose, Gray and rad, are appropriate, rather than units of dose equivalent, Sievert and rem.

[2] The National Council on Radiation Protection and Measurements recommended in NCRP Report No. 91 (June 1, 1987) that no more than 0.05 rem (0.5 mSv) to the embryo/fetus be received in any one month.

[3] All of the occupational doses in .03(5)(a) continue to be applicable to the declared pregnant worker as long as the embryo/fetus dose limit is not exceeded.

[4] Labeled with a Radioactive White I, Yellow II, or Yellow III label as specified in U.S. Department of Transportation (DOT) regulations, 49 CFR 172.403-172.440.

[5] Labeling of packages containing radioactive materials is required by the U.S. Department of Transportation (DOT) if the amount and type of radioactive material exceeds the limits for an excepted quantity or article as defined and limited by U.S. Department of Transportation (DOT) regulations 49 CFR 173.403(m) and (w) and 173.421-.424.

[6] A previous Rule, .03(5)(d), permitted burial of small quantities of licensed materials in soil before July 12, 1982, without specific Division authorization.

[7] For purposes of these Regulations, the U.S. Environmental Protection Agency Standards apply only to source material mills and nuclear power plants.

391-3-17-.05 Use of Radionuclides in the Healing Arts

(1) **Purpose and Scope.** This Rule, 391-3-17-.05, establishes requirements and provisions for the production, preparation, compounding and use of radionuclides in the healing arts and for issuance of licenses authorizing these activities. These requirements and provisions provide for the radiation safety of workers, the general public, patients, and human research subjects. The requirements and provisions of this Rule are in addition to, and not in substitution for, others in these regulations unless specifically exempted. All numbered and lettered references within this Rule refer to parts of this Rule, unless stated otherwise.

(2) **Definitions.**

(a) "Accredited institution," means a teaching facility for nuclear medicine technology or radiation therapy technology whose standards are accepted by the United States Department of Education.

(b) "Address of use," means the building or buildings that are identified on the license and where radioactive material may be produced, prepared, received, used, or stored.

(c) "Area of use," means a portion of an address of use that has been set aside for the purpose of receiving, using, or storing radioactive material.

(d) "Authorized medical physicist," means an individual who:

1. Meets the requirements in Rules .05(23)(a) and .05(27); or

2. Is identified as an authorized medical physicist on a license or equivalent permit issued by the Director, Nuclear Regulatory Commission or Agreement State; or

3. Is identified as an authorized medical physicist on a permit issued by the Director, Nuclear Regulatory Commission or Agreement State specific license of broad scope that is authorized to permit the use of radioactive material.

(e) "Authorized nuclear pharmacist," means a pharmacist who:

1. Meets the requirements in Rules .05(24)(a) and .05(27); or

2. Is identified as an authorized nuclear pharmacist on a license or equivalent permit issued by the Director, Nuclear Regulatory Commission or Agreement State; or

3. Is identified as an authorized nuclear pharmacist on a permit issued by the Director, Nuclear Regulatory Commission or Agreement State specific license of broad scope that is authorized to permit the use of radioactive material.

(f) "Authorized user," means a physician, dentist, or podiatrist who:

1. Meets the requirements in Rule .05(27) and .05(43)(a), .05(47)(a), .05(52)(a), .05(53)(a), .05(54)(a), .05(63)(a), .05(66)(a), or .05(84)(a); or

2. Is identified as an authorized user on a license or equivalent permit issued by the Director, Nuclear Regulatory Commission or Agreement State; or

3. Is identified as an authorized user on a permit issued by the Director, Nuclear Regulatory Commission or Agreement State specific license of broad scope that is authorized to permit the use of radioactive material.

(g) "Brachytherapy," means a method of radiation therapy in which plated, embedded, activated, or sealed sources are utilized to deliver a radiation dose at a distance of up to a few centimeters, by surface, intracavitary, intraluminal or interstitial application.

(h) "Brachytherapy source," means a radioactive source or a manufacturer-assembled source train or a combination of these sources that is designed to deliver a therapeutic dose within a distance of a few centimeters.

(i) "Client's address," means the address of use or a temporary jobsite for the purpose of providing mobile medical service in accordance with Rule .05(38).

(j) "Dedicated check source," means a radioactive source that is used to assure the consistent response of a radiation detection or measurement device over several months or years.

(k) "Dentist," means an individual licensed to engage in the practice dentistry under the Authority of O.C.G.A. 43-11-40.

(l) "Diagnostic clinical procedures manual," means a collection of written procedures that describes each method (and other instructions and precautions) by which the licensee performs diagnostic clinical procedures; where each diagnostic clinical procedure has been approved by the authorized user and includes the radiopharmaceutical, dosage, and route of administration, or in the case of sealed sources for diagnosis, the procedure.

(m) "High dose-rate remote afterloader," (HDR) means a device that remotely delivers a dose rate in excess of 12 gray (1200 rad) per hour at the treatment site.

(n) "Low dose-rate remote afterloader," (LDR) means a device that remotely delivers a dose rate of less than or equal to 2 gray (200 rad) per hour at the treatment site.

(o) "Management," means the chief executive officer or other individual having the authority to manage, direct, or administer the licensee's activities, or those persons' delegate or delegates.

(p) "Manual brachytherapy," means a type of therapy in which brachytherapy sources are manually applied or inserted.

(q) "Medical institution," means an organization in which several medical disciplines are practiced.

(r) "Medical use," means the intentional internal or external administration of radioactive material or the radiation from radioactive material to patients or human research subjects under the supervision of an authorized user.

(s) "Medium dose-rate remote afterloader," (MDR) means a device that remotely delivers a dose rate of greater than 2 gray (200 rad), but less than, or equal to, 12 gray (1200 rad) per hour at the treatment site.

(t) "Misadministration," means an event that meets the criteria in Rule .05(115)(a).

(u) "Mobile medical service," means the transportation of radioactive material or its medical use at the client's address.

(v) "Nuclear medicine technologist," means an individual who meets the requirements of Rule .05(25)(a) and, is under the supervision of an authorized user, to prepare or administers radioactive drugs to patients or human research subjects, or perform *in vivo* or *in vitro* measurements for medical purposes.

(w) "Nuclear medicine technology," means the science and art of in vivo and in vitro detection and measurement of radioactivity and the administration of radioactive drugs to patients or human research subjects for diagnostic and therapeutic purposes.

(x) "Output," means the exposure rate, dose rate, or a quantity related in a known manner to these rates from a brachytherapy source, or a teletherapy, remote afterloader, or gamma stereotactic radiosurgery unit for a specified set of exposure conditions.

(y) "Patient intervention," means actions by the patient or human research subject, whether intentional or unintentional, such as dislodging or removing treatment devices or prematurely terminating the administration.

(z) "Pharmacist," means any individual who is licensed to practice Pharmacy in this State by the Georgia State Board of Pharmacy.

(aa) "Physician," means any person who is licensed to engage in the practice of medicine under the Authority of O.C.G.A. 43-34-20 or the limited practice of medicine under O.C.G.A. 43-35-1.

(bb) "Podiatrist," means an individual licensed by the appropriate authority to practice podiatry in the state of Georgia.

(cc) "Positron Emission Tomography (PET) radionuclide production facility" is defined as a facility operating a cyclotron or accelerator for the purpose of producing PET radionuclides.

(dd) "Preceptor," means an individual who provides, directs or verifies training and experience required for an individual to become an authorized user, an authorized medical physicist, an authorized nuclear pharmacist, an Associate Radiation Safety Officer or a Radiation Safety Officer.

(ee) "Prescribed dosage," means the specified activity or range of activity of radioactive drug as documented:

1. In a written directive; or

2. In accordance with the directions of the authorized user for procedures performed pursuant to Rule .05(41), (44) and (48).

(ff) "Prescribed dose," means:

1. For gamma stereotactic radiosurgery, the total dose as documented in the written directive;

2. For teletherapy, the total dose and dose per fraction as documented in the written directive;

3. For brachytherapy, either the total source strength and exposure time or the total dose, as documented in the written directive; or

4. For remote brachytherapy afterloaders, the total dose and dose per fraction as documented in the written directive.

(gg) "Pulsed dose-rate remote afterloader," (PDR) means a special type of remote afterloading device that uses a single source capable of delivering dose rates in the "high dose-rate" range, but:

1. Is approximately one-tenth of the activity of typical high dose-rate remote afterloader sources; and

2. Is used to simulate the radiobiology of a low dose rate treatment by inserting the source for a given fraction of each hour.

(hh) "Radiation Safety Officer," means an individual who:

1. Meets the requirements in Rule .05(22)(a) or .05(22)(c)1. And .05(27); or

2. Is identified as a Radiation Safety Officer on a Nuclear Regulatory Commission or Agreement State license or other equivalent permit or license recognized by the Division for similar types and uses of radioactive material.

(ii) "Radiation therapist," means an individual who meets the requirements of Rule .05(25)(b) and is under the supervision of an authorized user to perform procedures and apply radiation emitted from sealed radioactive sources to human beings for therapeutic purposes.

(jj) "Radiation therapy technology," means the science and art of applying radiation emitted from sealed radioactive sources to patients or human research subjects for therapeutic purposes.

(kk) "Radioactive drug," means any chemical compound containing radioactive material that may be used on or administered to patients or human research subjects as an aid in the diagnosis, treatment, or prevention of disease or other abnormal condition.

(ll) "Sealed source," means any radioactive material that is encased in a capsule designed to prevent leakage or escape of the radioactive material.

(mm) "Sealed Source and Device Registry," means the national registry that contains the registration certificates maintained by the Nuclear Regulatory Commission, that summarize the radiation safety information for the sealed sources and devices and describe the licensing and use conditions approved for the product.

(nn) "Stereotactic radiosurgery," means the use of external radiation in conjunction with a stereotactic guidance device to very precisely deliver a dose to a treatment site.

(oo) "Structured educational program," means an educational program designed to impart particular knowledge and practical education through interrelated studies and supervised training.

(pp) "Teletherapy," as used in this Rule, means a method of radiation therapy in which collimated gamma rays are delivered at a distance from the patient or human research subject.

(qq) "Temporary jobsite," as used in this Rule, means a location where mobile medical services are conducted other than the location(s) of use authorized on the license.

(rr) "Therapeutic dosage," means a dosage of unsealed radioactive material that is intended to deliver a radiation dose to a patient or human research subject for palliative or curative treatment.

(ss) "Therapeutic dose," means a radiation dose delivered from a sealed source containing radioactive material to a patient or human research subject for palliative or curative treatment.

(tt) "Treatment site," means the anatomical description of the tissue intended to receive a radiation dose, as described in a written directive.

(uu) "Type of use," means use of radioactive material as specified under Rule .05(41), (44), (48), (55), (65), (67) or (85).

(vv) "Unit dosage," means a dosage that:

1. Is obtained or prepared in accordance with the regulations for uses described in Rule .05(41), (44), (48); and

2. Is to be administered as a single dosage to a patient or human research subject without any further manipulation of the dosage after it is initially prepared.

(ww) "Written directive," means an authorized user's written order for the administration of radioactive material or radiation from radioactive material to a specific patient or human research subject, as specified in Rule .05(19).

(xx) "Associate Radiation Safety Officer," means an individual who:

1. Meets the requirements in 391-3-17-.05(22) and .05(27); and

2. Is currently identified as an Associate Radiation Safety Officer for the types of use of byproduct material for which the individual has been assigned duties and tasks by the Radiation Safety Officer on:

(i) A specific medical use license issued by the Commission or an Agreement State; or

(ii) A medical use permit issued by a Commission master material licensee.

(yy) "Ophthalmic physicist," means an individual who:

1. Meets the requirements in 391-3-17-.05(27) and 391-3-17-.05(64)(c)2.; and

2. Is identified as an ophthalmic physicist on a:

(i) Specific medical use license issued by the Commission or an Agreement State;

(ii) Permit issued by a Commission or Agreement State broad scope medical use licensee;

(iii) Medical use permit issued by a Commission master material licensee; or

(iv) Permit issued by a Commission master material licensee broad scope medical use permittee.

(3) **Maintenance of Records.** Each record required by Rule .05 must be legible throughout the retention period specified by each Division Rule. The record may be the original, a reproduced copy, or a microform provided that the copy or microform is authenticated by authorized personnel and the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(4) **Provisions for Research Involving Human Subjects.** A licensee may conduct research involving human subjects using radioactive material provided:

(a) That the research is conducted, funded, supported, or regulated by a Federal agency that has implemented the Federal Policy for the Protection of Human Subjects. Otherwise, a licensee shall apply for and receive approval of a specific amendment to its Division license before conducting such research. Both types of licensees shall, at a minimum, obtain informed consent from the human subjects and obtain prior review and approval of the research activities by an "Institutional Review Board" in accordance with the meaning of these terms as defined and described in the Federal Policy for the Protection of Human Subjects;

(b) The research involving human subjects authorized in .05(4)(a) shall be conducted using radioactive material authorized for medical use in the license; and

(c) Nothing in Rule .05(4) relieves licensees from complying with the other requirements in Rule .05.

(5) **U.S. Food and Drug Administration, Federal, and State Requirements.** Nothing in Rule .05 relieves the licensee from complying with applicable U.S. Food and Drug Administration, other Federal, and State requirements governing radioactive drugs or devices.

(6) **Implementation.**

(a) A licensee shall implement the provisions in Rule .05 on July 1, 2003.

(b) When a requirement in Rule .05 differs from the requirement in an existing license condition, the requirement in Rule .05 shall govern.

(c) Any existing license condition that is not affected by a requirement in Rule .05 remains in effect until there is a license amendment or license renewal.

(d) If a license condition exempted a licensee from a provision of Rule .05 on July 1, 2003, it will continue to exempt a licensee from the corresponding provision in Rule .05.

(e) If a license condition cites provisions in Rule .05 that will be deleted on July 1, 2003, then the license condition remains in effect until there is a license amendment or license renewal that modifies or removes this condition.

(f) Licensees shall continue to comply with any license condition that requires it to implement procedures required by Rule .05(70), (76), (77) and (78) until there is a license amendment or renewal that modifies the license condition.

(7) **License Required.**

(a) A person may manufacture, produce, prepare, acquire, receive, possess, use, or transfer radioactive material for medical use only in accordance with a specific license issued by the Director, the Nuclear Regulatory Commission or an Agreement State, or as allowed in Rule .05(7)(b) or (7)(c).

(b) An individual may receive, possess, use, or transfer radioactive material in accordance with the regulations in Rule .05 under the supervision of an authorized user as provided in Rule .05(18), unless prohibited by license condition.

(c) An individual may prepare unsealed radioactive material for medical use in accordance with the regulations in Rule .05 under the supervision of an authorized nuclear pharmacist or authorized user as provided in Rule .05(18), unless prohibited by license condition.

(8) **Application for License, Amendment, or Renewal.**

(a) An application must be signed by the applicant's or licensee's management.

(b) An application for a license for medical use of radioactive material as described in Rule .05(41), (44), (48), (55), (65), (67) or (85) must be made by:

1. Filing an original Application for Radioactive Materials License, and

2. Submitting procedures required by sections Rule .05(70), (76), (77), and (78), as applicable.

(c) A request for a license amendment or renewal must be made by:

1. Submitting an original in letter format.

2. Submitting procedures required by sections Rule .05(70), (76), (77) and (78), as applicable.

(d) In addition to the requirements in (8)(b) and (8)(c), an application for a license or amendment for medical use of radioactive material as described in (85) of Rule .05 must also include information regarding any radiation safety aspects of the medical use of the material that is not addressed in Rule .05(1) through Rule .05(40), as well as any specific information on:

1. Radiation safety precautions and instructions;

2. Training and experience of proposed users;

3. Methodology for measurement of dosages or doses to be administered to patients or human research subjects; and

4. Calibration, maintenance, and repair of instruments and equipment necessary for radiation safety.

(e) The applicant or licensee shall also provide any other information requested by the Division in its review of the application.

(f) An applicant that satisfies the requirements specified in Rule .02(10)(b) may apply for a Type A specific license of broad scope.

(9) **Mobile Medical Service Administrative Requirements.**

(a) The Director shall license mobile medical services or clients of such services. The mobile medical service shall be licensed if the service receives, uses or possesses radioactive material. The client of the mobile medical service shall be licensed if the client receives or possesses radioactive material to be used by a mobile medical service.

(b) Mobile medical service licensees shall obtain a letter signed by the management of each location where services are rendered that authorizes use of radioactive material at the clinic's address of use. This letter shall clearly delineate the authority and responsibility of both the client and the mobile medical service. If the client is licensed, the letter shall document procedures for notification, receipt, storage and documentation of transfer of radioactive material delivered to the client's address for use by the mobile medical service.

(c) A mobile medical service shall not have radioactive material delivered directly from the manufacturer or the distributor to the client unless the client has a license allowing possession of the radioactive material. Radioactive material delivered to the client shall be received and handled in conformance with the client's license.

(d) A mobile medical service shall inform the client's management who is on site at each client's address of use at the time that radioactive material is being administered.

(e) A licensee providing mobile medical services shall retain the letter required in (9)(b) in accordance with Rule .05(97).

(f) A mobile medical service licensee shall maintain on each mobile unit:

1. The current operating and emergency procedures;

2. A copy of the license;

3. Copies of the letter required by .05(9)(b);

4. Current calibration records for each survey instrument and diagnostic equipment or dose delivery device in use; and

5. Survey records covering uses associated with the mobile unit during, at a minimum, the preceding 30 calendar days.

(g) A mobile medical service licensee shall maintain records required by Rules .03 and .05 of this Chapter at a location within the Division's jurisdiction that is:

1. A single address of use:

(i) Identified as the records retention location; and

(ii) Staffed at all reasonable hours by individual(s) authorized to provide the Division with access for purposes of inspection; or

2. When no address of use is identified on the license for records retention, the mobile unit:

(i) Identified in the license; and

(ii) Whose current client's address schedule and location schedule is reported to the Division.

(10) **License Amendments.** A licensee shall apply for and must receive a license amendment:

(a) Before it receives, prepares or uses radioactive material for a type of use that is permitted under Rule .05, but that is not authorized on the licensee's current license issued pursuant to Rule .05;

(b) Before it permits anyone to work as an authorized user, authorized nuclear pharmacist, or authorized medical physicist under the license, except an individual who is:

1. For an authorized user, an individual who meets the requirements in Rule .05(27) and (43)(a), Rule .05(47)(a), (52)(a), (53)(a), (54)(a), (63)(a), (64)(a), (66)(a), or (84)(a) or;

2. For an authorized nuclear pharmacist, an individual who meets the requirements in Rule .05(24)(a) and (27);

3. For an authorized medical physicist, an individual who meets the requirements in Rule .05(23)(a) and (27);

4. Identified as an authorized user, an authorized nuclear pharmacist, or authorized medical physicist on a Nuclear Regulatory Commission or Agreement State license or other equivalent permit or license recognized by the Division that authorizes the use of radioactive material in medical use or in the practice of nuclear pharmacy, respectively; or

5. Identified as an authorized user, an authorized nuclear pharmacist, or authorized medical physicist on a permit issued by a Nuclear Regulatory Commission or Agreement State specific licensee of broad scope that is authorized to permit the use of radioactive material in medical use or in the practice of nuclear pharmacy, respectively.

(c) Before it changes Radiation Safety Officers, except as provided in (15)(c);

(d) Before it receives radioactive material in excess of the amount, or in a different physical or chemical form than is authorized on the license;

(e) Before it adds to or changes the areas of use identified in the application or on the license, except as specified in (11)(b)4.;

(f) Before it changes the address(es) of use identified in the application or on the license;

(g) Before it changes statements, representations, and procedures which are incorporated into the license; and

(h) Before it releases licensed facilities for unrestricted use.

(11) **Notifications.**

(a) A licensee shall provide to the Division a copy of the board certification, the Nuclear Regulatory Commission or Agreement State license, or the permit issued by a licensee of broad scope for each individual no later than 30 days after the date that the licensee permits the individual to work as an authorized user, an authorized nuclear pharmacist or an authorized medical physicist, pursuant to (10)(b).

(b) A licensee shall notify the Division by letter no later than 30 days after:

1. A Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change;

2. The licensee's mailing address changes;

3. The licensee's name changes, but the name change does not constitute a transfer of control of the license as described in Rule .02 (13)(b) of these regulations; or

4. The licensee has added to or changed the areas where radioactive material is used in accordance with Rule .05(41) and (44).

(12) **Exemptions Regarding Type A Specific Licenses of Broad Scope.** A licensee possessing a Type A specific license of broad scope for medical use is exempt from:

(a) The provisions of (8)(d) of these regulations, regarding the need to file an amendment to the license for medical uses of radioactive material, as described in .05(85);

(b) The provisions of (10)(b) regarding the need to file an amendment before permitting anyone to work as an authorized user, an authorized nuclear pharmacist or an authorized medical physicist under the license;

(c) The provisions of (10)(e) regarding additions to or changes in the areas of use at the addresses specified in the license;

(d) The provisions of .05(11)(a) regarding notification to the Division for new authorized users, new authorized nuclear pharmacists and new authorized medical physicists; and

(e) The provisions of .05(21)(a) regarding suppliers for sealed sources.

(13) **License Issuance.**

(a) The Director shall issue a license for the medical use of radioactive material if:

1. The applicant has filed Application for Radioactive Materials License in accordance with the instructions in .05(8);

2. The applicant has paid any applicable fee;

3. The applicant meets the requirements of Rule .02 of this Chapter; and

4. The Director finds the applicant equipped and committed to observe the safety standards established by the Division in these Rules for the protection of the public health and safety.

(b) The Director shall issue a license for mobile services if the applicant:

1. Meets the requirements in .05(13)(a); and

2. Assures that individuals to whom radioactive drugs or radiation from implants containing radioactive material will be administered, may be released following treatment in accordance with .05(37).

(14) **Specific Exemptions.** The Director may, upon application of any interested person or upon its own initiative, grant such exemptions from the regulations in Rule .05 as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

General Administrative Requirements

(15) **Authority and Responsibilities for the Radiation Protection Program.**

(a) In addition to the radiation protection program requirements of Rule .03(4), a licensee's management must approve in writing:

1. Requests for license application, renewal, or amendments before submittal to the Division;

2. Any individual before allowing that individual to work as an authorized user, authorized nuclear pharmacist or authorized medical physicist, and

3. Radiation protection program changes that do not require a license amendment and are permitted under .05(16);

(b) A licensee's management shall appoint a Radiation Safety Officer, who agrees in writing to be responsible for implementing the radiation protection program. The licensee, through the Radiation Safety Officer, shall ensure that radiation safety activities are being performed in accordance with licensee-approved procedures and regulatory requirements. A licensee's management may appoint, in writing, one or more Associate Radiation Safety Officers to support the Radiation Safety Officer. The Radiation Safety Officer, with written agreement of the licensee's management, must assign the specific duties and tasks to each Associate Radiation Safety Officer. These duties and tasks are restricted to the types of use for which the Associate Radiation Safety Officer is listed on a license. The Radiation Safety Officer may delegate duties and tasks to the Associate Radiation Safety Officer but shall not delegate the authority or responsibilities for implementing the radiation protection program.

(c) For up to sixty days each year, a licensee may permit an authorized user or an individual qualified to be a radiation safety officer to function as a temporary Radiation Safety Officer and to perform the functions of a Radiation Safety Officer, as provided in .05(15)(e), provided the licensee takes the actions required in .05(15)(b),(d),(e) and (h). A licensee may simultaneously appoint more than one temporary RSO, if needed, to

ensure that the licensee has a temporary RSO that satisfies the requirements to be an RSO for each of the different uses of radioactive material permitted by the license.

(d) A licensee shall establish in writing the authority, duties, and responsibilities of the Radiation Safety Officer.

(e) A licensee shall provide the Radiation Safety Officer sufficient authority, organizational freedom, time, resources, and management prerogative, to:

1. Identify radiation safety problems;

2. Initiate, recommend, or provide corrective actions;

3. Stop unsafe operations; and,

4. Verify implementation of corrective actions.

(f) Licensees that are authorized for two or more different types of radioactive material use under Rule .05(48), (55), (67), and (85), or two or more types of units under Rule .05(67) shall establish a Radiation Safety Committee to oversee all uses of radioactive material permitted by the license. The Committee must include an authorized user of each type of use permitted by the license, the Radiation Safety Officer, a representative of the nursing service, and a representative of management who is neither an authorized user nor a Radiation Safety Officer, and may include other members as the licensee deems appropriate.

(g) A licensee's Radiation Safety Committee shall meet as necessary, but at a minimum shall meet at intervals not to exceed six months. The licensee shall maintain minutes of each required meeting in accordance with Rule .05(86)(c).

(h) A licensee shall retain a record of actions taken pursuant to Rule .05(15)(a), (15)(b) and (15)(d) in accordance with Rule .05(86)(a) and (b).

(16) **Radiation Protection Program Changes.**

(a) A licensee may revise its radiation protection program without Division approval if:

1. The revision does not require an amendment under Rule .05(10);

2. The revision is in compliance with the regulations and the license;

3. The revision has been reviewed and approved by the Radiation Safety Officer, licensee management and licensee's Radiation Safety Committee (if applicable); and

4. The affected individuals are instructed on the revised program before the changes are implemented.

(b) A licensee shall retain a record of each change in accordance with Rule .05(87).

(17) **Duties of Authorized User and Authorized Medical Physicist.**

(a) A licensee shall assure that only authorized users for the type of radioactive material use:

1. Prescribe the radiopharmaceutical dosage and/or dose to be administered through the issuance of a written directive or reference to the diagnostic clinical procedures manual;

2. Direct, as specified in Rule .05(18) and (19), or in license conditions, the administration of radioactive material for medical use to patients or human research subjects; and

3. Prepare and administer, or supervise the preparation and administration of radioactive material for medical use, in accordance with Rule .05(7)(b) and (7)(c) and (18).

(b) A licensee shall assure that only authorized medical physicists perform, as applicable:

1. Full calibration measurements as described in Rule .05(73), (74), and (75);

2. Periodic spot checks as described in Rule .05(76), (77), and (78); and

3. Radiation surveys as described in Rule 5(80).

(18) **Supervision.**

(a) A licensee that permits the receipt, possession, use, or transfer of radioactive material by an individual under the supervision of an authorized user or as allowed by Rule .05(7)(b) shall:

1. In addition to the requirements in Rule .07(3) of this Chapter, instruct the supervised individual in the licensee's written radiation protection procedures, written directive procedures, regulations of Rule .05, and license conditions with respect to the use of radioactive material; and

2. Require the supervised individual to follow the instructions of the supervising authorized user for medical uses of radioactive material, written radiation protection procedures, written directive procedures, regulations of Rule .05, and license conditions with respect to the medical use of radioactive material.

(b) A licensee that permits the preparation of radioactive material for medical use by an individual under the supervision of an authorized nuclear pharmacist or physician who is an authorized user, as allowed by Rule .05(7)(c), shall:

1. Instruct the supervised individual in the preparation of radioactive material for medical use, as appropriate to that individual's involvement with radioactive material; and

2. Require the supervised individual to follow the instructions of the supervising authorized user or authorized nuclear pharmacist regarding the preparation of radioactive material for medical use, the written radiation protection procedures, the regulations of Rule .05, and license conditions.

(c) Unless physical presence is required in other sections of Rule .05, a licensee who permits supervised activities under Rule .05(18)(a) and (18)(b) shall require an authorized user to be immediately available to communicate with the supervised individual, and when a written directive is required, be able to be physically present within one hour of notification; and

(d) A licensee that permits supervised activities under Rule .05(18)(a) and (18)(b) is responsible for the acts and omissions of the supervised individual.

(19) **Written Directives.**

(a) A written directive must be dated and signed by an authorized user prior to administration of I-131 sodium iodide greater than 1.11 megabecquerel (30 µCi), any therapeutic dosage of radioactive material or any therapeutic dose of radiation from radioactive material.

1. If, because of the emergent nature of the patient's condition, a delay in order to provide a written directive would jeopardize the patient's health, an oral directive will be acceptable, provided that the information contained in the oral directive is documented as soon as possible in writing in the patient's record and a written directive is prepared within 48 hours of the oral directive.

2. A written revision to an existing written directive may be made provided that the revision is dated and signed by an authorized user prior to the administration of the dosage of radioactive drug containing radioactive material, the brachytherapy dose, the gamma stereotactic radiosurgery dose, the teletherapy dose, or the next fractional dose.

3. If, because of the patient's condition, a delay in order to provide a written revision to an existing written directive would jeopardize the patient's health, an oral revision to an existing written directive will be acceptable, provided that the oral revision is documented as soon as possible in the patient's record and a revised written directive is signed by the authorized user within 48 hours of the oral revision.

(b) The written directive must contain the patient or human research subject's name and the following:

1. For an administration of a dosage of radioactive drug containing radioactive material, the radioactive drug containing radioactive material, dosage, and route of administration;

2. For gamma stereotactic radiosurgery, the total dose, treatment site, and number of target coordinate settings per treatment for each anatomically distinct treatment site;

3. For teletherapy, the total dose, dose per fraction, number of fractions, and treatment site;

4. For high dose rate remote afterloading brachytherapy, the radionuclide, treatment site, dose per fraction, number of fractions, and total dose;

5. For all other brachytherapy including LDR, MDR, and PDR:

(i) Prior to implantation: treatment site, the radionuclide, and dose; and

(ii) After implantation but prior to completion of the procedure: the radioisotope, treatment site, number of sources, and total source strength and exposure time (or, the total dose), and date; or

6. For permanent implant brachytherapy:

(i) Before implantation: The treatment site, the radionuclide, and the total source strength; and

(ii) After implantation but before the patient leaves the post-treatment recovery area: The treatment site, the number of sources implanted, the total source strength implanted, and the date.

(c) The licensee shall retain the written directive in accordance with Rule .05 (88).

(20) **Procedures for Administrations Requiring a Written Directive.**

(a) For any administration requiring a written directive, the licensee shall develop, implement, and maintain written procedures to provide high confidence that:

1. The patient's or human research subject's identity is verified before each administration; and

2. Each administration is in accordance with the written directive.

(b) The procedures required by Rule .05(20)(a) must, at a minimum, address the following items that are applicable for the licensee's use of radioactive material:

1. Verifying the identity of the patient or human research subject;

2. Verifying that the specific details of the administration are in accordance with the treatment plan, if applicable, and the written directive;

3. Checking both manual and computer-generated dose calculations;

4. Verifying that any computer-generated dose calculations are correctly transferred into the consoles of therapeutic medical units authorized by Rule .05(67);

5. Determining if a medical event, as defined in Rule .05(115), has occurred; and

6. Determining, for permanent implant brachytherapy, within 60 calendar days from the date the implant was performed, the total source strength administered outside of the treatment site compared to the total source strength documented in the post-implantation portion of the written directive, unless a written justification of patient unavailability is documented.

(c) A licensee shall retain a copy of the procedures required under subparagraph (a) in accordance with 391-3-17-.05(20) and (88).

(21) **Suppliers for Sealed Sources or Devices for Medical Use.** For medical use, a licensee may only use:

(a) Sealed sources or devices initially manufactured, labeled, packaged, and distributed in accordance with a license issued pursuant to Rule .02 of this Chapter or the equivalent requirements of the Nuclear Regulatory Commission or an Agreement State; or

(b) Sealed sources or devices non-commercially transferred from Rule .05 licensee or a Nuclear Regulatory Commission or an Agreement State medical use licensee.

(22) **Training for Radiation Safety Officer.** Except as provided in Rule .05(26), the licensee shall require an individual fulfilling the responsibilities of the Radiation Safety Officer (RSO) or an individual assigned duties and tasks as an Associate Radiation Safety Officer as provided in Rule .05(15) to be an individual who:

(a) Is certified by a specialty board whose certification process includes all of the requirements in Rule. 05(22)(d), and whose certification has been recognized by the Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. (i) Hold a bachelor's or graduate degree from an accredited college or university in physical science or engineering or biological science with a minimum of 20 college credits in physical science;

(ii) Have 5 or more years of professional experience in health physics (graduate training may be substituted for no more than 2 years of the required experience) including at least 3 years in applied health physics; and

(iii) Pass an examination administered by diplomates of the specialty board, which evaluates knowledge and competence in radiation physics and instrumentation, radiation protection, mathematics pertaining to the use and measurement of radioactivity, radiation biology, and radiation dosimetry; or

2. (i) Hold a master's or doctor's degree in physics, medical physics, other physical science, engineering, or applied mathematics from an accredited college or university;

(ii) Have 2 years of full-time practical training and/or supervised experience in medical physics:

(I) Under the supervision of a medical physicist who is certified in medical physics by a specialty board recognized by the Nuclear Regulatory Commission or an Agreement State; or

(II) In clinical nuclear medicine facilities providing diagnostic and/or therapeutic services under the direction of physicians who meet the requirements for authorized users in Rule .05(26), .05(47) or .05(52); and

(iii) Pass an examination, administered by diplomates of the specialty board, that assesses knowledge and competence in clinical diagnostic radiological or nuclear medicine physics and in radiation safety; or

(b) 1. Has completed a structured educational program consisting of both:

(i) 200 hours of classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Radiation biology; and

(V) Radiation dosimetry; and

(ii) One year of full-time radiation safety experience under the supervision of the individual identified as the RSO on a Nuclear Regulatory Commission, Agreement State license or permit issued by a Commission master material licensee that authorizes similar type(s) of use(s) of radioactive material. An Associate Radiation Safety Officer may provide supervision for those areas for which the Associate Radiation Safety Officer is authorized on a Nuclear Regulatory Commission, Agreement State license or permit issued by a Commission master material licensee that authorizes similar type(s) of use(s) of radioactive byproduct material. The full-time radiation safety experience must involve the following;

(I) Shipping, receiving, and performing related radiation surveys;

(II) Using and performing checks for proper operation of dose calibrators, survey meters, and instruments used to measure radionuclides;

(III) Securing and controlling radioactive material;

(IV) Using administrative controls to avoid mistakes in the administration of radioactive material;

(V) Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures;

(VI) Using emergency procedures to control radioactive material; and

(VII) Disposing of radioactive material; or

2. This individual must obtain a written attestation, signed by a preceptor Radiation Safety Officer or Associate Radiation Safety Officer who has experience with the radiation safety aspects of similar types of use of byproduct material for which the individual is seeking approval as a Radiation Safety Officer or an Associate Radiation Safety Officer. The written attestation must state that the individual has satisfactorily completed the requirements in subparagraphs (b)1. and (d) of this paragraph, and is able to independently fulfill the radiation safety-related duties as a Radiation Safety Officer or as an Associate Radiation Safety Officer for a medical use license; or

(c) 1. Is a medical physicist who has been certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory Commission or an Agreement State under Rule .05(23)(a) and has experience in radiation safety for similar types of use of byproduct material for which the licensee is seeking the approval of the individual as Radiation Safety Officer or Associate Radiation Safety Officer and who meets the requirements in .05(22)(d); or

2. Is an authorized user, authorized medical physicist, or authorized nuclear pharmacist identified on a Commission or an Agreement State license, a permit issued by a Commission master material license, a permit issued by a Commission or an Agreement State license broad scope permittee, has experience with the radiation safety aspects of similar types of use of radioactive byproduct material for which the licensee seeks the approval of the individual

as the Radiation Safety Officer or Associate Radiation Safety Officer, and meets the requirements in subparagraph .05(22)(d); or

3. Has experience with the radiation safety aspects of the types of use of byproduct material for which the individual is seeking simultaneous approval both as the Radiation Safety Officer and the authorized user on the same new medical use license or new medical use permit issued by a Commission master material licensee. The individual must also meet the requirements in subparagraph .05(22)(d).

(d) Has training in the radiation safety, regulatory issues, and emergency procedures for the types of use for which a licensee seeks approval. This training requirement may be satisfied by completing training that is supervised by a Radiation Safety Officer, an Associate Radiation Safety Officer, authorized medical physicist, authorized nuclear pharmacist, or authorized user, as appropriate, who is authorized for the type(s) of use for which the licensee is seeking approval.

(23) **Training for Authorized Medical Physicist.** Except as provided in Rule .05(26) the licensee shall require the authorized medical physicist to be an individual who:

(a) Is certified by a specialty board whose certification process includes all of the training and experience requirements in .05(23)(c) and whose certification has been recognized by the Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Hold a master's or doctor's degree in physics, medical physics, other physical science, engineering, or applied mathematics from an accredited college or university;

2. Have 2 years of full-time practical training and/or supervised experience in medical physics:

(i) Under the supervision of a medical physicist who is certified in medical physics by a specialty board recognized by the Nuclear Regulatory Commission or an Agreement State; or

(ii) In clinical radiation facilities providing high-energy, external beam therapy (photons and electrons with energies greater than or equal to 1 million electron volts) and brachytherapy services under the direction of physicians who meet the requirements for authorized users in Rule .05(26), .05(63) or .05(84); and

3. Pass an examination, administered by diplomates of the specialty board, that assesses knowledge and competence in clinical radiation therapy, radiation safety, calibration, quality assurance, and treatment planning for external beam therapy, brachytherapy, and stereotactic radiosurgery; or

(b) 1. Holds a master's or doctor's degree in physics, medical physics, other physical science, engineering, or applied mathematics from an accredited college or university; and has completed 1 year of full-time training in medical physics and an additional year of full-time work experience under the supervision of an individual who meets the requirements for an authorized medical physicist for the type(s) of use for which the individual is seeking authorization. This training and work experience must be conducted in clinical radiation facilities that provide high-energy, external beam therapy (photons and electrons with energies greater than or equal to 1 million electron volts) and brachytherapy services and must include:

(i) Performing sealed source leak tests and inventories;

(ii) Performing decay corrections;

(iii) Performing full calibration and periodic spot checks of external beam treatment units, stereotactic radiosurgery units, and remote afterloading units as applicable; and

(iv) Conducting radiation surveys around external beam treatment units, stereotactic radiosurgery units, and remote afterloading units as applicable; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in .05(23)(b)1. and .05(23)(c) of this section, and has achieved a level of competency sufficient to function independently as an authorized medical physicist for each type of therapeutic medical unit for which the individual is requesting authorized medical physicist status. The written attestation must be signed by a preceptor authorized medical physicist who meets the requirements in Rule .05(23), .05(26), or equivalent Nuclear Regulatory Commission or Agreement State requirements for an authorized medical physicist for each type of therapeutic medical unit for which the individual is requesting authorized medical physicist status; and

(c) Has training for the type(s) of use for which authorization is sought that includes hands-on device operation, safety procedures, clinical use, and the operation of a treatment planning system. This training requirement may be satisfied by satisfactorily completing either a training program provided by the vendor or by training supervised by an authorized medical physicist authorized for the type(s) of use for which the individual is seeking authorization.

(24) **Training for an Authorized Nuclear Pharmacist.** Except as provided in Rule .05(26), the licensee shall require the authorized nuclear pharmacist to be a pharmacist who:

(a) Is certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Have graduated from a pharmacy program accredited by the Accreditation Council for Pharmacy Education (ACPE) (previously named the American Council on Pharmaceutical Education) or have passed the Foreign Pharmacy Graduate Examination Committee (FPGEC) examination;

2. Hold a current, active license to practice pharmacy;

3. Provide evidence of having acquired at least 4,000 hours of training/experience in nuclear pharmacy practice. Academic training may be substituted for no more than 2,000 hours of the required training and experience; and

4. Pass an examination in nuclear pharmacy administered by diplomates of the specialty board, that assesses knowledge and competency in procurement, compounding, quality assurance, dispensing, distribution, health and safety, radiation safety, provision of information and consultation, monitoring patient outcomes, research and development; or

(b) 1. Has completed 700 hours in a structured educational program consisting of both:

(i) 200 hours of classroom and laboratory training in the following areas

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Supervised practical experience in a nuclear pharmacy involving:

(I) Shipping, receiving, and performing related radiation surveys;

(II) Using and performing checks for proper operation of dose calibrators, survey meters, and, if appropriate, instruments used to measure alpha or beta-emitting radionuclides;

(III) Calculating, assaying, and safely preparing dosages for patients or human research subjects;

(IV) Using administrative controls to avoid misadministrations in the administration of radioactive material; and

(V) Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures; and

2. Has obtained written attestation, signed by a preceptor authorized nuclear pharmacist, that the individual has satisfactorily completed the requirements in Rule .05(24)(b)1. and has achieved a level of competency sufficient to independently fulfill the radiation safety-related duties as an authorized nuclear pharmacist and operate a nuclear pharmacy, and

(c) Licensed as a Nuclear Pharmacist by the Georgia Board of Pharmacy.

(25) **Training and Technical Requirements for Nuclear Medicine Technologists and Radiation Therapists.**

(a) The licensee shall require a nuclear medicine technologist using radioactive materials under the supervision of an authorized user to be an individual who:

1. Is certified in:

(i) Nuclear Medicine by the Nuclear Medicine Technology Certification Board;

(ii) Nuclear Medicine by the American Registry of Radiologic Technologists with competency in Nuclear Medicine; or,

2. Is board eligible to take the CNMT or ARRT(N) examinations; or,

3. Has successfully completed a training program in nuclear medicine which has resulted in a certificate, associate degree, or baccalaureate degree in a nuclear medicine technology program from an accredited institution; or,

4. Has performed as a full-time nuclear medicine technologist for a minimum of two years during the past five-year period under the supervision of an authorized user who attests the experience in writing; or,

5. Has completed 80 hours of training and experience in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Quality Control checking of instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a misadministration involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures;

(VI) Administering dosages to patients or human research subjects; and

(iii) Has obtained written attestation, signed by a preceptor authorized user that the individual has satisfactorily completed the requirements of this section and has achieved a level of competency sufficient to independently function as a nuclear medicine technologist.

(b) The licensee shall require a radiation therapist using radioactive materials under the supervision of an authorized user to be an individual who:

1. Is certified in Radiation Therapy by the American Registry of Radiologic Technologists (ARRT(T)); or

2. Is board eligible to take the ARRT(T) examination; or,

3. Has successfully completed a training program in radiation therapy which has resulted in a certificate, associate degree, or baccalaureate degree in a radiologic technology program that complies with the requirements of the Joint Review Committee on Education in Radiologic Technology [1]; or,

4. Has performed as a full-time radiation therapist for a minimum of two years during the past five-year period under the supervision of an authorized user who attests the experience in writing; or

5. Has completed 200 hours of training and experience in basic radionuclide handling techniques applicable to the medical use of radioactive material that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity; and

(IV) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Assisting the authorized user in simulating the patient for treatment;

(III) Preparing the patient for treatment;

(IV) Implementing treatment plans as prescribed by the authorized user;

(V) Providing written documentation of treatment setup and patient treatments;

(VI) Quality control checks to determine that devices used to deliver the radiation doses are in compliance with institutional standards and performing checks for proper operation of survey meters;

(VII) Preparing or assisting in the preparation of sources, and implantation and removal of sealed sources;

(VIII) Delivering doses to patients or human research subjects under the supervision of the authorized user;

(IX) Preparing, implanting, and removing sealed sources;

(X) Delivering dose to patients or human research subjects;

(XI) Maintaining running inventories of material on hand;

(XII) Using administrative controls to prevent a misadministration involving the use of radioactive material; and,

(XIII) Properly implementing emergency procedures and

(iii) Has obtained written attestation, signed by a preceptor authorized user that the individual has satisfactorily completed the requirements of this section and has achieved a level of competency sufficient to independently function as a radiation therapist.

(c) Individuals working as nuclear medicine technologists or radiation therapists prior to July 1, 2003 for a facility holding a Division license need not comply with the training requirements of this section.

(d) The licensee shall maintain records of the above training as specified in Rule .05(100).

(26) **Provisions for Experienced Radiation Safety Officer, Teletherapy or Medical Physicist, Authorized Medical Physicist, Authorized User, Nuclear Pharmacist, and Authorized Nuclear Pharmacist.**

(a) 1. An individual identified as a Radiation Safety Officer, a teletherapy or medical physicist, an authorized medical physicist, a nuclear pharmacist or an authorized nuclear pharmacist on a Division, Nuclear Regulatory Commission or Agreement State license or on a permit issued by the Division, Nuclear Regulatory commission or Agreement State broad scope licensee or master material license permit or by a master material license permittee of broad scope before the effective date of this rule, need not comply with the training requirements of Rules .05(22), .05(23), or .05(24), respectively except the Radiation Safety Officers and authorized medical physicists identified in this paragraph must meet the training requirements in Rule .05(22)(d) or .05(23)(c), as appropriate, for any material or uses for which they were not authorized prior to this date.

2. Any individual certified by the American Board of Health Physics in Comprehensive Health Physics; American Board of Radiology; American Board of Nuclear Medicine; American Board of Science in Nuclear Medicine; Board of Pharmaceutical Specialties in Nuclear Pharmacy; American Board of Medical Physics in radiation oncology physics; Royal College of Physicians and Surgeons of Canada in nuclear medicine; American Osteopathic Board of Radiology; or American Osteopathic Board of Nuclear Medicine on or before October 24, 2005, need not comply with the training requirements of Rule .05(22) to be identified as a Radiation Safety Officer or as an Associate Radiation Safety Officer on a Division, U.S. Nuclear Regulatory Commission or an Agreement State license or U.S. Nuclear Regulatory Commission master material license permit for those materials and uses that these individuals performed on or before October 24, 2005.

3. Any individual certified by the American Board of Radiology in therapeutic radiological physics, Roentgen ray and gamma ray physics, x-ray and radium physics, or radiological physics, or certified by the American Board of Medical Physics in radiation oncology physics, on or before October 24, 2005, need not comply with the training requirements for an authorized medical physicist described in Rule .05(23), for those materials and uses that these individuals performed on or before October 24, 2005.

4. A Radiation Safety Officer, a medical physicist, or a nuclear pharmacist, who used only accelerator-produced radioactive materials, discrete sources of radium-226, or both, for medical uses or in the practice of nuclear pharmacy at a Government agency or Federally recognized Indian Tribe before November 30, 2007 or at all other locations of use before August 8, 2009, or an earlier date as noticed by the NRC, need not comply with the training requirements of Rules .05(22), .05(23) or .05(24), respectively, when performing the same uses. A nuclear pharmacist, who prepared only radioactive drugs containing accelerator-produced radioactive materials, or a medical

physicist, who used only accelerator-produced radioactive materials, at the locations and time period identified in this paragraph, qualifies as an authorized nuclear pharmacist or an authorized medical physicist, respectively, for those materials and uses performed before these dates, for purposes of this chapter.

(b) 1. Physicians, dentists, or podiatrists identified as authorized users for the medical use of radioactive byproduct material on a license issued by the Division, Nuclear Regulatory Commission or an Agreement State, a permit issued by a Nuclear Regulatory Commission master material licensee, a permit issued by a Division, Nuclear Regulatory Commission or an Agreement State broad scope licensee, or a permit issued by a Nuclear Regulatory Commission master material license broad scope permittee on or before March 17, 2020, who perform only those medical uses for which they were authorized on that date need not comply with the training requirements of Rules .05(43), .05(47), .05(52), .05(53), .05(54), .05(54.1), .05(63), .05(64), .05(66), and .05(84), respectively.

2. Physicians, dentists, or podiatrists identified as authorized users for the medical use of radioactive byproduct material on a license issued by the Division, Nuclear Regulatory Commission or Agreement State, a permit issued by a Nuclear Regulatory Commission master material licensee, a permit issued by a Division, Nuclear Regulatory Commission or Agreement State broad scope licensee, or a permit issued in accordance with a Nuclear Regulatory Commission master material license broad scope permittee who perform only those medical uses for which they were authorized on or before October 24, 2005, need not comply with the training requirements of Rules .05(43), .05(47), .05(52), .05(53), .05(54), .05(54.1), .05(63), .05(64), .05(66), and .05(84), as follows:

(i) For uses authorized under Rules .05(41) or .05(44), or oral administration of sodium iodide I-131 requiring a written directive for imaging and localization purposes, a physician who was certified on or before October 24, 2005, in nuclear medicine by the American Board of Nuclear Medicine; diagnostic radiology by the American Board of Radiology; diagnostic radiology or radiology by the American Osteopathic Board of Radiology; nuclear medicine by the Royal College of Physicians and Surgeons of Canada; or American Osteopathic Board of Nuclear Medicine in nuclear medicine;

(ii) For uses authorized under Rule .05(48), a physician who was certified on or before October 24, 2005, by the American Board of Nuclear Medicine; the American Board of Radiology in radiology, therapeutic radiology, or radiation oncology; nuclear medicine by the Royal College of Physicians and Surgeons of Canada; or the American Osteopathic Board of Radiology after 1984;

(iii) For uses authorized under Rules .05(55) or .05(67), a physician who was certified on or before October 24, 2005, in radiology, therapeutic radiology or radiation oncology by the American Board of Radiology; radiation oncology by the American Osteopathic Board of Radiology; radiology, with specialization in radiotherapy, as a British "Fellow of the Faculty of Radiology" or "Fellow of the Royal College of Radiology"; or therapeutic radiology by the Canadian Royal College of Physicians and Surgeons; and

(iv) For uses authorized under Rules .05(65), a physician who was certified on or before October 24, 2005, in radiology, diagnostic radiology, therapeutic radiology, or radiation oncology by the American Board of Radiology; nuclear medicine by the American Board of Nuclear Medicine; diagnostic radiology or radiology by the American Osteopathic Board of Radiology; or nuclear medicine by the Royal College of Physicians and Surgeons of Canada.

3. Physicians, dentists, or podiatrists who used only accelerator-produced radioactive materials, discrete sources of radium-226, or both, for medical uses performed at a Government agency or Federally recognized Indian Tribe before November 30, 2007 or at all other locations of use before August 8, 2009, or an earlier date as noticed by the NRC, need not comply with the training requirements of Rules .05(43), .05(47), .05(52), .05(53), .05(54), .05(54.1), .05(63), .05(64), .05(66), and .05(84) respectively, when performing the same medical uses. A physician, dentist, or podiatrist, who used only accelerator-produced radioactive materials, discrete sources of radium-226, or both, for medical uses at the locations and time period identified in this paragraph, qualifies as an authorized user for those materials and uses performed before these dates, for purposes of this chapter.

(c) Individuals who need not comply with training requirements as described in this paragraph may serve as preceptors for, and supervisors of, applicants seeking authorization on the Division licenses for the same uses for which these individuals are authorized.

(27) **Recentness of Training.** The training and experience specified in Rule .05 must have been obtained within the 7 years preceding the date of application or the individual must have had related continuing education and experience since the required training and experience was completed.

GENERAL TECHNICAL REQUIREMENTS

(28) **Quality Control of Diagnostic Equipment.** Each licensee shall establish written quality control procedures for all diagnostic equipment used for radionuclide studies. As a minimum, quality control procedures and frequencies shall be those recommended by equipment manufacturers or procedures that have been approved by the Division. The licensee shall conduct quality control procedures in accordance with written procedures.

(29) **Possession, Use, and Testing of Instruments to Measure the Activity of Unsealed Radioactive Materials.**

(a) For direct measurements performed in accordance with Rule .05(31), a licensee shall possess and use instrumentation to measure the activity of unsealed radioactive materials prior to administration to each patient or human research subject.

(b) A licensee shall test the instrumentation required in Rule .05(29)(a) in accordance with nationally recognized standards or the manufacturer's instructions.

(c) The tests required in Rule .05(29)(b) shall include tests for constancy, linearity, accuracy and geometry dependence, as appropriate to demonstrate proper operation of the instrument.

(d) A licensee shall retain a record of each instrument test required by Rule .05(29) in accordance with Rule .05(91).

(30) **Calibration of Survey Instruments.**

(a) A licensee shall ensure that the survey instruments used to show compliance with Rule .05 and Rule .03 of this Chapter, have been calibrated before first use, annually, and following any repair that will affect the calibration.

(b) To satisfy the requirements of Rule .05(30)(a), the licensee shall:

1. Calibrate all required scale readings up to 10 millisievert (1,000 mrem) per hour with a radiation source;

2. Have each radiation survey instrument calibrated:

(i) At energies appropriate for use and at intervals not to exceed 12 months or after instrument servicing, except for battery changes;

(ii) For linear scale instruments, at two points located approximately one-third and two-thirds of full-scale on each scale; for logarithmic scale instruments, at mid-range of each decade, and at two points of at least one decade; and for digital instruments, at 3 points between 0.02 and 10 millisievert (2 and 1,000 mrem) per hour; and

(iii) For dose rate instruments, so that an accuracy within plus or minus 20 percent of the true radiation dose rate can be demonstrated at each point checked; and

3. Conspicuously note on the instrument the date of calibration.

(c) The licensee shall not use survey instruments if the difference between the indicated exposure rate and the calculated exposure rate is greater than 20 percent.

(d) A licensee shall check each survey instrument for consistent response with a dedicated check source before each use. The licensee is not required to keep records of these checks.

(e) The licensee shall retain a record of each survey instrument calibration in accordance with Rule .05(92).

(31) **Determination of Dosages of Radioactive Material for Medical Use.**

(a) A licensee shall determine and record the activity of each dosage prior to medical use.

(b) For a unit dosage, this determination must be made either by direct measurement or by a decay correction, based on the measurement made by a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent provisions of the Nuclear Regulatory Commission or Agreement State.

(c) For other than unit dosages, this determination must be made by direct measurement of radioactivity or by a combination of measurements of radioactivity and mathematical calculations or combination of volumetric measurements and mathematical calculations, based on the measurement made by a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent provisions of the Nuclear Regulatory Commission or Agreement State.

(d) Unless otherwise directed by the authorized user, a licensee shall not use a dosage if the dosage differs from the prescribed dosage by more than 20 percent.

(e) A licensee shall retain a record of the dosage determination required by Rule .05(31)(a) through (31)(c) in accordance with Rule .05(93).

(32) **Authorization for Calibration, Transmission and Reference Sources.** Any person authorized by Rule .05(7) for medical use of radioactive material may receive, possess, and use the following radioactive material for check, calibration and reference use:

(a) Sealed sources manufactured and distributed by persons specifically licensed pursuant to Rule .02 of this Chapter or equivalent provisions of the Nuclear Regulatory Commission or Agreement State and that do not exceed 1.11 gigabecquerel (30 mCi) each;

(b) Any radioactive material with a half-life of 120 days or less in individual amounts not to exceed 555 megabecquerel (15 mCi);

(c) Any radioactive material with a half-life greater than 120 days in individual amounts not to exceed the smaller of:

1. 7.4 megabecquerel (200 µCi); or

2. 1,000 times the quantities in Schedule B of Rule .02(21)(b) of this Chapter; and

(d) Technetium-99m in amounts as needed.

(33) **Requirements for Possession of Sealed Sources and Brachytherapy Sources.**

(a) A licensee in possession of any sealed source or brachytherapy source shall follow the radiation safety and handling instructions supplied by the manufacturer or equivalent instructions approved by the Division.

(b) A licensee in possession of a sealed source shall:

1. Test the source for leakage in accordance with Rule .03 of this Chapter.

2. Test the source for leakage at intervals not to exceed 6 months or at other intervals approved by the Division, an Agreement State, or the Nuclear Regulatory Commission in the Sealed Source and Device Registry.

(c) If the leak test reveals the presence of 185 becquerel (0.005 µCi) or more of removable contamination, the licensee shall:

1. Immediately withdraw the sealed source from use and store, dispose, or cause it to be repaired in accordance with the requirements of Rules .02 and .03 of this Chapter; and

2. File a report with the Division within 5 days of receiving the leak test results in accordance with Rule .05(117).

(d) A licensee in possession of a sealed source or brachytherapy source, except for gamma stereotactic radiosurgery sources, shall conduct a semi-annual physical inventory of all such sources. The licensee shall retain each inventory record in accordance with Rule .05(94).

(34) **Labels.** Each syringe and vial that contains a radioactive drug shall be labeled to identify the radioactive drug. Each syringe shield and vial shield shall also be labeled unless the label on the syringe or vial is visible when shielded.

(35) **Vial Shields.** A licensee shall require each individual preparing or handling a vial that contains a radioactive drug to keep the vial in a vial radiation shield.

(36) **Surveys for Ambient Radiation Dose Rate and Contamination.**

(a) Except as provided in Rule .05(36)(h), a licensee shall survey with a radiation detection survey instrument at the end of each day of use all areas where radioactive drugs containing radioactive material requiring a written directive were prepared for use or administered.

(b) A licensee shall survey with a radiation detection survey instrument at least once each week all areas where radioactive drugs or radioactive wastes are stored.

(c) A licensee shall conduct the surveys required by Rule .05(36)(a) and (b) so as to be able to measure dose rates as low as 1 microsievert (0.1 mrem) per hour.

(d) A licensee shall establish dose rate action levels for the surveys required by Rule .05(36)(a) and (36)(b) and shall require that the individual performing the survey immediately notify the Radiation Safety Officer if a dose rate exceeds an action level.

(e) A licensee shall survey for removable contamination each day of use all areas where generators and bulk radioactive drugs are prepared for use or administered and each week where radioactive materials are stored.

(f) A licensee shall conduct the surveys required by Rule .05(36)(e) so as to be able to detect contamination on each wipe sample of 33.3 becquerel (2,000 dpm).

(g) A licensee shall establish removable contamination action levels for the surveys required by Rule .05(36)(e) and shall require that the individual performing the survey immediately notify the Radiation Safety Officer if contamination exceeds action levels.

(h) A licensee does not need to perform the surveys required by Rule .05(36)(a) in area(s) where patients or human research subjects are confined when they cannot be released pursuant to Rule .05(37).

(i) A licensee shall retain a record of each survey in accordance with Rule .05(95)

(37) **Release of Individuals Containing Radioactive Drugs or Implants.**

(a) A licensee may authorize the release of any individual who has been administered radioactive drugs or implants containing radioactive material if the total effective dose equivalent to any other individual from exposure to the released individual is not likely to exceed 5 mSv (0.5 rem).

(b) For patients administered radioactive material for which a written directive is required, a licensee shall provide the released individual, or the individual's parent or guardian, with instructions, including oral and written instructions, on actions recommended to maintain doses to other individuals as low as is reasonably achievable. If a

breast-feeding infant or child could receive a radiation dose as a result of the release of the patient, the instructions shall also include:

1. Guidance on the interruption or discontinuation of breast-feeding; and

2. Information on the potential consequences, if any, of failure to follow the guidance.

(c) The licensee shall maintain a record of the basis for authorizing the release of an individual in accordance with Rule .05(96).

(d) The licensee shall maintain a record of instructions provided to breast-feeding women in accordance with Rule .05(96).

(e) Notwithstanding Rule .05(37)(a), the licensee may be held responsible for the proper disposal of any individual's radioactive waste discovered in a solid waste stream that can be traced to the licensee.

(f) The licensee shall immediately notify the Division in accordance with Rule .05(118) if a patient departs prior to an authorized release.

(g) The licensee shall notify the Division in accordance with Rule .05(119):

1. When they are aware that a patient containing radioactive material and who has been released in accordance with Rule .05(37) dies; and,

2. If it is possible that any individual could receive exposures in excess of 5 millisievert (500 mrem) as a result of the deceased's body.

(38) **Mobile Medical Service Technical Requirements.** A licensee providing mobile medical service shall:

(a) Transport to each client's address only syringes or vials containing prepared drugs or radioactive materials that are intended for reconstitution of radioactive drug kits;

(b) Bring into each client's address all radioactive material to be used and, before leaving, remove all unused radioactive material and associated radioactive waste;

(c) Secure or keep under constant surveillance and immediate control all radioactive material when in transit or at a client's address;

(d) Check instruments used to measure the activity of unsealed radioactive material for proper function before medical use at each client's address or on each day of use, whichever is more frequent. At a minimum, the check for proper function shall include a constancy check;

(e) Check survey instruments for consistent response with a dedicated check source before use at each client's address;

(f) Prior to leaving a client's address, perform area surveys and survey for removable contamination in all areas of use, to ensure compliance with Rule .03 of this Chapter;

(g) Use radioactive gases only in areas of use and under conditions which have been evaluated and approved by the Division for compliance with airborne release standards; and,

(h) Retain a record of each survey required by Rule .05(38)(f) in accordance with Rule .05(97)(b).

(39) **Storage and Control of Volatiles and Gases.**

(a) A licensee shall store volatile radioactive materials and radioactive gases in the shippers' radiation shield and container.

(b) A licensee shall store and use a multi-dose container in a properly functioning fume hood.

(c) A licensee who administers radioactive aerosols or gases shall do so with a system that will keep airborne concentrations within the limits prescribed in Rule .03 of this Chapter.

(d) The system shall either be directly vented to the atmosphere through an air exhaust or provide for collection and decay or disposal of the aerosol or gas in a shielded container.

(e) A licensee shall check the operation of collection systems monthly. Records of these checks shall be maintained for 3 years.

(40) **Decay-in-Storage.**

(a) A licensee may hold radioactive material with a physical half-life of less than 120 days for decay-in-storage before disposal without regard to its radioactivity if the licensee:

1. Monitors radioactive material at the container surface before disposal and determines that its radioactivity cannot be distinguished from the background radiation level with an appropriate radiation detection survey instrument set on its most sensitive scale and with no interposed shielding;

2. Removes or obliterates all radiation labels, except for material that will be handled as biomedical waste after release; and

3. Separates and monitors each generator column individually with all radiation shielding removed to ensure that its contents have decayed to background radiation level before disposal.

(b) For radioactive material disposed in accordance with (40)(a) of this section, the licensee shall retain a record of each disposal in accordance with Rule .05(98).

SPECIFIC REQUIREMENTS FOR THE USE OF RADIOACTIVE MATERIAL WRITTEN DIRECTIVE NOT REQUIRED

(41) **Use of Unsealed Radioactive Material for Uptake, Dilution, or Excretion Studies for which a Written Directive is Not Required.** A licensee may use any unsealed radioactive material, in quantities that do not require a written directive, for a diagnostic use involving measurements of uptake, dilution, or excretion that is:

(a) Obtained from a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent regulations of another Agreement State or the Nuclear Regulatory Commission; or

(b) Excluding production of PET radionuclides, prepared by an authorized nuclear pharmacist, a physician who is an authorized user and who meets the requirements specified in Rule .05(47) or .05(52) and .05(47)(c)1.(ii)(VII), or an individual under the supervision of either as specified in Rule .05(18); or

(c) Obtained from and prepared by a Division, Nuclear Regulatory Commission or Agreement State licensee for use in research in accordance with a Radioactive Drug Research Committee-approved protocol or an Investigational New Drug (IND) protocol accepted by FDA; or

(d) Prepared by the licensee in accordance with a Radioactive Drug Research Committee-approved application or an Investigational New Drug (IND) protocol accepted by FDA for use in research.

(42) **Possession of Survey Instrument.** A licensee authorized to use radioactive material for uptake, dilution, and excretion studies shall possess a portable radiation detection survey instrument capable of detecting dose rates over

the range 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour. The instrument shall be operable and calibrated in accordance with Rule .05(30).

(43) **Training for Uptake, Dilution, and Excretion Studies.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a unsealed radioactive material for the uses authorized under Rule .05(41) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Complete 60 hours of training and experience in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed radioactive material for uptake, dilution, and excretion studies as described in Rule .05(43)(c)1.(i) through .05(43)(c)1.(ii)(VI); and

2. Pass an examination, administered by diplomates of the specialty board, that assesses knowledge and competence in radiation safety, radionuclide handling, and quality control; or

(b) Is an authorized user under Rule .05(47) or .05(52) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has completed 60 hours of training and experience, including a minimum of 8 hours of classroom and laboratory training, in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material for uptake, dilution, and excretion studies that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user who meets the requirements in Rules .05(26), (43), (47) or (52) or equivalent Agreement State or Nuclear Regulatory Commission requirements, involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a medical event involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures; and

(VI) Administering dosages to patients or human research subjects; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(43)(c)1. and is able to independently fulfill the radiation safety-related duties as an authorized user for the medical uses authorized under Rule .05(41). The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraph .05(43)(c)1.

(44) **Use of Unsealed Radioactive Material for Imaging and Localization Studies for Which a Written Directive is Not Required.** A licensee may use, for imaging and localization studies, any radioactive material (except aerosol or gaseous forms) prepared for medical use, in quantities that do not require a written directive as described in Rule .05(19) that is:

(a) Obtained from a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent regulations of another Agreement State or the Nuclear Regulatory Commission; or

(b) Excluding production of PET radionuclides, prepared by an authorized nuclear pharmacist, a physician who is an authorized user and who meets the requirements specified in Rule .05(47) or .05(52) and .05(47)(c)1.(ii)(VII), or an individual under the supervision of either as specified in Rule .05(18); or

(c) Obtained from and prepared by the Division, Nuclear Regulatory Commission or Agreement State licensee for use in research in accordance with a Radioactive Drug Research Committee-approved protocol or an Investigational New Drug (IND) protocol accepted by FDA; or

(d) Prepared by the licensee in accordance with a Radioactive Drug Research Committee-approved application or an Investigational New Drug (IND) protocol accepted by FDA, or

(e) Provided the conditions of Rule .05(39) are met, a licensee shall use radioactive aerosols or gases only if specific application is made to and approved by the Division.

(45) **Permissible molybdenum-99, strontium-82, and strontium-85 concentrations.**

(a) A licensee shall not administer to humans a radioactive drug containing:

1. More than 0.15 kilobecquerel of molybdenum-99 per megabecquerel of technetium-99m (0.15 µCi of Mo-99 per mCi of Tc-99m); or

2. More than 0.02 kilobecquerel of strontium-82 per megabecquerel of rubidium-82 chloride injection (0.02 µCi of Sr-82 per mCi of Rb-82 chloride); or

3. More than 0.2 kilobecquerel of strontium-85 per megabecquerel of rubidium-82 chloride injection (0.2 µCi of Sr-85 per mCi of Rb-82);

(b) To demonstrate compliance with Rule .05(45)(a), the licensee preparing radioactive drugs from radionuclide generators shall:

1. Measure the molybdenum-99 concentration in each eluate from a generator to demonstrate compliance with subparagraph .05(45)(a);

2. Before the first patient use of the day, measure the concentration of radionuclides strontium-82 and strontium-85 to demonstrate compliance with subparagraph .05(45)(a).

(c) A licensee who must measure radionuclide contaminant concentration shall retain a record of each measurement in accordance with Rule .05(99).

(d) A licensee shall report immediately to the Division each occurrence of radionuclide contaminant concentration exceeding the limits specified in Rule .05(45)(a).

(46) **Possession of Survey Instruments.** A licensee authorized to use radioactive material for imaging and localization studies shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(47) **Training for Imaging and Localization Studies.** Except as provided in Rule .05(26), the licensee shall require an authorized user of unsealed radioactive material for the uses authorized under Rule .05(44) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Complete 700 hours of training and experience in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed radioactive material for imaging and localization studies as described in (c)1.(i) through (c)1.(ii)(VII) of this rule; and

2. Pass an examination, administered by diplomates of the specialty board, which assesses knowledge and competence in radiation safety, radionuclide handling, and quality control; or

(b) Is listed as an authorized user under Rule .05(52) and meets the requirements in .05(47)(c)1.(ii)(VII) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has completed 700 hours of training and experience, including a minimum of 80 hours of classroom and laboratory training, in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material for imaging and localization studies that includes, at a minimum:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use;

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user, who meets the requirements in Rule .05(26), .05(47) or .05(47)(c)1.(ii)(VII) and Rule .05(52), or equivalent Agreement State or Nuclear Regulatory Commission requirements. An authorized nuclear pharmacist who meets the requirements in 391-3-17-.05(24) or 391-3-17-.05(26) may provide the supervised work experience for subparagraph .05(47)(c)1.(ii)(VII). Work experience must involve:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a medical event involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures;

(VI) Administering dosages to patients or human research subjects; and

(VII) Eluting generator systems appropriate for preparation of radioactive drugs for imaging and localization studies, measuring and testing the eluate for radiochemical purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(47)(c)1. and is able to independently fulfill the radiation safety-related duties as an authorized user for the medical uses authorized under Rules .05(41) and .05(44).

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraph .05(47)(c)1.

SPECIFIC REQUIREMENTS FOR THE USE OF UNSEALED RADIOACTIVE MATERIAL WRITTEN DIRECTIVE REQUIRED

(48) **Use of Unsealed Radioactive Material for Which a Written Directive is Required.** A licensee may use any unsealed radioactive material identified in subparagraph (52)(b)1.(ii)(VII) prepared for diagnostic or therapeutic medical use for which a written directive is required that has been:

(a) Obtained from a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent regulations of another Agreement State or the Nuclear Regulatory Commission; or

(b) Excluding production of PET radionuclides, prepared by an authorized nuclear pharmacist, a physician who is an authorized user and who meets the requirements specified in Rule .05(47) or (52), or an individual under the supervision of either as specified in Rule .05(26); or

(c) Obtained from and prepared by the Division, Nuclear Regulatory Commission or Agreement State licensee in accordance with a Radioactive Drug Research Committee-approved protocol or an Investigational New Drug (IND) protocol accepted by the FDA for use in research; or

(d) Prepared by the licensee in accordance with a Radioactive Drug Research Committee-approved application or an IND protocol accepted by FDA for use in research.

(49) **Safety Instruction.** In addition to the requirements of Rule .07(3) of this Chapter:

(a) A licensee shall provide radiation safety instruction to personnel caring for patients or human research subjects that have received therapy with a radioactive drug, and cannot be released in accordance with Rule .05(37). The training must be provided initially and at least annually. The instruction must be appropriate to the personnel's assigned duties and include the following:

1. Patient or human research subject control;

2. Visitor control to include the following:

(i) Routine visitation to hospitalized individuals in accordance with Rule .03 of this Chapter;

(ii) Contamination control;

(iii) Waste control; and

(iv) Notification of the RSO, or his or her designee, and the authorized user if the patient or the human research subject dies or has a medical emergency.

(b) A licensee shall retain a record of individuals receiving instruction in accordance with Rule .05(101).

(50) **Safety Precautions.**

(a) For each patient or human research subject receiving radiopharmaceutical therapy and hospitalized for compliance with Rule .05(37), a licensee shall:

1. Quarter the patient or the human research subject either in:

(i) A private room with a private sanitary facility; or

(ii) A room, with a private sanitary facility, with another individual who also has received radiopharmaceutical therapy and who cannot be released in accordance with Rule .05(37); and,

2. Visibly post the patient's or the human research subject's room with a "Radioactive Materials" sign and note on the door or in the patient's or human research subject's chart where and how long visitors may stay in the patient's or the human research subject's room; and

3. Either monitor material and items removed from the patient's or the human research subject's room to determine that their radioactivity cannot be distinguished from the natural background radiation level with a radiation detection survey instrument set on its most sensitive scale and with no interposed shielding, or handle such material and items as radioactive waste.

(b) The Radiation Safety Officer, or his designee, and the authorized user shall be notified immediately if the hospitalized patient dies or has a medical emergency. The licensee shall also notify the Division in accordance with Rule .05(119) if it is possible that any individual could receive exposures in excess of the limits in Rule .03(5)(i) of this Chapter as a result of the deceased's body.

(51) **Possession of Survey Instruments.** A licensee authorized to use radioactive material for which a written directive is required shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(52) **Training for Use of Unsealed Radioactive Material for Which a Written Directive is Required.** Except as provided in Rule .05(26), the licensee shall require an authorized user of radioactive material for the uses authorized under Rule .05(48) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State, and who meets the requirements of Rule .05(52)(b)1(ii)(VII). (Specialty boards whose certification processes have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To be recognized, a specialty board shall require all candidates for certification to:

1. Successfully complete residency training in a radiation therapy or nuclear medicine training program or a program in a related medical specialty. These residency training programs must include 700 hours of training and experience as described in Rule .05(52)(b)1.(i) through .05(52)(b)1.(ii)(V). Eligible training programs must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education, the Royal College of Physicians and Surgeons of Canada, or the Council on Postdoctoral Training of the American Osteopathic Association; and

2. Pass an examination, administered by diplomates of the specialty board, which tests knowledge and competence in radiation safety, radionuclide handling, quality assurance, and clinical use of unsealed radioactive material for which a written directive is required; or

(b) 1. Has completed 700 hours of training and experience, including a minimum of 200 hours of classroom and laboratory training, in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material requiring a written directive that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), .05(52) or equivalent Agreement State, or Nuclear Regulatory Commission requirements. The work experience must involve:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Performing quality control procedures on instruments used to determine the activity of dosages, and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a medical event involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures.

(VI) Reserved.

(VII) Administering dosages of radioactive drugs to patients or human research subjects involving a minimum of 3 cases in each of the following categories for which the individual is requesting authorized user status. This experience may be obtained concurrently with the supervised work experience required by Rule .05(52)(b)1.(ii):

(i) Oral administration of less than or equal to 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131, for which a written directive is required;

(ii) Oral administration of greater than 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131 [2];

(iii) Parenteral administration of any radioactive drug that contains a radionuclide that is primarily used for its electron emission, beta radiation characteristics, alpha radiation characteristics, or photon energy less than 150 keV, for which a written directive is required; and/or

(iv) Parenteral administration of any other radionuclide, for which a written directive is required; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(52)(b)1., and is able to independently fulfill the radiation safety-related duties as an authorized user for the medical uses authorized under Rule .05(48).

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraph .05(52)(b)1.

(53) **Training for the Oral Administration of Sodium Iodide I-131 in Quantities Less than or Equal to 1.22 Gigabecquerel (33 millicurie) for which a Written Directive is Required.** Except as provided in Rule .05(26), the licensee shall require an authorized user for the oral administration of sodium iodide I-131 in quantities less than or equal to 1.22 gigabecquerel (33 millicurie), for which a written directive is required, to be a physician who:

(a) Is certified by a medical specialty board whose certification process includes all of the requirements in .05(53)(c)1. and .05(53)(c)2. and whose certification has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.); or

(b) Is an authorized user under Rule (52) for uses listed in (52)(b)1.(ii)(VII)(i) or (ii), or (54), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has successfully completed 80 hours classroom and laboratory training, applicable to the medical use of sodium iodide I-131 for procedures requiring a written directive; the training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity;

(iv) Chemistry of radioactive material for medical use; and

(v) Radiation biology; and

2. Has work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), (52), (53) or (54), or equivalent Agreement State or Nuclear Regulatory Commission requirements. A supervising authorized user, who meets the requirements of Rule .05(52)(b) must have experience in administering dosages as specified in Rule .05(52)(b)1.(ii)(VII)(i) or (ii); the work experience must involve:

(i) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(ii) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation for survey meters;

(iii) Calculating, measuring, and safely preparing patient or human research subject dosages;

(iv) Using administrative controls to prevent a misadministration involving the use of radioactive material;

(v) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures; and

(vi) Administering dosages to patients or human research subjects that includes at least 3 cases involving the oral administration of less than or equal to 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131; and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(53)(c)1. and (53)(c)2. and is able to independently fulfill the radiation safety-related duties as an authorized user for medical uses authorized under .05(48).

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(53)(c)1. and 2.

(54) **Training for the Oral Administration of Sodium Iodide I-131 in Quantities Greater than 1.22 Gigabecquerel (33 millicurie) for which a Written Directive is Required.** Except as provided in Rule .05(26), the licensee shall require an authorized user for the oral administration of sodium iodide I-131 in quantities greater than 1.22 gigabecquerel (33 millicurie), to be a physician who:

(a) Is certified by a medical specialty board whose certification process includes all of the requirements in Rules .05(54)(c)1. and .05(54)(c)2. and whose certification has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.); or

(b) Is an authorized user under Rule .05(52) for uses listed in Rule .05(52)(b)1.(ii)(VII)(ii), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has successfully completed 80 hours classroom and laboratory training, applicable to the medical use of sodium iodide I-131 for procedures requiring a written directive; the training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity;

(iv) Chemistry of radioactive material for medical use; and

(v) Radiation biology; and

2. Has work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), (52), or (54), or equivalent Agreement State or Nuclear Regulatory Commission requirements. A supervising authorized user, who meets the requirements of Rule .05(52)(b), must have experience in administering dosages as specified in Rule .05(52)(b)1.(ii)(VII)(ii); the work experience must involve:

(i) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(ii) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation for survey meters;

(iii) Calculating, measuring, and safely preparing patient or human research subject dosages;

(iv) Using administrative controls to prevent a misadministration involving the use of radioactive material;

(v) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures; and

(vi) Administering dosages to patients or human research subjects that includes at least 3 cases involving the oral administration of greater than 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131; and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(54)(c)1. and .05(54)(c)2. and is able to independently fulfill the duties as an authorized user for medical uses authorized under Rule .05(48). The written attestation must be signed by a preceptor authorized user, who meets the requirements in Rule .05(26), .05(52), or .05(54), or equivalent Agreement State or Nuclear Regulatory Commission requirements. The preceptor authorized user, who meets the requirements of Rule .05(52)(b), must have experience in administering dosages as specified in Rule .05(52)(b)1.(ii)(VII)(ii).

(54.1) Except as provided in Rule .05(26) the licensee shall require an authorized user for the parenteral administration requiring a written directive, to be a physician who:

(a) Is an authorized user under Rule .05(52) for uses listed in 05(52)(b)1.(ii)(VII)(iii) or .05(52)(b)1.(ii)(VII)(iv), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(b) Is an authorized user under Rules .05(63), .05(84), or equivalent Agreement State or Nuclear Regulatory Commission requirements and who meets the requirements in .05(54.1)(d); or

(c) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State under Rules .05(63) or .05(84), and who meets the requirements in paragraph .05(54.1)(d).

(d) 1. Has successfully completed 80 hours of classroom and laboratory training, applicable to parenteral administrations, for which a written directive is required, of any beta emitter, or any photon-emitting radionuclide with a photon energy less than 150 keV, and/or parenteral administration of any other radionuclide for which a written directive is required. The training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity;

(iv) Chemistry of byproduct material for medical use; and

(v) Radiation biology; and

2. Has work experience, under the supervision of an authorized user who meets the requirements in Rules .05(26), .05(52), .05 (54.1) or equivalent Agreement State or Nuclear Regulatory Commission requirements, in the parenteral administration, for which a written directive is required, of any beta emitter, or any photon-emitting radionuclide with a photon energy less than 150 keV, and/or parenteral administration of any other radionuclide for which a written directive is required. A supervising authorized user who meets the requirements in Rule .05(52) or .05(54.1) must have experience in administering dosages as specified in 05(52)(b)1.(ii)(VII)(iii) or .05(52)(b)1.(ii)(VII)(iv). The work experience must involve:

(i) Ordering, receiving, and unpacking radioactive materials safely, and performing the related radiation surveys;

(ii) Performing quality control procedures on instruments used to determine the activity of dosages, and performing checks for proper operation of survey meters;

(iii) Calculating, measuring, and safely preparing patient or human research subject dosages;

(iv) Using administrative controls to prevent a medical event involving the use of unsealed byproduct material;

(v) Using procedures to contain spilled byproduct material safely, and using proper decontamination procedures; and

(vi) Administering dosages to patients or human research subjects, that include at least 3 cases involving the parenteral administration, for which a written directive is required, of any beta emitter, or any photon-emitting radionuclide with a photon energy less than 150 keV and/or at least 3 cases involving the parenteral administration of any other radionuclide, for which a written directive is required; and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in .05(54.1)(d)1. and (d)2. and is able to independently fulfill the radiation safety-related duties as an authorized user for the parenteral administration of unsealed radioactive material requiring a written directive.

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (52), (54.1) or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (52) or (54.1), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency

training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(54.1)(d)1. and 2.

Manual Brachytherapy

(55) **Use of Sealed Sources for Manual Brachytherapy.** A licensee shall use only brachytherapy sources for therapeutic medical uses:

(a) As approved in the Sealed Source and Device Registry for manual brachytherapy medical use. The manual brachytherapy sources may be used for manual brachytherapy uses that are not explicitly listed in the Sealed Source and Device Registry, but must be used in accordance with the radiation safety conditions and limitations described in the Sealed Source and Device Registry; or

(b) In research to deliver therapeutic doses for medical use in accordance with an active Investigational Device Exemption (IDE) application accepted by the U.S. Food and Drug Administration provided the requirements of Rule .05(21)(a) are met.

(56) **Surveys After Source Implant and Removal.**

(a) Immediately after implanting sources in a patient or a human research subject, the licensee shall perform a survey to locate and account for all sources that have not been implanted.

(b) Immediately after removing the last temporary implant source from a patient or a human research subject, the licensee shall make a survey of the patient or the human research subject with a radiation detection survey instrument to confirm that all sources have been removed.

(c) A licensee shall retain a record of the surveys in accordance with Rule .05(102).

(57) **Brachytherapy Sources Inventory.**

(a) A licensee shall maintain accountability at all times for all brachytherapy sources in storage or use.

(b) Promptly after removing sources from a patient or a human research subject, a licensee shall return brachytherapy sources to a secure storage area.

(c) A licensee shall maintain a record of the brachytherapy source accountability in accordance with Rule .05(103).

(58) **Safety Instruction.** In addition to the requirements of Rule .07(3) of this Chapter:

(a) The licensee shall provide radiation safety instruction, initially and at least annually, to personnel caring for patients or human research subjects that are undergoing implant therapy and cannot be released in accordance with Rule .05(37). Instruction must be commensurate with the duties of the personnel and shall include the following:

1. Size and appearance of the brachytherapy sources;

2. Safe handling and shielding instructions;

3. Patient or human research subject control;

4. Visitor control, including both:

(i) Routine visitation of hospitalized individuals in accordance with Rule .03(5)(i)1.(i) of this Chapter; and

(ii) Visitation authorized in accordance with Rule .03(5)(i)2. of this Chapter; and

5. Notification of the Radiation Safety Officer, or his or her designee, and an authorized user if the patient or the human research subject dies or has a medical emergency. The licensee shall also notify the Division in accordance with Rule .05(119) if it is possible for any individual to receive exposures in excess of 5 millisievert (500 mrem) as a result of the deceased's body.

(b) A licensee shall retain a record of individuals receiving instruction in accordance with Rule .05(101).

(59) **Safety Precautions for Patients or Human Research Subjects Receiving Brachytherapy.**

(a) For each patient or human research subject that is receiving brachytherapy and cannot be released in accordance with Rule .05(37), a licensee shall:

1. Not place the patient or human research subject in the same room as an individual who is not receiving brachytherapy;

2. Visibly post the patient's or human research subject's room with a "Radioactive Materials" sign and note on the door or in the patient's or human research subject's chart where and how long visitors may stay in the patient's or human research subject's room.

(b) A licensee shall have emergency response equipment available near each treatment room to respond to a source that inadvertently becomes:

1. Dislodged from the patient; or

2. Lodged within the patient following removal of the source applicators.

(c) Radiation Safety Officer, or his designee, and the authorized user shall be notified immediately if the hospitalized patient or human research subject dies or has a medical emergency.

(60) **Calibration Measurements of Brachytherapy Sealed Sources.**

(a) Prior to the first medical use of a brachytherapy sealed source on or after July 1, 2003, a licensee shall perform the following:

1. Determine the source output or activity using a dosimetry system that meets the requirements of Rule .05(72)(a);

2. Determine source positioning accuracy within applicators; and

3. Use published protocols accepted by nationally recognized bodies to meet the requirements of Rule .05(60)(a)1. and .05(60)(a)2.

(b) A licensee may use measurements provided by the source manufacturer or by a calibration laboratory accredited by the American Association of Physicists in Medicine that are made in accordance with Rule .05(60)(a).

(c) A licensee shall mathematically correct the outputs or activities determined in Rule .05(60)(a) of this section for physical decay at intervals consistent with 1.0 percent physical decay.

(d) An authorized medical physicist shall perform or review the calculation measurements made pursuant to Rule .05(60)(a), (60)(b), or (60)(c).

(e) Only an authorized medical physicist shall calculate the activity of each strontium-90 source that is used to determine the treatment times for ophthalmic treatments. The decay must be based on the activity determined in accordance with Rule .05(60)(a), (60)(b), and (60)(c).

(f) A licensee shall retain a record of each calibration in accordance with Rule .05(104).

(g) A licensee shall retain a record of decay calculations required by Rule .05(60)(e) in accordance with Rule .05(105).

(61) **Therapy-related Computer Systems.** The licensee shall perform acceptance testing on the treatment planning system in accordance with published protocols accepted by nationally recognized bodies. At a minimum, the acceptance testing must include, as applicable, verification of:

(a) The source-specific input parameters required by the dose calculation algorithm;

(b) The accuracy of dose, dwell time, and treatment time calculations at representative points;

(c) The accuracy of isodose plots and graphic displays; and

(d) The accuracy of the software used to determine radioactive source positions from radiographic images.

(62) **Possession of Survey Instruments.** A licensee authorized to use manual brachytherapy sources shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(63) **Training for Use of Manual Brachytherapy Sources.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a manual brachytherapy source for the uses authorized under Rule .05(55) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Successfully complete a minimum of 3 years of residency training in a radiation oncology program approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association; and

2. Pass an examination, administered by diplomates of the specialty board, that tests knowledge and competence in radiation safety, radionuclide handling, treatment planning, quality assurance, and clinical use of manual brachytherapy; or

(b) 1. Has completed a structured educational program in basic radionuclide handling techniques applicable to the use of manual brachytherapy sources that includes:

(i) 200 hours of classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity; and

(IV) Radiation biology; and

(ii) 500 hours of work experience, under the supervision of an authorized user who meets the requirements in .05(26), (63) or equivalent Agreement State, or Nuclear Regulatory Commission requirements at a medical institution authorized to use byproduct material under Rule .05(55), involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Checking survey meters for proper operation;

(III) Preparing, implanting, and removing brachytherapy sources;

(IV) Maintaining running inventories of material on hand;

(V) Using administrative controls to prevent a misadministration involving the use of radioactive material; and

(VI) Using emergency procedures to control radioactive material; and

2. Has completed three years of supervised clinical experience in radiation oncology, under an authorized user who meets the requirements in Rule .05(26), .05(63) or equivalent Agreement State or Nuclear Regulatory Commission requirements, as part of a formal training program approved by the Residency Review Committee for Radiation Oncology of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association. This experience may be obtained concurrently with the supervised work experience required by Rule .05(63)(b)1.(ii); and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rules .05(63)(b)1. and (63)(b)2. and is able to independently fulfill the radiation safety-related duties as an authorized user of manual brachytherapy sources for the medical uses authorized under in Rule .05(55).

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26) or (63), or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26) or (63), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(63)(b)1. and 2.

(64) **Training for Ophthalmic Use of Strontium-90.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a strontium-90 source for ophthalmic uses authorized under Rule .05(55) to be a physician who:

(a) Is an authorized user under Rule .05(63) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or,

(b) 1. Has completed 24 hours of classroom and laboratory training applicable to the medical use of strontium-90 for ophthalmic radiotherapy. The training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity; and

(iv) Radiation biology; and

2. Supervised clinical training in ophthalmic radiotherapy under the supervision of an authorized user at a medical institution, clinic, or private practice, and that includes the use of strontium-90 for the ophthalmic treatment of five individuals. This supervised clinical training must involve:

(i) Examination of each individual to be treated;

(ii) Calculation of the dose to be administered;

(iii) Administration of the dose; and

(iv) Follow-up and review of each individual's case history; and

3. Has obtained written attestation, signed by a preceptor authorized user, who meets the requirements in Rule .05(26), .05(63) or .05(64) or equivalent Agreement State or Nuclear Regulatory Commission requirements, that the individual has satisfactorily completed the requirements in Rule .05(64)(b)1. and 2., and is able to independently fulfill the radiation safety-related duties as an authorized user of strontium-90 for ophthalmic use.

(c) Licensees who use strontium-90 for ophthalmic treatments must ensure that certain activities as specified in subparagraph .05(64)(d) are performed by either:

1. An authorized medical physicist; or

2. An individual who:

(i) is identified as an ophthalmic physicist on a specific medical use license issued by the Commission or an Agreement State; permit issued by a Commission or Agreement State broad scope medical use licensee; medical use permit issued by a Commission master material licensee; or permit issued by a Commission master material licensee broad scope medical use permittee; and

(ii) holds a master's or doctor's degree in physics, medical physics, other physical sciences, engineering, or applied mathematics from an accredited college or university; and

(iii) has successfully completed 1 year of full-time training in medical physics and an additional year of full-time work experience under the supervision of a medical physicist; and

(iv) Has documented training in:

(I) The creation, modification, and completion of written directives;

(II) Procedures for administrations requiring a written directive; and

(III) Performing the calibration measurements of brachytherapy sources as detailed in Rule .05(60).

(d) The individuals who are identified in subparagraph .05(64)(c) must:

1. Calculate the activity of each strontium-90 source that is used to determine the treatment times for ophthalmic treatments. The decay must be based on the activity determined under Rule .05(60); and

2. Assist the licensee in developing, implementing, and maintaining written procedures to provide high confidence that the administration is in accordance with the written directive. These procedures must include the frequencies that the individual meeting the requirements in subparagraph .05(64)(c) will observe treatments, review the treatment methodology, calculate treatment time for the prescribed dose, and review records to verify that the administrations were in accordance with the written directives.

(e) Licensees must retain a record of the activity of each strontium-90 source in accordance with Rule .05(105).

Sealed Sources For Diagnosis

(65) **Use of Sealed Sources and Medical Devices for Diagnosis.**

(a) A licensee must use only sealed sources that are not in medical devices for diagnostic medical uses if the sealed sources are approved in the Sealed Source and Device Registry for diagnostic medicine. The sealed sources may be used for diagnostic medical uses that are not explicitly listed in the Sealed Source and Device Registry but must be used in accordance with the radiation safety conditions and limitations described in the Sealed Source and Device Registry.

(b) A licensee must only use medical devices containing sealed sources for diagnostic medical uses if both the sealed sources and medical devices are approved in the Sealed Source and Device Registry for diagnostic medical uses. The diagnostic medical devices may be used for diagnostic medical uses that are not explicitly listed in the Sealed Source and Device Registry but must be used in accordance with the radiation safety conditions and limitations described in the Sealed Source and Device Registry.

(c) Sealed sources and devices for diagnostic medical uses may be used in research in accordance with an active Investigational Device Exemption (IDE) application accepted by the U.S. Food and Drug Administration provided the requirements of Rule .05(20)(a) are met.

(66) **Training for Use of Sealed Sources for Diagnosis and Medical Devices for Diagnosis.** Except as provided in Rule .05(26), the licensee shall require the authorized user of a diagnostic sealed source for the use in a device authorized under Rule .05(65) to be a physician, dentist, or podiatrist who:

(a) Is certified by a specialty board whose certification process includes all of the requirements in Rules .05(66)(c) and .05(66)(d) and whose certification has been recognized by an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.); or

(b) Is an authorized user for uses listed in Rule .05(44) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) Has had 8 hours of classroom and laboratory training in basic radionuclide handling techniques specifically applicable to the use of the device that includes:

1. Radiation physics and instrumentation;

2. Radiation protection;

3. Mathematics pertaining to the use and measurement of radioactivity; and

4. Radiation biology; and

(d) Has completed training in the use of the device for the uses requested.

Photon-Emitting Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units

(67) **Use of Sealed Sources in a Remote Afterloader Unit, Teletherapy Unit, or Gamma Stereotactic Radiosurgery Unit.**

(a) A licensee must only use sealed sources:

1. Approved and as provided for in the Sealed Source and Device Registry in photon emitting remote afterloader units, teletherapy units, or gamma stereotactic radiosurgery units to deliver therapeutic doses for medical uses: or

2. In research involving photon-emitting remote afterloader units, teletherapy units, or gamma stereotactic radiosurgery units in accordance with an active Investigational Device Exemption (IDE) application accepted by the U.S. Food and Drug Administration provided the requirements of Rule .05(21)(a) are met.

(b) A licensee must use photon-emitting remote afterloader units, teletherapy units, or gamma stereotactic radiosurgery units:

1. Approved in the Sealed Source and Device Registry to deliver a therapeutic dose for medical use. These devices may be used for therapeutic medical treatments that are not explicitly provided for in the Sealed Source and Device Registry, but must be used in accordance with radiation safety conditions and limitations described in the Sealed Source and Device Registry; or

2. In research in accordance with an active Investigational Device Exemption (IDE) application accepted by the FDA provided the requirements of Rule .05(21)(a) are met.

(68) **Surveys of Patients and Human Research Subjects Treated with a Remote Afterloader Unit.**

(a) Before releasing a patient or a human research subject from licensee control, a licensee shall make a survey of the patient or the human research subject and the remote afterloader unit with a portable radiation detection survey instrument to confirm that the source(s) has been removed from the patient or human research subject and returned to the safe, shielded position.

(b) A licensee shall retain a record of the surveys in accordance with Rule .05(102).

(69) **Installation, Maintenance, Adjustment, and Repair.**

(a) Only a person specifically licensed by the Director, the Nuclear Regulatory Commission or an Agreement State shall install, maintain, adjust, or repair a remote afterloader unit, teletherapy unit, or gamma stereotactic radiosurgery unit that involves work on the source(s) shielding, the source(s) driving unit, or other electronic or mechanical component that could expose the source(s), reduce the shielding around the source(s), or compromise the radiation safety of the unit or the source(s).

(b) Except for low dose-rate remote afterloader units, only a person specifically licensed by the Director, an Agreement State or the Nuclear Regulatory Commission shall install, replace, relocate, or remove a sealed source or source contained in other remote afterloader units, teletherapy units, or gamma stereotactic units.

(c) For a low dose-rate remote afterloader unit, only a person specifically licensed by the Director, an Agreement State or the Nuclear Regulatory Commission, or an authorized medical physicist shall install, replace, relocate, or remove a sealed source(s) contained in the unit.

(d) A licensee shall retain a record of the installation, maintenance, adjustment and repair done on remote afterloader units, teletherapy units, and gamma stereotactic radiosurgery units in accordance with Rule .05(106).

(70) **Safety Procedures and Instructions for Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall:

1. Secure the unit, the console, the console keys, and the treatment room when not in use or when unattended;

2. Permit only individuals approved by the authorized user, Radiation Safety Officer, or authorized medical physicist to be present in the treatment room during treatment with the source(s);

3. Prevent dual operation of more than one radiation producing device in a treatment room, if applicable; and

4. Develop, implement, and maintain written procedures for responding to an abnormal situation when the operator is unable to place the source(s) in the shielded position, or remove the patient or human research subject from the radiation field with controls from outside the treatment room. This procedure must include:

(i) Instructions for responding to equipment failures and the names of the individuals responsible for implementing corrective actions;

(ii) The process for restricting access to and posting of the treatment area to minimize the risk of inadvertent exposure; and

(iii) The names and telephone numbers of the authorized users, the authorized medical physicist, and the Radiation Safety Officer to be contacted if the unit or console operates abnormally.

(b) A copy of the procedures required by Rule .05(70)(a)4. must be physically located at the unit console.

(c) A licensee shall post instructions at the unit console to inform the operator of:

1. The location of the procedures required by Rule .05(70)(a)4.; and

2. The names and telephone numbers of the authorized users, the authorized medical physicist, and the Radiation Safety Officer to be contacted if the unit or console operates abnormally.

(d) 1. Prior to the first use for patient treatment of a new unit or an existing unit with a manufacturer upgrade that affects the operation and safety of the unit, a licensee shall ensure that vendor operational and safety training is provided to all individuals who will operate the unit. The vendor operational and safety training must be provided by the device manufacturer or by an individual certified by the device manufacturer to provide the operational and safety training.

2. A licensee shall provide operational and safety instructions initially and at least annually to all individuals who operate the unit at the facility, as appropriate to the individual's assigned duties. The instructions shall include instruction in:

(i) The procedures identified in Rule .05(70)(a)4.; and

(ii) The operating procedures for the unit.

(e) A licensee shall ensure that operators, authorized medical physicists, and authorized users participate in drills of the emergency procedures, initially and at least annually.

(f) A licensee shall retain a record of individuals receiving instruction required by Rule .05(70)(d), in accordance with Rule .05(101).

(g) A licensee shall retain a copy of the procedures required by subparagraphs .05(70)(a)4. and (d)2.(ii).

(71) **Safety Precautions for Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall control access to the treatment room by a door at each entrance.

(b) A licensee shall equip each entrance to the treatment room with an electrical interlock system that will:

1. Prevent the operator from initiating the treatment cycle unless each treatment room entrance door is closed;

2. Cause the source(s) to be shielded promptly when an entrance door is opened; and

3. Prevent the source(s) from being exposed following an interlock interruption until all treatment room entrance doors are closed and the source(s) on-off control is reset at the console.

(c) A licensee shall require any individual entering the treatment room to assure, through the use of appropriate radiation monitors, that radiation levels have returned to ambient levels.

(d) Except for low-dose remote afterloader units, a licensee shall construct or equip each treatment room with viewing and intercom systems to permit continuous observation of the patient or the human research subject from the treatment console during irradiation.

(e) For licensed activities where sources are placed within the patient's or human research subject's body, a licensee shall only conduct treatments which allow for expeditious removal of a decoupled or jammed source.

(f) In addition to the requirements specified in Rule .05(71)(a) through (71)(e), a licensee shall:

1. For low dose-rate, medium dose-rate, and pulsed dose-rate remote afterloader units, require:

(i) An authorized medical physicist and either an authorized user or a physician, under the supervision of an authorized user, who has been trained in the operation and emergency response for the unit to be physically present during the initiation of all patient treatments involving the unit; and

(ii) An authorized medical physicist and either an authorized user or an individual, under the supervision of an authorized user, who has been trained to remove the source applicator(s) in the event of an emergency involving the unit, to be immediately available during continuation of all patient treatments involving the unit.

2. For high dose-rate remote afterloader unit, require:

(i) An authorized user and an authorized medical physicist to be physically present during the initiation of all patient treatments involving the unit; and

(ii) An authorized medical physicist and either an authorized user or a physician, under the supervision of an authorized user, who has been trained in the operation and emergency response for the unit, to be physically present during continuation of all patient treatments involving the unit.

3. For gamma stereotactic radiosurgery units, require an authorized user and an authorized medical physicist to be physically present throughout all patient treatments involving the unit.

4. Notify the Radiation Safety Officer, or his or her designee, and an authorized user as soon as possible, if the patient or human research subject has a medical emergency and, immediately, if the patient dies.

(g) A licensee shall have emergency response equipment available near each treatment room, to respond to a source that inadvertently:

1. Remains in the unshielded position; or

2. Lodges within the patient following completion of the treatment.

(72) **Dosimetry Equipment.**

(a) Except for low dose-rate remote afterloader sources where the source output or activity is determined by the manufacturer, a licensee shall have a calibrated dosimetry system available for use. To satisfy this requirement, one of the following two conditions must be met:

1. The system must have been calibrated using a system or source traceable to the National Institute of Standards and Technology (NIST) and published protocols accepted by nationally recognized bodies; or by a calibration

laboratory accredited by the American Association of Physicists in Medicine (AAPM). The calibration must have been performed within the previous 2 years and after any servicing that may have affected system calibration; or

2. The system must have been calibrated within the previous 4 years;18 to 30 months after that calibration, the system must have been inter-compared with another dosimetry system that was calibrated within the past 24 months by NIST or by a calibration laboratory accredited by the AAPM. The results of the inter-comparison must have indicated that the calibration factor of the licensee's system had not changed by more than 2 percent. The licensee may not use the inter-comparison result to change the calibration factor. When inter-comparing dosimetry systems to be used for calibrating sealed sources for therapeutic units, the licensee shall use a comparable unit with beam attenuators or collimators, as applicable, and sources of the same radionuclide as the source used at the licensee's facility.

(b) The licensee shall have available for use a dosimetry system for spot-check output measurements, if applicable. To satisfy this requirement, the system may be compared with a system that has been calibrated in accordance with Rule .05(72)(a). This comparison must have been performed within the previous year and after each servicing that may have affected system calibration. The spot-check system may be the same system used to meet the requirement in Rule .05(72)(a).

(c) The licensee shall retain a record of each calibration, inter-comparison, and comparison in accordance with Rule .05(107).

(73) **Full Calibration Measurements on Teletherapy Units.**

(a) A licensee authorized to use a teletherapy unit for medical use shall perform full calibration measurements on each teletherapy unit:

1. Before the first medical use of the unit; and

2. Before medical use under the following conditions:

(i) Whenever spot-check measurements indicate that the output differs by more than 5 percent from the output obtained at the last full calibration corrected mathematically for radioactive decay;

(ii) Following replacement of the source or following reinstallation of the teletherapy unit in a new location;

(iii) Following any repair of the teletherapy unit that includes removal of the source or major repair of the components associated with the source exposure assembly; and

3. At intervals not exceeding 1 year.

(b) To satisfy the requirement of Rule .05(73)(a), full calibration measurements must include determination of:

1. The output within +/-3 percent for the range of field sizes and for the distance or range of distances used for medical use;

2. The coincidence of the radiation field and the field indicated by the light beam localizing device;

3. The uniformity of the radiation field and its dependence on the orientation of the useful beam;

4. Timer accuracy and linearity over the range of use;

5. On-off error; and

6. The accuracy of all distance measuring and localization devices in medical use.

(c) A licensee shall use the dosimetry system described in Rule .05(72)(a) to measure the output for one set of exposure conditions. The remaining radiation measurements required in Rule .05(73)(b)1. may be made using a dosimetry system that indicates relative dose rates.

(d) A licensee shall make full calibration measurements required by Rule .05(73)(a) in accordance with published protocols accepted by nationally recognized bodies.

(e) A licensee shall mathematically correct the outputs determined in Rule .05(73)(b)1. for physical decay for intervals not exceeding 1 month for cobalt-60, 6 months for cesium-137, or at intervals consistent with 1 percent decay for all other nuclides.

(f) Full calibration measurements required by Rule .05(73)(a) and physical decay corrections required by Rule .05(73)(e) must be performed by the authorized medical physicist.

(g) A licensee shall retain a record of each calibration in accordance with Rule .05(108).

(74) **Full Calibration Measurements on Remote Afterloader Units.**

(a) A licensee authorized to use a remote afterloader unit for medical use shall perform full calibration measurements on each unit:

1. Before the first medical use of the unit;

2. Before medical use under the following conditions:

(i) Following replacement of the source or following reinstallation of the unit in a new location outside the facility; and

(ii) Following any repair of the unit that includes removal of the source or major repair of the components associated with the source exposure assembly;

3. At intervals not exceeding 1 quarter for high dose-rate, medium dose-rate, and pulsed dose-rate remote afterloader units with sources whose half-life exceeds 75 days; and

4. At intervals not exceeding 1 year for low dose-rate remote afterloader units.

(b) To satisfy the requirement of Rule .05(74)(a), full calibration measurements must include, as applicable, determination of:

1. The output within +/- 5 percent;

2. Source positioning accuracy to within +/- 1 millimeter;

3. Source retraction with backup battery upon power failure; and

4. Length of the source transfer tubes;

5. Timer accuracy and linearity over the typical range of use;

6. Length of the applicators; and

7. Function of the source transfer tubes, applicators, and transfer tube-applicator interfaces.

(c) In addition to the requirements for full calibrations for low dose-rate remote afterloader units in Rule .05(74)(b), a licensee shall perform an autoradiograph of the source(s) to verify inventory and source(s) arrangement at intervals not exceeding one quarter.

(d) A licensee shall use the dosimetry system described in Rule .05(72)(a) to measure the output.

(e) A licensee shall make full calibration measurements required by Rule .05(74)(a) in accordance with published protocols accepted by nationally recognized bodies.

(f) For low dose-rate remote afterloader units, a licensee may use measurements provided by the source manufacturer that are made in accordance with Rule .05(74)(a) through (74)(e).

(g) A licensee shall mathematically correct the outputs determined in Rule .05(74)(b)1. of this section for physical decay at intervals consistent with 1 percent physical decay.

(h) Full calibration measurements required by Rule .05(74)(a) and physical decay corrections required by Rule .05(74)(g) must be performed by the authorized medical physicist.

(i) A licensee shall retain a record of each calibration in accordance with Rule .05(108).

(75) **Full Calibration Measurements on Gamma Stereotactic Radiosurgery Units.**

(a) A licensee authorized to use a gamma stereotactic radiosurgery unit for medical use shall perform full calibration measurements on each unit:

1. Before the first medical use of the unit;

2. Before medical use under the following conditions:

(i) Whenever spot-check measurements indicate that the output differs by more than 5 percent from the output obtained at the last full calibration corrected mathematically for radioactive decay;

(ii) Following replacement of the sources or following reinstallation of the gamma stereotactic radiosurgery unit in a new location; and

(iii) Following any repair of the gamma stereotactic radiosurgery unit that includes removal of the sources or major repair of the components associated with the source assembly; and

3. At intervals not exceeding 1 year, with the exception that relative helmet factors need only be determined before the first medical use of a helmet and following any damage to a helmet.

(b) To satisfy the requirement of Rule .05(75)(a), full calibration measurements must include determination of:

1. The output within +/-3 percent;

2. Relative helmet factors;

3. Isocenter coincidence;

4. Timer accuracy and linearity over the range of use;

5. On-off error;

6. Trunnion centricity;

7. Treatment table retraction mechanism, using backup battery power or hydraulic backups with the unit off;

8. Helmet microswitches;

9. Emergency timing circuits; and

10. Stereotactic frames and localizing devices (trunnions).

(c) A licensee shall use the dosimetry system described in Rule .05(72)(a) to measure the output for one set of exposure conditions. The remaining radiation measurements required in Rule .05(75)(b)1. may be made using a dosimetry system that indicates relative dose rates.

(d) A licensee shall make full calibration measurements required by Rule .05(75)(a) in accordance with published protocols accepted by nationally recognized bodies.

(e) A licensee shall mathematically correct the outputs determined in Rule .05(75)(b)1. at intervals not exceeding 1 month for cobalt-60 and at intervals consistent with 1 percent physical decay for all other radionuclides.

(f) Full calibration measurements required by Rule .05(75)(a) and physical decay corrections required by Rule .05(75)(e) must be performed by the authorized medical physicist.

(g) A licensee shall retain a record of each calibration in accordance with Rule .05(108).

(76) **Periodic Spot-Checks for Teletherapy Units.**

(a) A licensee authorized to use teletherapy units for medical use shall perform output spot-checks on each teletherapy unit once in each calendar month that include determination of:

1. Timer accuracy, and timer linearity over the range of use;

2. On-off error;

3. The coincidence of the radiation field and the field indicated by the light beam localizing device;

4. The accuracy of all distance measuring and localization devices used for medical use;

5. The output for one typical set of operating conditions measured with the dosimetry system described in Rule .05(72)(b); and

6. The difference between the measurement made in Rule .05(76)(a)5. and the anticipated output, expressed as a percentage of the anticipated output (i.e., the value obtained at last full calibration corrected mathematically for physical decay).

(b) A licensee shall perform measurements required by Rule .05(76)(a) in accordance with procedures established by the authorized medical physicist. That individual need not actually perform the spot check measurements.

(c) A licensee shall have the authorized medical physicist review the results of each spot-check within 15 days. The authorized medical physicist shall promptly notify the licensee in writing of the results of each spot-check.

(d) A licensee authorized to use a teletherapy unit for medical use shall perform safety spot-checks of each teletherapy facility once in each calendar month and after each source installation to assure proper operation of:

1. Electrical interlocks at each teletherapy room entrance;

2. Electrical or mechanical stops installed for the purpose of limiting use of the primary beam of radiation (restriction of source housing angulation or elevation, carriage or stand travel and operation of the beam on-off mechanism);

3. Source exposure indicator lights on the teletherapy unit, on the control console, and in the facility;

4. Viewing and intercom systems;

5. Treatment room doors from inside and outside the treatment room; and

6. Electrically assisted treatment room doors with the teletherapy unit electrical power turned off.

(e) If the results of the checks required in Rule .05(76)(d) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(f) A licensee shall retain a record of each spot-check required by Rule .05(76)(a) and (76)(d), in accordance with Rule .05(109).

(77) **Periodic Spot-Checks for Remote Afterloader Units.**

(a) A licensee authorized to use remote afterloader units for medical use shall perform spot-checks of each remote afterloader facility and on each unit:

1. At the beginning of each day of use of a high dose-rate, medium dose-rate or pulsed dose-rate remote afterloader unit;

2. Prior to each patient treatment with a low dose-rate remote afterloader unit; and

3. After each source installation.

(b) The licensee shall have the authorized medical physicist establish written procedures for performing the spot-checks required in Rule .05(77)(a). The authorized medical physicist need not actually perform the spot-check measurements.

(c) A licensee shall have the authorized medical physicist review the results of each spot-check within 15 days. The authorized medical physicist shall notify the licensee as soon as possible in writing of the results of each spot check.

(d) To satisfy the requirements of Rule .05(77)(a), spot-checks must, at a minimum, assure proper operation of:

1. Electrical interlocks at each remote afterloader unit room entrance;

2. Source exposure indicator lights on the remote afterloader unit, on the control console, and in the facility;

3. Viewing and intercom systems in each high dose-rate, medium dose-rate and pulsed dose-rate remote afterloader facility;

4. Emergency response equipment;

5. Radiation monitors used to indicate the source position;

6. Timer accuracy;

7. Clock (date and time) in the unit's computer; and

8. Decayed source(s) activity in the unit's computer.

(e) If the results of the checks required in Rule .05(77)(d) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(f) A licensee shall retain a record of each check required by Rule .05(77)(d) in accordance with Rule .05(110).

(78) **Periodic Spot-Checks for Gamma Stereotactic Radiosurgery Units.**

(a) A licensee authorized to use a gamma stereotactic radiosurgery unit for medical use shall perform spot-checks of each gamma stereotactic radiosurgery facility and on each unit:

1. Monthly;

2. At the beginning of each day of use; and

3. After each source installation.

(b) The licensee shall have the authorized medical physicist:

1. Establish written procedures for performing the spot-checks required in Rule .05(78)(a); and

2. Review the results of each spot-check required by Rule .05(78)(a)1. within 15 days of the check. The authorized medical physicist need not actually perform the spot-check measurements.

(c) To satisfy the requirements of Rule .05(78)(a)1., spot-checks must, at a minimum:

1. Assure proper operation of:

(i) Treatment table retraction mechanism, using backup battery power or hydraulic backups with the unit off;

(ii) Helmet microswitches;

(iii) Emergency timing circuits; and

(iv) Stereotactic frames and localizing devices (trunnions).

2. Determine:

(i) The output for one typical set of operating conditions measured with the dosimetry system described in Rule .05(72)(b);

(ii) The difference between the measurement made in Rule .05(78)(c)2.(i) of this paragraph and the anticipated output, expressed as a percentage of the anticipated output (i.e., the value obtained at last full calibration corrected mathematically for physical decay);

(iii) Source output against computer calculation;

(iv) Timer accuracy and linearity over the range of use;

(v) On-off error; and

(vi) Trunnion centricity.

(d) To satisfy the requirements of Rule .05(78)(a)2. and (78)(a)3., spot-checks must assure proper operation of:

1. Electrical interlocks at each gamma stereotactic radiosurgery room entrance;

2. Source exposure indicator lights on the gamma stereotactic radiosurgery unit, on the control console, and in the facility;

3. Viewing and intercom systems;

4. Timer termination;

5. Radiation monitors used to indicate room exposures; and

6. Emergency off buttons.

(e) A licensee shall arrange for prompt repair of any system identified in Rule .05(78)(c) that is not operating properly.

(f) If the results of the checks required in Rule .05(78)(d) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(g) A licensee shall retain a record of each check required by Rule .05(78)(c) and (78)(d) in accordance with Rule .05(111).

(79) **Additional Technical Requirements for Mobile Remote Afterloader Units.**

(a) A licensee providing mobile remote afterloader service shall:

1. Check survey instruments before medical use at each address of use or on each day of use, whichever is more frequent; and

2. Account for all sources before departure from a client's address of use.

(b) In addition to the periodic spot-checks required by Rule .05(77), a licensee authorized to use mobile afterloaders for medical use shall perform checks on each remote afterloader unit before use at each address of use. At a minimum, checks must be made to verify the operation of:

1. Electrical interlocks on treatment area access points;

2. Source exposure indicator lights on the remote afterloader unit, on the control console, and in the facility;

3. Viewing and intercom systems;

4. Applicators, source transfer tubes, and transfer tube-applicator interfaces;

5. Radiation monitors used to indicate room exposures;

6. Source positioning (accuracy); and

7. Radiation monitors used to indicate whether the source has returned to a safe shielded position.

(c) In addition to the requirements for checks in Rule .05(79)(b), a licensee shall ensure overall proper operation of the remote afterloader unit by conducting a simulated cycle of treatment before use at each address of use.

(d) If the results of the checks required in Rule .05(79)(b) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(e) A licensee shall retain a record of each check required by Rule .05(79)(b) in accordance with Rule .05(112).

(80) **Radiation Surveys.**

(a) In addition to the survey requirements in Rule .03(8) of this Chapter, a person licensed pursuant to Rule .05 shall make surveys to ensure that the maximum radiation levels and average radiation levels from the surface of the main source safe with the source(s) in the shielded position does not exceed the levels stated in the Sealed Source and Device Registry.

(b) The licensee shall make the survey required by Rule .05(80)(a) at installation of a new source and following repairs to the source(s) shielding, the source(s) driving unit, or other electronic or mechanical component that could expose the source, reduce the shielding around the source(s), or compromise the radiation safety of the unit or the source(s).

(c) A licensee shall retain a record of the radiation surveys required by Rule .05(80)(a) of this section in accordance with Rule .05(113).

(81) **Five-Year Inspection for Teletherapy and Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall have each teletherapy unit and gamma stereotactic radiosurgery unit fully inspected and serviced during source replacement or at intervals not to exceed 5 years, whichever comes first, to assure proper functioning of the source exposure mechanism and other safety components.

(b) This inspection and servicing may only be performed by persons specifically licensed to do so by the Director, an Agreement State or the Nuclear Regulatory Commission.

(c) A licensee shall keep a record of the inspection and servicing in accordance with Rule .05(114).

(82) **Therapy-Related Computer Systems.** The licensee shall perform acceptance testing on the treatment planning system in accordance with published protocols accepted by nationally recognized bodies. At a minimum, the acceptance testing must include, as applicable, verification of:

(a) The source-specific input parameters required by the dose calculation algorithm;

(b) The accuracy of dose, dwell time, and treatment time calculations at representative points;

(c) The accuracy of isodose plots and graphic displays;

(d) The accuracy of the software used to determine radioactive source positions from radiographic images; and

(e) The accuracy of electronic transfer of the treatment delivery parameters to the treatment delivery unit from the treatment planning system.

(83) **Possession of Survey Instruments.** A licensee authorized to use radioactive material in remote afterloader units, teletherapy units, and gamma stereotactic radiosurgery units shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(84) **Training for Use of Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a sealed source for a use authorized under Rule .05(67) to be a physician who:

(a) Is certified by a medical specialty board whose certification has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission, and who meets the requirements in .05(84)(c). (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Successfully complete a minimum of 3 years of residency training in a radiation therapy program approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association; and

2. Pass an examination, administered by diplomates of the specialty board, which tests knowledge and competence in radiation safety, radionuclide handling, treatment planning, quality assurance, and clinical use of stereotactic radiosurgery, remote afterloaders and external beam therapy; or

(b) 1. Has completed a structured educational program in basic radionuclide techniques applicable to the use of a sealed source in a therapeutic medical unit that includes:

(i) 200 hours of classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity; and

(IV) Radiation biology; and

(ii) 500 hours of work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), .05(84) or equivalent Agreement State, or Nuclear Regulatory Commission requirements at a medical institution that is authorized to use radioactive materials in Rule .05(67), involving:

(I) Reviewing full calibration measurements and periodic spot checks;

(II) Preparing treatment plans and calculating treatment doses and times;

(III) Using administrative controls to prevent a misadministration involving the use of radioactive material;

(IV) Implementing emergency procedures to be followed in the event of the abnormal operation of the medical unit or console;

(V) Checking and using survey meters; and

(VI) Selecting the proper dose and how it is to be administered; and

2. Has completed three years of supervised clinical experience in radiation oncology, under an authorized user who meets the requirements in Rule .05(26), .05(84) or equivalent Agreement State or Nuclear Regulatory Commission requirements, as part of a formal training program approved by the Residency Review Committee for Radiation Oncology of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association. This experience may be obtained concurrently with the supervised work experience required by Rule .05(84)(b)1.(ii); and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(84)(b)1. and .05(84)(b)2., and .05(84)(c), and is able to independently fulfill the radiation safety-related duties as an authorized user of each type of therapeutic medical unit for which the individual is requesting authorized user status; and

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (84), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (84), or equivalent Agreement State or Nuclear Regulatory Commission requirements, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(63)(b)1. and 2.

(c) Has received training in device operation, safety procedures, and clinical use for the type(s) of use for which authorization is sought. This training requirement may be satisfied by satisfactory completion of a training program provided by the vendor for new users or by receiving training supervised by an authorized user or authorized medical physicist, as appropriate, who is authorized for the type(s) of use for which the individual is seeking authorization.

Other Medical Uses of Radioactive Material or Radiation from Radioactive Material

(85) **Other Medical Uses of Radioactive Material or Radiation From Radioactive Material.** A licensee may use radioactive material or a radiation source approved for medical use that is not specifically addressed in Rule .05 if:

(a) The applicant or licensee has submitted the information required by Rule .05(8)(b), (8)(c) and (8)(d); and

(b) The applicant or licensee has received written approval from the NRC or an Agreement State in a license and uses the material in accordance with the regulations and specific conditions the NRC or Agreement State considers necessary for the medical use of the material.

Records

(86) **Records of Authority and Responsibilities for Radiation Protection Programs.**

(a) A licensee shall retain a record of actions taken by the licensee's management in accordance with Rule .05(15)(a) for 5 years. The record must include a summary of the actions taken and a signature of licensee management.

(b) The licensee shall retain a current copy of the authorities, duties and responsibilities of the Radiation Safety Officer as required by Rule .05(15)(d), and a signed copy of the Radiation Safety Officer's agreement to be responsible for implementing the radiation safety program, as required by Rule .05(15)(b). The record must include the signature of the Radiation Safety Officer and licensee management.

(c) The minutes of each Radiation Safety Committee meeting held in accordance with Rule .05(15)(g) shall include:

1. The date of the meeting;

2. Members present;

3. Members absent; and

4. Summary of deliberations and discussions.

(87) **Records of Radiation Protection Program Safety Changes.** A licensee shall retain a record of each radiation protection program change made in accordance with Rule .05(16)(a) for 5 years. The record must include a copy of the old and new procedures; the effective date of the change; and the signature of the licensee management that reviewed and approved the change.

(88) **Records of Written Directives.** A licensee shall retain a copy of each written directive as required by Rule .05(19) for 3 years.

(89) **Records of Misadministrations.** A licensee shall retain a record of misadministrations reported in accordance with Rule .05(115) for 3 years. The record must contain the licensee's name; names of the individuals involved; the social security number or other identification number if one has been assigned, of the individual who is the subject of the misadministration; a brief description of the event; why it occurred; the effect, if any, on the individual; the actions, if any, taken, or planned, to prevent recurrence; and, whether the licensee notified the individual (or the individual's responsible relative or guardian) and, if not, whether such failure to notify was based on guidance from the referring physician.

(90) **Record of a Dose to an Embryo/Fetus or a Nursing Child.** A licensee shall retain a record of a dose to an embryo/fetus or a nursing child reported in accordance with Rule .05(116) for 3 years. The record must contain the licensee's name; names of all the individuals involved; social security number or other identification number if one has been assigned to the pregnant individual or nursing child who is the subject of the event; a brief description of the event; why it occurred; the effect, if any, on the embryo/fetus or nursing child; the actions, if any, taken, or planned, to prevent recurrence; and whether the licensee notified the pregnant individual or mother (or the mother's or child's responsible relative or guardian) and, if not, whether such failure to notify was based on guidance from the referring physician.

(91) **Records of Calibrations of Instruments Used to Measure the Activity of Unsealed Radioactive Material.** A licensee shall maintain a record of instrument calibrations required by Rule .05(29) for 3 years. The records must include the model and serial number of the instrument, the date of the calibration, the results of the calibration, and the name of the individual who performed the calibration.

(92) **Records of Survey Instrument Calibrations.** A licensee shall maintain a record of instrument calibrations required by Rule .05(30) for 3 years. The record must include the model and serial number of the instrument, the date of the calibration, the results of the calibration, and the name of the individual who performed the calibration.

(93) **Records of Dosages of Unsealed Radioactive Material for Medical Use.** A licensee shall maintain a record of dosage determinations required by Rule .05(31) for 3 years. The record must contain the radioactive drug; the patient's or human research subject's name, or identification number if one has been assigned; prescribed dosage; the determined dosage, or a notation that the total activity is less than 1.11 MBq (30 µCi); the date and time of the dosage determination; and the name of the individual who determined the dosage.

(94) **Records of Possession of Sealed Sources and Brachytherapy Sources.** A licensee shall retain a record of the semi-annual physical inventory of sealed sources and brachytherapy sources required by Rule .05(33)(d) for 3 years. The inventory record must contain the model number of each source, and serial number if one has been assigned, the identity of each source radionuclide and its nominal activity, the location of each source, and the name of the individual who performed the inventory.

(95) **Records of Surveys for Ambient Radiation Exposure Rate.** A licensee shall retain a record of each survey required by Rule .05(36) for 3 years. The record must include the date of the survey, the results of the survey, the instrument used to make the survey, and the name of the individual who performed the survey.

(96) **Records of the Release of Individuals Containing Radioactive Drugs or Implants Containing Radioactive Material.**

(a) A licensee shall retain a record, signed by the authorized user, of the basis for authorizing the release of an individual, for 3 years after the date of release,

(b) A licensee shall retain a record, for 3 years after the date of release, that the instructions required by Rule .05(37)(b) were provided to a breast-feeding woman.

(97) **Records of Administrative and Technical Requirements that Apply to the Provision of Mobile Services.**

(a) A licensee shall retain a copy of the letter(s) that permits the use of radioactive material at a client's address of use, as required by Rule .05(9)(b), for 3 years after the last provision of service.

(b) A licensee shall retain the record of each survey required by Rule .05(38)(f) for 3 years. The record must include the date of the survey, the results of the survey, the instrument used to make the survey, and the name of the individual who performed the survey.

(98) **Records of Decay-in-Storage.** A licensee shall maintain records of the disposal of licensed materials, as required by Rule .05(40), for 3 years. The record must include the date of the disposal, the survey instrument used, the background radiation level, the radiation level measured at the surface of each waste container, and the name of the individual who performed the survey.

(99) **Records of Radionuclide Purity.** A licensee shall maintain a record of the radionuclide contaminant concentration tests required by Rule .05(45) for 3 years. The record must include, for each measured elution of radionuclide used to prepare a radioactive drug, the ratio of the measures expressed as kilobecquerel of contaminant per megabecquerel of desired radionuclide (microcurie/millicurie), or microgram of contaminant per megabecquerel of desired radionuclide (microgram/millicurie), the time and date of the measurement, and the name of the individual who made the measurement.

(100) **Records of Training.** A licensee shall maintain records of training required by Rule .05(25) for 3 years after the last date an individual was authorized to act as a nuclear medicine technologist or radiation therapist at the licensee's facility.

(101) **Records of Safety Instruction and Training.** A licensee shall maintain a record of safety instructions and training required by Rules .05(49), (58) and (70) for 3 years. The record must include a list of the topics covered, the date of the instruction or training, the name(s) of the attendee(s), and the name(s) of the individual(s) who provided the instruction.

(102) **Records of Radiation Surveys of Patients and Human Research Subjects.** A licensee shall maintain a record of the surveys required by Rule .05(56) and (68) for 3 years. Each record must include the date and results of the survey, the survey instrument used, and the name of the individual who made the survey.

(103) **Records of Brachytherapy Source Inventory.**

(a) A licensee shall maintain a record of brachytherapy source accountability required by Rule .05(57) for 3 years.

(b) For temporary implants, the record must include:

1. The number and activity of sources removed from storage, the time and date they were removed from storage, the name of the individual who removed them from storage, and the location of use;

2. The number and activity of unused sources returned to storage, the time and date they were returned to storage, and the name of the individual who returned them to storage; and

3. The number and activity of temporarily implanted sources removed from the patient or human research subject, the time and date they were returned to storage, and the name of the individual who returned them to storage.

(c) For permanent implants, the record must include:

1. The number and activity of sources removed from storage, the date they were removed from storage, and the name of the individual who removed them from storage;

2. The number and activity of sources not implanted, the date they were returned to storage, and the name of the individual who returned them to storage; and

3. The number and activity of sources permanently implanted in the patient or human research subject.

(104) **Records of Calibration Measurements on Brachytherapy Sources.** A licensee shall maintain a record of the calibrations on brachytherapy sources required by Rule .05(60) for 3 years after the last use of the source. The

record must include the date of the calibration; the manufacturer's name, model number, and serial number for the source and the instruments used to calibrate the source; the source output or activity; source positioning accuracy within applicators; and the signature of the authorized medical physicist.

(105) **Records of Decay of Strontium-90 Sources for Ophthalmic Treatments.** The licensee shall maintain a record of the activity of a strontium 90 source required by Rule .05(60) for the life of the source. The record must include the date and initial activity of the source as determined under Rule .05(60), and for each decay calculation, the date, and the source activity and the signature of the authorized medical physicist.

(106) **Records of Installation, Maintenance, Adjustment, and Repair.** A licensee shall retain a record of the installation, maintenance, adjustment, and repair of remote afterloader units, teletherapy units, and gamma stereotactic radiosurgery units as required by Rule .05(69) for 3 years. For each installation, maintenance, adjustment and repair, the record must include the date, description of the service, and name(s) of the individual(s) who performed the work.

(107) **Records of Dosimetry Equipment.**

(a) A licensee shall retain a record of the calibration, inter-comparison, and comparisons of its dosimetry equipment done in accordance with Rule .05(72) for the duration of the license.

(b) For each calibration, inter-comparison, or comparison, the record must include:

1. The date;

2. The manufacturer's name, model numbers and serial numbers of the instruments that were calibrated, inter-compared, or compared as required by Rule .05(72)(a) and (72)(b);

3. The correction factor that was determined from the calibration or comparison or the apparent correction factor that was determined from an inter-comparison; and

4. The names of the individuals who performed the calibration, inter-comparison, or comparison.

(108) **Records of Teletherapy, Remote Afterloader, and Gamma Stereotactic Radiosurgery Full Calibrations.**

(a) A licensee shall maintain a record of the teletherapy, remote afterloader, and gamma stereotactic radiosurgery full calibrations required by Rule .05(73), (74) and (75) for 3 years.

(b) The record must include:

1. The date of the calibration;

2. The manufacturer's name, model number, and serial number for the teletherapy, remote afterloader, and gamma stereotactic radiosurgery unit(s), the source(s), and instruments used to calibrate the unit;

3. The results and assessments of the full calibrations;

4. The results of the autoradiograph required for low dose-rate remote afterloader units; and

5. The signature of the authorized medical physicist who performed the full calibration.

(109) **Records of Periodic Spot-Checks for Teletherapy Units.**

(a) A licensee shall retain a record of each periodic spot-check for teletherapy units required by Rule .05(76) for 3 years.

(b) The record must include:

1. The date of the spot-check;

2. The manufacturer's name, model number, and serial number for the teletherapy unit, source and instrument used to measure the output of the teletherapy unit;

3. An assessment of timer linearity and constancy;

4. The calculated on-off error;

5. A determination of the coincidence of the radiation field and the field indicated by the light beam localizing device;

6. The determined accuracy of each distance measuring and localization device;

7. The difference between the anticipated output and the measured output;

8. Notations indicating the operability of each entrance door electrical interlock, each electrical or mechanical stop, each source exposure indicator light, and the viewing and intercom system and doors; and

9. The name of the individual who performed the periodic spot-check and the signature of the authorized medical physicist who reviewed the record of the spot-check.

(110) **Records of Periodic Spot-Checks for Remote Afterloader Units.**

(a) A licensee shall retain a record of each spot-check for remote afterloader units required by Rule .05(77) for 3 years.

(b) The record must include, as applicable:

1. The date of the spot-check;

2. The manufacturer's name, model number, and serial number for the remote afterloader unit and source;

3. An assessment of timer accuracy;

4. Notations indicating the operability of each entrance door electrical interlock, radiation monitors, source exposure indicator lights, viewing and intercom systems, and clock and decayed source activity in the unit's computer; and

5. The name of the individual who performed the periodic spot-check and the signature of the authorized medical physicist who reviewed the record of the spot-check.

(111) **Records of Periodic Spot-Checks for Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall retain a record of each spot-check for gamma stereotactic radiosurgery units required by Rule .05(78) for 3 years.

(b) The record must include:

1. The date of the spot-check;

2. The manufacturer's name, model number, and serial number for the gamma stereotactic radiosurgery unit and the instrument used to measure the output of the unit;

3. An assessment of timer linearity and accuracy;

4. The calculated on-off error;

5. A determination of trunnion centricity;

6. The difference between the anticipated output and the measured output;

7. An assessment of source output against computer calculations;

8. Notations indicating the operability of radiation monitors, helmet microswitches, emergency timing circuits, emergency off buttons, electrical interlocks, source exposure indicator lights, viewing and intercom systems, timer termination, treatment table retraction mechanism, and stereotactic frames and localizing devices (trunnions); and

9. The name of the individual who performed the periodic spot-check and the signature of the authorized medical physicist who reviewed the record of the spot-check.

(112) **Records of Additional Technical Requirements for Mobile Remote Afterloader Units.**

(a) A licensee shall retain a record of each check for mobile remote afterloader units required by Rule .05(79) for 3 years.

(b) The record must include:

1. The date of the check;

2. The manufacturer's name, model number, and serial number of the remote afterloader unit;

3. Notations accounting for all sources before the licensee departs from a facility;

4. Notations indicating the operability of each entrance door electrical interlock, radiation monitors, source exposure indicator lights, viewing and intercom system, applicators and source transfer tubes, and source positioning accuracy; and

5. The signature of the individual who performed the check.

(113) **Records of Surveys of Therapeutic Treatment Units.**

(a) A licensee shall maintain a record of radiation surveys of treatment units made in accordance with Rule .05(80) for the duration of use of the unit.

(b) The record must include:

1. The date of the measurements;

2. The manufacturer's name, model number and serial number of the treatment unit, source, and instrument used to measure radiation levels;

3. Each dose rate measured around the source while the unit is in the off position and the average of all measurements; and

4. The signature of the individual who performed the test.

(114) **Records of Five-Year Inspection for Teletherapy and Gamma Stereotactic Surgery Units.**

(a) A licensee shall maintain a record of the five-year inspections for teletherapy and gamma stereotactic radiosurgery units required by Rule .05(81) for the duration of use of the unit.

(b) The record must contain:

1. The inspector's radioactive materials license number;

2. The date of inspection;

3. The manufacturer's name and model number and serial number of both the treatment unit and source;

4. A list of components inspected and serviced, and the type of service; and

5. The signature of the inspector.

Reports

(115) **Reports and Notifications of Misadministrations.**

(a) Other than events that result from intervention by a patient or human research subject, a licensee shall report any event in which the administration of radioactive material or radiation from radioactive material, except permanent implant brachytherapy, results in:

1. A dose that differs from the prescribed dose by more than 0.05 Sv (5 rem) effective dose equivalent, 0.5 Sv (50 rem) to an organ or tissue, or 0.5 Sv (50 rem) shallow dose equivalent to the skin; and either

(i) The total dose delivered differs from the prescribed dose by 20 percent or more;

(ii) The total dosage delivered differs from the prescribed dosage by 20 percent or more or falls outside the prescribed dosage range; or

(iii) The fractionated dose delivered differs from the prescribed dose, for a single fraction, by 50 percent or more.

2. A dose that exceeds 0.05 Sv (5 rem) effective dose equivalent, 0.5 Sv (50 rem) to an organ or tissue, or 0.5 Sv (50 rem) shallow dose equivalent to the skin from any of the following:

(i) An administration of a wrong radioactive drug or the wrong radionuclide for brachytherapy procedures;

(ii) An administration of a radioactive drug containing radioactive material by the wrong route of administration;

(iii) An administration of a dose or dosage to the wrong individual or human research subject;

(iv) An administration of a dose or dosage delivered by the wrong mode of treatment; or

(v) A leaking sealed source.

3. A dose to the skin or an organ or tissue other than the treatment site that exceeds by:

(i) 0.5 Sv (50 rem) or more the expected dose to that site from the procedure if the administration had been given in accordance with the written directive prepared or revised before administration; and

(ii) 50 percent or more the expected dose to that site from the procedure if the administration had been given in accordance with the written directive prepared or revised before administration.

4. For permanent implant brachytherapy, the administration of byproduct material or radiation from byproduct material (excluding sources that were implanted in the correct site but migrated outside the treatment site) that results in:

(i) The total source strength administered differing by 20 percent or more from the total source strength documented in the post-implantation portion of the written directive;

(ii) The total source strength administered outside of the treatment site exceeding 20 percent of the total source strength documented in the post-implantation portion of the written directive; or

(iii) An administration that includes any of the following:

(I) The wrong radionuclide;

(II) The wrong individual or human research subject;

(III) Sealed source(s) implanted directly into a location discontiguous from the treatment site, as documented in the post-implantation portion of the written directive; or

(IV) A leaking sealed source resulting in a dose that exceeds 0.5 Sv (50 rem) to an organ or tissue.

(b) A licensee shall report any event resulting from intervention of a patient or human research subject in which the administration of radioactive material or radiation from radioactive material results, or will result in, unintended permanent functional damage to an organ or a physiological system, as determined by a physician.

(c) The licensee shall notify the Division by telephone no later than the next calendar day after discovery of the misadministration.

(d) The licensee shall submit a written report to the Division within 15 days after discovery of the misadministration.

1. The written report must include:

(i) The licensee's name;

(ii) The name of the prescribing physician;

(iii) A brief description of the event;

(iv) Why the event occurred;

(v) The effect, if any, on the individual(s) who received the administration;

(vi) Actions, if any, that have been taken, or are planned, to prevent recurrence;

(vii) Certification that the licensee notified the individual (or the individual's responsible relative or guardian), and if not, why not; and

2. The report may not contain the individual's name or any other information that could lead to identification of the individual.

(e) The licensee shall provide notification of the misadministration to the referring physician and also notify the individual who is the subject of the misadministration no later than 24 hours after its discovery, unless the referring physician personally informs the licensee either that he or she will inform the individual or that, based on medical judgment, telling the individual would be harmful. The licensee is not required to notify the individual without first consulting the referring physician. If the referring physician or the affected individual cannot be reached within 24 hours, the licensee shall notify the individual as soon as possible thereafter. The licensee may not delay any appropriate medical care for the individual, including any necessary remedial care as a result of the misadministration, because of any delay in notification. To meet the requirements of this paragraph, the notification of the individual who is the subject of the misadministration may be made instead to that individual's responsible relative or guardian. If a verbal notification is made, the licensee shall inform the individual or appropriate

responsible relative or guardian that a written description of the event can be obtained from the licensee upon request. The licensee shall provide such a written description if requested.

(f) Aside from the notification requirement, nothing in this section affects any rights or duties of licensees and physicians in relation to each other, to individuals affected by the misadministration, or to that individual's responsible relatives or guardians.

(g) A licensee shall retain a record of a misadministration in accordance with Rule .05(89). A copy of the record required under Rule .05(89) shall be provided to the referring physician if other than the licensee, within 15 days after discovery of the misadministration.

(116) **Report and Notification of a Dose to an Embryo/Fetus or a Nursing Child.**

(a) A licensee shall report any dose to an embryo/fetus that is greater than 50 mSv (5 rem) dose equivalent that is a result of an administration of radioactive material or radiation from radioactive material to a pregnant individual unless the dose to the embryo/fetus was specifically approved, in advance, by the authorized user.

(b) A licensee shall report any dose to a nursing child that was not specifically approved, in advance, by the authorized user, that is a result of an administration of radioactive material to a breast feeding individual that:

1. Is greater than 50 mSv (5 rem) total effective dose equivalent; or

2. Has resulted in unintended permanent functional damage to an organ or a physiological system, as determined by a physician.

(c) The licensee shall notify by telephone the Division no later than the next calendar day after discovery of a dose to the embryo/fetus or nursing child that requires a report in Rule .05(116)(a) or (116)(b).

(d) The licensee shall submit a written report to the Division within 15 days after discovery of a dose to the embryo/fetus or nursing child that requires a report in Rule .05(116)(a) or (116)(b).

1. The written report must include:

(i) The licensee's name;

(ii) The name of the prescribing physician;

(iii) A brief description of the event;

(iv) Why the event occurred;

(v) The effect on the embryo/fetus or the nursing child;

(vi) What actions, if any, have been taken, or are planned, to prevent recurrence; and

(vii) Certification that the licensee notified the pregnant individual or mother (or the mother's or child's responsible relative or guardian), and if not, why not.

2. The report must not contain the individual's or child's name or any other information that could lead to identification of the individual or child.

(e) The licensee shall notify the referring physician and also notify the pregnant individual or mother, both hereafter referred to as the mother, no later than 24 hours after of discovery of an event that would require reporting under Rule .05(116)(a) or (116)(b), unless the referring physician personally informs the licensee either that he or she will inform the mother or that, based on medical judgment, telling the mother would be harmful. The licensee is not required to notify the mother without first consulting with the referring physician. If the referring physician or

mother cannot be reached within 24 hours, the licensee shall make the appropriate notifications as soon as possible thereafter. The licensee may not delay any appropriate medical care for the embryo/fetus or for the nursing child, including any necessary remedial care as a result of the event, because of any delay in notification. To meet the requirements of this paragraph, the notification may be made to the mother's or child's responsible relative or guardian instead of the mother, when appropriate. If a verbal notification is made, the licensee shall inform the mother, or the mother's or child's responsible relative or guardian, that a written description of the event can be obtained from the licensee upon request. The licensee shall provide such a written description if requested.

(f) A licensee shall retain a record of a dose to an embryo/fetus or a nursing child in accordance with Rule .05(90). A copy of the record required under Rule .05(90) shall be provided to the referring physician, if other than the licensee, within 15 days after discovery of the event.

(117) **Reports of Leaking Sources.** A licensee shall file a report with the Division within 5 days if a leakage test required by Rule .05(33) reveals the presence of 185 Bq (0.005 µCi) or more of removable contamination. The written report must include the model number and serial number if assigned, of the leaking source; the radionuclide and its estimated activity; the results of the test; the date of the test; and the action taken.

(118) **Reports of Patient Departure Prior to Authorized Release.**

(a) A licensee shall notify the Division by telephone immediately upon discovery that a patient or human research subject has departed from the licensee's facility without authorization under Rule .05(37)(a).

(b) The licensee shall submit a written report to the Division within 30 days after discovery of the unauthorized departure. The written report must include:

1. The licensee's name;

2. The date and time of the unauthorized departure;

3. The projected date and time when release would have occurred;

4. The address of the patient's or human research subject's home or anticipated destination following departure;

5. The radionuclide, chemical and physical form and calculated activity at time of release;

6. The apparent reason(s) for the departure prior to authorized release; and

7. A description of any changes in the licensee's patient release criteria or patient instructions that are designed to avoid a recurrence of such an event.

(119) **Notification of Deceased Patients or Human Research Subjects Containing Radioactive Material.**

(a) The licensee shall notify the Division by telephone immediately upon discovery that a patient or human research subject containing radioactive material has died, and it is possible that any individual could receive exposures in excess of limits specified in Rule .03(5)(i) of this Chapter as a result of the deceased's body.

(b) The licensee shall submit a written report to the Division within 30 days after discovery that the patient or human research subject referenced in (119)(a) has died. The written report must include:

1. The licensee's name;

2. The date of death;

3. The radionuclide, chemical and physical form and calculated activity at time of death; and,

4. The names (or titles) and address(es) of known individuals who might have received exposures exceeding 5 millisievert (500 mrem).

(120) **Report and Notification for an Eluate Exceeding Permissible Molybdenum-99, Strontium-82, and Strontium-85 Concentrations.**

(a) The licensee shall notify by telephone the Georgia Department of Natural Resources, Environmental Protection Division and the distributor of the generator within 7 calendar days after discovery that an eluate exceeded the permissible concentration listed in 391-3-17-.05(45)(a) at the time of generator elution. The telephone report to the Georgia EPD must include the manufacturer, model number, and serial number (or lot number) of the generator; the results of the measurement; the date of the measurement; whether dosages were administered to patients or human research subjects, when the distributor was notified, and the action taken.

(b) By an appropriate method listed in 391-3-17-.01(13), the licensee shall submit a written report to Georgia Department of Natural Resources, Environmental Protection Division within 30 calendar days after discovery of an eluate exceeding the permissible concentration at the time of generator elution. The written report must include the action taken by the licensee; the patient dose assessment; the methodology used to make this dose assessment if the eluate was administered to patients or human research subjects; and the probable cause and an assessment of failure in the licensee's equipment, procedures or training that contributed to the excessive readings if an error occurred in the licensee's breakthrough determination; and the information in the telephone report as required by subparagraph .05(120)(a).

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Footnotes:
[1] "Essentials and guidelines of an Accredited Educational Program for the Radiation Therapy Technologist", Joint Review Committee on Education in Radiologic Technology, 1988.

[2] Experience with at least 3 cases in category (VII)(ii) also satisfies the requirement in category (VII)(i).

391-3-17-.08 Regulation and Licensing of Naturally-Occurring Radioactive Materials (NORM)

(1) **Purpose.** This Rule, 391-3-17-.08, establishes radiation protection standards for the possession, use, transfer, and disposal of naturally-occurring radioactive materials (NORM) not subject to regulation under the Atomic Energy Act of 1954, as amended. All numbered and lettered references within this Rule refer to parts of this Rule, unless stated otherwise.

(2) **Scope.**

(a) This Rule applies to any person who engages in the extraction, mining, storage, beneficiating, processing, use, transfer, or disposal of NORM in such a manner as to alter the chemical properties or physical state of the NORM or its potential exposure pathways to humans.

(b) This Rule addresses the introduction of NORM into products in which neither the NORM nor the radiation emitted from the NORM is considered to be beneficial to the products. The manufacture and distribution of products containing NORM in which the NORM and/or its associated radiation(s) is considered to be a beneficial attribute are licensed under the provisions of Rule .02 of this Chapter.

(c) This Rule also addresses waste management and disposal standards.

(3) **Definitions.** As used in this Rule, the following definitions apply:

(a) "Beneficial attribute" or "Beneficial to the product" means that the radioactivity of the product is necessary to the use of the product.

(b) "Beneficiating" means the processing of materials for the purpose of altering the chemical or physical properties to improve the quality, purity, or assay grade.

(c) "General environment" means the total terrestrial, atmospheric, and aquatic environments outside sites within which any activity, operation, or process authorized by a general or specific license issued under this Rule is performed.

(d) "Naturally-occurring radioactive material" (NORM) means any nuclide which is radioactive in its natural physical state (i.e., not man-made), but does not include byproduct, source, or special nuclear material.

(e) "Product" means something produced, made, manufactured, refined, or beneficiated.

(f) "Recycling" means a process by which materials that have served their intended use are collected, separated, or processed and returned to use in the form of raw materials in the production of new products. Recycling shall not include the use of a material in a manner that constitutes disposal in accordance with Rule .03(12).

(g) "Technologically-enhanced" means the chemical properties or physical state of natural sources of radiation have been altered or the potential exposure pathways of natural sources of radiation to humans have been altered.

(h) "Working Level" (WL) means any combination of short-lived radon decay products in one liter of air that will result in the ultimate emission of alpha particles with a total energy of 130 billion electron volts (2.1×10^{-8}J).

(4) **Exemptions.**

(a) Persons who receive, possess, use, process, store, transfer, commercially distribute, or dispose of NORM are exempt from the requirements of this Chapter if the materials contain or are contaminated by concentrations of:

1. Either:

(i) 30 picocuries (1.11 Bq) per gram or less of technologically- enhanced radium-226 or radium-228 in soil, averaged over any 100 square meters and averaged over the first 15 centimeters of soil below the surface, provided that the radon emanation rate is less than 20 pCi (.74 Bq) per square meter per second, or

(ii) 30 pCi (1.11 Bq) per gram or less of technologically- enhanced radium-226 or radium-228 in media other than soil, provided that the radon emanation rate is less than 20 pCi (.74 Bq) per square meter per second;

2. Either:

(i) 5 pCi (.185 Bq) per gram or less of technologically- enhanced radium-226 or radium-228 in soil, averaged over any 100 square meters and averaged over the first 15 centimeters of soil below the surface, in which the radon emanation rate is equal to or greater than 20 pCi (.74 Bq) per square meter per second, or

(ii) 5 pCi (.185 Bq) per gram or less of technologically- enhanced radium-226 or radium-228 in media other than soil, in which the radon emanation rate is equal to or greater than 20 pCi (.74 Bq) per square meter per second; or

3. Either:

(i) 150 pCi (5.55 Bq) or less per gram of any other NORM radionuclide in soil, averaged over any 100 square meters and averaged over the first 15 centimeters of soil below the surface, provided that these concentrations are not exceeded at any time, or

(ii) 150 pCi (5.55 Bq) or less per gram of any other NORM radionuclide in media other than soil, provided that these concentrations are not exceeded at any time.

(b) Persons who receive products or materials containing NORM distributed in accordance with a specific license issued by the Director pursuant to (12)(c) are exempt from this Chapter.

(c) The manufacturing, commercial distribution, use, and disposal of the following products/materials are exempt from the requirements of this Chapter:

1. Potassium and potassium compounds which have not been isotopically enriched in the radionuclide K-40;

2. Brazil nuts; and

3. Byproducts from fossil fuel combustion (bottom ash, fly ash, and flue-gas emission control byproducts);

4. Materials used for building and highway construction, industrial processes, sand blasting, metal casings, or other material containing NORM, in which the radionuclide content has not been concentrated to levels higher than found in its natural state.

(d) The wholesale and retail distribution (including custom blending), possession, and use of the following products/materials are exempt from the requirements of this Chapter:

1. Phosphate and potash fertilizer;

2. Phosphogypsum for agricultural uses; and

3. Materials used for building and highway construction, industrial processes, sand blasting, metal casings, or other material containing NORM, in which the radionuclide content has not been concentrated to levels higher than found in its natural state.

(e) The possession, storage, transportation, commercial distribution, and use of natural gas and natural gas products and crude oil and crude oil products as a fuel are exempt from the requirements of this Chapter. The distribution of natural gas and crude oil and the manufacturing and distribution of natural gas and crude oil products are exempt from the specific license requirements of this Rule but are subject to the general license requirements in (7), (8), and (9).

(f) Materials in the recycling process, including scale or residue not otherwise exempted, and other equipment containing NORM are exempt from the requirements of this Rule if the maximum radiation exposure level does not exceed 50 microroentgens per hour including the background radiation level at any accessible point.

(g) Possession of produced waters from crude oil and natural gas production is exempt from the requirements of this Rule if the produced waters are reinjected in a well approved by the Division or if the produced waters are discharged under the authority of the Division.

(5) **Radiation Survey Instruments.**

(a) Radiation survey instruments used to determine exemptions pursuant to (4)(f) and radiation survey instruments used to make surveys in accordance with (7) shall be able to measure from 1 microroentgen per hour through at least 500 microroentgens per hour.

(b) Radiation survey instruments used to make surveys required by this Rule shall be calibrated, appropriate, and operable.

(c) Each radiation survey instrument shall be calibrated:

1. By a person licensed by the Director, another Agreement State or by the U.S. Nuclear Regulatory Commission to perform such service;

2. At energies appropriate for the licensee's use;

3. At intervals not to exceed 12 months, and after each instrument servicing other than battery replacement; and

4. To demonstrate an accuracy within plus or minus 20 percent using a reference source provided by a person authorized pursuant to (5)(c)1.

(d) Records of these calibrations shall be maintained for Division inspection for 5 years after the calibration date.

(6) **Effective Date.** The provisions and requirements of this Rule shall take effect upon March 26, 1994, and shall apply to all facilities or sites owned or controlled by a person on that date. Products distributed and disposals made prior to that date are not subject to the provisions of this Rule.

(7) **General License.**

(a) A general license is hereby issued to mine, extract, receive, possess, own, use, store, transfer, process, and dispose of NORM not exempted in (4) without regard to quantity. This general license does not authorize the manufacturing or commercial distribution of products containing NORM in concentrations greater than those specified in (4) nor the disposal of wastes from other persons.

(b) Facilities and equipment contaminated with NORM in excess of the levels set forth in the Appendix of this Rule shall not be released for unrestricted use. The decontamination of equipment and facilities shall be performed only by persons specifically licensed by the Director to conduct such work. Each general licensee shall establish written

procedures for the evaluation (or screening) of equipment, components, and facilities prior to release for unrestricted use to ensure that the levels in this Appendix are not exceeded.

(c) No person shall transfer land for unrestricted use where the concentration of radium-226 or radium-228 in soil averaged over any 100 square meters exceeds the background level by more than:

1. 5 pCi/g (185 Bq/kg), averaged over the first 15 cm of soil below the surface; and

2. 15 pCi/g (555 Bq/kg), averaged over 15 cm thick layers of soil more than 15 cm below the surface.

(d) The handling or processing by a general licensee of NORM-contaminated materials not otherwise exempted from these Rules for the purpose of recycling is authorized by the Division if the radiation level 18 inches from the NORM-contaminated material does not exceed 2 millirem per hour.

(e) Equipment contaminated with NORM in excess of the levels set forth in the Appendix of this Rule may be released for maintenance and/or overhaul provided the recipient is specifically licensed to perform the activity on contaminated equipment.

(f) The decontamination of equipment, facilities, and land, as described in (10)(b), shall only be performed by persons specifically licensed by the Director to conduct such work.

(g) Transfer of NORM

1. The transfer of NORM not exempt from this Chapter from one general licensee to another general licensee may be authorized by the Division if:

(i) The equipment and facilities contaminated with NORM are to be used by the recipient for the same purpose or at the same time,

(ii) The transfer of control or ownership of land contaminated with NORM includes an annotation in the deed records to indicate the presence of NORM,

(iii) The materials being transferred are ores or raw materials for processing or refinement, or

(iv) The material being transferred is in the recycling process.

2. Transfers made under (7)(g)1. do not relieve the general licensee who makes the transfer from the responsibilities of assessing the extent of NORM contamination or material present, evaluating the hazards of the NORM, informing the general licensee receiving the NORM of these assessments and evaluations, and maintaining records required by this Chapter.

(8) **Protection of Workers and the General Population During Operations.** Each person subject to a general license in (7) or to a specific license shall conduct operations in compliance with the standards for radiation protection set forth in Rules .03 and .07 of this Chapter, except for disposal, which shall be governed by (9).

(9) **Disposal and Transfer of Waste for Disposal.**

(a) Each person subject to the general license in (7) or a specific license shall manage and dispose of wastes containing NORM:

1. In accordance with the applicable requirements of the U.S. Environmental Protection Agency for disposal of such wastes;

2. In a manner equivalent to the requirements for uranium and thorium byproduct materials in 40 CFR 192;

3. By transfer of the wastes for disposal to a land disposal facility licensed by the U.S. Nuclear Regulatory Commission or an Agreement State; or

4. In accordance with alternate methods authorized by the Division upon application or upon the Division's initiative.

(b) Records of disposal, including manifests, shall be maintained pursuant to the provisions of Rule .03 of this Chapter.

(c) Transfers of waste containing NORM for disposal shall be made only to a person specifically authorized to receive such waste.

(10) **Specific Licenses.**

(a) Unless otherwise exempted under the provisions of (4) or licensed under the provisions of Rule .02 of this Chapter, the manufacturing and commercial distribution of any material or product containing NORM shall be specifically licensed pursuant to the requirements of this Rule or pursuant to equivalent regulations of the U.S. Nuclear Regulatory Commission or another Agreement State.

(b) Persons conducting the following activities involving equipment or facilities contaminated with NORM in excess of the levels set forth in the Appendix of this Rule or land contaminated in excess of the limits set forth in (7)(c) shall be specifically licensed pursuant to the requirements of this Rule:

1. Decontamination of equipment, facilities, and land; or

2. Disposal or storage of the resulting waste.

(11) **Filing Application for Specific Licenses.**

(a) Applications for specific licenses shall be filed in a manner and on a form prescribed by the Division.

(b) The Division may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Division to determine whether the application should be granted or denied or whether a license should be modified or revoked.

(c) Each application shall be signed by the applicant or licensee or a person duly authorized to act for and on behalf of the licensee.

(d) An application for a specific license may include a request for a license authorizing one or more activities.

(e) In an application, the applicant may incorporate by reference information contained in previous applications, statements, or reports filed with the Division provided such references are clear and specific by page and paragraph.

(f) Applications and documents submitted to the Division may be made available for public inspection pursuant to the open records act, O.C.G.A. Section 50-18-70, et seq., except that the Division may withhold any document or part thereof from public inspection if disclosure of its contents is not required by law.

(12) **Requirements for the Issuance of Specific Licenses.**

(a) An application for a specific license will be approved if the Division determines that:

1. The applicant is qualified by reason of training and experience to use the NORM in question for the purpose requested in accordance with these Rules in such a manner as to minimize danger to public health and safety, the environment, or property;

2. The applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety, the environment, and property;

3. The issuance of the license will not be inimical to the health and safety of the public;

4. The applicant satisfied any applicable special requirement in this Rule;

5. The applicant has met the financial surety requirements of (21); and

6. The applicant has appointed a qualified Radiation Safety Officer (RSO). The applicant, through the RSO, shall ensure that Radiation Safety activities are being performed in accordance with approved procedures and regulatory requirements in the daily operation of the applicant's program.

(i) The Radiation Safety Officer shall:

(I) Investigate overexposures, accidents, spills, losses, thefts, unauthorized receipts, uses, transfers, and disposals, and other deviations from approved radiation safety practices. The RSO shall have the authority to assume control and implement corrective actions, including shut down of operations when emergency or unsafe conditions exist.

(II) Have a thorough knowledge of the licensee's management policies and administrative procedures.

(III) Implement policies and procedures for:

I. Keeping an inventory record of radioactive material;

II. Using radioactive material safely and in accordance with the ALARA philosophy;

III. Taking emergency action if control of radioactive material is lost;

IV. Performing periodic radiation surveys;

V. Performing checks and calibrations of survey instruments and other safety equipment;

VI. Disposing of radioactive material;

VII. Training personnel who work in or frequent areas where radioactive material is used or stored; and

VIII. Keeping a copy of all records and reports required by the Regulations, a copy of this Chapter, a copy of each licensing request, the license and its amendments, and the written policy and procedures required by the Regulations.

(ii) The RSO's qualifications shall be submitted to the Division and shall include:

(I) Possession of a high school diploma or a certificate of high school equivalency based on the GED test;

(II) Completion of the training and testing requirements of the activities for which the license application is submitted; and

(III) Training and experience necessary to supervise the Radiation Safety aspects of the licensed activity.

(b) An application for a specific license to decontaminate equipment, land, or facilities contaminated with NORM in excess of the levels set forth in (4), (7)(c), or the Appendix of this Rule, as applicable, and to dispose of the resulting waste will be approved if:

1. The applicant satisfies the general requirements specified in (12)(a); and

2. The applicant has adequately addressed the following items in the application:

(i) Procedures and equipment for monitoring and protection of workers;

(ii) An evaluation of the radiation levels and concentrations of contamination expected during normal operations;

(iii) Operating and emergency procedures, including procedures for waste reduction and quality assurance of items released for unrestricted use; and

(iv) Method of disposing of the NORM removed from contaminated equipment, facilities, and/or land.

(c) An application for a specific license to manufacture and/or distribute products or materials containing NORM to persons exempted from this Chapter pursuant to (4)(b) will be approved if:

1. The applicant satisfied the general requirements specified in (12)(a);

2. The NORM is not contained in any food, beverage, cosmetic, drug, or other commodity designed for ingestion or inhalation by, or application to, a human being without approval by the U.S. Food and Drug Administration; and

3. The applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling or marking, and conditions of handling, storage, use, and disposal of the NORM material or product to demonstrate that the material or product will meet the safety criteria set forth in (13). The information shall include:

(i) A description of the material or product and its intended use or uses;

(ii) The type, quantity, and concentration of NORM in each material or product;

(iii) The chemical and physical form of the NORM in the material or product, and changes in chemical and physical form that may occur during the useful life of the material or product;

(iv) An analysis of the solubility in water and body fluids of the NORM in the material or product;

(v) The details of manufacture and design of the material or Rule product relating to containment and shielding of the NORM and other safety features under normal and severe conditions of handling, storage, use, reuse, and disposal of the material or product;

(vi) The type and degree of access of human beings to the material or product during normal handling, use, and disposal;

(vii) The total quantity of NORM expected to be distributed annually in the material or product;

(viii) The expected useful life of the material or product;

(ix) The proposed method of labeling or marking each unit of the material or product with identification of the manufacturer and/or initial transferor of the product and the radionuclide(s) and quantity of NORM in the material or product;

(x) The procedures for prototype testing of the material or product to demonstrate the effectiveness of the containment, shielding, and other safety features under both normal and severe conditions of handling, storage, use, reuse, and disposal;

(xi) The results of the prototype testing of the material or product, including any change in the form of the NORM contained in it, the extent to which the NORM may be released to the environment, any change in radiation levels, and any other changes in safety features;

(xii) The estimated external radiation doses and dose commitments relevant to the safety criteria in (13) and the basis for such estimates;

(xiii) A determination that the probabilities with respect to doses referred to in (13) meet the safety criteria;

(xiv) The quality control procedures to be followed in the production of production lots of the material or product, and the quality control standards the material or product will be required to meet; and

(xv) Any additional information, including experimental studies and tests, required by the Division to facilitate a determination of the radiation safety of the material or product.

(d) Notwithstanding the provisions of (13)(b), the Director may deny an application for a specific license if the end uses of the product are frivolous or cannot be reasonably foreseen.

(13) **Safety Criteria for Specific Licenses.**

An applicant for a specific license under (12)(c) shall demonstrate that the product is designed and will be manufactured so that:

(a) In normal use, handling, storage, and disposal, the dose to any individual likely to be exposed to radiation from the material or product will not exceed the limits set forth in Rule .03 of this Chapter.

(b) In normal use, disposal, handling, and storage, it is unlikely that the radon released from the material or product will result in an increase in the average radon concentration in air of more than 0.4 picocurie (.0148 Bq) per liter.

(c) It is unlikely that there will be a significant reduction in the effectiveness of the containment, shielding, or other safety features of the material or product from wear and abuse likely to occur in normal handling and use of the material or product during its useful life.

(14) **Issuance of Specific Licenses.**

(a) Upon a determination that an application meets the requirements of the Act and Rules of the Division, the Director will issue a specific license authorizing the proposed activity in such form and containing such conditions and limitations as it deems appropriate or necessary.

(b) The Director may incorporate in any license at the time of issuance, or thereafter by amendment, such additional requirements and conditions with respect to the licensee's receipt, possession, use, and transfer of NORM subject to this Rule as it deems appropriate or necessary in order to:

1. Minimize danger to public health and safety, to property, and to the environment;

2. Require such reports, require the keeping of such records, and to provide for such inspections of activities under the license as may be appropriate or necessary; and

3. Prevent loss or theft of NORM subject to this Rule.

(15) **Conditions of Specific Licenses Issued Under (12).**

(a) General Terms and Conditions

1. Each license issued pursuant to this Rule shall be subject to all the provisions of the Act, now or hereafter in effect, and to all Rules, Regulations, and Orders of the Director.

2. No license issued or granted under this Rule and no right to possess or utilize NORM granted by any license issued pursuant to this Rule shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person unless the Division shall,

after securing full information, find that the transfer is in accordance with the provisions of the Act, and shall give its consent in writing.

3. Each person licensed by the Director pursuant to this Rule shall confine use and possession of the NORM licensed to the locations and purposes authorized in the license.

4. Each person licensed by the Director pursuant to this Rule is subject to the license provisions of (8) and (9).

5. Notification

(i) Each licensee shall notify the Division in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under the Chapters of Title 11 (Bankruptcy) of the United States Code (11 U.S.C.) by or against:

(I) A licensee;

(II) An entity [as that term is defined in 11 U.S.C. 101 (15)] controlling a licensee or listing the license or licensee as property of the estate; or

(III) An affiliate [as that term is defined in 11 U.S.C. 101 (2)] of the licensee.

(ii) This notification must indicate:

(I) The bankruptcy court in which the petition for bankruptcy was filed; and

(II) The date of the filing of the petition.

(b) Quality Control, Labeling, and Reports of Transfer. Each person listed under (12)(c) shall:

1. Carry out adequate control procedures in the manufacture of the material or product to assure that each production lot meets the quality control standards approved by the Division;

2. Label or mark each unit so that the manufacturer, processor, producer, or initial transferor of the material or product and the NORM in the material or product can be identified; and

3. Maintain records identifying, by name and address, each person to whom NORM is transferred for use under (4)(b) or the equivalent regulations of the U.S. Nuclear Regulatory Commission or another Agreement State and stating the kinds, quantities, and uses of the NORM transferred. An annual summary report stating the total quantity of each radionuclide transferred under the specific license shall be filed with the Division. Each report shall cover the year ending December 31, and shall be filed within 30 days thereafter. If no transfers of NORM have been made pursuant to (13)(c) during the reporting period, the report shall so indicate.

(16) **Expiration and Termination of Specific Licenses.**

(a) Except as provided in (17)(b) and (16)(d)6., each specific license shall expire at the end of the specified day in the month and year stated therein.

(b) Each licensee shall notify the Division immediately, in writing, and request termination of the license when the licensee decides to terminate all activities involving NORM authorized under the specific license or when the licensee decides to terminate a licensed location. This notification and request for termination of the license must include the reports and information specified in (16)(d)4. The licensee is subject to the provisions of (16)(d) and (16)(e), as applicable.

(c) No less than 30 days before the expiration date specified in a specific license, the licensee shall either:

1. Submit an application for license renewal under (17), or

2. Notify the Division in writing, under (16)(b), if the licensee decides to discontinue all activities involving NORM.

(d) If the licensee terminates a licensed location, or if a licensee does not submit an application for license renewal under (17), the licensee shall on or before the expiration date specified in the specific license:

1. Terminate use of NORM;

2. Remove NORM contamination to the extent practicable;

3. Properly dispose of the NORM; and

4. Submit a report of the disposal of NORM and radiation survey(s) to confirm the absence of NORM or to establish the levels of residual NORM contamination. The licensee shall, as appropriate:

(i) Report levels of radiation in units of microrads (μGy) per hour of beta and gamma radiation at one centimeter and gamma radiation at one meter from surfaces and report levels of radioactivity in units of disintegrations per minute (or microcuries or becquerels) per 100 square centimeters removable and fixed on surfaces, microcuries (becquerels) per milliliter in water, and picocuries per gram (Bq/kg) in contaminated solids such as soils or concrete; and

(ii) Specify the instrument(s) used and certify that each instrument is properly calibrated and tested.

5. If no radioactivity attributable to activities conducted under the license is detected, the licensee shall submit a certification that no detectable NORM contamination was found. If the Division determines that the information submitted under (16)(d)2. and (16)(d)4. is adequate and surveys confirm the findings, the Director will notify the licensee in writing that the license is terminated.

6. If detectable levels of residual NORM attributable to activities conducted under the license are found, the specific license continues in effect beyond the expiration date, if necessary, with respect to possession of residual NORM until the Director notifies the licensee in writing that the license is terminated. During this time, the licensee is subject to the provisions of (16)(e). In addition to the information submitted under (16)(d)4., the licensee shall submit a plan, if appropriate, for decontaminating the location(s) and disposing of the residual NORM.

(e) Each licensee who possesses residual NORM under (16)(d)6., following the expiration date specified in the specific license, shall:

1. Be limited to actions involving NORM related to preparing the location(s) for release for unrestricted use; and

2. Continue to control entry to restricted areas until the location(s) is (are) suitable for release for unrestricted use and the Director notifies the licensee in writing that the license is terminated.

(17) **Renewal of Specific Licenses.**

(a) Applications for renewal of specific licenses shall be filed in accordance with (11).

(b) In any case in which a licensee, not less than 30 days prior to the expiration of an existing specific license, has filed an application in proper form for renewal or for a new specific license authorizing the same activities, such existing license shall not expire until final action by the Director.

(18) **Amendment of Specific Licenses at Request of Licensee.** Applications for amendment of a license shall be filed in accordance with (11) and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

(19) **Action on Applications to Renew and Amend Specific Licenses.** In considering an application by a licensee to renew or amend the specific license, the Division will apply the criteria set forth in (12).

(20) **Reciprocal Recognition of Licenses.**

Subject to this Chapter, any person who holds a specific license from the U.S. Nuclear Regulatory Commission or another Agreement State, and issued by the agency having jurisdiction where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is hereby granted a general license to conduct the activities authorized in such licensing document within this State for a period not in excess of 180 days in any calendar year provided that:

(a) The licensing document does not limit the activity authorized by such document to specified installations or locations;

(b) The out-of-state licensee notifies the Division in writing at least 3 days prior to engaging in such activity. Such notification shall indicate the location, period, and type of proposed possession and use within the State, and shall be accompanied by a copy of the pertinent licensing document. If, for a specific case, the 3-day period would impose an undue hardship on the out-of-state licensee, the licensee may, upon application to the Division, obtain permission to proceed sooner. The Division may waive the requirement for filing additional written notifications during the remainder of the calendar year following the receipt of the initial notification from a person engaging in activities under the general license provided in (20)(a);

(c) The out-of-state licensee complies with all applicable Rules of the Division and with all the terms and conditions of the licensing document, except any such terms and conditions which may be inconsistent with applicable Rules of the Division;

(d) The out-of-state licensee supplies such other information as the Division may request; and

(e) The out-of-state licensee shall not transfer or dispose of NORM possessed or used under the general license provided in (20)(a) except by transfer to a person:

1. Specifically licensed by the Director to receive such NORM; or

2. Exempt from the requirements for a license for such NORM under (4).

(21) **Financial Surety Arrangements for Specific Licenses.**

(a) Each licensee or applicant for a specific license under (12) shall post with the Director financial surety, or security, according to the requirements of Rule .02(8)(g), of this Chapter to ensure the protection of the public health and safety, property, and the environment in the event of abandonment, default, or other inability or unwillingness of the licensee to meet the requirements of the Act and this Chapter. Financial surety arrangements shall:

1. Consist of surety bonds, cash deposits, certificates of deposit, government securities, irrevocable letters or lines of credit, or any combination of these.

2. Be in an amount sufficient to meet the applicant's or licensee's obligations under the Act and this Chapter and shall be based upon Division-approved cost estimates.

3. Be established prior to issuance of the specific license or the commencement of operations to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the facility.

4. Be continuous for the duration of the license and for a period coincident with the applicant/licensee's responsibility under the Act and this Chapter.

5. Be available in Georgia subject to judicial process and execution in the event required for the purposes set forth.

6. Be established within 90 days of April 1, 1994, for licenses in effect on that date.

(b) No later than 90 days after the licensee notifies the Division that decontamination and decommissioning have been completed, the Division shall determine if these have been conducted in accordance with this Chapter and the conditions of the specific license. If the Division finds that the requirements have been met, the Director shall direct the return or release of the licensee's security in full plus any accumulated interest. If the Division finds that the requirements have not been met, the Division will notify the licensee in writing of the steps necessary for compliance.

(22) **Modification and Revocation of Licenses.**

(a) The terms and conditions of all licenses shall be subject to amendment, revision, or modification or the license may be suspended or revoked by reason of amendments to the Act, by reason of rules or Regulations promulgated by the Board, and Orders issued by the Director.

(b) Any license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any material false statement of fact required under provisions of the Act or this Chapter, or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Director to refuse to grant a license on an original application, or for violation of, or failure to observe, any of the terms and conditions of the Act, of the license, or of any Rule, Regulation, or Order of the Director.

(c) Except in cases of willfulness or those in which the public health, interest, or safety requires otherwise, no license shall be modified, suspended, or revoked unless, prior to the institution of proceedings therefor, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

APPENDIX

ACCEPTABLE SURFACE CONTAMINATION LEVELS FOR NORM

NUCLIDE[a]	AVERAGE[bcf]	MAXIMUM[bdf]	REMOVABLE[bcef]
U-nat, U-235, and associated products (including Po-210), except Ra-226, Th-230, Ac-227, and Pa-231	5,000 dpm alpha/100 cm^2	15,000 dpm alpha/100 cm^2	11,000 dpm alpha/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228 Pa-231, Ac-227	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Beta-/gamma-emitters (nuclides with decay modes other than alpha emission or spontaneous fission, including Pb-210), except others noted above.	5,000 dpm beta, gamma/100 cm^2	15,000 dpm beta, gamma/100 cm^2	1,000 dpm beta, gamma/100 cm^2

[a] Surfaces contaminated with alpha- and beta-emitting naturally-occurring radionuclides may be surveyed with a detector that responds to both types of radiation. The same method may be employed when evaluating wipe samples for removable contamination.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by naturally-occurring radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation using a ratemeter or scaler and detector appropriate for the type and energy of emissions being monitored. The detector shall be capable of responding to alpha, beta, and/or gamma radiation.

[c] Measurements of average contamination level should not be averaged over more than one square meter. For objects of less surface area, the average should be derived for each object.

[d] The maximum contamination level applies to an area of not more than 100 cm^2.

[e] The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

[f] All surveys and efficiency determinations shall be made with the detector's active surface no greater than 1 centimeter from the surface being surveyed, wipe being analyzed, or source being used. A scaler must be used when evaluating wipe samples and count times must be sufficient to detect 10 percent of the applicable limit with 95 percent confidence that the activity would be detected.

[g] Notwithstanding the levels in the table above, equipment containing NORM shall not exceed a maximum radiation exposure level of 50 microroentgens per hour, including the background radiation level at any accessible point.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.08

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Repealed: New Rule entitled "Regulation and Licensing of Naturally-Occurring Radioactive Materials (NORM)" adopted. F. Feb. 24, 1994; eff. Mar. 16, 1994.

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Amended: F. Mar. 29, 2002; eff. Apr. 18, 2002.

Amended: New title, "Regulation and Licensing of Naturally-Occurring Radioactive Materials (Norm)," as cited on SOS Rules and Regulations Website, corrected to "Regulation and Licensing of Naturally-Occurring Radioactive Materials (NORM)." F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Amended: F. Apr. 1, 2024; eff. Apr. 21, 2024.

391-3-17-.09 Licensing and Radiation Safety Requirements for Irradiators

(1) **Purpose and scope.**

(a) This Rule, 391-3-17-.09, contains requirements for the issuance of a license authorizing the use of sealed sources containing radioactive materials in irradiators used to irradiate objects or materials using gamma radiation. This Rule also contains radiation safety requirements for operating irradiators. The requirements of this Rule are in addition to other requirements of this Chapter. In particular, the provisions of Rules 391-3-17-.02, .03, and .07 apply to applications and licenses subject to this Rule. Nothing in this Rule relieves the licensee from complying with other applicable Federal, State, and local regulations governing the siting, zoning, land use, and building code requirements for industrial facilities.

(b) The Regulations in this Rule apply to panoramic irradiators that have either dry or wet storage of the radioactive sealed sources and to underwater irradiators in which both the source and the product being irradiated are under

water. Irradiators whose dose rates exceed 500 rads (5 Grays) per hour at one meter from the radioactive sealed sources in air or in water, as applicable for the irradiator type, are covered by this Rule.

(c) This Rule does not apply to self-contained dry-source-storage irradiators (those in which both the source and the areas subject to irradiation are contained within a device and are not accessible by personnel), medical radiology or teletherapy, radiography (the irradiation of materials for nondestructive testing purposes), gauging, or open-field (agricultural) irradiations.

(d) Any sealed source licensed pursuant to this Rule shall have a solubility equal to or less than the solubility of cobalt-60 metal in water.

(2) **Definitions.**

(a) "Annually" means once every 12 calendar months or no later than the last day of the same calendar month of the following year.

(b) "Doubly encapsulated sealed source" means a sealed source in which the radioactive material is sealed within a capsule and that capsule is sealed within another capsule.

(c) "Irradiator" means a facility that uses radioactive sealed sources for the irradiation of objects or materials.

(d) "Irradiator operator" means an individual who has successfully completed the training and testing described in (5)(a) of this Rule and is authorized by the terms of the license to operate the irradiator without a supervisor present.

(e) "Large irradiator" means an irradiator where radiation dose rates exceeding 500 rads (5 Grays) per hour exist at one meter from the sealed radioactive sources in air or in water, as applicable for the irradiator type, but does not include irradiators in which both the sealed source and the area subject to irradiation are contained within a device and are not accessible to personnel.

(f) "Panoramic dry-source-storage irradiator" means an irradiator in which the irradiations occur in air in areas potentially accessible to personnel and in which the sources are stored in shields made of solid materials. The term includes beam-type dry-source-storage irradiators in which only a narrow beam of radiation is produced for performing irradiations.

(g) "Panoramic irradiator" means an irradiator in which the irradiations are done in air in areas potentially accessible to personnel. The term includes beam-type irradiators.

(h) "Panoramic wet-source-storage irradiator" means an irradiator in which the irradiations occur in air in areas potentially accessible to personnel and in which the sources are stored under water in a storage pool.

(i) "Pool irradiator" means any irradiator at which the sources are stored or used in a pool of water including panoramic wet-source-storage irradiators and underwater irradiators.

(j) "Product conveyor system" means a system for moving the product to be irradiated to, from, and within the area where irradiation takes place.

(k) "Radiation room" means a shielded room in which irradiations take place. Underwater irradiators do not have radiation rooms.

(l) "Radiation Safety Officer" means an individual with responsibility for the overall Radiation Safety Program at the facility.

(m) "Sealed source" means any byproduct material that is used as a source of radiation and is encased in a capsule designed to prevent leakage or escape of the byproduct material.

(n) "Seismic area" means any area where the probability of a horizontal acceleration in rock of more than 0.3 times the acceleration of gravity in 250 years is greater than ten percent, as designated by the U.S. Geological Survey.

(o) "Solubility of one liquid or solid in another" means the mass of a substance contained in the solution which is in equilibrium with an excess of the substance.

(p) "Underwater irradiator" means an irradiator in which the sources always remain shielded under water and humans do not have access to the sealed sources or the space subject to irradiation without entering the pool.

(3) **Specific Licensing Requirements.**

(a) Application for a specific license.

1. A person, as defined in Rule 391-3-17-.01 may file an application for a specific license authorizing the use of sealed sources in large irradiators in accordance with Rule .02 of this Chapter.

2. A separate license is required for each large irradiator, radiation room, or underwater irradiator.

(b) Specific licenses for large irradiators. The Director will approve an application for a specific license for the use of licensed material in an irradiator if the applicant meets the requirements contained in this section.

1. The applicant shall satisfy the general requirements specified in Rule 391-3-17-.02 and the requirements contained in this Rule.

2. The applicant shall describe its training for irradiator operators that shall include, at a minimum, the following:

(i) A minimum of 40 hours of classroom training;

(ii) A minimum of 160 hours of on-the-job training;

(iii) Safety reviews;

(iv) The means the applicant will use to test each operator's understanding of and ability to comply with the Division's Rules and licensing requirements and the irradiator operating and emergency procedures; and

(v) Minimum training and experience of personnel who may provide training.

3. The applicant shall submit an outline or summary of the written operating and emergency procedures listed in this Rule that describes the radiation safety aspects of the procedures.

4. The application shall describe the organizational structure for managing the irradiator, specifically the radiation safety responsibilities or authorities. In particular, the application must specify who, within the management structure, has the authority to stop unsafe operations. The applicant shall also describe the training and experience required for the position of Radiation Safety Officer.

5. The application must include a description of the access control system required by (4)(b) of this Rule, the radiation monitors required by (4)(e) of this Rule, the method of detecting leaking sources required by (5)(e) of this Rule including the sensitivity of the method, and a diagram of the facility that shows the locations of all required interlocks and radiation monitors.

6. The applicant shall provide assurance that any radioactive source not used in the irradiation process shall be removed from the irradiator pool and disposed of or returned to the manufacturer.

7. If the applicant intends to perform leak testing of dry-source-storage sealed sources, the applicant shall establish procedures for leak testing and submit a description of these procedures to the Division for approval. The procedures must include the following:

(i) Instruments to be used;

(ii) Methods of performing the analysis; and

(iii) Pertinent experience of the individual who analyzes the samples.

8. If licensee personnel are to load or unload sources, the applicant shall describe the qualifications and training of the personnel and the procedures to be used. If the applicant intends to contract for source loading or unloading at his facility, the loading or unloading must be done by an organization specifically licensed by the Director, an Agreement State, or the U.S. Nuclear Regulatory Commission to load or unload irradiator sources.

9. The applicant shall perform the following operational tests to ensure proper functioning of all equipment and safety devices before the irradiator is loaded with sources:

(i) Interlock and radiation safety systems;

(ii) Pool integrity and plumbing;

(iii) Source rack mechanical positioning system;

(iv) Source rack movement and position sensing systems;

(v) Source rack electrical control system;

(vi) Uninterruptible electrical power supply for radiation monitoring warning systems;

(vii) Fire protection system;

(viii) Emergency systems for returning a stuck source rack into the pool;

(ix) Systems used for transferring sources to and from transport vehicles; and

(x) Product conveyor system.

10. The applicant shall describe the operational inspection and maintenance program, including the frequency of the checks required by (5)(f) of this Rule.

11. The roof plug opening or removable shielding providing access for the loading and removal of sources shall be large enough to accommodate the largest applicable transportation cask.

(c) The applicant shall not begin construction of a new irradiator facility prior to the issuance of a license by the Director. As used in this section, the term "construction" includes the construction of any portion of the permanent irradiator structure on the site but does not include: engineering and design work, purchase of site, site surveys or soil testing, site preparation, site excavation, and other similar tasks. Any activities undertaken prior to the issuance of license with respect to the requirements of this Chapter shall be at the risk of the applicant and have no bearing on the issuance of a license in accordance with this Chapter.

(d) Applications for exemptions.

1. The Director may, upon application of any interested person or upon its own initiative, grant any exemptions from the requirements in this Rule that it determines are authorized by law and will not endanger public health, safety, or property.

2. Any application for a license or for an amendment of a license authorizing use of a teletherapy-type unit for irradiation of materials or objects may include proposed alternatives for the requirements of this Rule. The Division

will approve the proposed alternatives if the applicant provides adequate rationale for the proposed alternatives and demonstrates that they are likely to provide an adequate level of safety for workers and the public.

(e) Request for written statements.

1. After the filing of the original application, the Division may request further information necessary to enable the Director to determine whether the application should be granted or denied.

2. Each license is issued with the condition that the licensee will, at any time before expiration of the license, upon the Division's request, submit written statements or other sufficient information to enable the Director to determine whether the license should be modified, suspended, or revoked.

(4) **Design and Performance Requirements for Irradiators.**

(a) Performance criteria for sealed sources.

1. Requirements. Sealed sources installed after January 1, 1994:

(i) Must have a certificate of registration issued under 10 CFR 32.210;

(ii) Must be doubly incapsulated;

(iii) Must use radioactive material that is as nondispersible as practical and that is as insoluble as practical if the source is used in a wet-source-storage or wet-source-change irradiator;

(iv) Must be encapsulated in a material resistant to general corrosion and to localized corrosion, such as 316L stainless steel or other material with equivalent resistance if the sources are for use in irradiator pools; and

(v) In prototype testing of the sealed source, must have been leak tested and found leak-free after each of the following tests:

2. Temperature. The test source must be held at 40°C for 20 minutes, 600°C for 1 hour, and then be subjected to a thermal shock test with a temperature drop from 600°C to 20°C within 15 seconds.

3. Pressure. The test source must be twice subjected for at least 5 minutes to an external pressure (absolute) of 2 million newtons per square meter.

4. Impact. A 2-kilogram steel weight, 2.5 centimeters in diameter, must be dropped from height of 1 meter onto the test source.

5. Vibration. The test source must be subjected 3 times for 10 minutes each to vibrations sweeping from 25 hertz to 500 hertz with a peak amplitude of 5 times the acceleration of gravity. In addition, each test source must be vibrated for 30 minutes at each resonant frequency found.

6. Puncture. A 50-gram weight and pin, 0.3 centimeter pin diameter, must be dropped from a height of 1 meter onto the test source.

7. Bend. If the length of the source is more than 15 times larger than the minimum cross-sectional dimension, the test source must be subjected to a force of 2000 newtons at its center equidistant from two support cylinders, the distance between which is 10 times the minimum cross-sectional dimension of the source.

(b) Access control.

1. Each entrance to a radiation room at a panoramic irradiator must have a door or other physical barrier to prevent inadvertent entry of personnel if the sources are not in the shielded position. Product conveyor systems may serve as barriers as long as they are reliable and consistently function as a barrier. It must not be possible to move the sources

out of their shielded position if the door or barrier is open. Opening the door or barrier while the sources are exposed must cause the sources to return promptly to their shielded position. The personnel entrance door or barrier must have a lock that is operated by the same key used to move the sources. The doors and barriers must not prevent any individual in the radiation room from leaving.

2. Each entrance to a radiation room at a panoramic irradiator must have an independent backup access control to detect personnel entry while the sources are exposed. Detection of entry while the sources are exposed must cause the sources to return to their full shielded position and must also activate a visible and audible alarm to make the individual entering the room aware of the hazard. The alarm must also alert at least one other individual who is onsite of the entry. That individual shall be trained in how to respond to the alarm and prepared to promptly render or summon assistance.

3. A radiation monitor must be provided to detect the presence of high radiation levels in the radiation room of a panoramic irradiator before personnel entry. The monitor must be integrated with personnel access door locks to prevent room access when radiation levels are high. Attempted personnel entry while the monitor measures high radiation levels must activate the alarm described in (4)(b)2. of this Rule. The monitor may be located in the entrance (normally referred to as the maze) but not in the direct radiation beam.

4. Before the sources move from their shielded position in a panoramic irradiator, the source control must automatically activate conspicuous visible and audible alarms to alert people in the radiation room that the sources will be moved from their shielded position. The alarms must give individuals enough time to leave the room before the sources leave the shielded position.

5. Each radiation room at a panoramic irradiator must have a clearly visible and readily accessible control that would allow an individual in the room to make the sources return to their fully shielded position.

6. Each radiation room of a panoramic irradiator must contain a control that prevents the sources from moving from the shielded position unless the control has been activated and the door or barrier to the radiation room has been closed with a present time after activation of the control.

7. Each entrance to the radiation room of a panoramic irradiator and each entrance to the area within the personnel access barrier of an underwater irradiator must have a sign bearing the radiation symbol and the words, "Caution (or danger) radioactive material." Panoramic irradiators must also have a sign stating "Very High radiation area," but the sign may be removed, covered, or otherwise made inoperable when the sources are fully shielded.

8. If the radiation room of a panoramic irradiator has roof plugs or other movable shielding, it must not be possible to operate the irradiator unless the shielding is in its proper location. This requirement may be met by interlocks that prevent operation if the shield is not placed properly or by an operating procedure requiring inspection including documentation of inspection, of shielding before operation.

9. Panoramic irradiators shall not operate if the requirements in (4)(b) of this Rule are not met.

10. Underwater irradiators must have a personnel access barrier around the pool, which must be locked to prevent access when the irradiator is not attended. Only operators and facility management may have access to keys to the personnel access barrier. There must be an intrusion alarm to detect unauthorized entry when the personnel access barrier is locked. Activation of the intrusion alarm must alert an individual (not necessarily onsite) who is prepared to respond or summon assistance.

(c) Shielding.

1. The radiation dose rate in areas that are normally occupied during operation of a panoramic irradiator may not exceed 2 millirems (0.02 millisievert) per hour at any location 30 centimeters or more from the wall of the room when the sources are exposed. The dose rate must be averaged over an area not to exceed 100 square centimeters having no linear dimension greater than 20 cm. Areas where the radiation dose rate exceeds 2 millirems (0.02 millisievert) per hour must be locked, roped off, or posted and not entered without written approval or in the physical presence of the Radiation Safety Officer.

2. The radiation dose at 30 centimeters over the edge of the pool of a pool irradiator may not exceed 2 millirems (0.02 millisievert) per hour when the sources are in the fully shielded position.

3. The radiation dose rate at 1 meter from the shield of a dry-source-storage panoramic irradiator when the source is shielded may not exceed 2 millirems (0.02 millisievert) per hour and at 5 centimeters from the shield must not exceed 20 millirems (0.02 millisievert) per hour.

(d) Fire protection.

1. The radiation room at a panoramic irradiator must have heat and smoke detectors. The detectors must activate an audible alarm. The alarm must be capable of alerting a person who is prepared to summon assistance promptly. The sources must automatically become fully shielded if a fire is detected.

2. The radiation room at a panoramic irradiator must be equipped with a fire extinguishing system capable of extinguishing a fire without the entry of personnel into the room. The system for the radiation room must have a shut-off valve to control flooding into unrestricted areas.

(e) Radiation monitors.

1. Irradiators with automatic product conveyor systems must have a radiation monitor with an audible alarm located to detect loose radioactive sources that are carried toward the product exit. If the monitor detects a source, an alarm must sound and product conveyors must stop automatically. The alarm must be capable of alerting an individual in the facility who is prepared to summon assistance. Underwater irradiators in which the product moves within an enclosed stationary tube are exempt from the requirements of this paragraph.

2. For pool irradiators, the licensee shall provide a means to detect radioactive contamination in pool water each day the irradiator operates. The means may be either an on-line radiation monitor on the pool water purification system or an analysis of pool water. If the licensee uses an on-line radiation monitor, the detection of above normal background radiation levels must activate the alarm. The alarm set-point must be set as low as practical, but high enough to avoid false alarms. If a false alarm due to background radiation occurs, the alarm set-point must be increased. Activation of the alarm must automatically cause the water purification system to shut off. However, the licensee may reset the alarm set-point to a higher level if necessary to operate the pool purification system to clean up contamination in the pool as specifically provided in written emergency procedures.

3. Underwater irradiators that are not in a shielded radiation room must have a radiation monitor over the pool to detect abnormal radiation levels. The monitor must have an audible alarm and a visible indicator at entrances to the personnel access barrier around the pool. The audible alarm may have a manual shut-off. The alarm must be capable of alerting an individual who is prepared to respond promptly.

(f) Control of source movement.

1. The mechanism that moves the sources of a panoramic irradiator must require a key to actuate. Actuation of the mechanism must cause an audible signal to indicate that the sources are leaving the shielded position. Only one key may be in use at any time, and only operators or facility management may possess it. The key must be attached to a portable radiation survey meter by a chain or cable. The lock for source control must be designed so that the key may not be removed if the sources are in an unshielded position. The door to the radiation room must require the same key.

2. The console of a panoramic irradiator must have a source position indicator that indicates when the sources are in the fully shielded position, when they are in transit, and when the sources are exposed.

3. The control console of a panoramic irradiator must have an emergency control that promptly returns the sources to the shielded position.

4. Each control for a panoramic irradiator must be clearly marked as to its function.

(g) Irradiator pools.

1. For licenses initially issued after January 1, 1994, irradiator pools must either:

(i) Have a water-tight stainless steel liner or a liner metallurgically compatible with other components in the pool; or

(ii) Be constructed so that there is a low likelihood of substantial leakage and have a surface designed to facilitate decontamination. In either case, the licensee shall have a method to safely store the sources during repairs of the pool.

2. For licenses initially issued after January 1, 1994, irradiator pools must have no outlets more than 0.5 meter below the normal low water level that could allow water to drain out of the pool. Pipes that have intakes more than 0.5 meter below the normal low water level and that could act as siphons must have siphon breakers to prevent the siphoning of pool water.

3. A means must be provided to replenish water losses from the pool.

4. A visible indicator must be provided in a clearly visible location to indicate the pool water level is below the normal low water level or above the normal high water level.

5. Irradiator pools must be equipped with a purification system designed to be capable of maintaining the water during normal operation at a conductivity of 20 micromhos per centimeter or less and with a clarity so that the sources can be seen clearly.

6. A physical barrier, such as a railing or cover, must be used around or over irradiator pools during normal operation to prevent personnel from accidentally falling into the pool. The barrier may be removed during maintenance, inspection, and service operations.

7. If long-handled tools or poles are used in irradiator pools, the radiation dose rate on the handling areas of the tools may not exceed 2 millirems (0.02 millisievert) per hour.

(h) Source rack protection.

If the product to be irradiated moves on a product conveyor system, the source rack and the mechanism that moves the rack must be protected by a barrier or guides to prevent products and product carriers from hitting or touching the rack or mechanism.

(i) Power failures.

1. If electrical power at a panoramic irradiator is lost for longer than 10 seconds, the sources must automatically return to the shielded position.

2. The lock on the door of the radiation room of a panoramic irradiator shall not be deactivated by a power failure.

3. During a power failure, the area of any irradiator where sources are located may be entered only when using an operable and calibrated radiation survey meter.

(j) Design requirements.

Irradiators whose construction begins after January 1, 1994, must meet the design requirements of this section.

1. Shielding. For panoramic irradiators, the licensee shall design shielding walls to meet generally accepted building code requirements for reinforced concrete and design the walls, wall penetrations, and entranceways to meet the radiation shielding requirements of (4)(c) of this Rule. If the irradiator will use more than 5 million Curies (1.85 x

1017 becquerels) of activity, the licensee shall evaluate the effects of heating of the shielding walls by the irradiator sources.

2. Foundations. For panoramic irradiators, the licensee shall design the foundation, with consideration given to soil characteristics, to ensure that it is adequate to support the weight of the facility shield walls.

3. Pool integrity. For pool irradiators, the licensee shall design the pool to assure that it is leak resistant, that it is strong enough to bear the weight of the pool water and shipping casks, that a dropped cask would not fall on sealed sources, that all outlets or pipes meet the requirements of (4)(c)2. of this Rule, and that metal components are metallurgically compatible with other components in the pool.

4. Water handling system. For pool irradiators, the licensee shall verify that the design of the water purification system is adequate to meet the requirements of (4)(g) of this Rule. The system must be designed so that water leading from the system does not drain to unrestricted areas without being monitored.

5. Radiation monitors. For all irradiators, the licensee shall evaluate the location and sensitivity of the monitor to detect sources carried by the product conveyor system as required by (4)(e)1. of this Rule. The licensee shall verify that the product conveyor is designed to stop before a source on the product conveyor would cause a radiation overexposure to any person. For pool irradiators, if the licensee uses radiation monitors to detect contamination under (5)(e)2. of this Rule, the licensee shall verify that the design of radiation monitoring systems to detect pool contamination includes sensitive detectors located close to where contamination is likely to concentrate.

6. Source rack. For pool irradiators, the licensee shall verify that there are no crevices on the source or between the source and source holder that would promote corrosion on a critical area of the source. For panoramic irradiators, the licensee shall determine that source rack drops due to loss of power will not damage the source rack and that source rack drops due to failure of cables (or alternate means of support) will not cause loss of integrity of sealed sources. For panoramic irradiators, the licensee shall review the design of the mechanism that moves the sources to assure that the likelihood of a stuck source is low and that, if the rack sticks, a means exists to free it with minimal risk to personnel.

7. Access control. For panoramic irradiators, the licensee shall verify from the design and logic diagram that the access control system will meet the requirements of (4)(b) of this Rule.

8. Fire protection. For panoramic irradiators, the licensee shall verify that the number, location, and spacing of the smoke and heat detectors are appropriate to detect fires and that the detectors are protected from mechanical and radiation damage. The licensee shall verify that the design of the fire extinguishing system provides the necessary discharge patterns, densities, and flow characteristics for complete coverage of the radiation room and that the system is protected from mechanical and radiation damage.

9. Source return. For panoramic irradiators, the licensee shall verify that the source rack will automatically return to the fully shielded position if offsite power is lost for more than 10 seconds.

10. Seismic. For panoramic irradiators to be built in seismic areas, the licensee shall design the reinforced concrete radiation shields to retain their integrity in the event of an earthquake by designing to the seismic requirements of an appropriate source such as American Concrete Institute Standard ACI 318-89, "Building Code Requirements for Reinforced Concrete," Chapter 21, "Special Provisions for Seismic Design," or local building codes, if current.

11. Wiring. For panoramic irradiators, the licensee shall verify that electrical wiring and electrical equipment in the radiation room are selected to minimize failures due to prolonged exposure to radiation.

12. Product carriers. For irradiators utilizing product carriers, the basic design of the carrier shall prevent the carrier from opening or coming into contact with the source rack or protective barrier. The basic design shall be submitted to the Division for approval.

13. Floor penetrations. All floor penetrations, including expansion joints, floor joints, and drains, shall not allow the uncontrolled release of water, which has not been analyzed for its radioactive content, from the radiation room.

14. Lift mechanisms. The lift mechanisms for the source rack and source transport cask must be designed for working and breaking strength to safely lift a source transport cask and sources into and out of the irradiator pool.

15. Ventilation. All radiation rooms in a panoramic irradiator shall be maintained under negative pressure. Any exhaust from radiation rooms shall be through a high-efficiency nuclear air cleaning system. This system shall consist of standard roughing and absolute (HEPA) filters that have been tested in line in accordance with and has met the requirements of ANSI N510.

(k) Construction monitoring and acceptance testing.

The requirements of (4)(k) of this Rule must be met for irradiators whose construction begins after January 1, 1994. Additionally, the requirements for shielding, (4)(k)1., foundations, (4)(k)2., pool integrity, (4)(k)3., and wiring, (4)(k)11. of this Rule must be certified by a registered professional engineer. The requirements must be met prior to loading sources.

1. Shielding. For panoramic irradiators, the licensee shall monitor the construction of the shielding to verify that its construction meets design specifications and generally accepted building code requirements for reinforced concrete.

2. Foundations. For panoramic irradiators, the licensee shall monitor the construction of the foundations to verify that their construction meets design specifications.

3. Pool integrity. For pool irradiators, the licensee shall verify that the pool meets design specifications and shall test the integrity of the pool. The licensee shall verify that outlets and pipes meet the requirements of (4)(f)2. of this Rule.

4. Water handling system. For pool irradiators, the licensee shall verify that the water purification system, the conductivity meter, and the water level indicators operate properly.

5. Radiation monitors. For all irradiators, the licensee shall verify the proper operation of the monitor to detect sources carried on the product conveyor system and the related alarms and interlocks required by (4)(e)1. of this Rule. For pool irradiators, the licensee shall verify the proper operation of the radiation monitors and the related alarm, if used, to meet (4)(e)2. of this Rule. For underwater irradiators, the licensee shall verify the proper operation of the over-the-pool monitor, alarms, and interlocks required by (4)(e)2. of this Rule.

6. Source racks. For panoramic irradiators, the licensee shall test the movement of the source racks for proper operation prior to source loading; testing must include source rack lowering due to simulated loss of power. For all irradiators with product conveyor systems, the licensee shall observe and test the operation of the conveyor system to assure that the requirements in (4)(h) of this Rule are met for protection of the source rack and the mechanism that moves the rack; testing must include tests of any limit switches and interlocks used to protect the source rack and mechanism that moves the rack from moving product carriers.

7. Access control. For panoramic irradiators, the licensee shall test the completed access control system to assure that it functions as designed and that all alarms, controls, and interlocks work properly.

8. Fire protection. For panoramic irradiators, the licensee shall test the ability of the heat and smoke detectors to detect a fire, to activate alarms, and to cause the source rack to automatically become fully shielded. The licensee shall test the operability of the fire extinguishing system.

9. Source return. For panoramic irradiators, the licensee shall demonstrate that the source racks can be returned to their fully shielded positions without offsite power.

10. Computer systems. For panoramic irradiators that use a computer system to control the access control system, the licensee shall verify that the access control system will operate properly if offsite power is lost and shall verify that the computer has security features that prevent an irradiator operator from commanding the computer to override the access control system when it is required to be operable.

11. Wiring. For panoramic irradiators, the licensee shall verify that the electrical wiring and electrical equipment that were installed meet the design specifications.

(5) **Operation of Irradiators.**

(a) Training.

1. Before an individual is permitted to operate an irradiator without a supervisor present, the individual must be instructed in the following:

(i) The fundamentals of radiation protection applied to irradiators (including the differences between external radiation and radioactive contamination, units of radiation dose, Division's dose limits, why large radiation doses must be avoided, how shielding and access controls prevent large doses, how an irradiator is designed to prevent contamination, the proper use of survey meters and personnel dosimeters, other radiation safety features of an irradiator, and the basic function of the irradiator);

(ii) The requirements of this Rule and Rule 391-3-17-.07 that are applicable to the irradiator;

(iii) The operation of the irradiator;

(iv) Those operating and emergency procedures listed in (5)(b) of this Rule that the individual is responsible for performing; and

(v) Case histories of accidents or problems involving irradiators.

2. Before an individual is permitted to operate an irradiator without a supervisor present, the individual shall pass a written test on the instruction received, consisting primarily of questions based on the licensee's operating and emergency procedures that the individual is responsible for performing and other operations necessary to safely operate the irradiator without supervision.

3. Before an individual is permitted to operate an irradiator without a supervisor present, the individual must have received on-the-job training or simulator training in the use of the irradiator as described in the license application. The individual shall also demonstrate the ability to perform those portions of the operating and emergency procedures that he or she is to perform.

4. The licensee shall conduct safety reviews for irradiator operators at least annually. The licensee shall give each operator a brief written test on the information. Each safety review must include, to the extent appropriate, each of the following:

(i) Changes in operating and emergency procedures since the last review, if any;

(ii) Changes in Regulations and license conditions since the last review, if any;

(iii) Reports on recent accidents, mistakes, or problems that have occurred at irradiators, if any;

(iv) Relevant results of inspections of operator safety performance;

(v) Relevant results of the facility's inspection and maintenance checks; and

(vi) A drill to practice an emergency or abnormal event procedure.

5. The licensee shall evaluate the safety performance of each irradiator operator at least annually to ensure that the Regulations, license conditions, and operating and emergency procedures are followed. The licensee shall discuss the results of the evaluation with the operator and shall instruct the operator on how to correct any mistakes or deficiencies observed.

6. Individuals who will be permitted unescorted access to the radiation room of the irradiator or the area around the pool of an underwater irradiator, but who have not received the training required for operators and the Radiation Safety Officer, shall be instructed and tested in any precautions they should take to avoid radiation exposure, and procedures or parts of procedures listed in (5)8. of this Rule that they are expected to perform or comply with, and their proper response to alarms required in this Rule. Tests may be oral.

7. Individual who must be prepared to respond to alarms required by (4)(b)2., (4)(b)10., (4)(d)1., (4)(e)1., and (5)(e)2. of this Rule shall be trained and tested on how to respond. Each individual shall be retested at least once a year. Tests may be oral.

(b) Operating and emergency procedures.

1. The licensee shall have and follow written operating procedures for the following:

(i) Operation of the irradiator, including entering and leaving the radiation room;

(ii) Use of personnel dosimeters;

(iii) Surveying the shielding of panoramic irradiators;

(iv) Monitoring pool water for contamination while the water is in the pool and before release of pool water to unrestricted areas;

(v) Leak testing of sources;

(vi) Inspection and maintenance checks required by (5)(f) of this Rule;

(vii) Loading, unloading, and repositioning sources, if the operations will be performed by the licensee; and

(viii) Inspection of movable shielding required by (4)(b)8. of this Rule, if applicable.

2. The licensee shall have and follow emergency or abnormal event procedures, appropriate to the irradiator type, for the following:

(i) Source stuck in the unshielded position;

(ii) Personnel overexposures;

(iii) A radiation alarm from the product exit portal monitor or pool monitor;

(iv) Detection of leaking sources, pool contamination, or alarm cause by contamination of pool water;

(v) A low or high water level indicator, an abnormal water loss, or leakage from the source storage pool;

(vi) A prolonged loss of electrical power;

(vii) A fire alarm or explosion in the radiation room;

(viii) An alarm indicating unauthorized entry into the radiation room, area around the pool, or another alarm area;

(ix) Natural phenomena, including an earthquake, tornado, flooding, or other phenomena as appropriate for the geographical location of the facility; and

(x) The jamming of the automatic conveyor system.

3. The licensee may revise operating and emergency procedures without Division approval only if all of the following conditions are met:

(i) The revisions do not reduce the safety of the facility,

(ii) The revisions are consistent with the outline or summary of procedures submitted with the license application,

(iii) The revisions have been reviewed and approved by the Radiation Safety Officer, and

(iv) The users or operators are instructed and tested on the revised procedures before they are put into use.

(c) Personnel monitoring.

1. Irradiator operators shall wear a personnel monitoring device while operating a panoramic irradiator or while in the area around the pool of an underwater irradiator. The personnel monitoring device processor must be capable of detecting high energy photons in the normal and accident dose ranges. Each personnel monitoring device must be assigned to and worn only by one individual. Film Badges must be replaced at least monthly and all other personnel monitoring devices must be processed at least quarterly. All personnel dosimeters must be evaluated at least quarterly or promptly after replacement, whichever is more frequent.

2. Other individuals who enter the radiation room of a panoramic irradiator shall wear a dosimeter, which may be a pocket dosimeter. For groups of visitors, only two people who enter the radiation room are required to wear dosimeters. If pocket dosimeters are used to meet the requirements of this paragraph, a check of their response to radiation must be done at least annually. Acceptable dosimeters must read within plus or minus 30 percent of the true radiation dose.

(d) Radiation surveys.

1. A radiation survey of the area outside the shielding of the radiation room of a panoramic irradiator must be conducted with the sources in the exposed position before the facility starts to operate. A radiation survey of the area above the pool of pool irradiators must be conducted after the sources are loaded but before the facility starts to operate. Additional radiation surveys of the shielding must be performed at intervals not to exceed 3 years and before resuming operations after addition of new sources or any modification to the radiation room shielding or structure that might increase dose rate.

2. If the radiation levels specified in (4)(c) of this Rule are exceeded, the facility must be modified to comply with the requirements of (4)(c) of this Rule.

3. Portable radiation survey meters must be calibrated at least annually to an accuracy of ±20 percent of the gamma energy of the sources in use. The calibration must be done at two points on each scale or, for digital instruments, at one point per decade over the range that will be used. Portable radiation survey meters must be of a type that does not saturate and read zero at high radiation dose rates.

4. Water from the irradiator pool, other potentially contaminated liquids, and sediments from pool vacuuming must be monitored for radioactive contamination before release to unrestricted areas. Radioactive concentrations must not exceed those specified in 10 CFR Part 20, Table 2, Column 2 or Table 3 of Appendix B, "Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sewerage".

5. Before releasing resins for unrestricted use, they must be monitored before release in an area with a background level of less than 0.5 millirem (0.005 millisievert) per hour. The resins may be released only if the survey does not detect radiation levels above background radiation levels. The survey meter used must be capable of detecting radiation levels of 0.5 millirem (0.005 millisievert) per hour.

(e) Detection of leaking sources.

1. Each dry-source-storage sealed source must be tested for leakage at intervals not to exceed six months using a leak test kit or method approved by the Division, an Agreement State, or the U.S. Nuclear Regulatory Commission. In the absence of a certificate from a transferor that a test has been made within the six months before the transfer, the sealed source may not be used until tested. The test must be capable of detecting the presence of 0.005 microcurie (200 becquerels) of radioactive material and must be performed by a person approved by the Division, an Agreement State, or the U.S. Nuclear Regulatory Commission to perform the test.

2. For pool irradiators, sources may not be put into the pool unless the licensee tests the sources for leaks or has a certificate from a transferor that a leak test has been done within the six months before the transfer. Water from the pool must be checked for contamination each day the irradiator operates. The check may be done either by using a radiation monitor on a pool water circulating system or by analysis of a sample of pool water. If a check for contamination is done by analysis of a sample of pool water, the results of the analysis must be available within 24 hours. If the licensee uses a radiation monitor on a pool water circulating system, the detection of above normal radiation levels must activate an alarm. The alarm set-point must be set as low as practical, but high enough to avoid false alarms. The licensee may reset the alarm set-point to a higher level if necessary to operate the pool water purification system to clean up contamination in the pool if specifically provided for in written emergency procedures.

3. If a leaking source is detected, the licensee shall arrange to remove the leaking source from service and have it decontaminated, repaired, or disposed of by the Division, Agreement State, or U.S. Nuclear Regulatory Commission licensee that is authorized to perform these functions. The licensee shall promptly check its personnel, equipment, facilities, and irradiated product for radioactive contamination. No product may be shipped until the product has been checked and found free of contamination. If a product has been shipped that may have been inadvertently contaminated, the licensee shall arrange to locate and survey that product for contamination. If any personnel are found to be contaminated, decontamination must be performed promptly. If contaminated equipment, facilities, or products are found, the licensee shall arrange to have them decontaminated or disposed of by the Division, U.S. Nuclear Regulatory Commission, or Agreement State licensee that is authorized to perform these functions. If a pool is contaminated, the licensee shall arrange to clean the pool until the contamination levels do not exceed the appropriate concentration in Table 2, Column 2, Appendix B to 20.1001 to 20.2401 of 10 CFR 20.

(f) Inspection and maintenance.

1. The licensee shall perform inspection and maintenance checks that include, as a minimum, each of the following at the frequency specified in the license or license application:

(i) Operability of each aspect of the access control system required by (4)(b) of this Rule.

(ii) Functioning of the source position indicator required by (4)(f) of this Rule.

(iii) Operability of the radiation monitor for radioactive contamination in pool water required by (5)(e)2. of this Rule using a radiation check source, if applicable.

(iv) Operability of the over-the-pool radiation monitor at underwater irradiators as required by (4)(e)3. of this Rule.

(v) Operability of the product exit monitor required by (4)(e)1. of this Rule.

(vi) Operability of the emergency source return control required by (4)(e)3. of this Rule.

(vii) Leak-tightness of systems through which pool water circulates (visual inspection).

(viii) Operability of the heat and smoke detectors and extinguisher system required by (4)(d) of this Rule (but without turning extinguishers on).

(ix) Operability of the means of pool water replenishment required by (4)(g)3. of this Rule.

(x) Operability of the indicators of high and low pool water levels required by (4)(g)4. of this Rule.

(xi) Operability of the intrusion alarm required by (4)(b)10. of this Rule, if applicable.

(xii) Functioning and wear of the system, mechanism, and cables used to raise and lower sources.

(xiii) Condition of the barrier to prevent products from hitting the sources or source mechanism as required by (4)(h) of this Rule.

(xiv) Amount of water added to the pool to determine if the pool is leaking.

(xv) Electrical wiring on required safety systems for radiation damage.

(xvi) Pool water conductivity measurements and analysis as required by (5)(g)2. of this Rule.

2. Malfunctions and defects found during inspection and maintenance checks must be repaired without undue delay.

(g) Pool water purity.

1. The pool water purification system must be run sufficiently to maintain the conductivity of the pool water below 20 micromhos per centimeter under normal circumstances. If pool water conductivity rises above 20 micromhos per centimeter, the licensee shall take prompt actions to lower the pool water conductivity, and shall take corrective actions to prevent future recurrences.

2. The licensee shall measure the pool water conductivity frequently enough, but not less than weekly, to assure that the conductivity remains below 20 micromhos per centimeter. Conductivity meters must be calibrated at least annually.

(h) Attendance during operation.

1. Both an irradiator operator and at least one other individual, who is trained on how to respond and prepared to promptly render or summon assistance if the access control alarm sounds, shall be present onsite:

(i) Whenever the irradiator is operated using an automatic product conveyor system; and

(ii) Whenever the product is moved into or out of the radiation room when the irradiator is operated in a batch mode.

2. At a panoramic irradiator at which static irradiations (no movement of the product) are occurring, a person who has received the training on how to respond to alarms described in (5)(a)7. of this Rule must be onsite.

3. At an underwater irradiator, an irradiator operator must be present at the facility whenever the product is moved into or out of the pool. Individuals who move the product into or out of the pool of an underwater irradiator need not be qualified as irradiator operators; however, they must have received the training described in (5)(a)6. and 7. of this Rule. Static irradiations may be performed without a person present at the facility.

4. Irradiator operators shall not be on duty more than 12 hours in any 24-hour period without at least 8 hours uninterrupted rest, unless an emergency exists and prior authorization has been given by the Division.

(i) Entering and leaving the radiation room.

1. Upon first entering the radiation room of a panoramic irradiator after an irradiation, the irradiator operator shall use a survey meter to determine that the source has returned to its fully shielded position. The operator shall check the functioning of the survey meter with a radiation check source while entering the radiation room. The survey meter must be of a type that does not saturate and read zero at high radiation dose rates.

2. Before exiting from and locking the door to the radiation room of a panoramic irradiator prior to a planned irradiation, the irradiator operator shall:

(i) Visually inspect the entire radiation room to verify that no one else is in it; and

(ii) Activate a control in the radiation room that permits the sources to be moved from the shielded position only if the door to the radiation room is locked within a preset time after setting the control.

3. During a power failure, the area around the pool of an underwater irradiator may not be entered without using an operable and calibrated radiation survey meter unless the over-the-pool monitor required by (4)(e)3. of this Rule is operating with backup power.

(j) Irradiation of explosive or flammable materials.

1. Irradiation of explosive material is prohibited unless the licensee has received prior written authorization from the Division. Authorization will not be granted unless the licensee can demonstrate that detonation of the explosive would not rupture the sealed sources, injure personnel, damage safety systems, or cause radiation overexposures of personnel.

2. Irradiation of more than small quantities of flammable material (flash point below 140°F) is prohibited in panoramic irradiators unless the licensee has received prior written authorization from the Division. Authorization will not be granted unless the licensee can demonstrate that a fire in the radiation room could be controlled without damage to sealed sources or safety systems and without radiation overexposures of personnel.

(6) **Records.**

(a) Records and retention periods.

The licensee shall maintain the following records at the irradiator for the periods specified:

1. A copy of the license, license conditions, documents incorporated into a license by reference, and amendments thereto until superseded by new documents or until the Director terminates the license for documents not superseded.

2. Records of each individual's training, tests, and safety reviews provided to meet the requirements of (5)(a)1., 2., 3., 4., 5., and 7. of this Rule for 3 years after the evaluation.

3. Records of the annual evaluations of the safety performance of irradiator operators required by (5)(a)5. of this Rule for 3 years after the evaluation.

4. A copy of the current operating and emergency procedures required by (5)(b) of this Rule until superseded or the Director terminates the license. Records of the Radiation Safety Officer's review and approval of changes in procedures as required by (5)(b)3.iii of this Rule are to be retained for 3 years from the date of the change.

5. Personnel monitoring results required by (5)(c) of this Rule shall be retained until the Director terminates each pertinent license requiring the record. Upon termination of the license, the licensee shall permanently store records on Division Form, "Occupational Radiation Exposure History", or equivalent, or shall make provisions with the Division for transfer to the Division.

6. Records of radiation surveys required by (5)(d) of this Rule for three years from the date of the survey.

7. Records of radiation survey meter calibrations required by (5)(d) of this Rule and pool water conductivity meter calibrations required by (5)(g)2. of this Rule until three years from the date of calibration.

8. Records of the results of leak tests required by (5)(e)1. of this Rule and the results of contamination checks required by (5)(e)2. of this Rule for three years from the date of each test.

9. Records of inspection and maintenance checks required by (5)(f) of this Rule for three years.

10. Records of major malfunctions, significant defects, operating difficulties or irregularities, and major operating problems that involve required radiation safety equipment for three years after repairs are completed.

11. Records of the receipt, transfer, and disposal of all licensed sealed sources for three years after the transfer or disposal of the sealed source.

12. Records of the design checks required by (4)(j) of this Rule and the construction control checks as required by (4)(k) of this Rule until the license is terminated. The records must be signed and dated. The title or qualification of the person signing must be included.

13. Records related to decommissioning of the irradiator as required by Rule 391-3-17-.02(8)(g)8.

(b) Reports.

1. In addition to the reporting requirements in other Rules of this Chapter, the licensee shall report the following events if not reported under other Rules of this Chapter:

(i) Source stuck in an unshielded position.

(ii) Any fire or explosion in a radiation room.

(iii) Damage to the source racks.

(iv) Failure of the cable or drive mechanism used to move the source racks.

(v) Inoperability of the access control system.

(vi) Detection of a radiation source by the product exit monitor.

(vii) Detection of radioactive contamination attributable to licensed radioactive material.

(viii) Structural damage to the pool liner or walls.

(ix) Abnormal water loss or leakage from the source storage pool.

(x) Pool water conductivity exceeding 100 micromhos (100 µS) per centimeter.

2. The report must include a telephone report within 24 hours and a written report within 30 days as described in Rule 391-3-17-.03(14)(b).

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.09

AUTHORITY: O.C.G.A. § 31-13-1 *et seq.*, as amended.

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Repealed: New Rule entitled "Licensing and Radiation Safety Requirements for Irradiators" adopted. F. Feb. 24, 1994; eff. Mar. 16, 1994.

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Amended: F. Mar. 29, 2002; eff. Apr. 18, 2002.

Amended: F. May 11, 2016; eff. May 31, 2016.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 30, 2022; eff. Apr. 19, 2022.

Amended: F. Apr. 1, 2024; eff. Apr. 21, 2024.

391-3-17-.10 Administration

(1) **Scope.** The provisions of this Rule, 391-3-17-.10, shall apply to the administrative procedures required by this Chapter.

(2) **Administration.**

(a) Administrative Examination of Applications. Applications for the issuance of a license, amendment of a license at the request of the holder, and renewal of a license will be given a docket or other identifying number for administrative examination. The applicant may be required to submit additional information and may be requested to confer informally regarding the application. The Division will give to others such notice of the filing of applications as is required under the applicable provisions of this Chapter and such additional notices as it deems appropriate.

(b) Effect of Timely Renewal Application. In the case of an application for renewal, if the licensee has made application for the renewal of an existing license at least 30 days prior to its expiration date, the license shall not be deemed to have expired until such application shall have been determined.

(c) Filing of Papers. Unless otherwise specified, papers required to be filed with the Division shall be filed with the Environmental Protection Division, Radioactive Materials Program, 4244 International Parkway, Suite 120 Atlanta, Georgia 30354. Papers required to be filed with the Division shall be deemed filed upon actual receipt with the Division at the location specified. Unless otherwise specified, the filing, when by mail, shall upon actual receipt be deemed complete as of the date of deposit in the mail. Papers may be filed at the Division's offices in Atlanta, Georgia.

(d) Payment of Fees. All licensees shall remit annual fees in accordance with Table 1, the Radioactive Materials License Fee Schedule. Annual fee payments for general and specific licenses are due before the end of the calendar year for the following calendar year. New licensees shall be invoiced for annual fees at a prorated rate. Such fees shall be due and payable thirty (30) days after the invoice date. Fees for applications for specific licenses, and annual fees for reciprocity applicants, shall accompany the request. An application fee must accompany renewal applications that are submitted after a license has expired. Licensees with fees which are delinquent shall not have any request for amendment or renewal of their licenses, except in the interest of public health and safety, honored by the Division until such fees are paid in full or a payment plan has been accepted by the Division.

Table 1

Radioactive Materials License Fee Schedule

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Medical Teletherapy	A.1.a	$4,750.00	$9,500.00	$3,500.00	$2,000.00
Stereotactic Radiosurgery (i.e., Gamma Knife)	A.1.b	$4,750.00	$9,500.00	$3,500.00	$2,000.00

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
& Proton Beam Therapy					
Broad Medical (single campus)	A.10.a	$3,774.00	$20,468.40	$5,460.00	$4,483.50
Broad Medical (multiple campuses) (2-5 locations of use)	A.10.b	$5,683.20	$34,796.25	$9,282.00	$7,621.95
Broad Medical (multiple campuses) (6-10 locations of use)	A.10.c	$9,679.20	$43,495.35	$11,602.50	$9,527.50
Broad Medical (multiple campuses) (11+ locations of use)	A.10.d	$9,679.20	$52,194.50	$13,923.00	$11,432.90
Eye Applicators	A.11	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Source Material	A.12	$2,397.60	$5,505.60	$522.90	$522.90
Depleted Uranium	A.12	$266.40	$799.20	$319.20	$319.20
Institutional Medical-Mult. Use (Including HDR)	A.2.a	$2,250.00	$4,500.00	$4,250.00	$3,900.00
Institutional Medical-Mult. Use	A.2.b	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Institutional Medical-Mult. Use (diagnostic only)	A.2.c	$1,198.80	$3,818.40	$2,100.00	$1,123.50
Institutional Medical-Single Use (therapy only)	A.3	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Private Practice (Therapy-HDR)	A.4.a	$1,198.80	$3,818.40	$3,780.00	$2,803.50
Private Practice (Limited Therapy)	A.4.b	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Private Practice (Diagnostic Only)	A.4.c	$1,198.80	$3,818.40	$2,205.00	$1,228.50
Private Practice (Veterinary)	A.4.d	$665.00	$2,100.00	$1,950.00	$1,100.00
In-Vitro Specific Licenses	A.5	$665.00	$2,175.60	$1,764.00	$997.50
In-Vitro General Licenses	A.6	$0.00	$120.00	$120.00	$120.00
Bone Mineral Analyzers	A.7	$1,198.80	$3,818.40	$2,100.00	$1,123.50
Nuclear Pharmacy	A.8.a.1	$4,250.00	$8,500.00	$5,500.00	$4,000.00

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Medical Manufacturer for Distribution	A.8.a.2	$2,886.00	$7,503.60	$2,828.70	$1,852.20
Medical Distribution or Redistribution Only (sealed sources)	A.8.b.1	$2,262.86	$4,460.63	$2,030.70	$1,054.20
Medical Distribution or Redistribution Only (GL)	A.8.b.2	$488.40	$1,420.80	$1,420.80	$829.50
Mobile Nuclear Medicine	A.9.a	$1,198.80	$3,818.40	$2,730.00	$1,753.50
Mobile HDR	A.9.b	$1,198.80	$3,818.40	$2,730.00	$1,753.50
Special Nuclear Material (sealed sources in devices)	B.1.a	$577.20	$1,598.40	$1,243.20	$686.70
Special Nuclear Material (power sources in devices)	B.1.b	$1,110.00	$3,241.20	$1,188.60	$632.10
Special Nuclear Material (other)	B.2	$1,110.00	$3,241.20	$2,274.30	$1,297.80
Pacemaker, Byproduct or SNM -- Medical Inst	B.3	$1,198.80	$3,818.40	$2,274.30	$1,297.80
Industrial Mfg. for Distribution	C.1	$1,953.60	$5,505.60	$2,925.30	$1,948.80
Installed Gauges	C.10.a	$665.00	$2,100.00	$1,950.00	$997.50
Gas Chromatograph, etc.	C.10.b	$665.00	$2,175.60	$1,680.00	$913.50
Portable Moisture Density Gauges, Pb analyzers, etc.	C.11	$665.00	$2,100.00	$1,950.00	$1,300.00
Calibration Sources	C.12.a	$665.00	$2,175.60	$2,100.00	$1,333.50
Calibration Sources (Radium)	C.12.b	$665.00	$2,175.60	$1,619.10	$852.60
Decontamination Services	C.13.a	$2,841.60	$6,615.60	$2,520.00	$1,753.50
Industrial (other) (NORM) (Gauge Service)	C.13.b	$2,841.60	$6,615.60	$2,100.00	$1,333.50
Contaminated Equipment	C.14	$665.00	$2,175.60	$1,619.10	$852.60
In-house Industrial Radiography	C.2	$3,000.00	$12,500.00	$4,900.00	$3,800.00

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Multiple Job-Site Industrial Radiography	C.3	$3,000.00	$12,500.00	$4,900.00	$3,800.00
Gamma Irradiators (Self-Shielded)	C.4.a	$1,420.80	$4,040.40	$1,362.90	$806.40
Gamma Irradiators (<10K Ci)	C.4.b.1	$2,841.60	$6,882.00	$2,100.00	$1,123.50
Gamma Irradiators (>10K<100K Ci)	C.4.b.2	$27,172.80	$62,559.60	$5,355.00	$4,378.50
Gamma Irradiators (>100K<1M Ci)	C.4.b.3	$27,172.80	$62,559.60	$9,660.00	$8,683.50
Gamma Irradiators (>1M Ci)	C.4.b.4	$27,172.80	$62,559.60	$21,210.00	$20,233.50
Broad Scope Distribution, Specific (Type A)	C.5.a.1	$5,683.20	$19,314.00	$6,258.00	$5,281.50
Broad Scope Distribution, Specific (Type B)	C.5.a.2	$5,683.20	$19,314.00	$3,318.00	$2,341.50
Broad Scope Distribution, Specific (Type C)	C.5.a.3	$5,683.20	$19,314.00	$2,730.00	$1,753.50
GL Distribution (source and / or device evaluation)	C.5.b	$888.00	$2,131.20	$1,986.60	$1,010.10
GL Distribution (no source and /or device eval)	C.5.c	$488.40	$1,420.80	$1,420.80	$1,161.30
Possession Incident to NRC Exempt Distribution	C.6.c	$665.00	$2,175.60	$2,087.40	$1,110.90
Well Logging /Tracers	C.7.a	$1,465.20	$4,528.80	$2,660.70	$1,684.20
Field Flooding Studies	C.7.b	$1,028.58	$3,520.62	$2,100.00	$1,333.50
Nuclear Laundries	C.8	$9,679.20	$20,468.40	$3,108.00	$2,131.50
Industrial Research & Development	C.9	$1,554.00	$3,862.80	$2,282.70	$1,306.20
Broad Scope (Academic) (Type A & B)	D.1.a	$3,250.00	$7,000.00	$3,998.80	$2,275.00
Broad Scope (Academic) (Type C)	D.1.b	$3,250.00	$7,000.00	$3,237.80	$1,640.25
Broad Scope (Industrial R&D) (Type A)	D.2.a	$2,397.60	$6,526.80	$3,076.50	$2,100.00

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Broad Scope (Industrial R&D) (Type B)	D.2.b	$2,397.60	$6,526.80	$2,751.00	$1,774.50
Broad Scope (Industrial R&D) (Type C)	D.2.c	$2,397.60	$6,526.80	$2,490.60	$1,514.10
Broad Scope (Medical Manufacturer for Dist) (R&D)	D.3	$2,886.00	$6,882.00	$3,318.00	$2,341.50
Civil Defense (Emergency Management)	E.1	$1,110.00	$3,996.00	$1,507.80	$741.30
Civil Defense (Emergency Response)	E.2	$1,110.00	$3,996.00	$1,425.90	$659.40
Teletherapy Service Co.	F	$2,841.60	$6,615.60	$2,282.70	$1,306.20
Consultants (Leak Testing Service)	G	$665.00	$2,175.60	$1,619.10	$493.50
Generally Licensed Devices (except tritium safety signs)	GL	$0.00	$120.00	$120.00	$120.00
Academic (Non-Broad)	I	$1,554.00	$3,862.80	$1,680.00	$913.50
Device Evaluation	J.1	$5,514.48	$6,420.24	$1,260.00	$283.50
Source Evaluation	J.2	$2,051.28	$2,783.88	$1,050.00	$283.50
Radioactive Waste Disposal-Burial	L.1	$185,143.84	$186,240.92	$47,460.00	$46,483.50
Radioactive Waste Disposal-Incineration	L.2	$185,143.84	$186,240.92	$47,460.00	$46,483.50
Radioactive Waste, Processing & Repackaging	L.3.a	$3,729.60	$14,208.00	$6,468.00	$5,491.50
Radioactive Waste, Prepackaged	L.3.b	$2,175.60	$6,615.60	$4,263.00	$3,286.50
Reciprocity	K.	$500 + Appropriate nominal annual fee (eligible for Small Entity/Lower Tier)			

(e) **Small Entity**

The size standards for Georgia small entities are as follows:

1. A small business is a business with annual receipts of $3.5 million or less except private practice physicians for which the standard is annual receipts of $1 million or less.

2. A small organization is a not-for-profit organization which is independently owned and operated and has annual receipts of $3.5 million or less.

3. Small governmental jurisdictions are governments of cities, counties, towns, school districts, or special districts with a population of less than 50,000.

4. A small educational institution is one that is (1) supported by a qualifying small governmental jurisdiction, or (2) one that is not state or publicly supported and has 500 employees or less.

(f) **Small Entity Lower Tier**

Small businesses and not-for-profit organizations with annual receipts of less than $250,000 and small governmental jurisdictions with populations of less than 20,000 qualify for the lower tier small entity fee.

(3) **Penalties.**

(a) Any person who engages in any of the following conduct shall be guilty of a misdemeanor as found in O.C.G.A. Section 31-13-13:

1. Hindering, obstructing, or otherwise interfering with any representative of the Department in the discharge of his official duties in making inspections or impounding radioactive materials as provided in Code Section 31-13-5 and 31-13-11 respectively; or

2. Violating the provisions of Code Section 31-13-7 (permits for disposal of radioactive waste; bonding of permittees), or any Rule or Regulation promulgated thereunder; or

3. Violating the provisions of Code Section 31-13-12 (Prohibited Uses of Sources of Radiation).

(b) Any person who submits any false statements or writings, concealment of facts, and fraudulent documents in matters within the jurisdiction of the Division shall be guilty of a felony as found in O.C.G.A. Section 16-10-20:

1. A person who knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact; makes a false, fictitious, or fraudulent statement or representation; or makes or uses any false writing or document, knowing the same to contain any false, fictitious, or fraudulent statement or entry, in any matter within the jurisdiction of the Division shall, upon conviction thereof, be punished by a fine of not more than $1,000.00 or by imprisonment for not less than one nor more than five years, or both.

(c) Any person who:

1. Violates any licensing provision of this 31-13-1, et. seq., or any Rule, Regulation, or Order issued under 31-13-1, et. seq., or any term, condition, or limitation of any license issued under this Chapter; or

2. Commits any violation for which a license may be revoked under rules or regulations issued pursuant to this 31-13-1, et. seq., may be subject to a civil penalty, to be imposed by the Division, not to exceed $10,000.00. If any violation is a continuing one, each day of such violation shall constitute a separate violation for the purpose of computing the applicable civil penalty.

3. If a violation is found to exist during an inspection or visit and is then found to exist on a subsequent inspection or visit, there shall arise a rebuttable presumption that the violation continued throughout the period of time between the initial inspection or visit and the subsequent inspection or visit.

(d) Whenever the Division proposes to subject a person to the imposition of a civil penalty, it shall notify such person in writing:

1. Setting forth the date, facts, and nature of each act or omission with which the person is charged.

2. Specifically identifying the particular provision or provisions of the Code section, Rule, Order, or license condition involved in the violation; and

3. Advising of each penalty which the Division proposes to impose and its amount.

(e) Such written notice shall be sent by registered or certified mail by the Division to the last known address of such person. The person so notified shall be granted an opportunity to show in writing, within ten days from receipt of such notice, why such penalty should not be imposed. The notice shall also advise such person that upon failure to pay the civil penalty subsequently determined by the Division, if any, the penalty may be collected by civil action.

(f) Upon receipt of a written response from the person so notified, alleging that a penalty should not be imposed, the Director shall consider the response and make a final decision on the appropriateness and amount of the penalty. The Division may, at its discretion, conduct an onsite inspection in order to make a final decision. In making this decision, the Director may, as deemed appropriate by the Director, consider such factors as: errors concerning the amount or nature of the penalty, corrective action taken by the licensee, and approved disposal of radioactive material by the licensee.

(g) The Division shall inform the licensee of its final decision by registered or certified mail to the last known address of the licensee. Within 10 days of receipt of the Division's final determination concerning the civil penalty, the licensee may request an administrative hearing pursuant to the Georgia Administrative Procedure Act, O.C.G.A. 50-13-1, et. seq.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.10

AUTHORITY: O.C.G.A § 31-13-1 *et seq.*, as amended.

HISTORY: Rule entitled "Administration" adopted. F. Feb. 24, 1994; eff. Mar. 16, 1994.

Amended: F. Oct. 4, 1994; eff. Oct. 24, 1994.

Amended: F. Apr. 16, 1997; eff. May 6, 1997.

Amended: F. Mar. 29, 2002; eff. Apr. 18, 2002.

Amended: F. Aug. 16, 2013; eff. Sept. 5, 2013.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Feb. 26, 2020; eff. Mar. 17, 2020.

Amended: F. Apr. 1, 2024; eff. Apr. 21, 2024.

391-3-17-.13 Physical Protection of Category 1 and Category 2 Quantities of Radioactive Materials

(1) Except as set forth in (2) and (3) below, this Rule incorporates by reference 10 CFR Part 37 with an Effective Date of December 30, 2019.

(2) The following provisions of 10 CFR Part 37 are not incorporated by reference. If there is a cross reference to a Federal citation specifically entirely excluded from incorporation, then the cross referenced citation is not incorporated by virtue of the cross reference:

(a) 10 CFR 37.1, Purpose

(b) 10 CFR 37.3, Scope

(c) 10 CFR 37.7, Communications

(d) 10 CFR 37.9, Interpretations

(e) 10 CFR 37.11 (a-b), Specific Exemptions

(f) 10 CFR 37.13, Information collection requirements: OMB approval

(g) 10 CFR 37.105, Inspections

(h) 10 CFR 37.109, Criminal penalties

(3) The following provisions of 10 CFR Part 37 are incorporated by reference with the specified changes:

(a) "Commission," "Nuclear Regulatory Commission," "NRC," and "U.S. Nuclear Regulatory Commission," as used in the provisions of Part 37 of the Code of Federal Regulations that are incorporated by reference, mean the Georgia Environmental Protection Division, except:

1. 10 CFR 37.5 Definitions for: *Commission, Fingerprint orders, Person*,

2. 10 CFR 37.25(b) *Grandfathering*,

3. 10 CFR 37.27(a) and (c) *General performance objective and requirements, Procedures for processing fingerprint checks*,

4. 10 CFR 37.29(a),

5. 10 CFR 37.71 referring to NRC's license verification system,

6. 10 CFR 37.71 "licensee of the Commission or an Agreement State" shall be deemed to be a reference to "licensee of the Georgia Environmental Protection Division, NRC or an Agreement State."

(4) In lieu of the address given in 10 CFR 37.27(c), licensee shall submit fingerprint cards or records to:

U.S. Nuclear Regulatory Commission

Director, Division of Physical and Cyber Security Policy

Attn: Criminal History Program/Mail Stop - T-07D04M

11545 Rockville Pike

Rockville, MD 20852-2738

(5) Reference in 10 CFR 37 to the following NRC regulation shall be deemed a reference to the identified section(s) in Georgia DNR Chapter 391-3-17:

(a) NRC Regulation (10 CFR) 30.41(d) refers to 391-3-17-.02(19).

(6) License required reports of events or notifications as specified in the following sections shall be submitted to Georgia Department of Natural Resources, Environmental Protection Division, as specified in Georgia DNR Chapter 391-3-17:

(a) 10 CFR 37.41,

(b) 10 CFR 37.45,

(c) 10 CFR 37.57,

(d) 10 CFR 37.77(a) - (d),

(e) 10 CFR 37.81

(7) In lieu of the address given in 10 CFR 37.23(a)(2), licensee should provide oath or affirmation certifications to the Georgia Department of Natural Resources, Environmental Protection Division.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.13

AUTHORITY: O.C.G.A. § 31-13-1 *et seq*., as amended.

HISTORY: Original Rule entitled "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Materials" adopted. F. Dec. 14, 2017; eff. Jan. 3, 2018.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

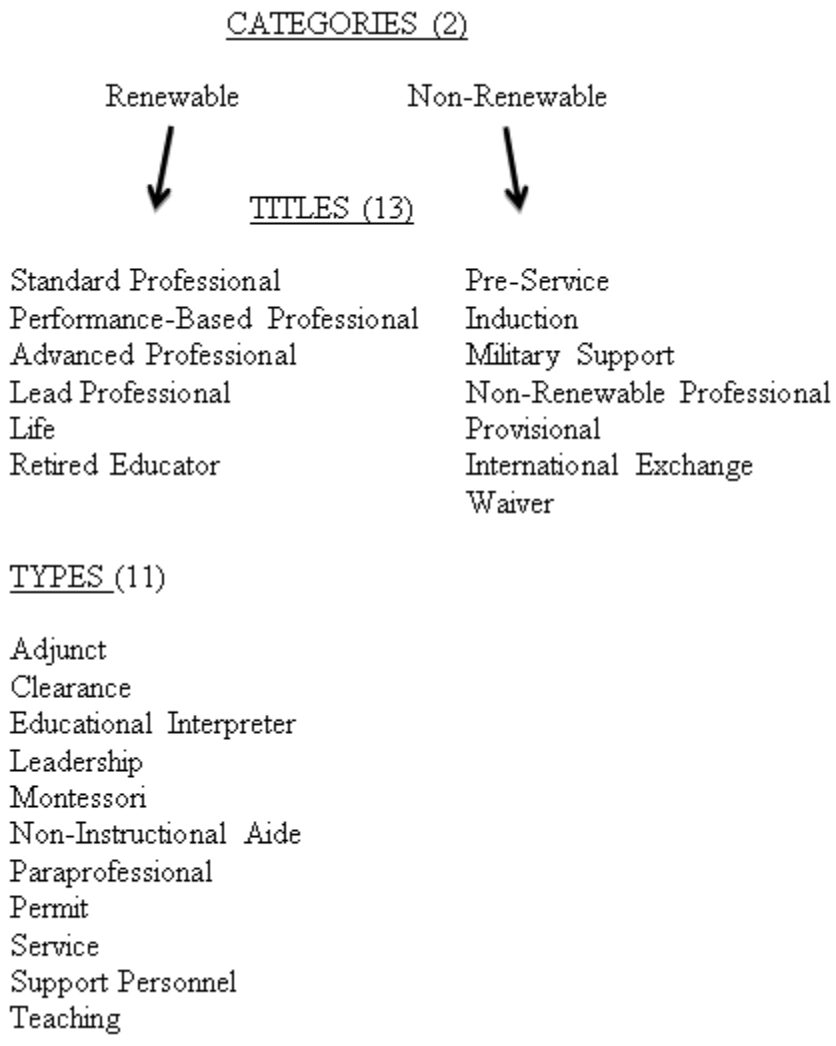
Amended: F. Apr. 1, 2024; eff. Apr. 21, 2024.

Department 505. PROFESSIONAL STANDARDS COMMISSION

Chapter 505-2. CERTIFICATION

505-2-.02 Classification

(1) **Summary:** Certification is classified according to category, title, type, field and level. The Georgia Professional Standards Commission (GaPSC) has authorized the issuance of certificates under the following classification system:



(2) **Categories.** Certificates are grouped under two (2) major categories based upon requirements needed for continued certification. The categories are: Renewable and Non-Renewable.

(a) Renewable certificate validity varies by title and type. During the validity period, the educator must satisfy renewal requirements outlined in GaPSC Rule 505-2-.36 RENEWAL REQUIREMENTS and/or any additional requirements outlined in the rule appropriate to the certificate title and type.

(b) Non-Renewable certificates are valid from one (1) to five (5) years, depending on the title and outstanding requirements for certification.

(3) **Titles**. Certificate titles identify the subcategories of certificates. There are thirteen (13) titles.

(a) Standard Professional: The Standard Professional certificate is a Georgia professional certificate title issued to educators with teaching, service and leadership certificate types employed by a Georgia local unit of administration (LUA). Certificate issuance is based upon completion of all requirements for professional certification and applicable Special Georgia Requirements. Standard Professional certificates are identified by the code letters "SR" (See GaPSC Rule 505-2-.05 PROFESSIONAL CERTIFICATE).

1. The Standard Professional teaching certificate title indicates that all requirements for professional teaching certification have been met, including applicable Special Georgia Requirements. The Standard Professional teaching certificate is issued to educators who are employed by a Georgia LUA but have not met performance evaluation requirements on the state annual summative performance evaluation or are not evaluated on the statewide evaluation system. Educators holding the Standard Professional teaching certificate who are not evaluated on the statewide evaluation system are evaluated by a school, district or agency approved evaluation system.

2. The Standard Professional leadership certificate title indicates that all requirements for professional leadership certification have been met, including applicable Special Georgia Requirements. The Standard Professional leadership certificate is issued to Georgia educators completing GaPSC-approved educator preparation programs prior to September 30, 2009. The certificate is also issued to educators applying by reciprocity who meet requirements outlined in GaPSC Rule 505-2-.153 EDUCATIONAL LEADERSHIP.

3. The Standard Professional service certificate title indicates that all requirements for professional certification in a service field have been met, including applicable Special Georgia Requirements.

(b) Performance-Based Professional: The Performance-Based Professional certificate is a Georgia professional certificate title issued to educators with teaching and leadership certificate types employed by a Georgia LUA. Certificate issuance is based upon completion of all requirements for professional certification, including applicable Special Georgia Requirements. Performance-Based Professional certificates are identified by the code letters "PR" (See GaPSC Rule 505-2-.05 PROFESSIONAL CERTIFICATE).

1. The Performance-Based Professional teaching certificate is part of Georgia's tiered teacher certification system and issued to educators who are employed by a Georgia LUA and evaluated on the statewide evaluation system.

2. The Performance-Based Professional leadership certificate is issued to educators who have completed GaPSC-approved educator preparation performance-based leadership programs and met applicable Special Georgia Requirements.

3. Performance-Based certificates issued to educators as a result of a classroom performance-based evaluation system known as the Teacher Performance Assessment Instrument (TPAI) discontinued in 1990 will have the certificate title converted to the Standard Professional certificate on the effective date of this rule. After meeting Performance-Based certificate requirements outlined in GaPSC Rule 505-2-.05 PROFESSIONAL CERTIFICATE, these educators will qualify for a Performance-Based Professional certificate.

(c) Advanced Professional: The Advanced Professional certificate title is part of Georgia's tiered teacher certification system and recognizes teachers with expert classroom practice and professional growth resulting in higher levels of student learning. The Advanced Professional certificate is issued to educators employed by a Georgia LUA. Certificate issuance is based upon completion of all requirements for Advanced Professional certification and applicable Special Georgia Requirements. Advanced Professional certificates are identified by the code letters "AP" (See GaPSC Rule 505-2-.06 ADVANCED PROFESSIONAL CERTIFICATE).

(d) Lead Professional: The Lead Professional certificate title is part of Georgia's tiered teacher certification system and recognizes qualified teachers who promote, support and expand opportunities for teacher leadership in grades P-12 to improve effective classroom practice resulting in higher levels of student learning. The Lead Professional

certificate is issued to educators employed by a Georgia LUA. Certificate issuance is based upon completion of all requirements for Lead Professional certification and applicable Special Georgia Requirements. Lead Professional certificates are identified by the code letters "LP" (See GaPSC Rule 505-2-.07 LEAD PROFESSIONAL CERTIFICATE).

(e) Life: The Life certificate title was issued prior to July 1, 1974, to educators eligible under requirements in place at that time. Once issued, the life status remains in effect for an unlimited time for the fields in which it was issued. Applications for higher certificate levels (upgrades) do not alter the life status for fields previously issued. No new life certificates shall be issued nor shall any new fields be added to life certificate holders with the life title. Life certificates are identified by the code letter "D" (See GaPSC Rule 505-2-.12 LIFE CERTIFICATE).

(f) Retired Educator: The Retired Educator certificate is issued to retired Georgia educators who have previously held renewable, professional educator certification. Retired Educator certificates are identified by the code letters "R" (See GaPSC Rule 505-2-.44 RETIRED EDUCATOR CERTIFICATE).

(g) Pre-Service: The Pre-Service certificate title is part of Georgia's tiered teacher certification system and recognizes candidates enrolled in GaPSC-approved educator preparation programs, and participating in field and clinical experiences in Georgia schools. Pre-Service certificates are identified by the code letters "PS" (See GaPSC Rule 505-2-.03 PRE-SERVICE TEACHING CERTIFICATE).

(h) Induction: The Induction certificate title is part of Georgia's tiered teacher certification system and provides a statewide structure for the professional development of early career educators and educators new to the state of Georgia and assures the effectiveness of these educators. Certificate issuance is based upon completion of all requirements for Induction certification and applicable Special Georgia Requirements. Induction certificates are identified by the code letter "IN" (See GaPSC Rule 505-2-.04 INDUCTION CERTIFICATE).

(i) Military Support Certificate: The Military Support certificate is issued to eligible transitioning military veterans and military spouses, allowing completion of certification requirements on a modified timeline. Military Support certificates are identified by the letter "M" (See GaPSC Rule 505-2-.46 MILITARY SUPPORT CERTIFICATE).

(j) Non-Renewable Professional: The Non-Renewable Professional certificate title is issued to educators at the request of a Georgia LUA under several different circumstances as outlined in the Non-Renewable Professional rule. Non-Renewable Professional certificates are identified by the code letter "N" (See GaPSC Rule 505-2-.09 NON-RENEWABLE PROFESSIONAL CERTIFICATE).

(k) Provisional: The Provisional certificate is issued to individuals who have satisfied the minimum job-entry level requirements for a specific field. Provisional certificates are identified by the code letter "B" (See GaPSC Rule 505-2-.08 PROVISIONAL CERTIFICATE).

(l) International Exchange: The International Exchange certificate title is issued at the request of an employing Georgia LUA to educators certified in other countries who wish to teach in Georgia schools for up to three (3) years. The certificate cannot be renewed or extended. International Exchange certificates are identified by the code letter "X" (See GaPSC Rule 505-2-.11 INTERNATIONAL EXCHANGE CERTIFICATE).

(m) Waiver: The Waiver certificate title is issued at the request of an employing Georgia LUA and at the discretion of the GaPSC to educators who have not satisfied all certification requirements. Valid for a one (1)-year period, the Waiver certificate is non-renewable. Waiver certificates are identified by the code letter "W" (See GaPSC Rule 505-2-.13 WAIVER CERTIFICATE).

(4) **Types.** Certification types identify eleven (11) school personnel functions: adjunct, clearance, educational interpreter, leadership, Montessori, non-instructional aide, paraprofessional, permit, service, support personnel, and teaching.

(a) Adjunct License: The Adjunct license is issued at the request of an employing Georgia LUA to individuals with specific knowledge, skills and experience in an engineering, medical, dental, pharmaceutical, veterinarian, legal, accounting or arts profession, or any other professional position approved by the GaPSC or who have instructional

experience in a branch of the U.S. military (except for JROTC), or in a GaPSC-accepted accredited college or university. Holders of this certificate are eligible to provide instruction for up to but no more than fifty (50) percent of the school day in specific subjects in grades 6-12 only. These licenses are issued for one (1)-year period and are renewable. These licenses are identified by the letter "J" (See GaPSC Rule 505-2-.15 ADJUNCT LICENSE).

(b) Clearance Certificate: The Clearance certificate is issued at the request of the employing Georgia LUA to educators who satisfactorily complete fingerprint and criminal background check requirements and do not have a certificate that is currently under investigation by the GaPSC or revoked or suspended in Georgia or any other state. All educators employed by a Georgia LUA must hold a Clearance Certificate. See GaPSC Rule 505-2-.42 CLEARANCE CERTIFICATE, for the definition of educator as it applies to this certificate. There are no academic requirements necessary to qualify for this certificate. All holders of this certificate are subject to the Georgia Code of Ethics for Educators. These certificates are identified by the letter "C" (See GaPSC Rule 505-2-.42 CLEARANCE CERTIFICATE).

(c) Educational Interpreter License: The Educational Interpreter license is issued to individuals who serve as sign language interpreters in schools. It is the responsibility of the Georgia LUA to assure that personnel who provide educational interpreting services, regardless of job title, hold the Educational Interpreter License. The Educational Interpreter License has no assigned level. These licenses are identified by the letters "EI" (See GaPSC Rule 505-2-.16 EDUCATIONAL INTERPRETER LICENSE).

(d) Leadership Certificate: The Leadership certificate is issued in fields that prepare an educator to administer or supervise a Georgia LUA, school, or school program. These certificates are identified by the letter "L" (See GaPSC Rule 505-2-.153 EDUCATIONAL LEADERSHIP).

(e) Montessori Certificate: The Montessori certificate is issued to eligible individuals who teach in Georgia public or private Montessori classrooms. The Montessori certificate is issued in Age Levels identified on the certificate. (See GaPSC Rule 505-2-.45 MONTESSORI CERTIFICATE).

(f) Non-Instructional Aide license: The Non-Instructional Aide license is issued to eligible individuals hired to perform routine non-instructional tasks. The Non-Instructional Aide license has no assigned level. These licenses are identified by the letters "AIDE" (See GaPSC Rule 505-2-.17 NON-INSTRUCTIONAL AIDE LICENSE).

(g) Paraprofessional license: The Paraprofessional license is issued to eligible individuals hired as Paraprofessionals. The Paraprofessional license has no assigned level. These licenses are identified by the letters "PARA" (See GaPSC Rule 505-2-.18 PARAPROFESSIONAL LICENSE).

(h) Permit: The Permit is issued at the request of an employing Georgia LUA to individuals with specific experience in the teaching fields of performing arts (art, music, dance, and drama), world language, JROTC, CTAE Specializations, Engineering and Technology, Healthcare Science, and the position of superintendent. These certificates are identified by the letter "P" (See GaPSC Rule 505-2-.10 PERMIT).

(i) Service certificate: The Service certificate is issued in fields that prepare an individual to provide support services to students, school personnel, and school operations. These certificates are identified by the letter "S" (See GaPSC Rules 505-2-.140 AUDIOLOGY to 505-2-.149 TEACHER LEADERSHIP).

(j) Support Personnel license: The Support Personnel license is issued at the request of an employing Georgia LUA to individuals who serve in positions of leadership over support functions in the LUA. Such positions include but are not limited to: finance, transportation, public relations, personnel, staff development, facilities, planning, evaluation, research, assessment, and technology coordination. The Support Personnel license has no assigned level. These licenses are identified by the letters "SP" (See GaPSC Rule 505-2-.19 SUPPORT PERSONNEL LICENSE).

(k) Teaching certificate: The teaching certificate is issued in fields that prepare an educator to teach the subject matter offered as a part of the school curriculum. These certificates are identified by the letter "T";

1. Technical Specialist teaching certificates were issued to eligible educators in the Career, Technical and Agricultural Education (CTAE) areas of Trade and Industrial Education and Healthcare Science Technology

Education prior to the effective date of this rule. These certificates were identified by the letters "TS" but were converted to "T" certificates on the effective date of this rule.

(5) **Fields**. Fields identify the specific teaching subject, service function or leadership function authorized by the certificate. Georgia certificate fields are listed on the GaPSC web site at www.gapsc.com.

(6) **Level.** Levels are assigned to Georgia educator certificates based on the degree(s) an educator holds subject to the commission's determined equivalent. Certificates may be assigned one or both of the following types of levels:

(a) General Level: The general level assigned to a certificate applies to all fields on that certificate, with the possible exception of Educational Leadership fields, as described in part (b) below.

1. The general level is determined upon initial issuance of a certificate based on the highest degree an educator has been awarded by a GaPSC-accepted accredited institution, with the following exception:

(i) A leadership degree that meets the criteria outlined in part (b) below shall not be used to determine the general level of a certificate.

2. Once an educator has been issued a certificate that may be upgraded as outlined in GaPSC Rule 505-2-.33 CERTIFICATE UPGRADE, the general level may only be increased according to the procedures outlined in that rule.

3. Unless otherwise noted, all references to the "level" of a certificate in GaPSC rules refer to the general level.

4. College hours beyond a degree are not used to assign the level, except as specifically noted in section (c) below.

(b) Leader Level: A certificate may be assigned a leader level in addition to a general level. The leader level only applies to any Educational Leadership fields on that certificate. If the general level of a certificate is higher than the leader level, the general level supersedes the leader level for all fields, including any Educational Leadership fields held.

1. A leader level is assigned to the certificate of any educator who completed a leadership degree, defined in O.C.G.A. 20-2-212 as "a degree earned in conjunction with completion of an educator leadership preparation program approved by the Professional Standards Commission," unless the leadership degree earned meets one of the following exemption criteria:

(i) The leadership degree was awarded prior to July 1, 2010; or

(ii) The educator enrolled in the leadership preparation program on or before April 1, 2009, and was awarded one of the following leadership degrees by the dates indicated:

(I) A master's level [level five (5)] leadership degree prior to July 1, 2012;

(II) An education specialist level [level six (6)] leadership degree prior to July 1, 2013; or

(III) A doctoral level [level seven (7)] leadership degree prior to July 1, 2014.

(iii) The leadership degree was not recognized as GaPSC-accepted preparation for Educational Leadership certification at the time that the educator initially received the General certificate level.

2. Once a leader level has been assigned to a certificate, it may only be increased according to the procedures outlined in GaPSC Rule 505-2-.33 CERTIFICATE UPGRADE.

(c) General requirements for recognizing certificate levels of education below the bachelor's degree level are:

1. Level One (1) - completion of a high school diploma or the GED equivalent;

2. Level Two (2) - completion of an associate's degree or one of the following options:

(i) Sixty (60) semester hours of acceptable college credit. Note: For certification purposes, the phrase "acceptable college credit" is defined as credits earned at an institution of higher education that holds GaPSC-accepted accreditation with a grade of "C" or higher for each course. Remedial courses, course work taken below the freshman level, and audited courses are not acceptable;

(ii) A two (2)-year program consisting of a minimum of two thousand (2,000) clock hours earned through a GaPSC-accepted accredited post-secondary vocational/technical school in the field in which certification is requested; or

(iii) A minimum of twenty-seven (27) semester hours of acceptable college or university credit and a minimum of one thousand (1,000) clock hours earned through a GaPSC-accepted accredited vocational/technical school in the field in which certification is requested.

(d) General requirements for recognizing initial certificate levels of education at the bachelor's degree level or higher are:

1. Level Four (4) - completion of a bachelor's degree or the GaPSC's determined degree equivalent. A bachelor's degree is the minimum degree requirement for teaching certification except for Healthcare Science and selected Career and Technical Specializations and Fine Arts Permit fields.

2. Level Five (5) - completion of a master's degree or the GaPSC's determined degree equivalent. A master's degree is the minimum degree requirement for service fields and non-performance based leadership certification.

3. Level Six (6) - completion of an education specialist degree or the GaPSC's determined degree equivalent as found on the GaPSC website at www.gapsc.com or completion of a minimum of thirty-six (36) semester hours of course work required for a level seven (7) doctoral degree and successful completion of the oral and/or written comprehensive examinations or the institution's determined equivalent. A specialist degree is the minimum degree requirement for performance-based leadership certification; and

4. Level Seven (7) - completion of a Ph.D., Ed.D. or the GaPSC's determined degree equivalent;

(e) Educators holding a valid level one (1) or two (2) certificate may qualify for a certificate level change to the bachelor's degree level - level four (4) - by earning a bachelor's degree that meets the requirements of GaPSC Rule 505-2-.31 GAPSC-ACCEPTED ACCREDITATION; VALIDATION OF NON-ACCREDITED DEGREES. The procedures outlined in GaPSC Rule 505-2-.33 CERTIFICATE UPGRADE do not apply to educators holding level one (1) or two (2) certificates;

(f) The assignment of a certification level to various degrees is contingent on a valid certificate field being held and the degree being awarded on an official transcript from a GaPSC-accepted accredited institution. Certificate levels that are assigned to various degrees and majors may be found on the GaPSC website at www.gapsc.com;

(g) Degrees with "doctoral," "doctorate" or "master's" in the degree title are not automatically equivalent to a specific degree level and may result in a determination ranging from level four (4) to level seven (7). The agency commission is responsible for determining what level is assigned to a specific degree; and

(h) The certificate level, as defined in Georgia, is not a part of the National Association of State Directors of Teacher Education and Certification (NASDTEC) Interstate Agreement and, therefore, does not transfer from state to state.

Cite as Ga. Comp. R. & Regs. R. 505-2-.02

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Appeals" adopted. F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: New Rule of same title adopted. F. Dec. 16, 1992; eff. July 1, 1993, as specified by the Agency.

Amended: F. Apr. 29, 1994; eff. July 1, 1994, as specified by the Agency.

Amended: F. June 24, 1997; eff. July 14, 1997.

Repealed: New Rule entitled "Classification: Category, Title, Type, Field, Level" adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Amended: F. Dec. 14, 2004; eff. Jan. 15, 2005, as specified by the Agency.

Amended: F. Aug. 15, 2008; eff. Sept. 15, 2008, as specified by the Agency.

Amended: F. Apr. 20, 2009; eff. May 15, 2009, as specified by the Agency.

Amended: F. Sept. 10, 2009; eff. Oct. 1, 2009, as specified by the Agency.

Repealed: New Rule of same title adopted. F. Dec. 17, 2009; eff. Jan. 15, 2010, as specified by the Agency.

Repealed: New Rule of same title adopted. F. June 7, 2010; eff. July 15, 2010, as specified by the Agency.

Amended: F. May 24, 2013; eff. June 15, 2013, as specified by the Agency.

Repealed: New Rule entitled "Classification" adopted. F. June 11, 2014; eff. July 1, 2014, as specified by the Agency.

Amended: F. Mar. 25, 2015; eff. Apr. 15, 2015, as specified by the Agency.

Amended: F. Dec. 21, 2015; eff. Jan. 15, 2016, as specified by the Agency.

Amended: F. Oct. 4, 2017; eff. Oct. 15, 2017, as specified by the Agency.

Amended: F. Apr. 10, 2018; eff. Apr. 15, 2018, as specified by the Agency.

Amended: F. Mar. 26, 2019; eff. Apr. 15, 2019, as specified by the Agency.

Amended: F. Dec. 13, 2019; eff. Jan. 1, 2020, as specified by the Agency.

Amended: F. Apr. 9, 2024; eff. Apr. 15, 2024, as specified by the Agency.

505-2-.10 Permit

(1) **Summary:** The permit is a certificate designed for individuals who qualify to teach in specific fields based on a combination of work experience, specified educational requirements and assessment(s). Permitted personnel include individuals with fluency in a language other than English; performing artists from the fields of art, dance, drama and music; Junior Reserve Officer's Training Corps (JROTC) personnel; and teachers and leaders from business, government, military, or other professions.

(2) **Fields of Issuance.** The following Permit fields are offered:

(a) Career and Technical Specializations

(b) Engineering and Technology

(c) World Languages

(d) Healthcare Science

(e) Junior Reserve Officer's Training Corps (JROTC)

(f) Performing Arts (Art, Dance, Drama and Music)

(g) Superintendent

(3) **Career and Technical Specializations.**

(a) Issuance.

1. Pass the GACE Educator Ethics Assessment.

2. Have at least two (2) years of occupational work experience in the area of specialization.

(i) The fields of Aviation-Flight Operations, Computer Animation and Electronics Technology have options that do not require occupational work experience. Please refer to the chart of licensure options **HERE**.

3. Satisfy minimum degree requirements and industry testing and/or licensure, which may be found **HERE**.

(i) With the exception of the specializations in (I) below, individuals meeting all other requirements except industry testing and/or licensure may be issued a Permit certificate. For those who do not meet the licensure requirement, it must be satisfied prior to extension of the Permit.

(I) The following fields require industry licensure for issuance of the initial Permit: Barbering, Esthetics, Cosmetology, and Nails.

4. Have the certificate requested by the employing Georgia local unit of administration (LUA) following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(b) Extension.

1. Satisfy the Special Education requirement with a grade of B or better.

2. Complete industry testing and/or licensure if the field did not require it for initial issuance.

3. Satisfy a locally-developed professional learning plan (PLP).

4. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(4) **Engineering and Technology.**

(a) Issuance.

1. Pass the GACE Educator Ethics Assessment.

2. Hold a bachelor's degree or higher from a GaPSC-accepted accredited institution in engineering or the GaPSC-determined equivalent.

3. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(b) Extension.

1. Meet the following Special Georgia Requirements:

(i) Pass the GACE content assessment in Engineering and Technology.

(ii) Satisfy the Special Education requirement with a grade of B or better.

2. Satisfy the locally-developed professional learning plan (PLP).

3. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(5) **World Language.**

(a) Issuance.

1. Pass the GACE Educator Ethics Assessment.

2. Pass the appropriate GACE content assessment or pass the American Council on the Teaching of Foreign Languages (ACTFL) Oral Proficiency Interview (OPI) and Writing Proficiency Test (WPT) at the levels indicated in GaPSC Rule 505-2-.26 CERTIFICATION AND LICENSURE ASSESSMENTS.

3. Hold a bachelor's degree or higher from a GaPSC-accepted accredited institution, or the U.S. equivalent of a bachelor's degree or higher based on a GaPSC-accepted Foreign Credential Report (See GaPSC Rule 505-2-.29 EVALUATION OF CREDIT EARNED OUTSIDE OF THE U.S).

4. Be proficient in English, as determined by the LUA.

5. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(b) Extension.

1. Satisfy the Special Education requirement with a grade of B or better.

2. Satisfy the locally-developed professional learning plan (PLP).

3. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(6) **Healthcare Science.**

(a) Issuance.

1. Pass the GACE Educator Ethics Assessment.

2. Hold a valid healthcare professional license, registration, or certification that relates to the healthcare field and has been issued by an appropriate governing or regulatory body, which may be found here.

3. Have a minimum of two (2) years of occupational work experience in the healthcare field.

4. Hold an associate's degree or higher from a GaPSC-accepted accredited institution in a healthcare-related field.

5. Meet Standards of Conduct.

6. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(b) Extension.

1. Satisfy the Special Education requirement with a grade of B or better.

2. Satisfy the locally-developed professional learning plan (PLP).

3. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(7) **Junior Reserve Officer's Training Corps (JROTC).**

(a) Issuance.

1. Pass the GACE Educator Ethics Assessment.

2. Hold a minimum of a high school diploma or GED.

3. Hold official military retirement orders, or a DD Form 214 Member Copy #4, with Block #24 reflecting honorable retirement from a branch of military service (Army, Air Force, Coast Guard, Marine Corps, or Navy). National Guard personnel may, in lieu of the DD Form 214, use NGB Form 22, with Block #24 reflecting honorable retirement.

4. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(b) Extension.

1. Hold a letter or certificate from a branch of military service verifying successful completion of all required JROTC instructor training for full branch certification.

2. Satisfy the Special Education requirement with a grade of B or better.

3. Satisfy the locally-developed professional learning plan (PLP).

4. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(c) Salaries for JROTC instructors are not calculated in the same way as other certified personnel. Determination of JROTC instructor salary is negotiated by the LUA in accordance with United States Code, Title 10 Armed Forces, Part III, Chapter 102 Junior Reserve Officer's Training Corps and appropriate Georgia Department of Education rules regarding state salaries and supplements and experience for salary purposes. When JROTC units are established, the respective military service branch will provide instructor pay information to LUAs.

(8) **Performing Arts: Art, Dance, Drama and Music.**

(a) Issuance.

1. Pass the GACE Educator Ethics Assessment.

2. Hold a minimum of a high school diploma or GED.

3. Have at least two (2) years of occupational work experience in the area of specialization.

4. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(b) Extension.

1. Meet the following Special Georgia Requirements:

(i) Pass the GACE content exam for the fields of Art and Music.

(ii) Satisfy the Special Education requirement with a grade of B or better.

2. Satisfy the locally-developed professional learning plan (PLP).

3. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(9) **Superintendent.**

(a) Issuance.

1. Pass the GACE Ethics for Educational Leadership Assessment.

2. Hold a master's degree or higher from a GaPSC-accepted accredited institution.

3. Have at least two (2) years of occupational work experience of business, management, leadership and/or instructional experiences acceptable to the employing LUA as meeting qualifications for employment.

4. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(b) Extension.

1. Meet the following Special Georgia Requirements:

(i) Pass the GACE content exam in Educational Leadership.

(ii) Satisfy the Special Education requirement with a grade of B or better.

2. Satisfy the locally-developed professional learning plan (PLP).

3. Have the certificate requested by the employing Georgia local unit of administration following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION, MyPSC AND TEST ELIGIBILITY PROCEDURES.

(c) If requirements in (9)(b) (1) or (2) have not been satisfied for the extension, the chair of the Board of Education must submit a letter supporting the extension.

(10) **Conversion to Professional.**

(a) An individual holding a Permit in a teaching field and seeking renewable professional certification must meet all requirements for issuance of the 5-Year Induction, Standard Professional or Performance-Based Professional certificate as outlined in GaPSC Rule 505-2-.04 INDUCTION CERTIFICATE and GaPSC Rule 505-2-.05 PROFESSIONAL CERTIFICATE.

(11) **Endorsements.** Permit holders are not eligible to add endorsement fields, with the following exceptions: permit holders in world language fields may add the ESOL endorsement; permit holders in Drama and Audio/Video Technology & Film may add the Dramatic Writing micro-endorsement; permit holders in teaching fields, with the exception of JROTC, may add the Online Teaching endorsement. Information on the endorsement requirements may be found in the appropriate endorsement rules.

(12) **Professional Learning.**

(a) The LUA shall establish a mentor system to provide permitted personnel with orientation to the school, guidance for basic principles of classroom management, and support as they adjust to the school work place.

(b) A Professional Learning Plan (PLP) shall be locally developed and implemented for the validity period of the permit. This plan must incorporate all Special Georgia Requirements to include course work in the identification and education of children with special education needs. The plan shall also address such areas as the development and assessment of teacher competence in the areas of learner characteristics and curriculum and methods specific to the age level and certificate field issued. It is appropriate for the plan to include prescribed course work. For example, a course in methods for teaching world languages in grades P-12 might be required for international speakers permitted to teach world languages. This plan must be developed at the beginning of the validity period and used to guide the permit holder's professional learning activities to support the school improvement plan and enhanced student achievement. The plan must be satisfied by the educator and maintained locally by the LUA.

(13) **Exceptions.**

(a) The GACE Educator Ethics Assessment is not required to convert to the five-year Permit if the initial permit was issued prior to October 15, 2017.

(b) The GACE Ethics for Educational Leadership Assessment is not required to convert to the five-year Permit if the initial permit was issued prior to October 15, 2017.

(14) **Restrictions.**

(a) A permit cannot be issued to individuals in the following circumstances:

1. Those who have been previously certified in Georgia but have not passed the required content assessment(s) will not be eligible for a permit in the same field.

2. Those who have two (2) or more un-remediated "Unsatisfactory," "Needs Development" or "Ineffective" performance evaluations as defined in GaPSC Rule 505-2-.43 ANNUAL PERFORMANCE EVALUATION.

3. Those who hold or have held a Non-Professional type certificate but have not successfully completed requirements to convert to a renewable professional certificate, unless the employing Georgia local unit of administration (LUA) that requested the initial Non-Professional type certificate provides documentation that the original certificate was requested in error.

4. The permit is not issued to an individual who has completed a state-approved educator preparation program leading to Induction or Professional certification and has not satisfied Special Georgia Requirements.

(15) **Validity.** The initial permit is valid for three (3) years and may be extended for multiple five (5)-year cycles upon completion of specific requirements outlined in correspondence accompanying the Permit and "Satisfactory," "Proficient" or "Exemplary" performance evaluations on the statewide evaluation instrument.

(a) Permits must be requested by an employing Georgia local unit of administration (LUA). As part of the application packet, the LUA must verify by completing the GaPSC Employer Assurance Form that the permit applicant is the best-qualified individual available for the position. Should a Permit holder change LUAs, it is not necessary to issue a new permit until the end of the validity period. However, the gaining LUA is responsible for developing a new Professional Learning Plan (PLP).

(16) **Legacy.** All valid permits issued prior to the effective date of this rule shall continue in effect and be extended, as long as there is no break in the validity period, based on completion of the requirements in existence at the time the permit was issued. If the permit is allowed to expire, all requirements in effect for the new permit must be satisfied at the time of application.

Cite as Ga. Comp. R. & Regs. R. 505-2-.10

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Classification" adopted. F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: New Rule entitled "Classification: Type, Title, Level, Field, Category" adopted. F. Dec. 16, 1992; eff. July 1, 1993, as specified by the Agency.

Amended: F. Apr. 29, 1994; eff. July 1, 1994, as specified by the Agency.

Amended: F. June 21, 1996; eff. July 11, 1996.

Amended: F. Apr. 7, 2000; eff. May 1, 2000, as specified by the Agency.

Amended: F. July 10, 2000; eff. August 1, 2000, as specified by the Agency.

Amended: F. Sept. 10, 2001; eff. Oct. 1, 2001, as specified by the Agency.

Amended: F. Sept. 19, 2002; eff. Oct. 15, 2002, as specified by the Agency.

Repealed: New Rule entitled "Permit" adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Amended: F. Aug. 20, 2004; eff. Sept. 15, 2004, as specified by the Agency.

Amended: F. June 23, 2005; eff. July 15, 2005, as specified by the Agency.

Amended: F. Feb. 10, 2006; eff. Mar. 15, 2006, as specified by the Agency.

Amended: F. Aug. 3, 2006, eff. Sept. 1, 2006, as specified by the Agency.

Amended: F. June 18, 2007; eff. July 15, 2007, as specified by the Agency.

Amended: F. Nov. 15, 2007; eff. Dec. 15, 2007, as specified by the Agency.

Amended: F. Sept. 16, 2008; eff. Oct. 15, 2008, as specified by the Agency.

Repealed: New Rule of same title adopted. F. June 7, 2010; eff. July 15, 2010, as specified by the Agency.

Amended: F. Sept. 25, 2013; eff. Oct. 15, 2013, as specified by the Agency.

Repealed: New Rule of same title adopted. F. June 11, 2014; eff. July 1, 2014, as specified by the Agency.

Amended: F. Sept. 26, 2016; eff. Oct. 15, 2016, as specified by the Agency.

Amended: F. Oct. 4, 2017; eff. Oct. 15, 2017, as specified by the Agency.

Amended: F. June 5, 2018; eff. July 1, 2018, as specified by the Agency.

Amended: F. Oct. 3, 2018; eff. Oct. 15, 2018, as specified by the Agency.

Amended: F. Mar. 26, 2019; eff. Apr. 15, 2019, as specified by the Agency.

Amended: F. Sept. 24, 2019; eff. Oct. 15, 2019, as specified by the Agency.

Repealed: New Rule of same title adopted. F. June 11, 2020; eff. July 1, 2020, as specified by the Agency.

Amended: F. Dec. 11, 2020; eff. Jan. 1, 2021, as specified by the Agency.

Amended: F. June 10, 2022; eff. July 1, 2022, as specified by the Agency.

Amended: F. Apr. 9, 2024; eff. Apr. 15, 2024, as specified by the Agency.

505-2-.14 Endorsements

(1) **Summary.** In addition to full-field certificates, Georgia educators may be issued endorsements in specific areas to recognize additional expertise. In some areas, the endorsement is required in order to be considered in-field in a designated area, while in other cases the endorsement is not required but simply strengthens and enhances competency levels. At the same time, some endorsements authorize the educator to work in the designated area only at the grade level and subject matter of the base certificate while other endorsements authorize work in all subjects at specific grade levels. Specific information is found in the in-field statement in each endorsement rule.

(2) **Base Certificate Requirements.** Each endorsement rule indicates which type of base certificate field (teaching, service or leadership) must be held to add the endorsement. A few endorsements may be added to more than one (1) certificate type, as specified by the appropriate endorsement rule. Endorsements added to service or leadership certificates are not considered the equivalent of a teaching certificate for purposes of adding a teaching certificate by the test-in option as described in paragraph (1)(a)2 of GaPSC Rule 505-2-.34 ADD A FIELD.

(3) **Requirements.** Endorsements may be initially issued as Standard Professional, Advanced Professional, Lead Professional, Non-Renewable Professional or Induction certificates depending on base certificate title, unless otherwise stated in the appropriate endorsement field rule.

(a) To be eligible for a renewable professional endorsement, an individual must:

1. Hold a valid certificate and meet any other requirements outlined in the appropriate endorsement field rule.

2. Meet one of the following requirements:

(i) Complete a state-approved program in the endorsement field and receive verification of program completion from the approved provider; or

(ii) Hold or have held an out-of-state certificate in an endorsement field comparable to an endorsement field offered by the Georgia Professional Standards Commission (GaPSC).

(b) To be eligible for a three (3)-year Non-Renewable endorsement, an individual must:

1. Hold a valid, renewable professional or Permit certificate and meet any other requirements outlined in the appropriate endorsement field rule.

(i) The only Non-Renewable Professional endorsement that may be added to a Permit certificate is the Non-Renewable Professional English to Speakers of Other Languages (ESOL) endorsement, which may be added to a valid Permit certificate in any world language field.

2. Have the endorsement requested by an employing Georgia local unit of administration (LUA).

(c) To be eligible for a three (3)-year Induction endorsement, an individual must:

1. Hold a valid Induction certificate and meet any other requirements outlined in the appropriate endorsement field rule; and

2. Have the endorsement requested by an employing Georgia LUA.

(d) Special Georgia Requirements do not apply to endorsement fields.

(4) **Validity.**

(a) The validity period for a renewable professional endorsement is the same as for the base certificate it endorses and will be renewed when the endorsed base certificate is renewed.

(b) The validity period for a Non-Renewable Professional endorsement is three (3) years.

(c) The validity period for an Induction endorsement is the same as for the base certificate it endorses.

(d) Endorsement fields require that the base certificate field be maintained.

Cite as Ga. Comp. R. & Regs. R. 505-2-.14

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Non-Instructional Aide" adopted. F. Aug. 15, 2008; eff. Sept. 15, 2008, as specified by the Agency.

Repealed: New Rule entitled "Endorsements" adopted. F. June 11, 2014; eff. July 1, 2014, as specified by the Agency.

Amended: F. June 13, 2014; eff. July 3, 2014.

Amended: F. Mar. 25, 2015; eff. Apr. 15, 2015, as specified by the Agency.

Amended: F. Mar. 26, 2019; eff. Apr. 15, 2019, as specified by the Agency.

Repealed: New Rule of same title adopted. F. Dec. 13, 2019; eff. Jan. 1, 2020, as specified by the Agency.

Amended: F. Apr. 9, 2024; eff. Apr. 15, 2024, as specified by the Agency.

505-2-.22 Certification By State-Approved Program

(1) **Summary:** State-approved programs are professional education programs based on established state standards and delivered as traditional or non-traditional routes to certification. Such programs, usually provided by colleges/universities, school systems, Regional Educational Services Agencies (RESAs), or collaborative arrangements between any of these agencies, must be approved by the appropriate state agency in order to verify completion of certification programs. Program standards and requirements are based on preparation necessary to

obtain a certificate, and state-approved programs may or may not require a specific degree. Georgia Professional Standards Commission (GaPSC)-approved programs include those that result in certificates as well as endorsements. A listing of GaPSC-approved programs may be found on the GaPSC web site at www.gapsc.com. Information concerning program approval standards and procedures may be found HERE.

(2) **Out-of-State Programs.** The GaPSC may certify individuals who have completed state-approved educator preparation programs in any state under the following conditions:

(a) The educator preparation program was approved by the state approval authority in a state that approves teacher preparation programs, the program was approved for the field in which the educator completed the program and the program held approval status during the year in which the individual completed the program.

1. In the specific field of Speech and Language Pathology, the GaPSC shall accept ASHA-approved programs that are not state-approved but are completed at GaPSC-accepted accredited institutions.

(b) The individual has completed all state-approved program requirements and the authorized official at the program provider has verified program completion on the appropriate GaPSC form.

(c) The program was completed in a field recognized by the GaPSC. If the program was completed in an area recognized in Georgia as an endorsement only, the individual will be eligible for the appropriate endorsement certificate in that field.

(d) The individual has completed field experiences or clinical practice including student teaching. If field experiences, clinical practice or student teaching was completed in a Georgia local unit of administration (LUA) requiring GaPSC certification, the individual must have held a Pre-Service certificate and have worked with a cooperating teacher holding renewable professional certification in the field in which the individual completed a state-approved certification program, or in a closely related field as outlined below. If clinical practice was completed in a Georgia LUA that has the legal authority to waive certification, the cooperating teacher must, at a minimum meet federal requirements under Title IIA regulations or Every Student Succeeds Act (ESSA) of 2015 In-field requirements. If the cooperating teacher does not meet these requirements, the clinical practice or field experience does not meet Georgia certification requirements and will not be accepted.

1. The following fields are considered closely related for the purposes of cooperating teachers for field experiences, clinical practice, or student teaching:

(i) An individual earning certification in Birth through Kindergarten may work with a cooperating teacher certified in Early Childhood Education.

(ii) An individual earning certification in Middle Grades may work with a cooperating teacher certified in the corresponding secondary (6-12) field.

(iii) An individual earning certification in a world language field may work with a cooperating teacher certified in any other world language field.

(iv) An individual earning certification in Science (6-12) may work with a cooperating teacher certified in any other secondary science field (Biology, Chemistry, Earth/Space Science, or Physics), and a candidate earning certification in any of the secondary science fields may work with a cooperating teacher certified in Science (6-12).

(v) An individual earning certification in a Career, Technical, and Agricultural Education (CTAE) field may work with a cooperating teacher certified in any other CTAE field.

2. Effective July 1, 2020, individuals completing culminating residency (formerly referred to as student teaching) in a Georgia LUA must be placed in classrooms for a minimum of one full semester or the equivalent.

(3) **In-State Programs.** GaPSC-approved programs shall include all course work specified in Special Georgia Requirements, outlined in GaPSC Rule 505-2-.24 SPECIAL GEORGIA REQUIREMENTS. However, the GACE

content assessment is not considered part of the approved program, but is a separate state requirement for certification. GaPSC-approved program providers may verify approved program completion for an individual who has completed all program requirements, to include the Special Georgia Requirements, and the GACE content assessment as long as the assessment was attempted. If a GaPSC-approved provider verifies program completion with attempting but not passing the assessment, the individual will not be eligible for any certificate unless requested by an employing Georgia local unit of administration (LUA). Upon such a request, a One (1)-year Induction certificate may be issued.

(4) **Out-of-Country Programs.** The GaPSC may certify individual who have completed the equivalent of a state-approved educator preparation program outside the United States. The program must be in a field recognized by the GaPSC, and include clinical practice/student teaching. Individuals for certification who have attended colleges or universities outside the United States must provide the Georgia Professional Standards Commission (GaPSC) with a detailed course-by-course credential report of college-level credit completed as outlined in GaPSC Rule 505-2-.29 EVALUATION OF CREDIT EARNED OUTSIDE OF THE U.S.

(5) **Advanced Degrees.** In order to qualify for a certificate level upgrade, an individual must complete an advanced degree program that meets specific quality standards outlined in GaPSC Rule 505-2-.33 CERTIFICATE UPGRADE. These standards apply to all advanced degree programs, even those that are state-approved.

(6) **Educational Leadership.**

(a) Georgia Educational Leadership programs that lead to certification must be GaPSC-approved programs, as described in GaPSC Rules 505-3-.58 EDUCATIONAL LEADERSHIP PROGRAM and 505-2-.153 EDUCATIONAL LEADERSHIP.

(b) Georgia applies reciprocity to initial out-of-state Educational Leadership certificate holders based on completion of a state-approved program at level six (6) or seven (7), and also at level five (5) when the educator has at least three (3) years of successful experience in a leadership position as outlined in Rule 505-2-.153 EDUCATIONAL LEADERSHIP.

(7) **Resources.** GaPSC-approved programs for all fields are listed on the GaPSC web site HERE.

Cite as Ga. Comp. R. & Regs. R. 505-2-.22

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Application for Initial Certification/Upgrading" adopted. F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: New Rule entitled "Correction of Certificates" adopted. F. Dec. 16, 1992; eff. July 1, 1993, as specified by the Agency.

Repealed: New Rule entitled "PSC-Accepted Accreditation and Validation of Non-Accredited Degrees" adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Repealed: New Rule entitled "Certification by State-Approved Program" adopted. F. June 11, 2014; eff. July 1, 2014, as specified by the Agency.

Amended: F. June 13, 2014; eff. July 3, 2014.

Amended: F. Dec. 22, 2014; eff. Jan. 15, 2015, as specified by the Agency.

Amended: F. Dec. 21, 2015; eff. Jan. 15, 2016, as specified by the Agency.

Amended: F. June 26, 2019; eff. July 1, 2019, as specified by the Agency.

Repealed: New Rule of same title adopted. F. Dec. 13, 2019; eff. Jan. 1, 2020, as specified by the Agency.

Amended: F. June 11, 2020; eff. July 1, 2020, as specified by the Agency.

Amended: F. Apr. 9, 2024; eff. Apr. 15, 2024, as specified by the Agency.

505-2-.26 Certification and Licensure Assessments

(1) **Summary:** This rule outlines specific assessment requirements for obtaining certification. The Georgia Professional Standards Commission (GaPSC) administers through a testing supplier educator assessments required for certification. As of September 1, 2006, the Georgia Assessments for the Certification of EducatorsT (GACE) is the state-approved educator certification assessment program in Georgia. GACE assessments include Program Admission, Content, Standards-based assessment of knowledge of the Georgia Code of Ethics for Educators and Paraprofessional assessments. All GACE assessments are aligned with state-approved educator preparation program standards, national standards, and the state standards for the P-12 curriculum. Information about the GACE program is available at www.gapsc.com. In addition to the GACE, there are other state-accepted content assessments for certain world language and career and technical specializations.

(2) **Program Admission Assessment.**

(a) The GACE Program Admission assessment measures an individual's general knowledge in the areas of reading, mathematics, and writing at a competency level to be successful in an educator preparation program.

(b) The following individuals are required to either pass or exempt the GACE Program Admission assessment:

1. Candidates seeking admission to a GaPSC-approved educator preparation program in a teaching or service field. Verification of this requirement is the responsibility of the Educator Preparation Provider (EPP) and is documented electronically by the provider in the Traditional Program Management System (TPMS) or on the Georgia Approved Program Completion form used to verify program completion. Documentation of any exemption must also be provided to the GaPSC upon application for Pre-Service certification.

2. Individuals seeking Provisional certification.

3. Individuals seeking the service field of School Social Work (See GaPSC Rules 505-2-.147 SCHOOL SOCIAL WORK).

4. Initial permit holders applying for an extension, with the exception of JROTC Permit holders.

5. Individuals seeking an Induction Teaching or Service field through completion of a GaPSC-accepted program.

(c) Individuals holding a Military Support Provisional certificate must attempt the assessment during the first semester of enrollment in a GaPSC-accepted certification program and pass the assessment prior to issuance of the Year Three (3) Provisional certificate.

(d) Information regarding the Program Admission Requirement and exemption criteria can be accessed at http://www.gapsc.com/EducatorPreparation/Assessment/BasicSkillsInfo.aspx.

(3) **Content Assessment.**

(a) GACE content assessments test knowledge in a variety of content areas as required for certification. GACE content assessments have two passing levels: Induction and Professional. All passing scores earned on GACE assessments will be treated as Professional level scores for certification purposes even if the official score report reflects an Induction level score. Information on the content assessments required for Georgia certification may be accessed at www.gapsc.com.

(b) The following individuals are required to pass the GACE content assessment for the desired certification field:

1. Individuals seeking a Provisional certificate.

(i) For Special Education fields, the pre-requisite is the special education academic content concentration(s), which must be met by passing the appropriate academic content assessment(s). Individuals enrolled in GaTAPP have the option of verifying an academic content concentration if approved by the GaTAPP provider. The appropriate Special Education field assessment must then be completed before conversion to a Professional.

(ii) Individuals holding the Military Support Provisional certificate must pass the GACE content assessment(s) prior to issuance of the Year Two (2) Provisional certificate.

2. Individuals seeking an initial permit in a world language field.

3. Georgia Pre-Service certificate holders applying for an Induction certificate.

(i) A One (1)-Year Induction certificate may be issued at the request of an employing Georgia local unit of administration (LUA) to individuals applying for initial certification based on completion of a GaPSC-accepted program who must satisfy the content assessment.

4. Georgia Professional or Induction certificate holders applying to add a certification field.

5. Individuals applying for initial Professional or Induction certification in Georgia based on reciprocity.

(i) These individuals may exempt the content assessment requirement by meeting the exemption criteria outlined in section (10)(a) below.

(ii) A One (1)-Year Non-Renewable Professional or One (1)-Year Induction certificate may be issued at the request of an employing Georgia local unit of administration (LUA) to individuals applying for initial certification based on reciprocity who must satisfy the content assessment.

6. Georgia educators who complete out-of-state programs leading to certification must pass the GACE content assessment; these educators will not be eligible for the exemption outlined in section (11)(a) below, even upon submission of an out-of-state professional certificate.

7. Individuals seeking to extend an initial permit in the fields of Art, Music, Engineering & Technology and Superintendent.

8. Individuals seeking an Adjunct license must pass the appropriate GACE content assessment(s) for the field(s) being taught or hold the appropriate professional licensure for the profession or field of instructional experience.

9. Individuals seeking an initial professional Service field.

(c) For fields in which there is no GACE assessment available, the GaPSC may designate other state-approved certification exams. The Praxis exam is the Georgia state-approved content assessment for the field of Speech and Language Pathology, and the proficiency exams offered by the American Council on the Teaching of Foreign Languages (ACTFL), detailed in section (9) below, are one of the Georgia state-approved content assessments for world language fields.

(d) Georgia does not have a content assessment for the fields of Audiology, Dance, Drama, School Nutrition Director, School Social Work, Speech, Physical and Health Disabilities, Special Education Preschool, Visual Impairment, and some world language fields. In fields for which there is no Georgia state-approved or state-accepted content assessment, passing a content assessment for certification is not required. (See GaPSC Rule 505-3-.24 SPECIAL GEORGIA REQUIREMENTS).

(e) The following outlines the GACE content assessments alignment for Montessori fields:

1. Birth Through Kindergarten must be passed for Infant Toddler (birth - 3) and PK2- K (ages 2 1/2 - 6).

2. Elementary Education must be passed for Elementary I Grades 1st - 3rd (ages 6 - 9) and Elementary I- II Grades 1st - 6th (ages 6 - 12).

3. Middle Grades Language Arts and Social Science must be passed for Secondary I Language Arts & Social Studies.

4. Middle Grades Science and Middle Grades Mathematics must be passed for Secondary I Science & Mathematics.

5. English must be passed for Secondary II English.

6. Mathematics must be passed for Secondary II Mathematics.

7. Science must be passed for Secondary II Science.

8. Behavioral Science, Economics, Geography, History, and Political Science must be passed for Secondary II Social Studies, as determined by the field(s) of instruction.

(4) **Educator Ethics Assessments.**

(a) The GACE Educator Ethics Assessment is designed to both teach and assess knowledge and skills in the areas of the Georgia Code of Ethics for Educators and of ethical understanding to guide behaviors and decision-making.

(b) A passing score on GACE Educator Ethics Assessment is required for the following:

1. Issuance of a Pre-Service certificate, with the following exception:

(i) Pre-Service certificate applicants who have been continuously enrolled in the same educator preparation program since July 1, 2014, or earlier are exempt from this requirement. Note: The term "enrolled" is defined as admitted to a program and actively taking coursework.

(ii) The GACE Educator Ethics - Program Entry will continue to be accepted for individuals who previously completed the assessment for program admission. For those individuals, the GACE Educator Ethics Assessment must be passed for conversion of the Pre-Service certificate.

2. Issuance of an initial Clearance certificate to individuals who are not required to hold an in-field certificate as outlined in GaPSC Rule 505-2-.42 CLEARANCE CERTIFICATE.

3. Issuance of a Provisional teaching certificate, including the Military Support Provisional teaching certificate.

4. Issuance of a Five (5)-Year Induction certificate in a teaching field.

5. Issuance of an International Exchange certificate.

6. Issuance of an initial three-year Permit.

7. Conversion to the five-year Permit if the initial Permit was issued on or after October 15, 2017.

8. Conversion of a Provisional or Induction Pathway 4 teaching certificate to a Professional certificate.

(c) A passing score on GACE Ethics for Educational Leadership is required for the following:

1. Issuance of a Non-Renewable certificate in educational leadership for completion of an approved program.

(i) The GACE Ethics for Educational Leadership - Program Entry will continue to be accepted for individuals who previously completed the assessment for issuance of the Non-Renewable certificate. For those individuals, the GACE Ethics for Educational Leadership must be passed for conversion to the Professional certificate.

2. Issuance of an initial professional certificate in educational leadership.

3. Issuance of an initial Superintendent Permit.

4. Conversion to the five-year Superintendent if the initial Permit was issued on or after October 15, 2017.

(5) **Paraprofessional Assessment.**

(a) The GACE assessment for paraprofessionals in Georgia covers four (4) areas: reading, writing, mathematics and classroom skills. The Paraprofessional assessment is designed to enable individuals and school districts to satisfy state and federal No Child Left Behind requirements that call for "highly qualified paraprofessionals" in a P-12 setting. These requirements indicate that paraprofessionals working in Title I schools or paid with Title I funds must meet a rigorous standard of quality and demonstrate, through formal state or local assessment, knowledge of and ability to assist in instructing, reading, writing, and mathematics; or knowledge of and ability to assist in instructing, reading readiness, writing readiness, and mathematics readiness, as appropriate.

(b) Passing the GACE Paraprofessional assessment, in combination with a high school diploma or GED equivalent, is one of the options available to qualify for a Paraprofessional Certificate. (See GaPSC Rule 505-2-.18 PARAPROFESSIONAL CERTIFICATE).

(6) **Educational Leadership Assessment.**

(a) The GACE Educational Leadership content assessment is designed to assess knowledge and skills for those completing GaPSC-approved Educational Leadership programs. The GACE Educational Leadership assessment is required for Educational Leadership Tier I and Tier II certification even if the educator has previously passed the Teacher Certification Test (TCT).

(b) Individuals applying for certification in Educational Leadership Tier I or Tier II in Georgia based on reciprocity must pass the GACE Educational Leadership assessment or meet exemption criteria in (10)(a) for content knowledge assessment(s) appropriate to the field of educational leadership prior to the issuance of the Professional certificate:

1. A one (1)-year Non-Renewable Professional certificate may be issued at the request of an employing Georgia local unit of administration (LUA) to individuals applying for initial certification based on reciprocity who must satisfy the content assessment.

(c) A passing score on the Performance-Based Assessment for School Leaders (PASL) is required for educators completing GaPSC-approved Tier II programs after 7/1/17.

(7) **Career and Technical Specializations.**

(a) For Career and Technical Specializations certificates, GaPSC accepts a number of different industry assessments offered by a variety of external organizations. The accepted assessments are detailed in GaPSC Rule 505-2-.90 CAREER AND TECHNICAL SPECIALIZATIONS.

(8) **World Language Assessment.**

(a) A GACE assessment is not available for certain world language fields. For these fields, the GaPSC requires The American Council on the Teaching of Foreign Languages (ACTFL) Oral Proficiency Interview (OPI) and Written Proficiency Test (WPT). If the OPI and WPT are passed for fields that have a GACE content assessment for issuance of a Permit, the GACE content assessment is not required for conversion of a Permit to an Induction or Professional certificate.

(b) The American Council on the Teaching of Foreign Languages (ACTFL) foreign language assessments are considered appropriate content assessments for adding a new world language teaching field. The validation of passing levels of proficiency is the responsibility of the applicant and the employing local unit of administration (LUA). Contact information for scheduling the ACTFL is available at http://www.languagetesting.com/academic-services.

(c) The GaPSC-accepted assessments for world language fields are as follows:

ROMAN-BASED ALPHABET

French	(GACE)
German	(GACE)
Italian	(ACTFL)
Latin	(GACE)
Portuguese	(ACTFL)
Spanish	(GACE)

NON-ROMAN BASED ALPHABET

Arabic	(ACTFL)
Chinese (Mandarin)	(ACTFL)
Farsi (Persian)	(ACTFL)
Hebrew	(ACTFL)
Japanese	(ACTFL)
Korean	(ACTFL)
Russian	(ACTFL)
Swahili	(ACTFL)
Turkish	(ACTFL)
Urdu	(ACTFL)

OTHER

American Sign Language	(GACE)

1. The ACTFL assessments for Greek are not Greek (Classical), and therefore are not accepted for the Georgia Greek (Classical) Permit or Certificate.

2. At the time of this rule change, the WPT is not available in the language of Swahili. Until the WPT in this field is available, the OPI will meet assessment requirements for Swahili.

3. For the Roman-Based Alphabet ACTFL assessments, the passing proficiency level for the OPI and the WPT is "Advanced-Low."

4. For the Non-Roman Based Alphabet ACTFL assessments, the passing proficiency level for the OPI and the WPT is "Intermediate-High."

(9) **Educational Interpreter Performance Assessment (EIPA).**

(a) Individuals seeking licensure as an Educational Interpreter must meet assessment requirements outlined in GaPSC Rule 505-2-.16 EDUCATIONAL INTERPRETER LICENSE.

(10) **Content Exemption Criteria.**

(a) The GACE content assessment requirement may be exempted in the following circumstances:

1. Veteran out-of-state educators moving into Georgia may be eligible to exempt all Special Georgia Requirements except the Standards of Conduct. To be eligible, the individual must hold a valid out-of-state certificate and have a minimum of five (5) full years of successful education experience as defined in section (5) of GaPSC Rule 505-2-.25 EXPERIENCE REQUIREMENTS.

2. Individuals holding a valid National Board for Professional Teaching Standards (NBPTS) certification in the specific certificate field, with the exception of the Middle Grades Generalist field are exempted from the content assessment requirement. The NBPTS Middle Grades Generalist field does not exempt the GACE Middle Grades content assessments.

3. Out-of-state professional certificate holders applying for initial Georgia certification who have passed the out-of-state content assessment required for issuance of the out-of-state certificate field.

4. Individuals seeking certification in a field for which the GaPSC has not adopted a content assessment.

(11) **Previous State-Approved Assessments.**

(a) Georgia honors passing scores on previous state-approved Georgia assessments that are passed during the validity period for those assessments. The following are previous Georgia state-approved assessments:

1. Georgia Teacher Certification Test (TCT):

(i) The TCT was the first content assessment required for Georgia certification effective July 1, 1978, through June 30, 1997.

(ii) Individuals who obtained a passing score on the Special Education Professional Knowledge TCT assessment at the time it was required now meet the certification assessment requirement for the fields of Special Education Adapted Curriculum (P-12) and Special Education General Curriculum (P-12).

(iii) The GaPSC will accept passing scores on a TCT assessment taken in a broad-field area (Science or Social Science) to award certification in the comparable field currently issued.

2. Praxis Series:

(i) The Praxis Series replaced the TCT effective July 1, 1997.

(ii) For Georgia certification candidates in the field of Speech and Language Pathology, the Praxis II Speech and Language Pathology Assessment (Test 0330) will remain the required assessment as it is accepted for national licensing with the American Speech-Language-Hearing Association (ASHA). The passing score may be found at http://www.gapsc.com/EducatorPreparation/Assessment/passingscores.aspx.

(iii) The GaPSC accepts a passing score on the Praxis Paraprofessional Assessment taken before June 30, 2007.

(iv) The GaPSC accepts passing scores on the required Georgia Praxis assessment in Educational Leadership (Test 0410) on or before March 15, 2008.

3. The GACE replaced the Praxis Series for most fields on September 1, 2006; however, the GaPSC accepts passing scores on the required Georgia Praxis assessment taken in its entirety on or before March 5, 2007, except in the field of Educational Leadership. The GACE Educational Leadership assessment is required for educators completing Educational Leadership programs [See 7(a) and 7(b)].

4. The School Leaders Licensure Assessment:

(i) The GaPSC accepts passing scores on the Praxis School Leaders Licensure Assessment (Test 1010) taken on or after July 1, 2005, through March 15, 2008.

5. Georgia Paraprofessional Assessment:

(i) The Georgia Paraprofessional Assessment was administered July 2002 and November 2002, and was replaced by the Praxis Paraprofessional Assessment and later with the GACE Paraprofessional assessment.

6. Content Pedagogy Assessment (edTPA) September 1, 2015 - July 1, 2020:

(i) A passing score on the GaPSC-approved content pedagogy assessment (edTPA) was required for the following:

(I) Issuance of an Induction certificate to any individual who completed the clinical practice or student teaching requirements of the GaPSC-approved or GaPSC-accepted initial certification program on or after September 1, 2015.

(II) Conversion of an Induction Pathway Four (4) or Provisional teaching certificate held by any individual who completed the clinical practice or student teaching requirements of the GaPSC-approved or GaPSC-accepted initial certification program on or after September 1, 2015.

7. Educator Ethics Assessments:

(i) Georgia Educator Ethics - Program Entry Assessment: January 1, 2015 - July 1, 2020:

(I) Completion of the Georgia Educator Ethics - Program Entry Assessment was required for issuance of a Pre-Service certificate unless an applicant was continuously enrolled in the same educator preparation program since July 1, 2014, or earlier. Note: The term "enrolled" was defined as admitted to a program and actively taking coursework.

(II) Completion of the Georgia Educator Ethics - Program Entry Assessment was required for issuance of an Induction Pathway Four (4) or Provisional certificate.

(III) GACE Educator Ethics - Program Entry Assessment will continue to be accepted for individuals who previously completed the assessment for program admission or issuance of a Provisional certificate.

(ii) Georgia Educator Ethics - Program Exit Assessment was rebranded as the GACE Educator Ethics Assessment.

(iii) Georgia Ethics for Educational Leadership - Program Entry Assessment, January 15, 2016 - July 1, 2020:

(I) Georgia Ethics for Educational Leadership - Program Entry

Assessment was required for issuance of a Non-Renewable certificate in Educational Leadership for completion of an approved program.

(II) Georgia Ethics for Educational Leadership - Program Entry Assessment will continue to be accepted for individuals who previously completed the assessment for program admission or issuance of a Non-Renewable certificate.

(iv) GACE Ethics for Educational Leadership - Program Exit was rebranded as GACE Ethics for Educational Leadership.

(12) **Duplicate Score Reports.**

(a) The GaPSC, as a courtesy to the state's educators, can provide certain official test score information for those assessments whose scores are otherwise not retrievable. The GaPSC does not charge for the retrieval, validation, or mailing of the score. Complete information on how to request test scores can be accessed at http://www.gapsc.com/EducatorPreparation/Assessment/testScoreRequest.aspx.

1. Test Scores available from GaPSC:

(i) Teacher Certification Test (TCT) regardless of score report date.

(ii) Georgia state-administered Paraprofessional assessment, in 2002 only.

(iii) Praxis I and Praxis II assessments taken on or prior to September 1, 2006.

2. For any GACE scores, examinees must contact the appropriate testing Supplier for the GACE program. Complete contact information is provided at http://www.gapsc.com/EducatorPreparation/Assessment/testScoreRequest.aspx.

(13) **Every Student Succeeds Acts (ESSA) In-Field Assessment Requirements.**

(a) For complete ESSA in-field requirements, including assessment, please refer to the Georgia Department of Education website at www.gadoe.org.

Cite as Ga. Comp. R. & Regs. R. 505-2-.26

AUTHORITY: O.C.G.A. § 20-2-2007**.**

HISTORY: Original Rule entitled "Application for Evaluation" adopted F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: Rule Reserved. F. Dec. 16, 1992; eff. July 1, 1993, as specified by the Agency.

Amended: New Rule entitled "In-Field Assignments" adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Amended: F. Aug. 20, 2004; eff. Sept. 15, 2004, as specified by the Agency.

Amended: F. Nov. 15, 2007; eff. Dec. 15, 2007, as specified by the Agency.

Amended: F. Aug. 15, 2008; eff. Sept. 15, 2008, as specified by the Agency.

Repealed: New Rule entitled "Certification and Licensure Assessments" adopted. F. June 11, 2014; eff. July 1, 2014, as specified by the Agency.

Amended: F. June 13, 2014; eff. July 3, 2014.

Amended: F. Mar. 25, 2015; eff. Apr. 15, 2015, as specified by the Agency.

Amended: F. Sep. 24, 2015; eff. Oct. 15, 2015, as specified by the Agency.

Amended: F. Apr. 13, 2016; eff. Apr. 15, 2016, as specified by the Agency.

Amended: F. Sept. 26, 2016; eff. Oct. 15, 2016, as specified by the Agency.

Amended: F. Mar. 27, 2017; eff. Apr. 15, 2017, as specified by the Agency.

Amended: F. June 8, 2017; eff. July 1, 2017, as specified by the Agency.

Amended: F. June 5, 2018; eff. July 1, 2018, as specified by the Agency.

Amended: F. Oct. 3, 2018; eff. Oct. 15, 2018, as specified by the Agency.

Amended: F. Mar. 26, 2019; eff. Apr. 15, 2019, as specified by the Agency.

Amended: F. June 26, 2019; eff. July 1, 2019, as specified by the Agency.

Repealed: New Rule of same title adopted. F. Dec. 13, 2019; eff. Jan. 1, 2020, as specified by the Agency.

Note: Correction of typographical errors in subparagraph (3)(b)1.(i), *"The appropriate Special Education field assessment must then be completed before conversion to a Professional"* corrected to *"The appropriate Special Education field assessment must then be completed before conversion to a Professional certificate;"*, as requested by the Agency. Effective Jan. 1, 2020.

Repealed: New Rule of same title adopted. F. June 11, 2020; eff. July 1, 2020, as specified by the Agency.

Amended: F. June 10, 2022; eff. July 1, 2022, as specified by the Agency.

Amended: F. Apr. 9, 2024; eff. Apr. 15, 2024, as specified by the Agency.

505-2-.57 Teaching Fields

(1) **Summary**: This rule lists the certification teaching fields offered in the state of Georgia to qualified individuals and outlines how to locate requirements and procedures to qualify for certification.

(2) **Areas of Specialization**. The following teaching fields are offered:

(a) Early Grades Education (B-5).

1. Birth Through Kindergarten (B-K)

2. Elementary Education (Grades P-5)

(b) Middle Grades Education (Grades 4-8).

1. Middle Grades Language Arts

2. Middle Grades Math

3. Middle Grades Reading

4. Middle Grades Science

5. Middle Grades Social Science

(c) Secondary Education (Grades 6-12).

1. Behavioral Science

2. Biology

3. Chemistry

4. Earth/Space Science

5. Economics

6. English

7. Geography

8. History

9. Mathematics

10. Physics

11. Political Science

12. Science

13. Speech

(d) Career, Technical and Agriculture Education.

1. Agriculture (Grades 6-12)

2. Business (Grades 6-12)

3. Career and Technical Specializations (Grades 6-12)

4. Computer Science (Grades P-12)

5. Engineering and Technology (Grades P-12)

6. Family and Consumer Sciences (Grades 6-12)

7. Healthcare Science (Grades 6-12)

8. Marketing (Grades 6-12)

(e) World Languages (Grades P-12).

1. American Sign Language

2. Arabic

3. Chinese (Mandarin)

4. Farsi

5. French

6. German

7. Greek (Classical)

8. Hebrew

9. Hindi

10. Italian

11. Japanese

12. Korean

13. Latin

14. Portuguese

15. Russian

16. Spanish

17. Swahili

18. Turkish

19. Urdu

(f) Montessori Fields.

1. Infant Toddler (Birth - 3)

2. PK2 - K (Ages 2 1/2 - 6)

3. Elementary I Grades 1st - 3rd (Ages 6-9)

4. Elementary I-II Grades 1st - 6th (Ages 6-12)

5. Secondary I Grades 7th - 9th (Ages 12-15)

(i) Secondary I Language Arts & Social Studies

(ii) Secondary I Science & Mathematics

6. Secondary I-II Grades 7th - 12th (Ages 12-18)

(i) Secondary II English

(ii) Secondary II Mathematics

(iii) Secondary II Science

(iv) Secondary II Social Science

(g) P-12 Fields.

1. Art

2. Dance

3. Drama

4. English to Speakers of Other Languages

5. Gifted

6. Health

7. Health and Physical Education

8. Music

9. Reading

(h) Special Education.

1. Academic Content Concentrations (Cognitive Levels P-5, 4-8, and 6-12)

2. Behavior Disorders (Grades P-12)

3. Deaf Education (Grades P-12)

4. Physical and Health Disabilities (Grades P-12)

5. Special Education Adapted Curriculum (Grades P-12)

6. Special Education General Curriculum (Grades P-12)

7. Special Education General Curriculum/Elementary Education (Grades P-5)

8. Learning Disabilities (Grades P-12)

9. Special Education Preschool (Ages 3-5)

10. Visual Impairment (Grades P-12)

(3) **Teaching Endorsements** (See GaPSC Rules 505-2-.159 to 505-2-.191).

(a) The following teaching field endorsements are offered and may be used for placement in the field of instruction:

1. Agriculture Education (Grades P-5)

2. Birth through Five (B-5)

3. Career Technical Instruction (Grades 6-12)

4. Career Exploration (Grades 6-12)

5. Computer Science (Grades P-12)

6. Coordinated Career Academic Education (Grades 6-12)

7. Culinary Arts (Grades 6-12)

8. Dramatic Writing Micro-Endorsement (In-Field)

9. Dual Immersion Elementary Education (Grades P-5)

10. English to Speakers of Other Languages (In-Field)

11. Gifted In-Field (In-Field)

12. Reading (In-Field)

13. Safety and Driver Education (Grades 6-12)

14. Special Education Deaf Education (Grades P-12)

15. Special Education Physical and Health Disabilities (P-12)

16. Special Education Preschool (Ages 3-5)

17. Special Education Visual Impairment (Grades P-12)

18. Teacher Support and Coaching (In-Field)

19. Work-Based Learning (Grades 6-12)

(b) The following teaching field endorsements are offered for enhanced competency and not required for placement in the field:

1. Dyslexia

2. Coaching

3. Intervention Specialist

4. K-5 Mathematics

5. K-5 Science

6. Multi-Tiered System of Supports Facilitator

7. Online Teaching

8. Personalized Learning

9. Positive Behavior Intervention and Supports

10. Special Education Autism

11. Special Education Transition Specialist

12. STEM Education

13. Teacher Leader

14. Urban Education

(4) **Provisional Certificate (See GaPSC** 505-2-.08 **PROVISIONAL CERTIFICATE).**

(a) For Career and Technical Specialization fields see GaPSC 505-2-.90 CAREER AND TECHNICAL SPECIALIZATIONS.

(b) For the field of Healthcare Science see GaPSC Rule 505-2-.87 HEALTHCARE SCIENCE.

(c) For Montessori fields see GaPSC Rule 505-2-.45 MONTESSORI CERTIFICATE.

(5) **Induction Certificate** (See GaPSC Rule 505-2-.04 INDUCTION CERTIFICATE).

(a) For Career and Technical Specialization fields see GaPSC Rule 505-2-.90 CAREER AND TECHNICAL SPECIALIZATIONS.

(b) For the field of Healthcare Science see GaPSC Rule 505-2-.87 HEALTHCARE SCIENCE.

(c) For Montessori fields see GaPSC Rule 505-2-.45 MONTESSORI CERTIFICATE.

(6) **Professional Certificate** (See GaPSC Rule 505-2-.05 PROFESSIONAL CERTIFICATE).

(a) For Career and Technical Specialization fields see GaPSC Rule 505-2-.90 CAREER AND TECHNICAL SPECIALIZATIONS.

(b) For the field of Healthcare Science see GaPSC Rule 505-2-.87 HEALTHCARE SCIENCE.

(c) For Montessori fields see GaPSC Rule 505-2-.45 MONTESSORI CERTIFICATE.

(7) **Non-Renewable Professional Certificate** (See GaPSC Rule 505-2-.09 NON-RENEWABLE PROFESSIONAL CERTIFICATE).

(a) For Career and Technical Specialization fields see GaPSC Rule 505-2-.90 CAREER AND TECHNICAL SPECIALIZATIONS.

(b) For the field of Healthcare Science see GaPSC Rule 505-2-.87 HEALTHCARE SCIENCE.

(c) For Montessori fields see GaPSC Rule 505-2-.45 MONTESSORI CERTIFICATE.

(8) **To Add a Field** (See GaPSC Rule 505-2-.34 ADD A FIELD).

(a) For Career and Technical Specialization fields see GaPSC Rule 505-2-.90 CAREER AND TECHNICAL SPECIALIZATIONS.

(b) For the field of Healthcare Science see GaPSC Rule 505-2-.87 HEALTHCARE SCIENCE.

(c) For Montessori fields see GaPSC Rule 505-2-.45 MONTESSORI CERTIFICATE.

(9) **To Upgrade the Level** (See GaPSC Rule 505-2-.33 CERTIFICATE UPGRADE).

(10) **Renewal Requirements** (See GaPSC Rule 505-2-.36 RENEWAL REQUIREMENTS).

(11) **Additional Certificate Titles Issued for Teaching Fields.**

(a) Adjunct License see GaPSC Rule 505-2-.15 ADJUNCT LICENSE.

(b) International Exchange Certificate see GaPSC Rule 505-2-.11 INTERNATIONAL EXCHANGE CERTIFICATE.

(c) Life Certificate see GaPSC Rule 505-2-.12 LIFE CERTIFICATE.

(d) Military Support Certificate see GaPSC Rule 505-2-.46 MILITARY SUPPORT CERTIFICATE.

(e) Montessori Certificate see GaPSC Rule 505-2-.45 MONTESSORI CERTIFICATE.

(f) Permit see GaPSC Rule 505-2-.10 PERMIT CERTIFICATE.

(g) Pre-Service Teaching Certificate see GaPSC Rule 505-2-.03 PRE-SERVICE TEACHING CERTIFICATE.

(h) Retired Educator Certificate see GaPSC Rule 505-2-.44 RETIRED EDUCATOR CERTIFICATE.

(i) Waiver Certificate see GaPSC Rule 505-2-.13 WAIVER CERTIFICATE.

(12) **Exceptions.**

(a) In some cases, obsolete fields may continue to be renewed if previously held by an educator.

(13) **In-Field Statement.** Individuals certified in teaching fields are in-field to teach specified Georgia curriculum courses in the grade levels identified by the teaching field. You may view individual in-field statements here. Each state-approved curriculum course, with specified certificate fields that are designated as in-field, may be found under Certification/Curriculum Assignment Policies (CAPs) on the GaPSC web site at www.gapsc.com.

Cite as Ga. Comp. R. & Regs. R. 505-2-.57

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Life Professional Teaching Certificate" adopted. F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: New Rule entitled "Dance" adopted. F. Dec. 16, 1992; eff. July 1, 1993, as specified by the Agency.

Amended: F. June 21, 1996; eff. July 11, 1996.

Repealed: New Rule of same title adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Amended: F. Apr. 20, 2009; eff. May 15, 2009, as specified by the Agency.

Repealed: F. June 11, 2014; eff. July 1, 2014, as specified by the Agency.

Adopted: New Rule entitled "Teaching Fields." F. June 11, 2020; eff. July 1, 2020, as specified by the Agency.

Amended: F. Apr. 9, 2024; eff. Apr. 15, 2024, as specified by the Agency.

Department 560. RULES OF DEPARTMENT OF REVENUE

Chapter 560-7. INCOME TAX DIVISION

Subject 560-7-8. RETURNS AND COLLECTIONS

560-7-8-.60 Qualified Education Donation Tax Credit

(1) **Purpose.** The purpose of this regulation is to provide guidance concerning the administration of the tax credit under O.C.G.A. § 48-7-29.21.

(2) **Definitions.** As used in this regulation, the terms "qualified education donation" and "recipient" shall have the same meaning as in O.C.G.A. § 48-7-29.21.

(3) **Credit Amount.** The amount of qualified education donation tax credit allowed a taxpayer shall be as follows:

(a) For an individual taxpayer, the credit amount shall not exceed $1,000, or the actual amount donated, whichever is less.

(b) For an individual taxpayer filing married filing separate, the credit amount shall not exceed $1,250, or the actual amount donated, whichever is less.

(c) For individual taxpayers filing married filing joint, the credit amount shall not exceed $2,500, or the actual amount donated, whichever is less.

(d) For an individual taxpayer who is a member of a limited liability company duly formed under state law, a shareholder of a Subchapter 'S' corporation, or a partner in a partnership, the credit is limited to the lesser of the actual amount donated or $10,000 per tax year, whichever is less; provided, however, that the tax credits shall only be allowed for the Georgia income on which such tax was actually paid by such member of a limited liability company, shareholder of a Subchapter 'S' corporation, or partner in a partnership. In determining such Georgia income, the shareholder, partner, or member shall exclude any income that was subtracted on their Georgia return because the entity paid tax at the pass-through entity level in Georgia as provided in Regulation 560-7-3-.03. If the individual taxpayer is a member, partner, or shareholder in more than one pass-through entity, the total credit allowed cannot exceed $10,000; the individual taxpayer decides which pass-through entities to include when computing Georgia income for purposes of the qualified education donation tax credit. All Georgia income, loss, and expense from the taxpayer selected pass-through entities will be combined to determine Georgia income for purposes of the qualified education donation tax credit. Such combined Georgia income shall be multiplied by the applicable marginal tax rate to determine the tax that was actually paid. If the taxpayer is filing a joint return, the taxpayer's spouse may also claim a credit for their ownership interests and shall separately be eligible for a credit as provided in this subparagraph. If the taxpayer(s) chooses to be preapproved pursuant to this subparagraph, for all purposes of claiming the credit they shall be subject to the provisions of this subparagraph and shall not be entitled to claim any other amounts provided in O.C.G.A. § 48-7-29.21 and this regulation. If the taxpayer is preapproved for an amount that exceeds the amount that is calculated as allowed when the return is filed, the excess amount cannot be claimed by the taxpayer and cannot be carried forward.

1. Example: Taxpayer, an individual taxpayer, is the sole shareholder of A, Inc., an S corporation, Taxpayer is also a 50% partner, in BC Company, a partnership, and Taxpayer is also a 20% member of a limited liability company, XYZ Company, which is taxed as a partnership. Taxpayer requests preapproval for the qualified education donation tax credit for calendar year 2022 by electronically submitting Form IT-QED-TP1 through the Georgia Tax Center. On Form IT-QED-TP1, Taxpayer estimates that the taxpayer's Georgia income from A, Inc. is $120,000, and that Taxpayer's share of Georgia income from BC Company is $60,000, Taxpayer chooses not to include any income from XYZ Company when estimating Georgia income for purposes of the qualified education donation tax credit; therefore the Department preapproves Taxpayer for $10,000 qualified education donation tax credit (since $10,000 is less than $10,350 (5.75% of $180,000)), the applicable marginal tax rate for 2022 is 5.75%. Taxpayer makes a

$10,000 donation to the recipient within 60 days of receiving preapproval from the Department and before the end of 2022. When Taxpayer files Taxpayer's 2022 Georgia income tax return, Taxpayer received a salary from A, Inc. of $50,000 and A, Inc.'s actual Georgia income is $60,000; Taxpayer's actual share of Georgia income from BC Company is $20,000 and Taxpayer received a guaranteed payment from BC Company of $15,000; Taxpayer's actual share of Georgia income from XYZ Company is $5,000 (the Taxpayer can choose to include this company even though it was not considered at the time of preapproval), Taxpayer can only claim $8,625 qualified education donation tax credit (which is 5.75% of the $150,000 actual income from Taxpayer's selected pass-through entities), and the extra $1,375 cannot be claimed by Taxpayer and cannot be carried forward. Any amount of the $8,625 qualified education donation tax credit claimed but not used on the taxpayer's 2022 Georgia income tax return shall be allowed to be carried forward to apply to the taxpayer's succeeding five years' tax liability.

(e) For a corporation taxpayer, fiduciary taxpayer, an S corporation that makes the election to pay tax at the entity level under O.C.G.A. § 48-7-21, or a partnership that makes the election to pay tax at the entity level under O.C.G.A. § 48-7-23, the credit amount shall not exceed 75 percent of the corporation's, fiduciary's, electing S corporation's, or electing partnership's income tax liability, or the actual amount donated, whichever is less. A fiduciary cannot pass through the credit to its beneficiaries.

1. Example: Taxpayer, a corporation, requests preapproval for the qualified education donation tax credit for calendar year 2022 by electronically submitting Form IT-QED-TP1 through the Georgia Tax Center. On Form IT-QED-TP1 Taxpayer's intended contribution for 2022 is $100,000; and Taxpayer's estimated income tax liability for the 2022 tax year is $100,000; therefore the Department preapproves Taxpayer for $75,000 qualified education donation tax credit for calendar year 2022. Taxpayer makes a $75,000 donation to the recipient within 60 days of receiving preapproval from the Department and before the end of 2022. When Taxpayer files their 2022 Georgia income tax return, Taxpayer's income tax liability for tax year 2022 is $80,000, Taxpayer can only claim $60,000 of qualified education donation tax credit ($60,000 is 75% of their actual Georgia income tax liability for tax year 2022), and the extra $15,000 cannot be claimed by Taxpayer and cannot be carried forward. Any amount of the $60,000 qualified education donation tax credit claimed but not used on the taxpayer's 2022 Georgia income tax return shall be allowed to be carried forward to apply to the taxpayer's succeeding five years' tax liability.

2. Example: Taxpayer, a S Corporation electing to pay tax at the entity level, requests preapproval for the qualified education donation tax credit for calendar year 2022 by electronically submitting Form IT-QED-TP1 through the Georgia Tax Center. On Form IT-QED-TP1 Taxpayer's intended contribution for 2022 is $100,000; and Taxpayer's estimated income tax liability for the 2022 tax year is $100,000; therefore the Department preapproves Taxpayer for $75,000 qualified education donation tax credit for calendar year 2022. Taxpayer makes a $75,000 donation to the recipient within 60 days of receiving preapproval from the Department and before the end of 2022. When Taxpayer files their 2022 Georgia income tax return, Taxpayer's income tax liability for tax year 2022 is $80,000, Taxpayer can only claim $60,000 of qualified education donation tax credit ($60,000 is 75% of their actual Georgia income tax liability for tax year 2022), and the extra $15,000 cannot be claimed by Taxpayer and cannot be carried forward. Any amount of the $60,000 qualified education donation tax credit claimed but not used on the taxpayer's 2022 Georgia income tax return shall be allowed to be carried forward to apply to the taxpayer's succeeding five years' tax liability but shall not be allowed to be passed through to and used by the shareholders.

(f) Except as provided in subparagraph (3)(e) of this regulation, when the taxpayer is a pass-through entity which has no income tax liability of its own, the tax credits will be considered earned by its members, shareholders, or partners based on their profit/loss percentage at the end of the year and the limitations of subparagraph (3)(d) of this regulation. The donation is made by the pass-through entity but all credit forms (preapproval, claiming, and reporting) will be filed in the name of its members, shareholders, or partners and the credit can only be applied against the shareholders', members', or partners' tax liability on their income tax returns. The pass-through entity shall provide all necessary information to the recipient so that the preapproval, claiming and reporting forms can be filed in the name of its members, shareholders, or partners.

(4) **Credit Cap.** In no event shall the aggregate amount of tax credits allowed under O.C.G.A. § 48-7-29.21 exceed $5 million per calendar year.

(5) **Mandatory Electronic Preapproval Application.** A taxpayer seeking preapproval to claim the tax credits under paragraph (3) of this regulation must electronically submit Form IT-QED-TP1 through the Georgia Tax

Center. The Department will not preapprove any qualified education donation tax credit where Form IT-QED-TP1 is submitted or filed in any other manner.

(a) The qualified education donation tax credit shall be allowed on a first-come, first-served basis. The date the Form IT-QED-TP1 is electronically submitted shall be used to determine such first-come, first-served basis.

(b) The Department will notify each taxpayer and the recipient of the contribution amount, the tax credit certificate number, and the tax credits preapproved and allocated to such taxpayer within thirty days from the date the Form IT-QED-TP1 was received.

(c) On the day any Form IT-QED-TP1 is received for a calendar year that causes the calendar year limit in paragraph (4) of this regulation to be reached, then the remaining tax credits shall be allocated among the applicants who filed the Form IT-QED-TP1 on the day the calendar year limit was exceeded on a pro rata basis based upon the amounts otherwise allowed by O.C.G.A. § 48-7-29.21 and this regulation. Only credit amounts on Form IT-QED-TP1(s) received on the day the calendar year limit was exceeded shall be allocated on a pro rata basis.

(d) The contribution must be made by the taxpayer within sixty days of the date of the preapproval notice received from the Department and within the calendar year in which it was preapproved.

(e) In the event it is determined that the contributor has not met all the requirements of O.C.G.A. § 48-7-29.21 and this regulation, then the amount of the qualified education donation tax credit shall not be preapproved or, if already claimed, the preapproved qualified education donation tax credit shall be disallowed. With respect to such disallowed credit, tax and interest shall be due.

(f) Once the calendar year limit is reached for a calendar year, taxpayers shall no longer be eligible for a credit under O.C.G.A. § 48-7-29.21, for such calendar year. If any Form IT-QED-TP1 is received after the calendar year limit has been reached, then it shall be denied and not be reconsidered for preapproval at any later date.

(6) **Letter of Confirmation.** Form IT-QED-FUND1 shall be provided by the recipient to the taxpayer to confirm the contribution within 15 days of the contribution.

(7) **Claiming the Credit.** A taxpayer claiming the qualified education donation tax credit, unless indicated otherwise by the Commissioner, must submit Form IT-QED-TP2 with the taxpayer's Georgia tax return when the qualified education donation tax credit is claimed. A software program's Form IT-QED-TP2 that is electronically filed with the Georgia income tax return in the manner specified by the Department satisfies this requirement.

(8) **Carry Forward.** Any credit which is claimed but not used in a taxable year shall be allowed to be carried forward to apply to the taxpayer's succeeding five years' tax liability. However, any amount in excess of the credit amount limits in paragraph (3) of this regulation shall not be eligible for carry forward to the taxpayer's succeeding years' tax liability nor shall such excess amount be claimed by or reallocated to any other taxpayer.

(9) **Taxpayer Must Add Back Portion of Federal Deduction on State Return if Taxpayer Takes State Credit.** O.C.G.A. § 48-7-29.21(h) provides that no qualified education donation tax credit shall be allowed under O.C.G.A. § 48-7-29.21, with respect to any amount deducted from taxable net income by the taxpayer as a charitable contribution to a bona fide charitable organization qualified under Section 501(c)(3) of the Internal Revenue Code. If the taxpayer is allowed the state income tax deduction in place of the charitable contribution deduction as allowed by the Internal Revenue Service, for purposes of this paragraph such deduction shall be considered a charitable contribution to the extent such deduction is allowed federally. Accordingly, the taxpayer must add back to Georgia taxable income that part of any federal deduction taken on a federal return for which a Georgia qualified education donation tax credit is allowed under O.C.G.A. § 48-7-29.21.

(a) If a taxpayer's itemized deductions are limited federally (and therefore for Georgia purposes) because their Federal Adjusted Gross Income exceeds a certain amount, the taxpayer is only required to add back to Georgia taxable income that portion of the federal charitable deduction that was actually deducted pursuant to the following formula. The federal charitable deduction that must be added back to Georgia taxable income shall be the amount of the federal charitable contribution relating to the qualified education donation tax credit multiplied by the following

ratio. The numerator is the amount of the itemized deductions subject to limitation and allowed as itemized deductions after the limitation is applied. The denominator is the total itemized deductions that are subject to limitation before the limitation is applied.

1. For example. A taxpayer has a $2,500 charitable contribution relating to the qualified education donation tax credit and has property taxes of $1,500 both of which are subject to limitation. The taxpayer also has mortgage interest expense of $10,000 (which is not limited). Accordingly, the taxpayer's total itemized deductions before limitation are $14,000. After applying the federal limitation, the taxpayer is allowed $13,000 in itemized deductions. As such only $3,000 ($13,000 less the $10,000 mortgage interest expense which is not limited) of the original $4,000 charitable deduction and property taxes are allowed to be deducted. Applying the ratio from the subparagraph above, the taxpayer must add back $1,875 of the charitable contribution to their Georgia taxable income (($2,500) X ($3,000 / $4,000)).

(10) **Designation of Contributions.** The tax credit shall not be allowed if the taxpayer directly or indirectly designates the taxpayer's qualified education donation for the direct benefit of any particular school, or program, which the taxpayer's child or children attend.

(11) **Report by the Nonprofit Corporation Incorporated by the Georgia Foundation for Public Education.** The nonprofit corporation incorporated by the Georgia Foundation for Public Education shall electronically submit Form IT-QED-FUND2 to the Department through the Georgia Tax Center by January 12 each year. The report, Form IT-QED-FUND2, shall be prepared on a calendar year basis and shall include the following:

(a) The total number and dollar value of individual contributions and qualified education donation tax credits preapproved. Individual contributions include contributions made by those filing income tax returns as single, head of household, married filing separate, and married filing joint;

(b) The total number and dollar value of corporate, fiduciary, S corporation, and partnership contributions and qualified education donation tax credits preapproved;

(c) The total number and dollar value of grants awarded to public schools;

(d) A list of donors (which includes the donor's name, address, and identification number), including the dollar value of each donation, the dollar value of each preapproved qualified education donation tax credit, and each Department issued tax credit certificate number; and

(e) Any other information required by the Commissioner.

The Department shall post on its website the information received from the nonprofit corporation incorporated by the Georgia Foundation for Public Education under subparagraph 11(a) through 11(c) of this regulation.

(12) **Sunset Date.** O.C.G.A. § 48-7-29.21, the qualified education donation tax credit, shall be repealed on December 31, 2026.

(13) **Effective Date.** This regulation shall be applicable to years beginning on or after January 1, 2023. Years beginning before January 1, 2023 will be governed by the regulations of Chapter 560-7 as they existed before January 1, 2023 in the same manner as if the amendments thereto set forth in this regulation had not been promulgated.

Cite as Ga. Comp. R. & Regs. R. 560-7-8-.60

AUTHORITY: O.C.G.A. §§ 48-2-12, 48-7-29.21.

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Note: Correction of non-substantive typographical error in subparagraph (11)(b), "fidicuicary" corrected to "fiduciary." Effective December 11, 2019.

Amended: F. Dec. 7, 2021; eff. Dec. 27, 2021.

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