State of New Jersey
Department of Environmental Protection
PO Box 402
Trenton, NJ 08625

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. McCABE
Commissioner

April 30, 2019

Pete Lopez
Regional Administrator
EPA, Region 2
290 Broadway
New York, NY 10007-1866

Reference: Revision to the NJ State Implementation Plan (SIP) for CMC Steel New Jersey, Sayreville, NJ

Dear Mr. Lopez:

This letter requests approval from the United States Environmental Protection Agency (EPA) of a revision to the New Jersey State Implementation Plan for the Attainment and Maintenance of the Ozone National Ambient Air Quality Standard (Ozone SIP). This revision is being submitted for the above referenced facility to incorporate a facility-specific emission limits (FSEL) for volatile organic compounds (VOC) and nitrogen oxides (NOx). The FSELs have been established pursuant to N.J.A.C. 7:27-16.17 and 19.13. EPA Region 2 staff have previously reviewed drafts of the FSELs and SIP revision.

CMC Steel New Jersey is a steel mini-mill located in Sayreville. The specific piece of equipment of concern for this revision is an electric arc furnace. The facility uses the electric arc furnace to melt metal scrap.

The following is a summary of all necessary elements required for this SIP revision application:

Attachment 1: Site specific and source specific NOx RACT SIP information

The above attachment contains site specific permit information, a technical support package and the following enclosures:

Enclosure 1: SIP Completeness Checklist
Enclosure 2: FSEL Compliance Plan
Enclosure 3: Response to comments document
Enclosure 4: Statement of Basis
Enclosure 5: A copy of the Public Notice and Opportunity for Public Hearing

Enclosure 6: A copy of the Affidavit of Publication of Public Notice
Enclosure 7: A copy of the application package from the applicant and other supporting documentation

Attachment 2: Copy of N.J.A.C. 7:27-16.1 et seq., Control and Prohibition of Air Pollution by Volatile Organic Compounds, most recently amended on January 16, 2018; and

Copy of N.J.A.C. 7:27-19.1 et seq., Control and Prohibition of Air Pollution from Oxides of Nitrogen, most recently amended on January 16, 2018.

If you have any questions regarding this SIP revision submittal, please contact Mr. Bachir Bouzid of my staff at (609) 777 -0286.

Sincerely yours,

Catherine R. McCabe
Commissioner

Attachments
Copy w/o Attachments to:

Paul Baldauf, Assistant Commissioner
Francis Steitz, Director, Division of Air Quality
Richelle Wormley, Director, Compliance & Enforcement
Kirk Wieber, Chief, USEPA, Air Planning Section
Suilin Chan, Chief, USEPA, Permitting Section
Bachir Bouzid, Chief, Operating Permits Section

ATTACHMENT 1

Site-specific and source-specific VOC RACT and NOx RACT SIP information

Facility Name:	CMC Steel New Jersey
Facility Location:	1 N Crossman Rd., Sayreville, Middlesex County
Program Interest No.	18052
Activity No.	BOP150002
Equipment Description:	Electric Arc Furnace
Approval Summary:	Pursuant to N.J.A.C. 7:27-16.17 and N.J.A.C. 7:27-19.13, the New Jersey Department of Environmental Protection (NJDEP) has determined that the proposed facility-specific VOC control plan and facility-specific maximum allowable NO_x emission limit are approvable

ENCLOSURE 1

SIP Completeness Checklist

Administrative Support

1. **A formal letter of submittal from the Governor or designee requesting USEPA approval of the revision.**

   A letter is included with the package.

2. **Evidence that the State has adopted the revision in the State code or body of regulations; or issued the permit, order, consent agreement (hereafter document) in final form. That evidence should include the date of adoption or final issuance as well as the effective date of the revision if different from the adoption/issuance date.**

   Title V Operating permit BOP150002 was approved on April 30, 2019. The permit is fully enforceable by the State and includes a facility-specific VOC control plan with conditions pursuant to the requirements of N.J.A.C. 7:27-16.17 and a facility-specific NOx emission limit with conditions pursuant to the requirements of N.J.A.C. 7:27-19.13. The Facility-Specific VOC Control Plan and Facility-Specific NOx Emission Limit approval summary is enclosed (Enclosure 2).

3. **Evidence that the State has the necessary legal authority under State law to adopt and implement the revision.**

   N.J.A.C. 7:27-16.17 (Alternative and facility-specific VOC control requirements) and N.J.A.C. 7:27-19.13 (Alternative and facility-specific NO_x emission limits) give the legal authority to the Department to approve the facility-specific VOC control plan and facility-specific NOx emission limit. Copies of the rules are available at https://www.state.nj.us/dep/aqm/rules27.html

4. **A copy of the actual regulation, or document submitted for approval and incorporation by reference into the SIP, including indication of the changes made to the existing approved SIP, where applicable. The submittal should be a copy of the official state regulation/document signed, stamped, dated by the appropriate State official indicating that it is fully enforceable by the State. The effective date of the regulation/document should, whenever possible, be indicated in the document itself.**

   Copies of the actual regulations are enclosed (Attachment 2).

5. **Evidence that the State followed all the requirements of its Administrative Procedures Act (or equivalent) in conducting and completing the adoption/issuance of the revision.**

   The New Jersey Administrative Procedure Act is found in Title 52, chapter 14B of New Jersey Statutes. According to N.J. Stat. § 52:14B-3, each agency should adopt rules of practice and should make available final orders, decisions and opinions for public inspection.

N.J.A.C. 7:27-16.17, Alternative VOC Control Requirements institutes procedures and standards for the establishment of facility-specific VOC control plans for any source operation or equipment that have the potential to emit at least three pounds per hour and is not regulated elsewhere in N.J.A.C. 7:27-16 and is not specifically exempted elsewhere in N.J.A.C. 7:27-16 because the source operation is within a category that is exempted or because the source operation operates below exclusion rates or threshold levels for control. Pursuant to N.J.A.C. 7:27-16.17(c)(3), the facility has submitted to the Department a proposed facility-specific VOC control plan prepared in accordance with N.J.A.C. 7:27-16.17(d) (Enclosure 7).

N.J.A.C. 7:27-19.13, Alternative and Facility-Specific NOx Emission Limits institutes procedures and standards for the establishment of facility-specific maximum allowable NOx emission rates for any source operation or item of equipment of a category not listed in N.J.A.C. 7:27-19.2(b) or (c) that has the potential to emit more than 10 tons of NOx per year. Pursuant to N.J.A.C. 7:27-19.13(a)(3), the facility has submitted to the Department a proposed facility-specific maximum allowable NOx emission limit prepared in accordance with N.J.A.C. 7:27-19.13(d) (Enclosure 7).

Pursuant to N.J.A.C. 7:27-16.17(h) and N.J.A.C. 7:27-19.13(f), the Department has published a Notice of Opportunity for Public Comment in a newspaper for general circulation in the area in which the facility is located to seek comments from the general public before making final decision to approve the proposed facility-specific maximum allowable NOx emission rate (Enclosures 5 and 6).

The Department is submitting the facility-specific VOC control plan and facility-specific maximum allowable NOx emission limit approved by NJDEP to EPA for approval as a revision to New Jersey's State Implementation Plan pursuant to N.J.A.C. 7:27-19.13(h).

6. **Evidence that Public Notice was given of the proposed change consistent with procedures approved by EPA, including the date of publication of such notice.**

   A copy of the public notice is provided in Enclosure 5. A copy of the Affidavit of Publication of Public Notice is provided in Enclosure 6.

7. **Certification that public hearing(s) were held in accordance with the information provided in the public notice and the State's Administrative Procedures Act (or equivalent), if applicable**.

   There was no request to conduct a public hearing before, after or during the public comment period; therefore, no public hearing was conducted.

8. **Compilation of public comments and the State's response thereto.**

   No comments were submitted during the public comment period.

Technical Support

1. **Identification of all regulated pollutants affected by the revision:**

   Emissions of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) are affected by the revision.

2. **Identification of the locations of affected sources including the EPA attainment or nonattainment designation of the locations, and the status of the attainment plan for the affected sources:**

   The facility is located in Middlesex County, New Jersey. Middlesex County is part of the NY-NJ-CT 8-hour ozone nonattainment area and was classified as moderate under the 1997 8-hour ozone standard. It is currently classified as marginal under the 2008 8-hour ozone standard. There is no attainment plan currently required for marginal areas for the 2008 0.075 ppm NAAQS. New Jersey was issued a clean data determination (77 FR 36163 6-18-12) and an attainment plan approval (78 FR 9596 2-11-2013) for the 1997 0.08 ppm NAAQS. Middlesex County is located in an area that has been re-designated to attainment for PM2.5, effective 9-4-2013 (FR 54396 9-4-2013).

3. **Quantification of the changes in SIP allowable emissions from affected sources. Estimates of changes in current actual emissions from affected sources or, where appropriate, quantification of changes in actual emissions from affected sources through calculations of the differences between certain baseline levels and allowable emissions anticipated post revision:**

   Previous facility-specific VOC control plan for the electric arc furnace was approved by the Department prior to May 19, 2009. The facility would like to continue to operate the electric arc furnace with the same facility-specific VOC control plan.

   Previous facility-specific maximum allowable NOx emission limit for the electric arc furnace was approved by the Department prior to May 1, 2005. The facility would like to continue to operate the electric arc furnace with the same facility-specific maximum allowable NOx emission limit.

   There will be no changes in SIP allowable emissions from the affected source.

4. **Demonstration that the NAAQS/PSD increments/RFP demonstrated/ visibility are protected if revision is approved and implemented:**

   The affected source will not increase hourly VOC and NOx rates. Therefore, the NAAQS for ozone is protected.

5. **Modeling information required to support the proposed revision, including input data, output data, models used, justification of model selections, ambient**

monitoring data used, meteorological data used, justification for use of off-site data (where used), modes of models used, assumptions, etc.:

This proposed SIP revision addressing VOC and NOx RACT compliance pursuant to N.J.A.C. 7:27-16.17 and N.J.A.C. 7:27-19.13 is for ozone attainment. The rule does not require single source modeling for ozone and therefore, no air quality modeling for ozone was conducted.

6. **Evidence, where necessary, that emission limitations are based on continuous emission reduction technology, e.g., add-on controls industrial/process equipment designs, reformulated materials, etc.:**

   The electric arc furnace is equipped with a Direct Evacuation System to generate no more than 31 lb/hr of VOC (24 hour block average).

7. **Evidence that a revision contains emission limitations, work practice standards and record keeping/reporting requirements, where necessary, to ensure emission levels:**

   The facility is required to continuously monitor and record VOC and NOx emissions using continuous emission monitoring systems.

8. **Compliance/enforcement strategies including how compliance will be determined in practice, and at what frequency:**

   Compliance with VOC and NOx hourly emission rates will be determined by continuous monitoring and recording of VOC and NOx emissions utilizing continuous emission monitoring systems.

9. **As appropriate, special economic and technological justifications per applicable EPA policies. For example, economic and technological justification for alternative RACT, for long-term averaging for VOC emission limits, or its support bubble proposals.**

   It was established that there are no electric arc furnaces in the United States that employ any post-combustion flue gas treatment technologies other than direct evacuation systems. Therefore, the Department has determined that the operation of the Direct Evacuation System is the reasonably available air pollution control technology for the electric arc furnace.

ENCLOSURE 3

Response to Comment Document

No comments were received during the public comment period

ENCLOSURE 2

Facility-Specific VOC Control Plan
and
Facility-Specific NOx Emission Limit
Approval Summary and Compliance Plan

APPROVAL SUMMARY and COMPLIANCE PLAN

Facility Name: CMC Steel New Jersey
Facility Location: 1 N Crossman Rd., Sayreville, New Jersey
Program Interest No. 18052
Activity No. BOP150002
Equipment Description: Electric Arc Furnace

Pursuant to N.J.A.C. 7:27-16.17 and N.J.A.C. 7:27-19.13, the Department has determined that the use of use of the Direct Evacuation System is the reasonably available air pollution control technology.

The table below summarizes the approval conditions. A copy of the compliance plan is attached.

Condition	Emission Unit	Operating Scenario	Reference #
VOC (Total) <= 57 lb/hr	U1	OS1	25
NOx (Total) <= 31 lb/hr	U1	OS1	26

ENCLOSURE 4

Statement of Basis

STATEMENT OF BASIS for CMC STEEL NJ

TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION
FACILITY-SPECIFIC VOC CONTROL PLAN
AND
FACILITY-SPECIFIC NOx EMISSION LIMIT
FOR
ELECTRIC ARC FURNACE
Program Interest (PI): 18052 / Permit Activity Number: BOP150002

I. FACILITY INFORMATION

CMC Steel NJ is located at 1 N Crossman Rd., Sayreville, Middlesex County, NJ 08872 and consists of a steel mini-mill. The facility is owned and operated by CMC Steel NJ.

The facility is classified as a major facility based on its potential to emit 81.6 tons per year of volatile organic compounds, 155 tons per year of nitrogen oxides and 1390 tons per year of carbon monoxide.

This permit allows individual hazardous air pollutant to be emitted at a rate to not exceed: 0.033 tons per year of arsenic compounds, 7.08 tons per year of benzene, 0.084 tons per year of cadmium, 0.301 tons per year of chromium, 0.0000264 tons per year of dioxins, 1.06 tons per year of n-Hexane, 8.7 tons per year of hydrogen chloride, 0.711 tons per year of hydrogen fluoride, 0.84 tons per year of manganese, and 0.248 tons per year of mercury compounds.

II. AREA ATTAINMENT CLASSIFICATION

The Federal Clean Air Act (CAA) sets National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate matter, ground-level ozone, carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), and lead. The US Environmental Protection Agency (USEPA) also classifies areas as “attainment” or “nonattainment” for each criteria pollutant, based on the magnitude of an area's problem. Nonattainment classifications are used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment. Currently, the entire State of New Jersey is designated as nonattainment for the 8-hour ozone NAAQS. New Jersey is designated attainment for all other pollutants. For nonattainment classification refer to https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information.

III. BACKGROUND AND HISTORY

The equipment that emits air contaminants from this facility include: electric arc furnace, ladle preheaters, casting machine and other material handling equipment located in the melt shop; billet reheat furnace; powder coating booth; grit blast cabinet; storage silos; and diesel electrical generators. The melt shop is vented to the atmosphere through a baghouse with no less than 99% reduction efficiency for particulate emissions. The billet reheat furnace is equipped with a baghouse with no less than 99% reduction efficiency for particulate emissions. The coating booth, the blast cabinet and silos are equipped with cartridge filters with no less than 99% reduction efficiency for particulate emissions.

A Facility-Wide Risk Assessment was conducted on 7/2/2018 and health risk was determined to be negligible consistent with NJDEP Technical Manual 1003. A revised Health Risk Assessment was not conducted with this permit modification, since no changes were made to Air Toxics (including HAPs) emissions or risk parameters since the last risk assessment.

This is a Permit Modification to establish facility-specific VOC control plan and facility-specific maximum allowable NOx emission rate for electric arc furnace.

There are no proposed changes to air contaminant allowable emission rates.

IV. CASE-BY-CASE DETERMINATIONS

Facility-Specific VOC Control Plan and Facility-Specific Maximum Allowable NOx Emission Limit

The Facility-Specific VOC Control Plan and Facility-Specific Maximum Allowable NOx Emission Limit include monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's compliance with the applicable requirements.

N.J.A.C. 7:27-16, Control and Prohibition of Air Pollution by Volatile Organic Compounds does not establish maximum allowable emission rate of NOx from electric arc furnaces. Instead, it institutes procedures and standards for the establishment of facility-specific VOC control plans for any source operation or equipment that have the potential to emit at least three pounds per hour and is not regulated elsewhere in N.J.A.C. 7:27-16 and is not specifically exempted elsewhere in N.J.A.C. 7:27-16 because the source operation is within a category that is exempted or because the source operation operates below exclusion rates or threshold levels for control pursuant to N.J.A.C. 7:27-16.17.

N.J.A.C. 7:27-19, Control and Prohibition of Air Pollution by Oxides of Nitrogen does not establish maximum allowable emission rate of NOx from electric arc furnaces. Instead, it institutes procedures and standards for the establishment of facility-specific maximum allowable NO_x emission rates for source operations or items of equipment that have the potential to emit more than 10 tons of NO_x per year pursuant to N.J.A.C. 7:27-19.13.

Previous facility-specific VOC control plan for the electric arc furnace was approved by the Department prior to May 19, 2009. The facility would like to continue to operate the electric arc furnace with the same facility-specific VOC control plan.

Previous facility-specific maximum allowable NOx emission limit for the electric arc furnace was approved by the Department prior to May 1, 2005. The facility would like to continue to operate the electric arc furnace with the same facility-specific maximum allowable NOx emission limit.

It was established that there are no electric arc furnaces in the United States that employ any post-combustion flue gas treatment technologies. Therefore, the Department has determined that the use of the Direct Evacuation System is the reasonably available air pollution control technology. This SIP revision establishes facility-specific VOC emission rate of 57 lb/hr and facility-specific maximum allowable NOx emission rate of 31 lb/hr and, therefore, does not change allowable emissions from the affected source.

New Jersey's approval of the proposed facility-specific VOC control plan and facility-specific maximum allowable NOx emission rate from the electric arc furnace will be submitted to the United States Environmental Protection Agency for approval as a revision to the New Jersey's State Implementation Plan.

V. EMISSION OFFSET REQUIREMENTS

This modification is not subject to Emission Offset requirements.

VI. BASIS FOR MONITORING AND RECORDKEEPING REQUIREMENTS

The facility's operating permit includes monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's continued compliance with the applicable requirements consistent with the following:

1. Provisions to implement the testing and monitoring requirements of N.J.A.C. 7:27-22.18, the recordkeeping and reporting requirements of N.J.A.C. 7:27-22.19, and all emissions monitoring and analysis procedures or compliance assurance methods required under the applicable requirements, including any procedures and methods promulgated pursuant to 40 CFR 64; and

2. Where the applicable requirement does not require direct periodic monitoring of emissions, the Department requires periodic monitoring of surrogate parameters sufficient to yield reliable data from the relevant time period that are representative of the facility's compliance with the permit.

3. In some cases, direct periodic monitoring of emissions and/or surrogate parameters is not required due to one or more of the following:

    - Equipment size and capacity limitations,
    - Subject equipment being permitted at the maximum rated capacity,
    - There is no specific state or Federal standard that applies to this piece of equipment,
    - Not a pollutant of concern for this piece of equipment,
    - Agreements with EPA on the frequency of testing and monitoring for combustion sources.

VII. APPLICABLE STATE AND FEDERAL RULES

This modification is subject to New Jersey Air Pollution Control Regulations, codified in N.J.A.C. 7:27-1 through 34, as applicable. A complete text of these regulations is available at: http://www.nj.gov/dep/aqm/rules27.html

This modification is also subject to Federal regulations listed below.

NSPS Subpart AAa:	Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983.
NSPS Subpart A:	General Provisions
MACT Subpart YYYYY:	National Emission Standards for Hazardous Air Pollutants (HAP) for Area Sources: Electric Arc Furnace Steelmaking Facilities
MACT Subpart A:	General Provisions

The Greenhouse Gas (GHG) emissions from this facility are 87,760 TPY CO2e and there is no GHG emission increase OR the GHG emissions increase are less than 75,000 TPY CO2e.

VIII. FACILITY'S COMPLIANCE STATUS

Responsible Official at the facility has certified that the facility currently meets all applicable requirements of the Federal Clean Air Act and the New Jersey Air Pollution Control Act. Based on this certification, the Department's evaluation of the information included in the facility's application, and a review of the facility's compliance status, the Department has concluded that this air pollution control operating permit should be approved.

This operating permit includes a permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. A permit shield provides that compliance with the relevant conditions of the operating permit shall be deemed compliance with the specific applicable requirements that are in effect on the date of issuance of the draft operating permit, and which form the basis for the conditions in the operating permit.

Prior to the expiration of the Operating Permit's five-year term, the facility will be required to apply for a renewal, at which time the Department will evaluate the facility and issue a public notice with its findings.

IX. EXEMPT ACTIVITIES

The facility's operating permit does not include exempt activities such as office and interior maintenance activities, maintenance shop activities, food preparation facilities, cafeterias and dining rooms, etc. A complete list of exempt activities, as allowed by the Operating Permit rule, can be found at N.J.A.C. 7:27-22.1.

FACILITY NAME (FACILITY ID NUMBER)
BOP050001

Activity Number assigned by the Department

New Jersey Department of Environmental Protection
Facility Specific Requirements

Emission Unit Number assigned by the Facility

Brief description of emission unit

Emission Unit: **U40 Sewage Sludge Incinerators**
Operating Scenario: **OS Summary** **OR** **OS2 Fluidized Bed Incinerator**

OS Summary lists all rules and requirements that apply to an emission unit. An emission unit may contain one or more pieces of equipment and corresponding operating scenarios.

OSX denotes the operating scenario number and lists the rules and requirements that apply to a scenario. An operating scenario represents various ways (or scenarios) a piece of equipment is permitted to operate.

Item Number

Description of applicable requirement

Monitoring method to ensure compliance

Recordkeeping to show facility's compliance

Actions and submittals required for the facility

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	The permittee shall conduct an annual performance test for each pollutant in Table 2 of 40CFR62 Subpart LLL between 11 and 13 calendar months after the previous performance test or within 60 days of a process change. [40 CFR 62.16000(a)]	Other: Conduct the performance test using the test methods, averaging methods and minimum sampling volumes or durations as specified in 40CFR62 Subpart LLL and according to the testing, monitoring and calibration requirements specified in 40 CFR 62.16015(a). [40 CFR 62.16000(a)].	Other: (1) Maintain records of the results of initial, annual and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable. [40 CFR 62.16025(e)].	Submit a report: Annually to the Administrator and to the Department. The permittee shall submit an annual compliance report as specified in 40 CFR 62. [40 CFR 62.16000(d)]

Rule citation for applicable requirement

Rule citation for monitoring requirement

Rule citation for recordkeeping requirement

Rule citation for submittal/ action requirement

Explanation Sheet for Facility Specific Requirements

ENCLOSURE 5

Public Notice and Opportunity for Public Hearing

NOTICE OF OPPORTUNITY FOR PUBLIC COMMENT for CMC STEEL NJ

DRAFT TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION
FACILITY-SPECIFIC VOC CONTROL PLAN
AND
FACILITY-SPECIFIC NOx EMISSION LIMIT
FOR
ELECTRIC ARC FURNACE
Program Interest (PI): 18052 / Permit Activity Number: BOP150002

The New Jersey State Department of Environmental Protection (NJDEP) is seeking public comment on its intent to approve an air pollution control Operating Permit Significant Modification for this facility pursuant to the provisions of Title V of the Federal Clean Air Act, the federal rules promulgated at 40 CFR 70, and the state regulations promulgated at N.J.A.C. 7:27-22.

FACILITY INFORMATION

CMC Steel NJ is located at 1 N Crossman Rd., Sayreville, Middlesex County, NJ 08872 and consists of a steel mini-mill. The facility is owned and operated by CMC Steel NJ.

FACILITY PROCESSES AND AIR EMISSIONS INFORMATION

For information about the facility's processes and their air emissions please refer to the Statement of Basis available on this webpage at http://www.state.nj.us/dep/aqpp/publicnotices.htm.

CASE-BY-CASE DETERMINATIONS

Facility-Specific VOC Control Plan and Facility-Specific Maximum Allowable NOx Emission Limit

The Facility-Specific VOC Control Plan and Facility-Specific Maximum Allowable NOx Emission Limit include monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's compliance with the applicable requirements.

N.J.A.C. 7:27-16, Control and Prohibition of Air Pollution by Volatile Organic Compounds does not establish maximum allowable emission rate of NOx from electric arc furnaces. Instead, it institutes procedures and standards for the establishment of facility-specific VOC control plans for any source operation or equipment that have the potential to emit at least three pounds per hour and is not regulated elsewhere in N.J.A.C. 7:27-16 and is not specifically exempted elsewhere in N.J.A.C. 7:27-16 because the source operation is within a category that is exempted or because the source operation operates below exclusion rates or threshold levels for control pursuant to N.J.A.C. 7:27-16.17.

N.J.A.C. 7:27-19, Control and Prohibition of Air Pollution by Oxides of Nitrogen does not establish maximum allowable emission rate of NOx from electric arc furnaces. Instead, it institutes procedures and standards for the establishment of facility-specific maximum allowable NO_x emission rates for source operations or items of equipment that have the potential to emit more than 10 tons of NO_x per year pursuant to N.J.A.C. 7:27-19.13.

Previous facility-specific VOC control plan for the electric arc furnace was approved by the Department prior to May 19, 2009. The facility would like to continue to operate the electric arc furnace with the same facility-specific VOC control plan.

Previous facility-specific maximum allowable NOx emission limit for the electric arc furnace was approved by the Department prior to May 1, 2005. The facility would like to continue to operate the electric arc furnace with the same facility-specific maximum allowable NOx emission limit.

It was established that there are no electric arc furnaces in the United States that employ any post-combustion flue gas treatment technologies. Therefore, the Department has determined that the use of the Direct Evacuation System is the reasonably available air pollution control technology. This SIP revision establishes facility-specific VOC emission rate of 57 lb/hr and facility-specific maximum allowable NOx emission rate of 31 lb/hr and, therefore, does not change allowable emissions from the affected source.

DRAFT TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION
FACILITY-SPECIFIC VOC CONTROL PLAN
AND
FACILITY-SPECIFIC NOx EMISSION LIMIT
FOR
ELECTRIC ARC FURNACE
Program Interest (PI): 18052 / Permit Activity Number: BOP150002

New Jersey's approval of the proposed facility-specific VOC control plan and facility-specific maximum allowable NOx emission rate from the electric arc furnace will be submitted to the United States Environmental Protection Agency for approval as a revision to the New Jersey's State Implementation Plan.

PUBLIC COMMENTS AND CONTACT INFORMATION

This public notice, the statement of basis, and the draft permit have been posted at the Department's website: http://www.state.nj.us/dep/aqpp/publicnotices.htm. The draft permit is also available for inspection at NJDEP/Air Permits, 401 E State Street, Trenton, NJ 08625. You may inspect the permit application and any supporting materials at the Trenton location by calling Yogesh Doshi at 609-633-7249.

All persons, including the applicant, who believe that any condition of the draft Air Pollution Operating Permit or the Department's tentative decision to approve this permit is inappropriate, must raise all reasonable issues of concern and submit all arguments and factual grounds or materials supporting their position during the public comment period. Any comments on this draft permit must be received within thirty days of the date of this notice and addressed to Yogesh Doshi, yogesh.doshi@dep.nj.gov, NJDEP, 401 E State Street, 2nd Floor, PO Box 420, Mail Code 401-02, Trenton, NJ 08625-0420.

In accordance with N.J.A.C. 7:27-22.11(f), any person may request that the Department hold a public hearing on the draft permit. A request for a public hearing shall be submitted, in writing, within thirty days of the date of this notice to the Department at the Trenton address listed above. The request for public hearing shall include a statement of issues to be discussed at the public hearing. The statement of issues shall be relevant to the draft permit under review by the Department.

The Department will consider and respond to all written and timely submitted comments. The applicant, and each person, who submitted written comments, will receive a notice of the Department's final decision regarding the Operating Permit modifications and a copy of the Response to Comment document.

ENCLOSURE 6

Affidavit of Publication of Public Notice

Governor Phil Murphy • Lt.Governor Sheila Oliver

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STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF STATIONARY SOURCES

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  - Air Permit Information
- Applications and Forms
- General Permits
- Online Permitting Help
- Permitting Guidance
- Public Notices

DOCUMENTS FOR PUBLIC COMMENT

All documents are available for public review at the DEP offices located at 401 East State Street, Trenton, New Jersey. Permit documents are also available for review at the Regional Enforcement Offices.

Under the provisions of N.J.A.C. 7:27-8.10 and N.J.A.C. 7:27-22.11, DEP is seeking comments from the public on the following draft permits. Public comments may only be submitted during the public comment period listed below.

DEP is also seeking EPA comments on the following proposed permits.

EPA Comment Period Information (Click this link for more information)

Date Posted: 1/28/19

Public Comment Period: 2/4/19 - 3/6/19

Permit Applicant/Location:

CMC Steel NJ
1 N Crossman Rd
Sayreville, NJ 08872

Public Notice	Draft Permit	Proposed Permit	Contact Person
Public Notice	Draft Permit	Proposed Permit	Yogesh Doshi e-mail
Statement of Basis	**Permit Type**	**Response to Comments**	
Statement of Basis	Title V Significant Modification	N/A	

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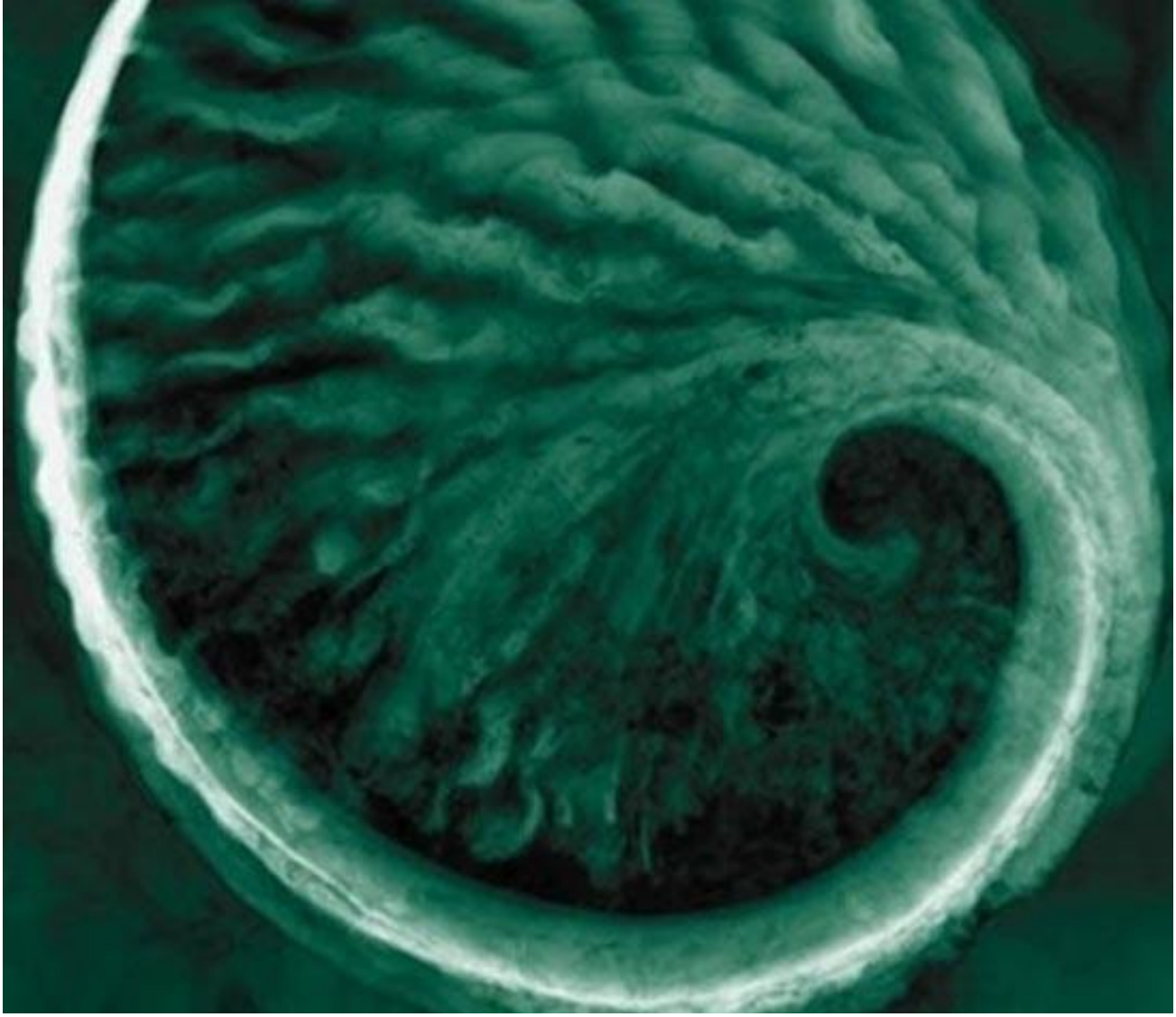
ENCLOSURE 7

Application Packages from Applicant

and other Supporting Documentation



Gerdau Ameristeel
Sayreville New Jersey Facility
North Crossman Road
Sayreville, NJ 08871

Application for N.J.A.C. 7:27-16.17, Proposed Facility-Specific VOC Control Plan for Electric Arc Furnace

Program Interest ID: 18052
Permit ID: BOP150001

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The business of sustainability

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Gerdau Ameristeel Sayreville ("Gerdau" or the "facility") operates a mini-mill in Sayreville, New Jersey. The facility operations consist of reclaiming scrap metal and processing it into billets and reinforcing bars (rebar). The mill has two primary production areas: the Melt Shop and the Rolling Mill. The Melt Shop production process uses an electric arc furnace (EAF) to melt the incoming scrap, which is then sent to a caster from a ladle to form billets. The billets can either be shipped off-site or sent to the Rolling Mill to be formed into rebar. In the Rolling Mill, billets are heated in the Billet Reheat Furnace (BRF) and are then sent through a series of roller strands, which reduce the billet to the desired diameter for steel rebar.

On April 20, 2009, the New Jersey Department of Environmental Protection ("NJDEP") revised regulations at N.J.A.C. 7:27-16, Control and Prohibition of Air Pollution from Volatile Organic Compounds, also known as the "VOC Reasonably Available Control Technology (RACT) Rule." In addition to establishing control requirements, operating practices, and emission limits for specific equipment considered to substantially contribute to VOC emissions in New Jersey, the VOC RACT rule also applies to any other equipment not specifically listed that is located at a major source of air pollutants and that has the potential to emit greater than three (3) pounds per hour (lb/hr) of VOC emissions. Further, VOC emission limits for such equipment are established through the submittal and approval of a facility-specific VOC RACT Plan that establishes a facility-specific emission limit ("FSEL") for the equipment. Gerdau is a major source of emissions; potential VOC emissions from the EAF exceed 3 lb/hr. As such, Gerdau is required to establish an FSEL for the EAF through a facility-specific VOC RACT Plan.

Several VOC control options were evaluated for the EAF. The options identified as being technically feasible are a Scrap Management Plan, Direct Evacuation System (DES), and Thermal Incinerator. The Scrap Management Plan and DES are currently in use at the facility and there is no incremental cost associated with their continued use. The cost-effectiveness of installing and operating a Thermal Incinerator was evaluated in this plan and considered not to be cost-effective.

Based on the technical and cost analysis conducted for this facility-specific VOC RACT Plan, Gerdau selects the following control strategies as RACT:

- Scrap Management Plan; and
- Direct Evacuation System.

The Scrap Management Plan limits the amount of oil and free organic liquids in scrap charged to the EAF; these organic liquids contribute to the emission of VOC. The DES helps destroy some VOC emissions from the EAF by sending the gas stream back through the high temperature prechamber.

This VOC RACT plan concludes that the current operation of the EAF is RACT and proposes no change to the VOC emission limits in the current Title V permit (BOP150001).

1.0 INTRODUCTION

1.1 COMPANY BACKGROUND

Gerdau Ameristeel Sayreville operates a steel mini-mill in Sayreville, New Jersey. The mill consists of two primary production areas: the Melt Shop and the Rolling Mill. The Melt Shop consists of a prechamber or preheater, electric arc furnace, ladle, and caster. The Melt Shop uses an electric arc furnace to melt scrap metal, which is then transported by a ladle to a continuous caster where it is cast into billets. The particulates, metals, and emissions from the Melt Shop are vented via a Direct Evacuation System to a baghouse.

The billets are further processed into reinforcing bars in the Rolling Mill. The Rolling Mill consists of a billet reheat furnace (BRF) where the billets are reheated and rollers where the rebar is formed from the reheated billets. Most of the rebar formed is shipped as final product but a small amount of rebar is coated with an epoxy in another area of the mill.

The facility employs approximately 240 employees and has a permitted production rate of 3,450 tons of billets per day in the Melt Shop.

1.2 VOC RACT RULE APPLICABILITY

Subchapter 16 of N.J.A.C. 7:27 ("VOC RACT Rules") establishes the requirements and procedures for control of VOC emissions. In an effort to reach attainment with the National Ambient Air Quality Standard ("NAAQS"), Subchapter 16 sets forth control requirements, operating practices, and emission limits for specific equipment considered to substantially contribute to VOC emissions, an ozone precursor. In general, the subchapter identifies the control level that is considered the reasonably available control technology ("RACT") that must be applied to the source of VOC emissions. In addition to identifying RACT controls for specific types of equipment, the VOC RACT rule also applies to any other equipment not specifically listed in Subchapter 16 that is located at a major source, and that has the potential to emit greater than three pounds per hour (lb/hr) of VOC emissions. Further, the VOC emission limits for such equipment are established through the submittal and approval of a facility-specific VOC RACT Plan that establishes a facility-specific emission limit for the equipment.

Gerdau originally submitted a facility-specific VOC RACT plan for the EAF in October 1994 and has implemented the VOC RACT controls approved in the original plan. On April 20, 2009, the New Jersey Department of Environmental Protection revised the VOC RACT Rule. Pursuant to the VOC RACT Rule revisions at N.J.A.C. 7:27-16.17(c)(3), Gerdau was issued a FSEL for the EAF prior to May 19, 2009, and was required to submit a proposed facility-specific VOC control plan by August 17, 2009 in order to continue operating under the existing FSEL. To satisfy this requirement, Gerdau submitted this plan on August 17, 2009.[1] Because the EAF continues to have a permitted VOC emission rate in excess of 3 lb/hr, and the EAF is not otherwise regulated by the VOC RACT rule, Gerdau must continue to operate under an FSEL. Gerdau submitted a VOC RACT plan for the EAF to satisfy the requirements of N.J.A.C. 7:27-16.17(a)(3) and (c)(3). This updated plan focuses on the control of VOC emissions from the EAF by evaluating permits issued for new or modified EAF since the 2009 Plan was submitted and by determining if other control strategies have emerged since then.

1.3 VOC RACT PLAN ELEMENTS

This VOC RACT plan addresses VOC emission control options for the EAF, which operates in the Melt Shop. This VOC RACT plan has been prepared in accordance with N.J.A.C. 7:27-16.17(d) for source operations that meet the criteria defined in N.J.A.C. 7:27-16.17(c). Specifically, the VOC RACT rules require the following elements in a VOC Control Plan to establish an FSEL for a source operation or equipment:

- A list of each source operation or item of equipment at the facility that is not regulated under N.J.A.C. 7:27-16.2 through 16.16, 16.20 or 16.21, and has the potential to emit at least three pounds of VOC per hour;
- The following information for each applicable source operation:
  - A brief description of the source operation, and its permit number and any other identifying numbers;
  - The maximum rated capacity of the source operation;
  - The source operation's potential to emit VOC;
  - A list of all VOC control technologies available for use with the source operation;

[1] On September 7, 2018, the NJDEP requested that Gerdau update this VOC RACT Plan. The updates to the plan are contained herein.

- A list of all alternative processes and pollution prevention measures that the owner or operator is considering using with or in place of the source operation to reduce VOC emissions;
- An analysis of the technological feasibility of installing and operating each control technology and process alternative;
- For each control technology and process alternative which is technologically feasible to install and operate, an estimate of the cost of installation and annual operation;
- An estimate of the remaining useful life of the existing source operation;
- An estimate of the reduction in VOC emissions attainable through the use of each control technology and process alternative;
- The VOC control technology or technologies or process alternatives which the owner or operator proposes to employ and an implementation schedule;
- For any construction, alteration or installation of any equipment or control apparatus that the owner or operator proposes in the plan, a complete application for each permit required;
- A proposed VOC emission limit for the source operation or for the proposed process alternative; and
- Proposed recordkeeping requirements sufficient to document the owner or operator's continued compliance with the plan; and

- A certification signed by the owner or operator, satisfying the requirements of N.J.A.C. 7:27-1.39.

The following sections of this VOC Control Plan address each required regulatory element described above. Section 2 identifies and describes each source operation that has the potential to emit more than 3 lb/hr of VOC emissions and is not otherwise listed in N.J.A.C. 7:27-16. Section 3 identifies available VOC emission control techniques and alternative processes and pollution prevention measures that can be considered for use with or in place of the source operation to reduce VOC emissions. Section 4 evaluates the VOC control options and pollution prevention measures to identify those that are technically feasible for the EAF and also estimates the VOC emission reductions expected from each technically feasible option. Section 5 provides the economic analysis for each technically feasible control and pollution prevention option. Section 6 identifies the selected VOC RACT level of control for the EAF and provides the VOC emission limit. The certification is provided as Appendix A to this VOC Control Plan.

2.0 IDENTIFICATION OF SOURCE OPERATIONS

At Gerdau's Sayreville mill, The Melt Shop process refers to the melting of scrap metal by the EAF and casting the melted steel to form billets utilizing the Consteel™ Process. The scrap steel is melted in the EAF and then transferred to the Caster, using the Ladle, where the melted steel is cast into billets. The EAF is a continuously charged furnace that utilizes an electric arc to melt incoming ferrous scrap metal. Continuous melting-refining of the steel takes place within the EAF under a layer of foaming slag. A heel of molten metal in the base of the EAF acts as a "thermal flywheel" for the quick melting of new scrap steel as it is introduced. A fundamental principal of the Consteel™ Process is the rapid melting of the scrap as it is introduced into a hot heel of metal. Heat is supplied to the molten metal bath by the arc of electrodes in the EAF that are covered by foaming slag. The incoming scrap melts as it is introduced to the furnace. Scrap metal, along with byproducts of the scrap and additives are released as particulate dust as a result of the intense discharge of electricity and heat during the scrap melting step.

The EAF bath temperature is maintained in the carbon boil range, while oxygen injection at the base of the bath level stirs the bath, foams the slag, and generates carbon monoxide that is later combusted in the preheater chamber. In order to oxidize most of the carbon monoxide in the preheater chamber, particular care is taken to minimize air intake in the arc furnace and the connecting car.

The furnace operation is present within a negative pressure environment known as the Direct Evacuation System (DES). The melt shop is evacuated through two main branches of ductwork and evacuation systems: 1) a canopy hood which is positioned high above the EAF in the melt shop roof; and, 2) via direct evacuation of the EAF through the preheater chamber which feeds scrap to the furnace. These off-gases heat the incoming scrap and are confined by the preheater as they are drawn toward the baghouse. Before arriving at the baghouse, exhaust gases pass through an antechamber and a water spray chamber, and are then combined with exhaust gases collected by the canopy hood. Combined exhaust gases are cleaned in the baghouse and discharged through the Melt Shop stack. The Melt Shop air and furnace exhaust are filtered by a negative pressure baghouse system constructed of high temperature rated fabric filter Gore Tex® polyester bags. The filtered air is released through the Melt Shop stack.

Several modifications were made to the DES system design after its initial design in 1997 for the primary purpose of reducing VOC emissions.

Specifically, two methods of post-combustion control are integrated into the Consteel™/DES system design. These included oxygen injection in the freeboard space in the EAF above the foamy slag and oxygen injection into the preheater at ports along the length of the scrap conveyor. Gerdau also replaced the antechamber and DES waterspray chambers with larger vessels to increase residence time. Finally, modifications to the DES were made to increase temperature in the antechamber by reducing infiltration of cold air.

At Gerdau's Sayreville mill, the Melt Shop operates in accordance with the provisions at U1 of the Title V Operating permit. The permit establishes a maximum potential to emit of 78.7 tpy of VOC for the Melt Shop; these emissions are attributed almost entirely to the EAF source. Other sources of VOC emissions in the Melt Shop include VOC emissions from combustion from a scrap pre-heater, three ladle preheaters, a tundish preheater, and billet cutting torches. However, based on the most recent emissions inventory, each of these sources contributes substantially less than 3 lb/hr of VOC emissions. Therefore, only the EAF source operation is subject to the VOC RACT rule because it has the potential to emit more than 3 lb/hr VOC per year as per N.J.A.C. 7:27-16.17(a).

Table 1 provides other identifying information for the EAF.

Table 1: Identifying Information for the Electric Arc Furnace

Parameter	VOC
Facility Name	Gerdau Ameristeel Sayreville
Facility Title V Program Interest No.	18052
Permit Activity No.	BOP150001
Equipment ID	E201
Emission Unit	U1
Maximum Rated capacity of the EAF	3,450 tons/day; 800,000 tons/yr
Permitted Annual VOC Emission Rate	78.7 tons/yr
Permitted Hourly VOC Emission Rate	57 lb/hr, with an allowance for 150 hours of operation at 75 lb/hr
Useful Life[2]	See Footnote 2

[2] The EAF includes the electrodes, refractory, as well as the furnace shell. The useful life of each is different. Electrodes generally have a life of 40 heats, whereas refractory must be replaced every 6 to 8 weeks. The furnace shell would be expected to have a useful life of 15 years.

3.0 VOC EMISSIONS CONTROL TECHNOLOGY ANALYSIS

In accordance with 7:27-16.17(d)2iv, a discussion of all available VOC control technologies is provided in this section. The control measures evaluated are based on a review of the technical literature, with particular focus on controls for an Electric Arc Furnace. Section 3.1 identifies controls technologies and pollution prevention measures found in technical literature. Section 3.2 identifies VOC control technologies identified through a review of federal and state regulations.

3.1 VOC CONTROL TECHNOLOGIES FOR ELECTRIC ARC FURNACES

VOC are organic compounds that can participate in photochemical reactions to produce ozone when released to the atmosphere. The predominant fraction of VOC is compounds that can rapidly evaporate at ambient temperatures. Therefore, in Melt Shop operations, VOC emissions are likely first formed in the preheater chamber where the scrap metal on the conveyor is heated to 1,100ºF prior to charging to the EAF. Most of the organic impurities in the scrap, such as paint, plastics, grease and oil, would volatilize in the preheater chamber. The heated scrap is then sent to the EAF, where heavier organics would volatilize at 2,200ºF. The exhaust gases from the EAF are ducted through the preheater chamber and water spray chamber before being mixed with canopy hood exhaust from the melt shop. The combined canopy hood and EAF exhaust enter the baghouse.

Primary emission control involves preventing or reducing the conditions or material that create VOC. Secondary emission control involves the destruction of already created VOC. Since the most concentrated VOC stream is at the outlet of the DES prior to combining the flow with the canopy hood system, secondary emission controls are evaluated by treating the gas flow outlet of the DES prior to combining the flow with the canopy hood system.

To identify VOC control options for the EAF, Gerdau reviewed the previous control technology analyses completed for the facility, and online technical resources. On November 13, 1996, Gerdau (as New Jersey Steel Corporation) submitted a BACT/LAER analysis to support a permit application under the New Source Review/Prevention of Significant

Deterioration (NSR/PSD) Program[3]. The BACT/LAER analysis addressed multiple emissions and subsequent control options for the EAF and BRF at Sayreville. One section of the BACT/LAER report includes a LAER Review for VOC emissions from the EAF. Gerdau (as Co-Steel Corporation) also submitted a State of the Art Analysis to NJDEP in August 2001 to support a modification to its air permit. Both reports conclude, and NJDEP concurred, that implementation of scrap management and use of the DES represented LAER and SOTA for VOC emissions from the EAF.

The LAER analysis was approved in the mid-1990's and the SOTA analysis in 2002. Therefore, Gerdau utilized EPA's RACT/BACT/LAER Clearinghouse (RBLC) to determine if new control technologies to minimize VOC emissions have emerged since that time. Table 2, shown in Appendix B, summarizes the results of the RBLC search for VOC control technologies and VOC emission limits associated with an EAF at a steel mill. As noted in Table 2 of Appendix B, the VOC control methods identified include scrap management and the use of a DES system (also referred to as a Direct Evacuation Chamber or DEC). The RBLC is supplemented by known secondary VOC control techniques identified in EPA technical documents to yield the following list of all available VOC Control technologies:

- Scrap management plan;
- direct evacuation system (DES);
- thermal incineration;
- catalytic incineration;
- flares;
- adsorption; and
- condensers/recapture.

A more detailed description of these technologies, as well as the feasibility of applying them to the EAF at the Sayreville Mill, is provided in Section 4.

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[3] Sayreville Facility, APC ID No. 15076, BACT/SOTA Analysis, from N. Hinsey, BE&K to M. Friedman, November 13, 1996.

3.2. *CURRENT APPLICABLE AIR REGULATORY STANDARDS*

Federal and state regulations were reviewed to identify rules that limit emissions from the EAF. The following rules regulate EAF:

- 40 CFR Part 60.270a, Subpart AAa – Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983;
- 40 CFR Part 63, Subpart YYYYY – National Emission Standards for Hazardous Air Pollutants (HAP) for Area Sources: Electric Arc Furnace Steelmaking Facilities; and
- N.J.A.C. 7:27-27, Control and Prohibition of Mercury Emissions.

No other state regulations addressing emissions from EAF (other than those that incorporate the federal NSPS and MACT rules) are identified.

The NSPS limits opacity and particulate emissions from melt shop operations but does not address VOC emissions. The area source rule imposes maximum achievable control technology (MACT) to limit emissions of mercury, and generally available control technology (GACT) to limit volatile HAP, i.e., VOC. The GACT rule identifies a scrap management program to remove organic compounds in the scrap metal thus reducing VOC emissions from the EAF. No other control measures to reduce volatile HAP were considered under the rulemaking.

Specifically, under the restricted scrap provision in the GACT rules, the plant owner or operator would agree to restrict the use of certain scrap, including metallic scrap from motor vehicle bodies, engine blocks, oil filters, oily turnings, machine shop borings, transformers and capacitors containing polychlorinated biphenyls (PCBs), lead-containing components, chlorinated plastics, or free organic liquids. The rule also requires the plant owner or operator to prepare a pollution prevention plan for metallic scrap selection and inspection to minimize the amount of chlorinated plastics, lead (except for the production of leaded steel), and free organic liquids. The owner or operator would be required to keep a copy of the plan onsite and train plant personnel with materials acquisition or inspection duties in the plan's requirements. The plan must include specifications for scrap materials to be depleted (to the extent practicable) of lead-containing components (except for the production of leaded steel), undrained used oil filters, chlorinated plastics, and free organic liquids. The plan would also contain procedures for determining if these requirements are met (e.g., visual inspection or periodic audits of scrap suppliers) and procedures for taking corrective actions with vendors whose shipments are not within specifications.

Gerdau Sayreville is subject to the GACT rule, and has completed its pollution prevention plan, submitted the plan to NJDEP, and implemented the plan as written.

The feasibility of secondary control devices depends more on the characteristics of the exhaust stream than the actual operation. Several control technologies are not feasible based on the VOC concentration in the exhaust gas. EPA provides the following general guidelines for the applicability of these control technologies. For the information in Table 3 below, a review of EPA's Technology Transfer Network – Clean Air Technology Center website was reviewed for all the control options listed. In addition, for the thermal incinerator, the EPA's "Handbook on Control Technologies for Hazardous Air Pollutants," was reviewed and for the condenser, the EPA's Cost Manual, sixth edition was also reviewed.

Table 3: Control Technology and Applicable VOC Concentration

EPA Document ID	Control Technology	VOC Concentration (ppmv)
EPA-452/F-03-022 EPA 625/6-91/014	Thermal Incineration	> 20
EPA-452/F-03-018	Catalytic Incinerator	1 – 10,000 (usually 25% of LEL)
EPA-452/F-03-019	Flare (assuming 1000 BTU/scf VOC)	25% of the LEL
EPA-456/F-99-004	Carbon Adsorption (fixed bed)	400 – 2,000 (typical)
EPA-452/B-02-001 EPA-456/R-01-004	Condenser	5,000 – 10,000

A catalytic incinerator utilizes a catalyst to destroy VOC emissions at temperatures lower than a thermal incinerator. Because of the high particulate content, including lead and arsenic, in the exhaust gas, there is the strong likelihood of catalyst poisoning and deactivation. Also, the high level SO_3 and sulfuric acid (H_2SO_4) would cause catalyst fouling. Therefore, employing a catalytic incinerator is not a technically feasible control option.

Flares require constant fuel combustion to maintain the pilot flame, which would result in higher emissions, including CO and NOx emissions. Also, a flare is usually employed as a safety device to handle upset conditions at a facility. Adsorption and condensers are usually used for reclaiming or separating out VOCs from a gas stream for further use. These options also require large amounts of energy to meet the high cooling requirements required to use these options. In addition, condensers are generally used

in streams with very high concentrations of VOC. These control techniques are not technically feasible for an electric arc furnace.

Based on the RBLC search (Appendix B) there are no documented uses of thermal incinerators, catalytic incinerators, flares, adsorption, or condensers to control VOC emissions from an electric arc furnace. Scrap management was considered BACT for VOC emissions from an EAF in PSD permit approvals issued as recently as 2016. In addition, the MACT and GACT standards only identify a scrap management plan as the required control method for VOC emissions from an EAF.

Based on the information in Table 3 above and the average VOC concentration in the exhaust gas of the DES at Sayreville (80 ppm on average), thermal incineration control technology is technically feasible even though it has not been implemented for an EAF. A more comprehensive analysis of this control technology is presented below.

The scrap management plan and the direct evacuation system are currently operating at the Sayreville facility and therefore, both are technically feasible and are also discussed in more detail in the following sections.

4.1 THERMAL INCINERATOR

Thermal incineration is one of the best methods for destroying VOC emissions from industrial gases with efficiencies between 98% and 99.99% achievable with proper design. A major advantage of incineration is that virtually any gaseous organic stream can be incinerated and it is less dependent on pollutant and emission stream characteristics than other methods.

Thermal incineration is not well suited for streams with large fluctuations in flow rate because the reduced residence time and mixing during increased flow would result in lower destruction efficiency. Incinerators, in general, are not recommended for halogen- or sulfur- containing compounds. The annual operating costs are relatively high due to supplemental fuel costs and are generally not cost effective for low concentration, high-volume vapor streams. The cost-effectiveness of a thermal incinerator for the EAF at Sayreville is presented in further detail in Section 5.

Typical gas flow rates for thermal incinerators range from 500 to 50,000 standard cubic feet per minute (scfm). The typical design characteristics to achieve 98% destruction (or 20 ppmv of existing VOC) are 1,500°F, 0.5 second residence time, and proper mixing. Most thermal incinerators are

designed to provide no more than 1 second of residence time with temperatures between 1,200°F and 2,000°F. Halogenated compounds usually require 1 second of residence time with temperatures around 2,000°F, and the use of an acid gas scrubber on the outlet stream.

4.2 *SCRAP MANAGEMENT PLAN*

One of the largest costs of producing each ton of billets is the cost of scrap. Therefore, the facility is predisposed to maintain an aggressive scrap management program to ensure that material it purchases is of consistent and verifiable quality. In addition, the VOC formed in the EAF and preheater come from impurities in the scrap charged. To this end, scrap inspectors at the facility inspect each delivered shipment and verify that the material meets the defined specifications in accordance with the pollution prevention plan required under 40 CFR Part 63 Subpart YYYYY, which has been provided to NJDEP. In general, specifications for each scrap commodity were developed to minimize the amount of non-metallic/organic material, including oil, grease, and plastic that would result in VOC emissions. More detailed information is available in the pollution prevention plan.

4.3 *DIRECT EVACUATION SYSTEM (DES)*

The direct evacuation system also functions as a secondary VOC control device due to the process configuration. The DES utilizes "Fourth-hole evacuation" to capture gas from the EAF through the preheater to send to the baghouse (through ducts). Because the EAF exhausts through the DES, essentially all of the VOC emissions in the melt shop flow through the preheater and prechamber. The temperature in the preheater/prechamber is maintained between 1,400 and 2,100°F with an oxygen content varying from 0 to 14% as measured at the preheater exit. These conditions are conducive to destruction of VOC compounds. Thus the VOC emissions are both generated in and destroyed (controlled) in the preheater by the DES. As described in Section 2, the DES design at Sayreville was further enhanced for the primary purpose of decreasing VOC emissions.

4.4 RANKING OF TECHNICALLY FEASIBLE CONTROL TECHNOLOGIES

Table 4 ranks the VOC control technologies identified for review and summarizes whether they are technically feasible for the EAF.

Table 4: VOC EAF Control Strategies

Ranking	VOC Control Strategy	Technically Feasible?		Control Efficiency
		Yes	No	
1	Thermal Incineration	X		95%
2	Scrap Management Plan[4]	X		Undetermined
3	Direct Evacuation System (DES)	X		Undetermined
4	Catalytic Incineration		X	95%
5	Flare		X	95%
6	Carbon Adsorption		X	N/A
7	Condenser/Recapture		X	N/A

As noted in Table 4, thermal incineration is a technically feasible VOC control option for the EAF. Therefore, a cost analysis is provided in Section 5. Scrap management plan and DES are technically feasible control options that have already been implemented at the facility. Since these options are already implemented, there is no additional cost to Gerdau and a cost analysis for these options is not provided.

[4] Because of the nature of the scrap management plan and DES, any VOC reductions are difficult to quantify. Likewise, Subpart YYYYY does not assign a control efficiency. For purposes of this control plan the control efficiency of these options is listed as "undetermined."

5.0 CONTROL COST ANALYSIS

A cost analysis was developed for the thermal incinerator control option because it is technically feasible. The scrap management plan and DES system control options are also technically feasible but both are currently implemented at the site. Therefore, the cost for operating under a scrap management plan and operating a DES are assumed to be included in the current cost of business and no additional costs would be incurred.

The costs associated with the thermal incinerator are presented in Table 5 of Appendix C. These costs were developed based on the USEPA's Office of Air Quality Planning and Standards ("OAQPS") Cost Manual, Sixth Edition, EPA/452/B-02-001 and assumptions used in previous BACT/SOTA/LAER analyses submitted by Gerdau in 1996. Based on the OAQPS Cost Manual the maximum design flow rate for a thermal incinerator should be no greater than 50,000 SCFM, otherwise multiple incinerators should be used. Therefore, the cost needed to handle a flow rate of 100,000 SCFM is based on the cost of two (2) 50,000 SCFM units. Please note that only the cost of thermal incineration was considered in the cost analysis. The presence of sulfuric acid in the gas stream may require the installation of an acid gas scrubber to control halogenated/sulfur compounds. The addition of a gas scrubber would increase all costs evaluated.

The design data used in the cost analysis, such as flow rate and heat usage data, were based on the 1996 BACT/SOTA and LAER analysis and the assumption that the EAF process has not changed substantially since 1996. General assumptions included:

- Total Flow rate = 100,000 scfm
- Oxygen content of waste gas exceeds 20%
- Lower Explosive Limit ("LEL") is below 25%
- VOC Control Efficiency of 95%

Capital Costs

The Equipment Cost was based on two thermal incinerator units with a 50,000 SCFM capacity (100,000 scfm total). The total cost, based on the OAQPS Cost Control Manual, is $638,275 in 1988 dollars. Adjusting this cost from 1988 dollars to 2018 using the CPI online calculator (to adjust for inflation) results in a 2018 cost of $1,392,615. By applying the direct and

indirect costs per the USEPA's OAQPS Cost Manual, Sixth Edition, EPA/452/B-02-001, the estimated total capital investment to install both units is $2,645,690.

Annual Costs

Following the USEPA's OAQPS Cost Manual, Sixth Edition, EPA/452/B-02-001, the annual cost of operating a thermal incinerator was evaluated. The total annual cost was calculated to be $3,647,283. This includes both direct annual costs and indirect annual costs. The majority of the annual expenses would be energy costs associated with supplemental fuel (natural gas) and electricity associated with operating the thermal incinerator (e.g., pump fan). The direct costs were based on the following data:

- Electricity Costs: $0.1011/kWh
- Fuel (Natural Gas) Costs: $2.63/MMBTU
- Labor Costs: $40.87/hr

The cost effectiveness of the thermal incinerator was calculated using the total annual cost and the amount of VOCs that would be removed by the incinerator. The VOC reduction was based on a baseline of 78.7 tons/yr from the facility's Title V permit and an assumed control efficiency of 95%, resulting in a reduction of 74.8 tons/yr of VOC. A control efficiency of 95% was selected based on EPA information for the demonstrated destruction of a typical incinerator.

The calculated cost effectiveness to implement thermal incinerators is $48,783 per ton of VOC removed, which is not considered cost effective.

The selection of RACT for Gerdau's EAF is based on the cost-effectiveness and incremental cost-effectiveness associated with applying the thermal incinerator option, as discussed in the following section.

6.0 RACT SELECTION

An facility-specific VOC RACT analysis requires a "top-down" approach. Using this approach, the facility must evaluate the most stringent level of VOC emission control and determine the feasibility of selecting it as RACT. In this section, only the control options that were deemed technically feasible in Section 4 are evaluated.

Table 6 summarizes the ranking of technically feasible control options and the cost to implement each option.

Table 6: Cost to Implement Feasible Control Options

Ranking	VOC Control Strategy	Control Efficiency	Cost to Implement
1	Thermal Incineration	95%	$48,783 per ton of VOC removed
2	Scrap Management Plan	Undetermined	$0.00
3	Direct Evacuation System (DES)	Undetermined	$0.00

The most stringent, technically feasible control option is the thermal incinerator. However, based on the results of the cost effectiveness evaluation, this option cannot be selected as RACT. The average cost effectiveness for the thermal incinerator estimated an annual cost of $48,783 per ton of VOC removed, which is above any documented RACT cost effectiveness threshold. This cost is not economically justifiable.; in addition to the annual cost per ton, there is the possibility of costs for a gas scrubber to control halogenated/sulfur compounds.[5]

The scrap management plan and DES control options are both technically feasible and cost effective. Gerdau proposes these options as VOC RACT controls for the Sayreville facility. Both control options are currently being used at Gerdau-Sayreville and will continue to be used and refined in the future. Therefore, Gerdau proposes the same VOC limits of 78.7 tons per year and 57 lb/hr (with 150 hours of a peak rate of 75 lb/hr) be used for the Electric Arc Furnace.

---

[5] Based on a cost of $47 per scfm of volumetric flow (the mean capital cost rate from EPA-CICA Fact Sheet (EPA-452/F-03-015) CPI adjusted to 2018 dollars), the capital cost for the installation of a 100,000 scfm packed-bed/packed-tower wet scrubber would be $4,703,832. O&M costs for the scrubber are not captured

Appendix A

Table 2: RACT/BACT/LAER Clearinghouse Search of EAF Controls

RBLC ID	Facility	Process	Pollutant	Short-Term Emission Limit(s)	Annual Emission Limit	Control Method	Case-by-Case Basis	Permit Approval Date
AL-0319	NUCOR STEEL TUSCALOOSA, INC.	Electric Arc Furnace	Volatile Organic Compounds (VOC)	0.13 lb/ton 39 lb/hr			BACT-PSD	3/9/2017
AL-0309	NUCOR STEEL DECATUR, LLC	TWO (2) ELECTRIC ARC FURNACES WITH TWO (2) MELTSHOP BAGHOUSES	Volatile Organic Compounds (VOC)	0.13 lb/ton 57.2 lb/hr		SCRAP MANAGEMENT PROGRAM	BACT-PSD	3/2/2016
*TX-0651	STEEL MILL	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	0.43 lb/ton		GOOD COMBUSTION PRACTICES.	BACT-PSD	10/2/2013
OH-0350	REPUBLIC STEEL	Electric Arc Furnace	Volatile Organic Compounds (VOC)	0.1 lb/ton	60 tpy (rolling 12-month limit)	Scrap management and Direct-Shell Evacuation Control system with adjustable air gap and water-cooled elbow and duct.	BACT-PSD	7/18/2012
CO-0066	ERMS PUEBLO	Electric Arc Furnace (EAF 5)	Volatile Organic Compounds (VOC)	0.13 lb/ton		The proportion of oily scrap (borings, turnings, properly drained used oil filters, etc.) charged in each batch shall not exceed 3% of the total scrap.	BACT-PSD	11/30/2011
OH-0339	HARRISON STEEL PLANT	Electric Arc Furnace (2)	Volatile Organic Compounds (VOC)	0.37 lb/ton	74 tpy each		BACT-PSD	12/29/2010
OH-0342	FAIRCREST STEEL	Electric Arc Furnace	Volatile Organic Compounds (VOC)	0.17 lb/ton	110.5 tpy		BACT-PSD	12/29/2010
OH-0316	V & M STAR	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	0.18 lb/ton			Other Case-by-Case	9/23/2008
OK-0128	MID AMERICAN STEEL ROLLING MILL	Electric Arc Furnaces	Volatile Organic Compounds (VOC)	0.3 lb/ton (3-hour Average) 12.05 lb/hr (3-hour Average)		Cleaned Scrap	BACT-PSD	9/8/2008
OH-0315	NEW STEEL INTERNATIONAL, INC., HAVERHILL	ELECTRIC ARC FURNACE (2)	Volatile Organic Compounds (VOC)	22.44 lb/hr 0.072 lb/ton	74.96 tpy (rolling 12-month limit)		BACT-PSD	5/6/2008
AR-0096	NUCOR YAMATO STEEL	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	65 lb/hr 0.13 lb/ton	284.7 tpy	SCRAP MANAGEMENT	BACT-PSD	1/31/2008
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC	ELECTRIC ARC FURNACE/MELT SHOP	Volatile Organic Compounds (VOC)	0.13 lb/ton 27 lb/hr (3-hour average)			BACT-PSD	9/7/2007
AL-0231	NUCOR DECATUR LLC	TWO (2) ELECTRIC ARC FURNACES AND THREE (3) LADLE METALLURGY FURNACES WITH TWO (2) MELTSHOP BAGHOUSES	Volatile Organic Compounds (VOC)	0.13 lb/ton 57.2 lb/hr			BACT-PSD	6/12/2007
PA-0251	ELLWOOD NATIONAL STEEL	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	0.28 lb/ton (12-month rolling average)	20.6 tpy (12-month rolling average)		Other Case-by-Case	8/18/2006
AL-0218	NUCOR STEEL TUSCALOOSA, INC.	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	0.13 lb/ton 39 lb/hr		UTILIZATION OF SCRAP MANAGEMENT PROGRAM	BACT-PSD	6/6/2006
CO-0054	CF & I STEEL L.P. DBA ROCKY MOUNTAIN STEEL MILLS	ELECTRIC ARC FURNACE (EAF)	Volatile Organic Compounds (VOC)	0.13 lb/ton		PROCESS AND RAW MATERIAL CONTROLS	Other Case-by-Case	6/21/2004
MI-0376	MACSTEEL DIVISION	2 ELECTRIC ARC FURNACES	Volatile Organic Compounds (VOC)	0.03 lb/ton	84 tpy (rolling 12-month limit)		BACT-PSD	12/8/2003
AL-0202	CORUS TUSCALOOSA	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	20.8 lb/hr 0.13 lb/ton			BACT-PSD	6/3/2003
AL-0197	NUCOR STEEL DECATUR, LLC	ELECTRIC ARC FURNACE, (2)	Volatile Organic Compounds (VOC)	88 lb/hr 0.2 lb/ton			BACT-PSD	7/11/2002
TN-0155	NUCOR STEEL CORPORATION	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	0.26 lb/ton		SCRAP MANAGEMENT PLAN; PROPER OPERATION OF EAF AND DEC SYSTEMS, USE OF OXY-FUEL FOR POST-COMBUSTION CONTROL	BACT-PSD	11/6/2000
OH-0245	REPUBLIC TECHNOLOGIES INTERNATIONAL	ELECTRIC ARC FURNACE (EAF) NO. 7, P905	Volatile Organic Compounds (VOC)	29.75 lb/hr	130.3 tpy		N/A	1/27/1999
OH-0245	REPUBLIC TECHNOLOGIES INTERNATIONAL	ELECTRIC ARC FURNACE (EAF) NO. 9, P907	Volatile Organic Compounds (VOC)	57.75 lb/hr	252.9 tpy		N/A	1/27/1999
NJ-0040	CO-STEEL RARITAN (GERDAU AMERISTEEL PERTH AMBOY)	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	6 lb/hr		GOOD COMBUSTION PRACTICES.	BACT-PSD	12/19/1996
IN-0073	QUALITECH STEEL CORP.	ELECTRIC ARC FURNACE (EAF)	Volatile Organic Compounds (VOC)	0.15 lb/ton		SCRAP MANAGEMENT - NO HEAVY OILED SCRAF	BACT-PSD	10/31/1996
SC-0039	NUCOR STEEL	ELECTRIC ARC FURNACE	Volatile Organic Compounds (VOC)	0.13 lb/ton	767 tpy	SCRAP MANAGEMENT PROGRAM	BACT-PSD	8/16/1995
IN-0061	STEEL DYNAMICS, INC.	ELECTRIC ARC FURNACE #1	Volatile Organic Compounds (VOC)	0.13 lb/ton		SCRAP MANAGEMENT	BACT-PSD	10/7/1994

*Means RBLC entry is listed as a draft determination. All other determinations are final.

Only Electric Arc Furnaces Listed In the RBLC Under Process Code 81.21 (Steel Production) were selected for the analysis. Electric Arc Furnaces listed in the RBLC under Process Code 81.31 (Steel Foundry) were not considered.

Gerdau - Current Emissions Limits								
---	GERDAU AMERISTEEL SAYREVILLE	Emission Unit U1: Melt shop including preheater and electric arc furnace	Volatile Organic Compounds (VOC)	57 lb/hr (24-hour Block Average) 75 lb/hr (1-hr Average Peak Emission Limit)	78.7 tpy	SCRAP MANAGEMENT PLAN AND DES	OTHER CASE-BY-CASE	3/26/2018

Appendix B

VOC Control Cost Spreadsheet
Thermal Incinerator

Table 5: Cost Analysis for Recuperative Thermal Incinerator

	Factor	Cost
CAPITAL COST		
Purchased equipment costs		
Incinerator (EC) + auxiliary equipment[1,2]		$638,275
EC adjusted for CPI index[3]	A	$1,392,615
Instrumentation[4]	0.1 * A	$139,262
Sales taxes[4]	0.03 * A	$41,778
Freight[4]	0.05 * A	$69,631
Purchased equipment cost, PEC	B	$1,643,286
Direct installation costs[4]		
Foundations & supports	0.08 * B	$131,463
Handling & erection	0.14 * B	$230,060
Electrical	0.04 * B	$65,731
Piping	0.02 * B	$32,866
Insulation for ductwork	0.01 * B	$16,433
Painting	0.01 * B	$16,433
Direct installation costs		$492,986
Site Preparation		0
Buildings		0
Total Direct Costs, DC		$492,986
Indirect Costs (installation)[4]		
Engineering	0.10 * B	$164,329
Construction and field expenses	0.05 * B	$82,164
Contractor fees	0.10 * B	$164,329
Start-up	0.02 * B	$32,866
Performance test	0.01 * B	$16,433
Contingencies	0.03 * B	$49,299
Total Indirect Costs, IC		$509,419
TOTAL CAPITAL INVESTMENT		**$2,645,690**

Table 5
Thermal Incinerator
Control Option
Gerdau-Ameristeel Sayreville

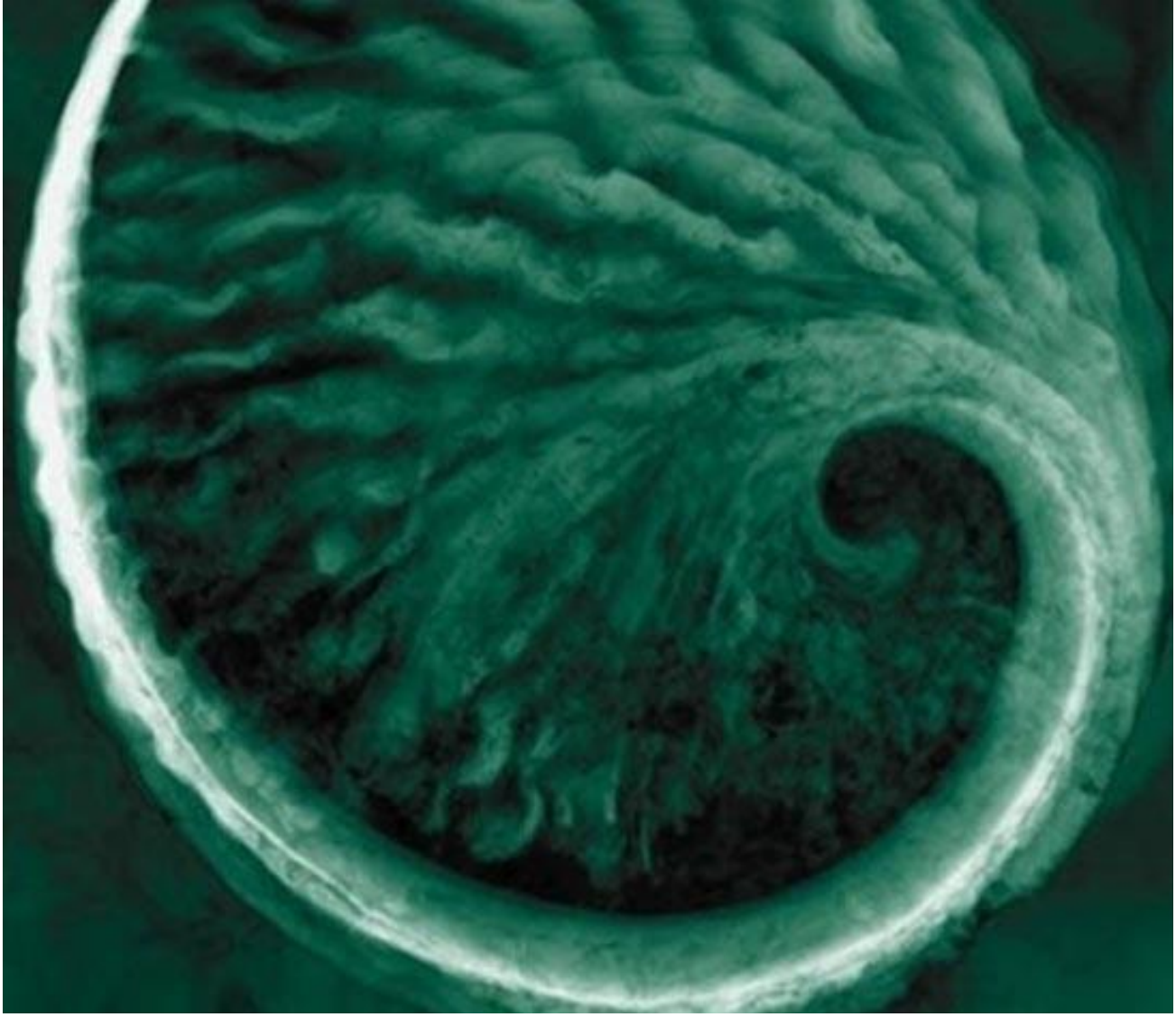
ANNUAL COSTS			
Operating Labor[4,5]			
	Operator[6]	1.5 hr/day x 365 days x $40.87/hr	$22,376
	Supervisor	15% of Operator labor cost	$3,356
Maintenance[4,5]			
	Labor[6]	1.5 hr/day x 365 days x $40.87/hr	$22,376
	Materials	100% of Maintenance labor	$22,376
Utilities[4,5]			
	Natural gas[7]	$ 2.63 /MMBTU 66 MMBTU/hr (assuming 70% heat recovery with 50% combustion air)	$1,520,561
	Electricity[8]	10.11 cents/kwh ($0.1011/kWh) kW = (((1.17e-4*475,488 acfm *19"of water)/0.60) (kW*8760 hours * $0.1011/kWh)	$1,560,210
Total Direct Annual Cost			$3,151,256
Indirect Annual Cost[4]			
Overhead	(60% of sum of operating, supervisor, & maintenance (labor & materials		$42,291
Administrative Charges		2% * TCI	$52,914
Property Taxes		1% * TCI	$26,457
Insurance		1% * TCI	$26,457
Capital recovery (a)[5]		TCI * CRF system	$347,908
Total Indirect Annual Cost			$496,027
TOTAL ANNUAL COST			**$3,647,283**

a. Capital Recovery Factor, CRF, is a function of equipment life and the rate of return on capital investment.
CRF = 0.1315 for a 15 year life and a10% rate of return

COST EFFECTIVENESS

Baseline VOC emissions, tons/yr	78.7
VOC Reduction @95%, tons/yr	74.8
VOC Control Option Rate, tons/yr	3.9
Cost Effectiveness ($/ton)	**$48,783**

Notes:
1. Design parameters based on calculations done in the 1996 BACT/SOTA analysis for the EAF. Process is the same as in 1996 in terms of design (same design flow rate and heat input), actual operating parameters may have changed.
2. Equipment Cost based on equation in EPA Air Pollution Control Cost Manual, 6th Edition, Jan. 2002. Used equation for Thermal Incinerators, Recuperative and Heat Recovery = 70% and calculated for two incinerators at 50,000 scfm each for a total of 100,000 scfm design rate.
   EC = 21,342 * Qtot^(0.2500) where Heat Recovery HR = 70%, and Qtot = flow rate in scfm.
3. Equipment Purchase price adjusted for inflation using CPI online calculator to 2018 dollars.
4. Based on EPA Air Pollution Control Cost Manual, 6th Edition, Jan. 2002.
5. Cost information (rates, factors) taken from 1996 BACT/SOTA Analysis for the EAF.
6. Labor Rate taken from 1996 BACT/SOTA analysis ($25/hr) and adjusted for inflation using CPI online calculator.
7. Cost data for Natural Gas from:
   EIA, DOE for July 2018, http://www.eia.doe.gov/cneaf/electricity/epm/table4_13_a.html
8. Cost data for Electricity from:
   EIA, DOE for July 2018 http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html



Gerdau Ameristeel
Sayreville New Jersey Facility
North Crossman Road
Sayreville, NJ 08871

Application for N.J.A.C. 7:27-19.13, Proposed Facility-Specific NOx Control Plan for Electric Arc Furnace

Program Interest ID: 18052
Permit ID: BOP150001

Original 17 August 2009
Updated 31 October 2018

The business of sustainability

EXECUTIVE SUMMARY *i*

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APPENDIX A TABLE 2 RACT/BACT/LAER CLEARINGHOUSE SEARCH OF EAF Controls

Gerdau Ameristeel Sayreville ("Gerdau" or the "facility") operates a mini-mill in Sayreville, New Jersey. The facility operations consist of reclaiming scrap metal and processing it into billets and reinforcing bars (rebar). The mill has two primary production areas: the Melt Shop and the Rolling Mill. The Melt Shop production process uses an electric arc furnace (EAF) to melt the incoming scrap, which is then sent to a caster from a ladle to form billets. The billets can either be shipped off-site or sent to the Rolling Mill to be formed into rebar. In the Rolling Mill, billets are heated in the Billet Reheat Furnace (BRF) and are then sent through a series of roller strands, which reduce the billet to the desired diameter for steel rebar.

On April 20, 2009, the New Jersey Department of Environmental Protection (NJDEP) revised regulations at N.J.A.C. 7:27-19, Control and Prohibition of Air Pollution from Oxides of Nitrogen, also known as the "NOx Reasonably Available Control Technology (RACT) Rule." In addition to establishing control requirements, operating practices, and emission limits for specific equipment considered to substantially contribute to NOx emissions in New Jersey, the NOx RACT rule also applies to any other equipment not specifically listed that has the potential to emit greater than 10 tons per year (tpy) of NOx emissions. Further, maximum allowable NOx emission limits for such equipment are established through the submittal and approval of a facility-specific NOx RACT Plan that establishes a facility-specific emission limit (FSEL) for the equipment. Based on emission potential, the EAF and BRF at Sayreville are required to establish FSEL through a facility-specific NOx RACT Plan.

This NOx RACT plan focuses on the control of NOx emissions from the EAF (a NOx RACT Plan for the BRF is provided under separate cover). Gerdau submits this NOx RACT plan for the EAF to satisfy the requirements of N.J.A.C. 7:27-19.13.

Several NOx control options for the EAF were evaluated for technical feasibility. The option identified as being technically feasible is using Good Operating Practices for minimizing emissions. This control strategy, selected as RACT, minimize NOx emissions by maintaining constant temperatures in the prechamber and EAF, which avoids temperature spikes that would create more NOx emissions.

This option is currently implemented by Gerdau; as such, there is no cost to implement. Likewise, Gerdau proposes no change to the NOx emission limits in the current Title V permit (BOP150001).

1.0 INTRODUCTION

1.1 COMPANY BACKGROUND

Gerdau Ameristeel Sayreville operates a steel mini-mill in Sayreville, New Jersey. The mill consists of two primary production areas: the Melt Shop and the Rolling Mill. The Melt Shop consists of a prechamber or preheater, Electric Arc Furnace, Ladle, and Caster. The Melt Shop uses an Electric Arc Furnace (EAF) to melt scrap metal, which is then transported by a ladle to a continuous caster where it is cast into billets. The particulates, metals, and emissions from the Melt Shop are vented via a Direct Evacuation System (DES) to a baghouse.

The billets are further processed into reinforcing bars (rebar) in the Rolling Mill. The Rolling Mill consists of a Billet Reheat Furnace (BRF) where the billets are reheated and rollers where the rebar is formed from the reheated billets. Most of the rebar formed is shipped as final product but a small amount of rebar is coated with an epoxy in another area of the mill.

The facility employs approximately 240 employees and has a permitted production rate of 3,450 tons of billets per day in the Melt Shop.

1.2 NOX RACT RULE APPLICABILITY

On April 20, 2009, the New Jersey Department of Environmental Protection (NJDEP) revised regulations at N.J.A.C. 7:27-19, Control and Prohibition of Air Pollution from Oxides of Nitrogen, also known as the "NOx RACT Rule." In an effort to reach attainment with the National Ambient Air Quality Standard (NAAQS), the NOx RACT rule sets forth control requirements, operating practices, and emission limits for specific equipment considered to substantially contribute to NOx emissions, an ozone precursor. The NOx RACT rule also applies to any other equipment not specifically listed that has the potential to emit greater than 10 tons per year (tpy) of NOx emissions. Further, the maximum allowable NOx emission limits for such equipment are established through the submittal and approval of a facility-specific NOx RACT Plan that establishes a facility-specific emission limit (FSEL) for the equipment.

Gerdau originally submitted a facility-specific NOx RACT plan for the EAF on May 31, 1995 and has implemented the NOx RACT control

options approved in the original plan. Pursuant to the NOx RACT Rule revisions at N.J.A.C. 7:27-19.13(a)(3), Gerdau was issued an FSEL for the EAF prior to May 1, 2005, and was required to submit a proposed facility-specific VOC control plan by August 17, 2009 in order to continue operating under the existing FSEL.. To satisfy this requirement, Gerdau submitted this plan on August 17, 2009.[1] Because the EAF continues to have a permitted NOx emission rate in excess of 10 tpy each, and the EAF is not specifically regulated by the NOx RACT rule, Gerdau must continue to operate under an FSEL. Therefore, Gerdau submitted a NOx RACT plan for the EAF to satisfy the requirements of N.J.A.C. 7:27-19.13(a)(3). This updated NOx RACT plan focuses on the control of NOx emissions from the EAF (the FSEL for the BRF is incorporated into the facility's current Title V permit (BOP150001)).

1.3 NOX RACT PLAN ELEMENTS

This NOx RACT plan addresses NOx emission control options for the EAF, which operates in the Melt Shop. This NOx RACT plan has been prepared in accordance with N.J.A.C. 7:27-19.13 for source operations that meet the criteria defined in N.J.A.C. 7:27-19.13(a)3. Specifically, the NOx RACT rules require the following elements in a NOx Control Plan to establish an FSEL for a source operation or equipment:

- The Plan must include a list of each source operation or item of equipment at the facility that has the potential to emit more than 10 tons of NOx per year and is not listed in N.J.A.C. 7:27 19.2(b) or (c). The Plan shall briefly describe the source operation or item of equipment, and list its permit number and any other identifying numbers [N.J.A.C. 7:27-19.13(b)(5);

- The Plan shall include the information listed in N.J.A.C. 7:27-19.13(d), as follows:

    - For each source operation or item of equipment, a list of all NOx control technologies available for use with the equipment or source operation;
    - an analysis of the technological feasibility of installing and operating each control technology identified;

[1] On September 7, 2018, the NJDEP requested that Gerdau update this VOC RACT Plan. The updates to the plan are contained herein.

- for each control technology which is technologically feasible to install and operate, an estimate of the cost of installation and operation;
- An estimate of the remaining useful life of each applicable source operation or item of equipment;
- an estimate of the reduction in NOx emissions attainable through the use of each control technology which is technologically feasible to install and operate;
- for each applicable source operation or item of equipment, the NOx control technology or technologies which the owner or operator proposes to employ and an implementation schedule;
- for each applicable source operation or item of equipment, a proposed NOx emission limit; and
- a certification signed by the owner or operator, satisfying the requirements of N.J.A.C. 7:27 8.24.

The following sections of this NOx Control Plan address each required regulatory element described above. Section 2 identifies and describes each source operation that has the potential to emit more than 10 tons of NOx per year and is not listed in N.J.A.C. 7:27 19.2(b) or (c). Section 3 identifies available NOx emission control techniques based on a regulatory review and an evaluation of control technology documentation. Section 4 evaluates the NOx control options, and identifies those that are technically feasible for the EAF. Section 5 identifies the selected RACT level of control for the EAF and provides the NOx emission limit. The certification is provided as Appendix A to this NOx Control Plan.

At Gerdau's Sayreville mill, the Melt Shop operates in accordance with the provisions at U1 of Title V Operating Permit BOP150001. The permit establishes a maximum potential to emit of 78.8 tpy of NOx for the Melt Shop; these emissions are attributed almost entirely to the EAF. Other sources of NOx emissions in the Melt Shop include a scrap pre-heater, three ladle preheaters, a tundish preheater, and billet cutting torches. However, based on the most recent emissions inventory, each of these sources contributes less than one ton of NOx to the overall NOx emissions from the melt shop. Therefore, only the EAF is subject to the NOx RACT rule because it has the potential to emit more than 10 tons of NOx per year as per N.J.A.C. 7:27-19.2(b)12.

The Melt Shop process refers to the melting by EAF and casting of scrap metal to form billets utilizing the Consteel™ Process. The scrap steel is melted in the EAF and then transferred to the Caster, using the Ladle, where the melted steel is cast into billets. The EAF is a continuously charged furnace that utilizes an electric arc to melt incoming ferrous scrap metal. Continuous melting-refining of the steel takes place within the EAF under a layer of foaming slag. A heel of molten metal in the base of the EAF acts as a "thermal flywheel" for the quick melting of new scrap steel as it is introduced. A fundamental principal of the Consteel™ Process is the rapid melting of the scrap as it drops into a hot heel of metal. Heat is supplied to the molten metal bath by the arc of electrodes in the EAF that are covered by foaming slag. The incoming scrap melts as it is introduced to the furnace. Scrap metal, along with byproducts of the scrap and additives are released as a particulate dust as a result of the intense discharge of electricity and heat during the scrap melting step.

The EAF bath temperature is maintained in the carbon boil range, while oxygen injection at the base of the bath level stirs the bath, foams the slag, and generates carbon monoxide that is later combusted in the preheater. In order to oxidize most of the carbon monoxide in the preheater, particular care is taken to minimize air intake in the arc furnace and the connecting car.

The furnace operation is present within a negative pressure environment known as the Direct Evacuation System (DES). The Melt Shop air and furnace exhaust are filtered by a negative pressure baghouse system

constructed of high temperature rated fabric filter Gore Tex® polyester bags. The filtered air is released through the Melt Shop stack.

Table 1 provides other identifying information for the EAF.

Table 1. Identifying Information for the Electric Arc Furnace

Parameter	NOx
Facility Name	Gerdau Ameristeel Sayreville
Facility Title V Program Interest No.	18052
Permit Activity No.	BOP150001
Equipment ID	E201
Emission Unit	U1
Permitted Annual NOx Emission Rate	78.8 tons/yr
Permitted Hourly NOx Emission Rate	31 lb/hr, with an allowance for 150 hours of operation at 41 lb/hr
Useful Life[2]	See Footnote 2

[2] The EAF includes the electrodes, refractory, as well as the furnace shell. The useful life of each is different. Electrodes generally have a life of 40 heats, whereas refractory must be replaced every 6 to 8 weeks. The furnace shell would be expected to have a useful life of 15 years.

3.0 NOX EMISSION CONTROL TECHNOLOGY ANALYSIS

In accordance with 7:27-19.13(d)1, a list of all available NOx control technology along with a technical analysis of each is provided in this section. Section 3.1 identifies NOx emission control technologies and NOx emission rates based on a review of the technical literature, with particular focus on controls for an Electric Arc Furnace. Section 3.2 identifies NOx emission limits found in federal and state regulations.

When evaluating NOx control technologies both primary and post-combustion (or secondary) controls were evaluated. Primary controls meaning controls that restrict or prevent the formation of NOx and post-combustion controls meaning the destruction of already created NOx.

3.1. NOX CONTROL TECHNOLOGIES FOR ELECTRIC ARC FURNACES

Nitrogen Oxides (NOx) form when nitrogen and oxygen in air combine at temperatures greater than 2,000^{o}F. This type of NOx formation is referred to as thermal NOx, and it is the primary mechanism taking place in the EAF, due to the nature of the process and the melting point of steel. The region of the furnace above the molten steel in the vicinity of the EAF electrodes is exposed to temperatures greater than 2,000^{o} F.

Generally, NOx emission control techniques can be divided into two categories; (1) techniques to minimize NOx generation, or primary control, and (2) techniques to remove already generated NOx, or secondary control.

To identify NOx control options for the EAF, Gerdau reviewed the previous LAER analyses completed for the facility, and online technical resources. On November 13, 1996, Gerdau submitted a BACT/LAER analysis to support a permit application under the New Source Review/Prevention of Significant Deterioration (NSR/PSD) Program[3]. The BACT/LAER analysis addressed multiple emissions and subsequent control options for the EAF and BRF at Sayreville. One section of the BACT/LAER report includes a LAER Review for NOx emissions from the EAF. The report concludes that no NOx control technologies were available for the EAF, and that operation of the EAF represented LAER.

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[3] Sayreville Facility, APC ID No. 15076, BACT/SOTA Analysis, from N. Hinsey, BE&K to M. Friedman, NJDEP, November 13, 1996.

In the technical literature, there was one EPA report that addressed control of NOx emissions from EAF[4]. In this document, the EPA concludes that there is no information that NOx emission controls have been installed on EAFs or that suitable controls are available.[5]

Both the LAER analysis and the EPA document date to the mid-1990's. Therefore, Gerdau utilized EPA's RACT/BACT/LAER Clearinghouse (RBLC) to determine if new control technologies to minimize NOx emissions have emerged since that time. Table 2, shown in Appendix B, summarizes the results of the RBLC search for NOx control technologies and NOx emission limits associated with an EAF at a steel mill. The RBLC is supplemented by known secondary NOx control techniques to yield the following list of all available NOx Control technologies.

- Low NOx/Oxy-Fuel Burners;
- Low Excess Air (LEA);
- Flue Gas recirculation or reduction of air preheat temperature;
- Direct Evacuation System;
- Selective Catalytic Reduction (SCR);
- Selective Non-Catalytic Reduction (SNCR);
- Non-Selective Catalytic Reduction (NSCR); and
- Good Operating Practices.

A more detailed description of these technologies, as well as the feasibility of applying them to the EAF at the Sayreville Mill, is provided in Section 4.

3.2. *CURRENT APPLICABLE AIR REGULATORY STANDARDS*

Federal and state regulations were reviewed using the RegScan program to identify rules that limit emissions from EAF. The following federal rules regulate EAF:

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[4] United States Environmental Protection Agency. Alternative Control Techniques Document – NOx Emissions From Iron and Steel Mills, 1994. EPA-453/R-94-065

[5] USEPA has not issued more recent guidance on NOx controls for EAFs since the release of EPA-453/R-94-065.

- 40 CFR Part 60.270a, Subpart AAa – Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983

- 40 CFR Part 63, Subpart YYYYY – National Emission Standards for Hazardous Air Pollutants (HAP) for Area Sources: Electric Arc Furnace Steelmaking Facilities

Although these federal rules focus on emissions from EAF, neither addresses NOx emissions. The NSPS limits opacity and particulate emissions from melt shop operations; the area source rule imposes maximum achievable control technology (MACT) to limit emissions of metal HAP, mercury, and volatile HAP.

In New Jersey, mercury emissions from EAF are regulated at N.J.A.C. 7:27-27; however, these regulations do not address NOx emissions. No other state regulations addressing emissions from EAF (other than those that incorporate the federal NSPS and MACT rules) are identified .

4.0 FEASIBILITY ANALYSIS FOR NOX CONTROL TECHNOLOGIES

Each of the control technologies listed in Section 3 were analyzed to determine their feasibility in controlling NOx from the EAF. In Section 4.1, the technical issues that can arise from implementing control measures at an existing facility are discussed. In Section 4.2, each NOx emission control technique is evaluated.

4.1 TECHNICAL ISSUES UNIQUE TO ELECTRIC ARC FURNACES

Several technical aspects of the EAF make the control of NOx emissions challenging and unique. The first technical issue is related to the high temperature required to melt scrap metal. Because of the high temperature required in the furnace, the incoming temperature cannot be lowered to decrease the formation of thermal NOx. Lowering the incoming temperature would also have an overall negative impact because it would require more electricity to be used to melt the scrap. A second technical issue is the composition and concentration of the exhaust gas. The high particulate content and metals in the exhaust make back-end control of NOx problematic.

4.2 TECHNICAL FEASIBILITY OF NOX CONTROL OPTIONS

4.2.1 LOW NOx/OXY-FUEL BURNERS

The Low-NOx burners and oxy-fuel burners identified in the RBLC search are installed on pre-heaters, not on an EAF. Low-NOx burners utilize a lower burner temperature to reduce the formation of thermal NOx. Oxy-fuel burners use pure oxygen instead of air, which reduces the nitrogen content and thereby reduces the formation of NOx. Both these control technologies are implemented on burners. The EAF and Scrap Preheater at Gerdau do not utilize burners to melt scrap. As such, these technologies are not feasible for the EAF.

4.2.2 LOW EXCESS AIR (LEA)

Low Excess Air is a control technology used on burners to reduce the excess air introduced to the burner, typically 5 to 10 percent excess air. Because the EAF does not utilize burners to melt scrap, this control technology is not technically feasible.

4.2.3 *FLUE GAS RECIRCULATION/TEMPERATURE REDUCTION*

The basics behind Flue Gas Recirculation or Reduction of Preheat Temperature involve reducing the temperature of the gas entering the furnace. In theory, this would reduce the amount of Thermal NOx created. The EAF operation requires a temperature of over 2,000°F for the incoming air, well above the temperature required to control NOx using gas recirculation. This temperature requirement does not allow the use of any gas recirculation or temperature reduction to control the generation of NOx. Also, Carbon Monoxide (CO) is combusted in the preheater to maintain the correct temperature and to control CO. Reducing the temperature at the preheater could jeopardize the CO combustion and control.

This control option is not technically feasible for the EAF.

4.2.4 *DIRECT EVACUATION SYSTEM (DES)*

A DES or DEC (Direction Evacuation Control) was listed as "Control Methods" for NOx for several facilities in the EPA's RACT, BACT, and LAER Clearinghouse. The Direct Evacuation System (DES) is actually a capture system; at Sayreville, it encompasses the scrap preheater, antechamber, and water spray. The DES helps maintain a negative pressure within the Melt Shop to vent emissions to the baghouse. Also, the DES helps maintain the temperature in the scrap preheater by allowing enough time for the CO reactions to take place and preventing exhaust gases from leaving too quickly (allowing enough time for heat transfer from the hot gases).

Even though the DES vents NOx emissions to the baghouse, it does not prevent the formation of NOx nor does it destroy already created NOx. Therefore, the DES is not technically a "NOx Control device" for this plan though it has been identified as meeting BACT as part of recent PSD permitting as shown in Table 2.

4.2.5 *SELECTIVE CATALYTIC REDUCTION (SCR)*

Selective Catalytic Reduction (SCR) utilizes ammonia (NH3) injected into the exhaust gas upstream from a catalyst. On the catalyst surface the ammonia reacts with the NOx to form water and nitrogen, which is then vented through the stack.

The primary variable affecting NOx reduction is temperature. Optimum NOX reduction of over 90% occurs at catalyst bed temperatures of 600 to

750°F for vanadia-titania (V/Ti) based catalysts and 470 to 510°F for platinum (Pt) catalysts.

The major drawback to using SCR in the EAF is catalyst poisoning by acid gases and particulate matter. The scrap metal contains large amounts of sulfur, which leads to the formation of sulfuric acid and SO_3 in the EAF. SO_3 can combine with the ammonia to form Ammonium Bisulfate, which sticks to the catalyst causing fouling of the catalyst. The sulfuric acid created can also cause poisoning of the catalyst directly. Both of these considerably reduce the effectiveness of the catalyst.

The exhaust gas from the EAF contains high concentrations of particulate matter including metals. The high concentration of particulate matter will cause unacceptable fouling of the catalyst, which can deactivate the catalyst rendering it impractical for the EAF. Also, the presence of metals, such as arsenic, mercury, vanadium, zinc, etc, can deactivate the catalyst as well.

The use of a SCR in the EAF has not been achieved in practice and is not technically feasible as a NOx control method.

4.2.6 SELECTIVE NON-CATALYTIC REDUCTION (SNCR)

Selective Non-Catalytic Reduction (SNCR) reduces NOx by injecting ammonia or urea but without the use of a catalyst. SNCR involves injecting the ammonia or urea into the exhaust gas, which is between 1,600°F and 2,100°F, where it reacts with NOx to produce nitrogen, carbon dioxide, and water.

The SNCR reaction needs a certain temperature range to take place. If the temperature is too low the NH3 and NOx do not react, resulting in ammonia slip emissions (in addition to the NOx that wasn't destroyed being released). At too high of a temperature ammonia decomposes into NO and water, resulting in higher NOx emissions.

In theory this control technology could be considered technically feasible. However, because of the wide variability of temperature, flow rate, and pollutant concentrations in the gas exhaust, SNCR is impractical. This variability would lead to periods of uncontrollable ammonia slip, reduced efficiency, and possibly increased NOx emissions. A sensitive NOx concentration feedforward and feedback system would have to be developed and installed to attempt to respond to the highly variable conditions.

Another impediment to using an SNCR system is the lack of information or literature on SNCR operation at existing EAFs. Because of this vendors would have to conduct pilot tests to determine feasibility, operating parameters, as well as cost estimates, and emission rates.

The use of a SNCR in the EAF has not been achieved in practice and is not technically feasible as a NOx control method.

4.2.7 NON-SELECTIVE CATALYTIC REDUCTION (NSCR)

Non-Selective Catalytic Reduction (NSCR) is generally applicable to rich burn reciprocating engines running near stoichiometric conditions to reduce (destroy) NOx, CO, and VOC/HAP. The EAF does not operate as a reciprocating engine and therefore, the NSCR system is not applicable for this process. Also, the EAF operates with excess oxygen (lean-burn) and the oxygen content in the exhaust gas would be too high for NSCR to be technically feasible.

4.2.8 GOOD OPERATING PRACTICES

Good Operating Practices include the proper operation of the furnace to minimize NOx emissions by maintaining constant temperatures in the prechamber and EAF, which avoids temperature spikes that would create more NOx emissions. It is also considered good operating practice to operate the furnace efficiently using the least amount of electricity as possible to reduce indirect NOx emissions.

5.0 RANKING OF TECHNICALLY FEASIBLE CONTROL TECHNOLOGIES AND RACT SELECTION

Table 3 summarizes the NOx control technologies identified for review, the assessment of whether they are technically feasible for an EAF, and an assessment of whether they are cost effective.

Table 3. EAF NOx Control Strategies

NOx Control Strategy	**Technically Feasible?**		**Cost to Implement**
	Yes	**No**	
Low-NOx/Oxy Fuel Burners		X	
Low Excess Air		X	
Flue Gas Recirculation		X	
Selective Catalytic Reduction (SCR)		X	
Selective Non-Catalytic Reduction (SNCR)		X	
Non-Selective Catalytic Reduction (NSCR)		X	
Good Operating Practices[1]	***X***		***$0.00***

Note 1: Selected as RACT. The control option identified as "Technically Feasible" has already been implemented at the facility. Since this option is already implemented, there is no additional cost to Gerdau and a cost analysis of these options is not required.

As noted in Table 3, there are no technically feasible NOx control options other than continuing the good operating practices that are currently in place. Those practices were considered LAER based on NJDEP review of the 1996 NSR/PSD permit application, and a review of the regulations and the RBLC indicate that no NOx control technologies have emerged since that review was completed. As a result, Gerdau proposes that current operations be used as NOx RACT control. In addition, Gerdau proposes the same NOx limits of 78.8 tons per year and 31 lb/hr (with 150 hours of a peak rate of 41 lb/hr) be used for the Electric Arc Furnace.

Appendix A
Table 2: RACT/BACT/LAER Clearinghouse Search of EAF Controls

RBLC ID	Facility	Process	Pollutant	Short-Term Emission Limit(s)	Annual Emission Limit	Control Method	Case-by-Case Basis	Permit Approval Date
*NE-0063	NUCOR STEEL DIVISION	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	0.42 lb/ton			BACT-PSD	11/7/2017
AL-0323	OUTOKUMPU STAINLESS USA, LLC	Electric Arc Furnace	Nitrogen Oxides (NOx)	0.6 lb/ton 75.6 lb/hr		Direct Evacuation Control	BACT-PSD	6/13/2017
AL-0319	NUCOR STEEL TUSCALOOSA, INC.	Electric Arc Furnace	Nitrogen Oxides (NOx)	105 lb/hr 0.35 lb/ton			BACT-PSD	3/9/2017
AL-0309	NUCOR STEEL DECATUR, LLC	TWO (2) ELECTRIC ARC FURNACES WITH TWO (2) MELTSHOP BAGHOUSES	Nitrogen Oxides (NOx)	0.42 lb/ton 184.8 lb/hr		OXY-FUEL BURNERS	BACT-PSD	3/2/2016
*TX-0651	STEEL MILL	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	0.9 lb/ton		OXY FIRED BURNERS	BACT-PSD	10/2/2013
OH-0350	REPUBLIC STEEL	Electric Arc Furnace	Nitrogen Oxides (NOx)	0.5 lb/ton	300 tpy (rolling 12-month limit)		N/A	7/18/2012
CO-0066	ERMS PUEBLO	Electric Arc Furnace (EAF 5)	Nitrogen Oxides (NOx)	0.28 lb/ton (30-day rolling average)		BACT for NOX, SO2, and CO has been determined to be the use of process controls	BACT-PSD	11/30/2011
GA-0142	OSCEOLA STEEL CO.	Electric Arc Furnace	Nitrogen Oxides (NOx)	0.35 lb/ton (3-hour stack test)		Low NOx Burners with FGR Technology and Good Combustion/Operating practices.	BACT-PSD	12/29/2010
OH-0339	HARRISON STEEL PLANT	Electric Arc Furnace (2)	Nitrogen Oxides (NOx)	0.2 lb/ton			OTHER CASE-BY-CASE	12/29/2010
OH-0342	FAIRCREST STEEL	Electric Arc Furnace	Nitrogen Oxides (NOx)	0.2 lb/ton			OTHER CASE-BY-CASE	12/29/2010
OH-0316	V & M STAR	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	0.4 lb/ton			BACT-PSD	9/23/2008
OK-0128	MID AMERICAN STEEL ROLLING MILL	Electric Arc Furnaces	Nitrogen Oxides (NOx)	0.3 lb/ton			BACT-PSD	9/8/2008
OH-0315	NEW STEEL INTERNATIONAL, INC., HAVERHILL	ELECTRIC ARC FURNACE (2)	Nitrogen Oxides (NOx)	102.3 lb/hr 0.321 lb/ton	341.72 tpy (rolling 12-month limit)	LOW NOX OXY-FUEL BURNERS	BACT-PSD	5/6/2008
AR-0096	NUCOR YAMATO STEEL	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	190 lb/hr 0.38 lb/ton	832.2 tpy	LOW NOX BURNERS	BACT-PSD	1/31/2008
MN-0070	MINNESOTA STEEL INDUSTRIES, LLC	ELECTRIC ARC FURNACE/MELT SHOP	Nitrogen Oxides (NOx)	0.3 lb/ton 53 lb/hr (24-hour rolling average)			BACT-PSD	9/7/2007
AL-0231	NUCOR DECATUR LLC	TWO (2) ELECTRIC ARC FURNACES AND THREE (3) LADLE METALLURGY FURNACES WITH TWO (2) MELTSHOP BAGHOUSES	Nitrogen Oxides (NOx)	0.42 lb/ton 184.8 lb/hr			BACT-PSD	6/12/2007
PA-0251	ELLWOOD NATIONAL STEEL	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)		28.5 tpy		BACT-PSD	8/18/2006
AL-0218	NUCOR STEEL TUSCALOOSA, INC.	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	0.35 lb/ton 105 lb/hr			BACT-PSD	6/6/2006
NY-0099	NUCOR STEEL AUBURN INC	ELECTRIC ARC FURNACE (STEEL RECOVERY)	Nitrogen Oxides (NOx)	0.27 lb/ton (30-day rolling average) 27.32 lb/hr (24-hour rolling average)			LAER	5/5/2006
CO-0054	CF & I STEEL L.P. DBA ROCKY MOUNTAIN STEEL MILLS	ELECTRIC ARC FURNACE (EAF)	Nitrogen Oxides (NOx)	0.15 lb/ton		GOOD COMBUSTION PRACTICES.	Other Case-by-Case	6/21/2004
MI-0376	MACSTEEL DIVISION	2 ELECTRIC ARC FURNACES	Nitrogen Oxides (NOx)	0.53 lb/ton	148.4 tpy (rolling 12-month limit)		BACT-PSD	12/8/2003
AL-0202	CORUS TUSCALOOSA	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	56 lb/hr 0.35 lb/ton			BACT-PSD	6/3/2003
AL-0197	NUCOR STEEL DECATUR, LLC	ELECTRIC ARC FURNACE, (2)	Nitrogen Oxides (NOx)	176 lb/hr 0.4 lb/ton			BACT-PSD	7/11/2002
TN-0155	NUCOR STEEL CORPORATION	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	0.7 lb/ton 21 PPMV during abnormal production		THE PROPER OPERATION OF THE EAF AND DEC SYSTEMS, OXY-FUEL NATURAL GAS BURNERS IN THE SHAFT, ELBOW BOX AND SIDEWALLS	BACT-PSD	11/6/2000
OH-0245	REPUBLIC TECHNOLOGIES INTERNATIONAL	ELECTRIC ARC FURNACE (EAF) NO. 7, P905	Nitrogen Oxides (NOx)	8.5 lb/hr	37.2 tpy	LOOKED AT SCR, SNCR, AND FGR ALL INFEASIBLE.	BACT-PSD	1/27/1999
OH-0245	REPUBLIC TECHNOLOGIES INTERNATIONAL	ELECTRIC ARC FURNACE (EAF) NO. 9, P907	Nitrogen Oxides (NOx)	0.35 lb/ton 33 lb/hr	144.5 tpy	LOOKED AT SCR, SNCR, AND FGR ALL INFEASIBLE	BACT-PSD	1/27/1999
AR-0021	QUANEX CORPORATION - MACSTEEL DIVISION	ELECTRIC ARC FURNACES, 2	Nitrogen Dioxide (NO2)	43.9 lb/hr		EXISTING NATURAL GAS OXY-FUEL BURNERS	BACT-PSD	2/18/1998
NJ-0040	CO-STEEL RARITAN	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	24 lb/hr			BACT-PSD	12/19/1996
IN-0073	QUALITECH STEEL CORP.	ELECTRIC ARC FURNACE (EAF)	Nitrogen Oxides (NOx)	0.5 lb/ton			BACT-PSD	10/31/1996
SC-0039	NUCOR STEEL	ELECTRIC ARC FURNACE	Nitrogen Oxides (NOx)	0.35 lb/ton	767 tpy	LOW NOX BURNERS IN ELECTRIC ARC FURNACE SHELLS	BACT-PSD	8/16/1995
IN-0061	STEEL DYNAMICS, INC.	ELECTRIC ARC FURNACE #1	Nitrogen Oxides (NOx)	0.51 lb/ton		LOW NOX BURNERS	BACT-PSD	10/7/1994
WI-0075	CHARTER STEEL PLANT	ELECTRIC ARC FURNACE (EAF) SHOP	Nitrogen Oxides (NOx)	0.51 lb/ton		OPERATING PRACTICES	BACT-PSD	12/20/1993

*Means RBLC entry is listed as a draft determination. All other determinations are final.

Only Electric Arc Furnaces Listed In the RBLC Under Process Code 81.21 (Steel Production) were selected for the analysis. Electric Arc Furnaces listed in the RBLC under Process Code 81.31 (Steel Foundry) were not considered.

Gerdau - Current Emissions Limits								
---	GERDAU AMERISTEEL SAYREVILLE	Emission Unit U1: Melt shop including preheater and electric arc furnace	Nitrogen Oxides (NOx)	31 lb/hr (24-hour Block Average) 41 lb/hr (1-hr Average Peak Emission Limit)	78.8 tpy	Direct Evacuation Control and Good Operating Practices	OTHER CASE-BY-CASE	3/26/2018

ATTACHMENT 2

N.J.A.C. 7:27-16 – Control and Prohibition of Air Pollution by Volatile Organic Compounds

N.J.A.C. 7:27-19 – Control and Prohibition of Air Pollution by Oxides of Nitrogen

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW JERSEY ADMINISTRATIVE CODE
TITLE 7
CHAPTER 27
SUBCHAPTER 16

Control and Prohibition of Air Pollution by Volatile Organic Compounds

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Please note: The Department has made every effort to ensure that this text is identical to the official, legally effective version of this rule, set forth in the New Jersey Register. However, should there be any discrepancies between this text and the official version of the rule, the official version will prevail.

REGULATORY HISTORY

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7:27-16.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

"AASHTO" means American Association of State Highway and Transportation Officials.

"Aboveground storage tank" or **"AST"** means any storage tank that is not an underground storage tank.

"Actual emissions" means the rate at which an air contaminant is actually emitted, either directly or indirectly, to the outdoor atmosphere, in units of mass per calendar year, seasonal period, or other time period specified in this subchapter.

"Adhesion primer" or **"adhesion promoter"** means a coating that is applied to a polyolefin part to promote the adhesion of a subsequent coating. An adhesion primer or promoter is identified as such on its accompanying safety data sheet (SDS).

"Adhesive" means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

"Aerosol coating product" means a pressurized coating product containing pigments or resins that is dispensed by means of a propellant and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marking applications.

"Aerospace coating" means a coating to be applied to the fabricated part, assembly of parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including prototypes and test models.

"Agitator" means an apparatus with an external seal used to shake, stir, or mix material in an enclosed vessel.

"Air-assisted airless spray" means a coating spray application system using fluid pressure to atomize the coating and lower air pressure to adjust the shape of the spray pattern.

"Air contaminant" means any substance, other than water or distillates of air, present in the atmosphere as solid particles, liquid particles, vapors or gases.

"Air-dried coating" means a coating that is cured at a temperature of up to 90 degrees Celsius (194 degrees Fahrenheit).

"Airless cleaning system" means a solvent cleaning machine that operates under vacuum and seals at a differential pressure of 0.50 pounds per square inch or less, prior to the introduction of solvent or solvent vapor into the cleaning chamber, and maintains this differential pressure under vacuum during all cleaning and drying cycles.

"Airless spray" means a spray coating method in which the coating is atomized by forcing it through a small nozzle opening at high pressure. The coating is not mixed with air before it exits from the nozzle opening.

"Air-tight cleaning system" means a solvent cleaning machine that seals at a differential pressure of 0.50 pounds per square inch or less, prior to the introduction of solvent or solvent vapor into the cleaning chamber, and maintains this differential pressure during all cleaning and drying cycles.

"Alter" means to effect an alteration of equipment or control apparatus.

"Alteration" means one of the following changes to equipment or control apparatus, or to a source operation, for which a permit has been issued:

1. If the equipment, control apparatus, or source operation is subject to preconstruction permit requirements, a change which requires a permit revision under N.J.A.C. 7:27-8.18; or

2. If the equipment, control apparatus, or source operation is at a facility for which an operating permit has been issued, a change, which requires a minor modification or a significant modification of the permit under N.J.A.C. 7:27-22.23 or 24.

"Antifoulant coating" or **"antifouling coating"** means a coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, which is registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. §136).

"Antifouling sealer/tiecoat" means a coating applied over a biocidal antifouling coating to prevent the release of biocides into the environment and/or to promote adhesion between an antifouling and a primer or other antifoulings.

"AP-42" means the January 1995, 5th edition of the manual entitled "Compilation of Air Pollutant Emission Factors," which is published by the EPA, including supplements A through G and any subsequent revisions, as supplemented or amended and incorporated herein by reference. The manual may be obtained from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia, 22161, (703) 487-4650; or from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402, (202) 783-3228. In addition, the manual can be accessed electronically through the EPA Technology Transfer Network CHIEF site at http://www.epa.gov/ttn/chief/ap42/index.html.

"Applicable VOC" means any VOC which has a vapor pressure or sum of partial pressures of organic substances of 0.02 pounds per square inch (1.0 millimeters of mercury) absolute or greater at standard conditions.

"Application equipment cleaning" means the process of flushing or removing resin and gel coats from the interior or exterior of equipment that is used to apply resin or gel coat in the manufacturing of fiberglass parts.

"Architectural coating" means a coating to be applied at the site of installation to the following: stationary structures or their appurtenances, portable buildings, pavements, or curbs. This term does not include adhesives and coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles.

"Asphalt" means a solid, semisolid, or liquid material, produced by mixing bituminous substances together with gravel, crushed rock or similar materials, and used commonly as a coating or paving.

"Asphalt pavement production plant" means a batch type asphalt plant or drum mix asphalt plant operated to manufacture asphalt pavement.

"Assembly adhesive" means any chemical material used in the joining of one fiberglass, metal, foam, or wood part to another to form a temporary or permanently bonded assembly. Assembly adhesives include, but are not limited to, methacrylate adhesives and putties made from polyester or vinylester resin mixed with inert fillers or fibers.

"ASTM" means the American Society for Testing and Materials.

"Atomized resin application" means a resin application technology in which the resin leaves the application equipment and breaks into droplets or an aerosol as it travels from the application equipment to the surface of the part. Atomized application methods include, but are not limited to, resin spray guns and resin chopper spray guns.

"Authorized inspection agency" means any one of the following that employs an authorized inspector:

1. An insurance company that is licensed or registered in New Jersey to write aboveground storage tank insurance;

2. An owner or operator of one or more aboveground storage tanks; or

3. An independent organization or person contracted by an aboveground storage tank owner or operator to perform an inspection.

"Authorized inspector" means a person authorized by the tank owner or operator to conduct floating roof inspections. This person may be an employee of the tank owner or operator or a contractor.

"Automated parts handling system" means, with respect to a solvent cleaning machine, a mechanical device that carries parts and/or baskets containing parts at a controlled speed from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts.

"Automobile and light-duty assembly" means the manufacturing of any passenger car or passenger car derivative capable of seating 15 or fewer passengers, or any motor vehicle rated at 8,500 pounds (3,856 kilograms) gross vehicle weight or less, that is designed primarily for purposes of transportation of property, or a derivative of such vehicle including, but not limited to, pick-ups, vans, and window vans.

"Automobile or light duty truck surface coating operation" means the application, flash-off, and curing of the primer, topcoat, and repair coat on the main body and other exterior sheetmetal of any passenger car or passenger car derivative capable of seating 15 or fewer passengers, or any motor vehicle rated at 8,500 pounds (3,856 kilograms) gross vehicle weight or less which is designed primarily for purposes of transportation of property, or a derivative of such vehicle including, but not limited to, pick-ups, vans, and window vans. This term includes the entire coating application system, including all spray booths, flash-off areas, and ovens in which surface coating formulations within the same spray primer, topcoat, or repair operation category are applied, dried and cured.

"Automotive elastomeric coating" means a coating designed for application over surfaces of flexible mobile equipment and mobile equipment components, such as elastomeric bumpers.

"Automotive impact resistant coating" means a coating designed to resist chipping caused by road debris.

"Automotive jambing clear coat" means a fast-drying, ready-to-spray clear coat applied to surfaces such as door jambs and trunk and hood edges to allow for quick closure.

"Automotive lacquer" means a thermoplastic coating applied directly to the bare metal surfaces of mobile equipment and mobile equipment components which dries primarily by solvent evaporation, and which is resoluble in its original solvent.

"Automotive low-gloss coating" means a coating which exhibits a gloss reading less than or equal to 25 on a 60° glossmeter.

"Automotive multi-colored topcoat" means a topcoat that exhibits more than one color, is packaged in a single container, and camouflages surface defects on areas of heavy use, including, but not limited to, cargo beds and other surfaces of trucks and other utility vehicles.

"Automotive pretreatment" means a primer that contains a minimum of 0.5 percent acid, by weight, that is applied directly to the bare metal surfaces of mobile equipment and mobile equipment components to provide corrosion resistance and to promote adhesion of subsequent coatings.

"Automotive primer-sealer" means a coating applied to mobile equipment and mobile equipment components prior to the application of a topcoat to provide corrosion resistance, to

promote adhesion of subsequent coatings, to promote color uniformity, and to promote the ability of the undercoat to resist penetration by the topcoat.

"Automotive primer-surfacer" means a coating applied to mobile equipment and mobile equipment components prior to the application of a topcoat for the purpose of:

1. Filling surface imperfections in the substrate;

2. Providing corrosion resistance; and

3. Promoting adhesion of subsequent coatings.

"Automotive specialty coating" means a coating which has been determined by the Department to have only specialized, relatively low-volume uses. This term includes, but is not limited to, elastomeric coatings, adhesion promoters, low gloss coatings, bright metal trim repair coatings, jambing clear coats, impact resistant coatings, rubberized asphaltic underbody coatings, uniform finish blenders, or weld-through primers applied to automotive surfaces and lacquer topcoats applied to a historic motor vehicle.

"Automotive topcoat" means a coating or a series of coatings applied over an automotive primer-surfacer, automotive primer-sealer or existing finish on the surfaces of mobile equipment and mobile equipment components for the purpose of protection or beautification.

"Automotive touch up repair and refinish" means an application of automotive topcoat to cover minor finishing imperfections which are equal to or less than one inch in diameter.

"Automotive/transportation part" or **"automotive/transportation product"** means an interior or exterior component of a motor vehicle or mobile source.

"Background concentration" means, with respect to the measurement of the emission of VOC from a component, the concentration of VOC in the ambient air as determined within the facility and at least one meter upwind of the component being tested.

"Baked coating" means a category of coating, other than a high bake or low bake coating, which is cured at a temperature at or above 90 degrees Celsius (194 degrees Fahrenheit).

"Ballasting" means the loading of water or other liquid into a marine tank vessel's cargo tank to obtain proper propeller, rudder, and hull immersion.

"Batch" means the material retained in a batch operation, measured at any instant prior to, during, or at the completion of the conversion.

"Batch cycle emission rate" means the total emissions of air contaminants per batch divided by the batch cycle time in hours.

"Batch cycle time" means the total elapsed time per batch in any single manufacturing process vessel, including all phases of the operation during which the vessel contains process materials, excluding time waiting for removal from the vessel.

"Batch operation" means a type of manufacturing process in which fixed amounts of one or more process materials are introduced into a manufacturing process vessel where they are retained for a prescribed amount of time during which they are converted. Starting materials for a batch are not introduced into the vessel until the previous batch has been removed.

"Batch mix asphalt plant" means an asphalt plant where the aggregate and asphalt cement or other binder are mixed in equipment other than a rotary dryer.

"Batch vapor cleaning machine" means a vapor cleaning machine in which the individual parts or a set of parts that are being cleaned move through the entire cleaning cycle before new parts are introduced into the cleaning machine. The term includes, but is not limited to, solvent cleaning machines, such as ferris wheel cleaners or cross rod machines, that clean multiple loads simultaneously and that are manually loaded.

"Black automotive coating" means a coating that 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.

"Blowdown event" means the non-emergency release of natural gas from a pipeline for the purposes of inspection, maintenance, or repair and where, in the absence of control, more than 2,000 pounds of VOC could be released to the atmosphere.

"Boiler serving an electric generating unit" means a steam generating unit used for generating electricity including a unit serving a cogeneration facility.

"Brake horsepower" or **"bhp"** means a measure of mechanical power generated by a reciprocating engine determined by a brake attached to the shaft coupling.

"British thermal unit" or **"BTU"** means the quantity of heat required to raise the temperature of one avoirdupois pound of water one degree Fahrenheit at 39.1 degrees Fahrenheit.

"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 Code numbers 3572, 3573, 3574, 3579, and 3661, and photocopy machines, a subcategory of Standard Industrial Classification Code number 3861.

"Calendar day" means the 24 hour period from 12 o'clock midnight to 12 o'clock midnight the following day.

"Camouflage coating" means a coating principally used by the military to conceal equipment from detection.

"Can coating" means exterior and interior spray coating in two-piece can lines; interior and exterior coating in sheet coating lines for three-piece cans; side seam spray coating and interior spray coating in can fabricating lines for three-piece cans; and sealing compound application and sheet coating in end coating lines.

"Capacity" means the volume of liquid that is capable of being stored in a vessel, determined by multiplying the vessel's internal cross-sectional area by the internal height of the shell.

"Capture efficiency" means the amount of VOC entering a capture system and delivered to a control device expressed as a ratio of the total VOC generated by a source of VOC.

"CARB" means the California Air Resources Board.

"CARB-certified Phase I Enhanced Vapor Recovery system" or **"CARB-certified Phase I EVR system"** means a Phase I vapor recovery system that has been certified by CARB in an Executive Order after February 1, 2001, which Executive Order has not been superseded or disapproved at the time of installation.

"CARB-certified Phase II Enhanced Vapor Recovery system" or **"CARB-certified Phase II EVR system"** means a Phase II vapor recovery system that has been certified by CARB in an Executive Order after February 1, 2001, which Executive Order has not been superseded or disapproved at the time of installation.

"Carbon adsorber" means a bed of activated carbon into which an air/solvent, gas/vapor or liquid stream is routed and which adsorbs certain compound(s) found in the stream onto the carbon.

"Carbon monoxide" or **"CO"** means a colorless, odorless, tasteless gas at standard conditions, having a molecular composition of one carbon atom and one oxygen atom.

"Cartridge filtration system" means a system in which perforated canisters containing filtration paper and/or activated carbon are used in a pressurized system to remove solid particles and fugitive dyes from soil-laden solvent.

"Catalytic oxidizer" means a type of control apparatus which reduces the emission of air contaminants by causing the air contaminant molecules to decompose by oxidation, accomplished by preheating the gases being emitted to a predetermined temperature, which is

less than required for thermal oxidation, and contacting the preheated gases with catalysts to promote decomposition.

"Certificate" means either an operating certificate or a temporary operating certificate.

"CFR" means the Code of Federal Regulations.

"Chemical plant" means any facility, or any part thereof, classified within the Standard Industrial Code (SIC) Major Group 28, "Chemical and Allied Products."

"Clean produced water" means water containing less than 35 milligrams of VOC per liter, as determined by the Diesel Range Organics option under EPA SW-846 Method 8015B or NJDEP Method OQA-QAM-025, Revision 6, and/or, if necessary, EPA SW-846 Test Method 8260, as supplemented or amended, and incorporated herein by reference. Hydrocarbons heavier than C14, as determined by Test Method ASTM E 260-85, as supplemented or amended and incorporated herein by reference, may be excluded from the total concentration. This term will be used within the context of tank degassing and cleaning operations. EPA SW-846 Method 8015B and EPA SW-846 Test Method 8260 are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161; phone number 1-800-553-6847. NJDEP Method OQA-QAM-025 Reference 6 is available on the Department's website at www.nj.gov/dep/oqa/bboard.html. Test Method ASTM E 260-85 is available from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428-2959 or from its website at www.astm.org.

"Cleaning material" means, with respect to a surface coating operation or graphic arts operation, a substance that contains VOCs and that is used for the purpose of removing dirt, grease, oil, or other contaminants from the surfaces of equipment used for the application of surface coatings.

"Clear coating" means a coating which lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color and any coating used as an interior protective lining on any cylindrical metal shipping container of greater than one gallon capacity.

"Clear coating (plastic)" means a colorless coating that contains binders, but no pigment, and is formulated to form a transparent film.

"Clear gel coat" means a gel coat that is clear or translucent so that underlying colors are visible. This term does not include tooling gel coats used to build or repair molds.

"Clear topcoat" means the final coating, which contains binders by not opaque pigments and which is specifically formulated to form a transparent or translucent solid protective film on wood furniture.

"Closed molding" means a molding process in which pressure is used to distribute resin through the reinforcing fabric placed between two mold surfaces to either saturate the fabric or

fill the mold cavity. The pressure may be clamping pressure, fluid pressure, atmospheric pressure, or vacuum pressure, used either alone or in combination. The mold surfaces may be rigid or flexible. Closed molding includes, but is not limited to, compression molding with sheet molding compound, infusion molding, resin injection molding (RIM), vacuum-assisted resin transfer molding (VARTM), resin transfer molding (RTM), and vacuum-assisted compression molding. Processes in which a closed mold is used only to compact saturated fabric or remove air or excess resin from the fabric (such as in vacuum bagging), are not considered closed molding. Open molding steps, such as the application of a gel coat or skin coat layer by conventional open molding prior to a closed molding process, are not closed molding.

"CO" means carbon monoxide.

"Coating of flat wood paneling and printed hardwood" means the coating of hardwood, plywood, particle board, interior wood panels, exterior siding, exterior wood panels, tile boards, and hardboard paneling. This term includes, but is not limited to, cedar, plywood or redwood stocks, composition hard boards, particle boards, plywood panels, and any other panels or siding constructed of solid wood or a wood-containing product. This term excludes the coating of particle board used in furniture manufacturing.

"Coating of miscellaneous metal parts and products" means the application of any coating, excluding an adhesive, to any metal part or product including, but not limited to, large and small farm machinery, small appliances, office machinery, vending machines, industrial machinery, metal-covered doors, door frames, and electrical machinery.

"Coating of wood furniture" means the application of any surface coating formulation to any furnishing made of wood or a composite of wood including, but not limited to, kitchen cabinets, equipment cabinets, household furniture and office furniture.

"Coil coating" means the coating of any flat metal sheet or strip available in rolls or coils.

"Cold cleaning machine" means a solvent cleaning machine, containing and/or using an unheated liquid which contains greater than five percent VOC or five percent HAP by weight, into which parts are placed for the purpose of removing dirt, grease, oil or other contaminants and coatings from the surfaces of the parts. This term includes both immersion cold cleaning machines and remote reservoir cold cleaning machines. The term does not include vapor cleaning machines and machines which do not have a solvent/air interface, such as airless and air-tight cleaning systems.

"Coldset web lithographic printing" means a lithographic printing process in which ink is allowed to dry naturally through evaporation and absorption, without the use of a heatset dryer.

"Combined cycle combustion turbine" means a combustion turbine that recovers heat from the turbine exhaust gases to heat water or generate steam.

"Combustion source" means a source operation or item of equipment which combusts fuel.

"Combustion turbine" means an internal combustion engine fueled by liquid or gaseous fuel, in which blades are driven by combustion gases to generate mechanical energy in the form of a rotating shaft that drives an electric generator or other industrial equipment.

"Complete" means, in reference to an application for a permit, that the application contains all of the information necessary, as determined by the Department, for commencing technical review of the application. Designating an application complete for purposes of commencing technical review does not preclude the Department from requesting or accepting any additional information.

"Component" means, with respect to leak detection and repair, any part of a source operation, including any equipment and control apparatus, from which emissions of air contaminants may be released into the ambient air. This term includes, but is not limited to, any agitator, valve, flange, fitting, gasket, seal, joint, pump, compressor, pressure relief device, diaphragm, manhole, hatch, sight-glass, instrument connection or other connection, meter, or associate equipment. This term does not include a designed emission point of a stack or chimney.

"Compressor" means a device used to compress gases or vapors by the addition of energy, and includes all associated components used to make connections or seals.

"Conductive ink" means an ink used in screen printing which contains material that permits electric current to flow through printed lines or patterns.

"Conservation vent" means any valve designed and used to reduce evaporation losses of any VOC by limiting the amount of air admitted to, or vapors released from, the vapor space of a closed storage vessel.

"Construction ballast" means the filling of an underground storage tank with any VOC, including gasoline, to provide stability during construction.

"Construction engine" means a mobile engine used for construction at a site for a limited time period. Construction engine includes a mobile electric generator that is used until regular electric power lines are available to replace the function of the electric generator at the construction site. Construction engine does not include:

1. An engine attached to a foundation;

2. An engine (including any replacement engines) at the same location for more than 12 months;

3. An engine (including any replacement engines) at a seasonal source for at least 90 days per year for at least two years; or

4. An engine that is moved from one location to another in an attempt to circumvent the residence time criteria in 2 or 3 above.

"Control apparatus" means any device which prevents or controls the emission of any air contaminant directly or indirectly into the outdoor atmosphere.

"Conveyorized surface cleaner" means a surface cleaner through which the parts to be cleaned are moved by means of a continuous, automatic system.

"Crude oil" means petroleum extracted from the earth and that has not been processed in a refining operation.

"Cured resin" or "cured gel coat" means a resin or gel coat that has been polymerized and has changed from a liquid to a solid.

"Custom topcoating" means, with respect to automobiles and light duty trucks, the application of surface coating formulations, except during original equipment manufacturing, to the main body or other exterior areas of any passenger car or any motor vehicle capable of seating 15 or fewer passengers or any motor vehicle rated at 8,500 pounds (3,856 kilograms) gross weight or less which is designed for purposes of transportation of property, or a derivative of such vehicle including, but not limited to, pick-ups, vans, and window vans, to achieve a finish that meets individual specifications, including, but not limited to, custom color, design, or gloss. It shall not include the use of adhesion promoters, zinc phosphate pretreatments, uniforming finishes or blenders, specialty primers for plastics, or low reflective accessory coatings.

"Cutback asphalt" means any paving asphalt which has been liquefied by blending with petroleum solvents, or produced directly from the distillation of petroleum having vaporization properties similar to the blended and liquefied asphalt.

"Day" means calendar day.

"Deck fitting" means a functional or operational device on a tank floating roof that substantially closes or seals a penetration in the deck of the floating roof including, but not limited to, any access hatch, fixed roof support column and well, gauge float, gauge hatch, sample port, guidepole, ladder and well, rim vent, roof drain, roof leg, and vacuum breaker, and excluding the rim seal system.

"Degassing" means the process of removing organic vapors from a storage tank in preparation for human entry.

"Delivery vessel" means any vehicle designed and constructed or converted to be capable of transporting liquid VOC cargo such as gasoline or fuel oil. This term includes, but is not limited to, tank trucks, tank trailers, railroad tank cars, and marine tank vessels.

"Department" means the New Jersey Department of Environmental Protection.

"Destruction efficiency" means the amount of VOC destroyed or removed by a control device expressed as a ratio of the total VOC entering the device.

"Development" means investigations in a laboratory or pilot plant directed toward the structuring or establishment of methods of manufacture or of specific designs of salable substances, devices or procedures, based upon previously discovered facts, scientific principles or substances. Development shall not include production for sale of established products through established processes; nor shall it include production in plant, works or semi-works equipment for distribution through market-testing channels.

"Difficult to monitor component" means any component located over 15 feet above ground when access is required from the ground, or any component located 9.6 feet away from a platform when access is required from a platform.

"Digital printing" means a method of printing in which an electronic output device transfers variable data, in the form of an image, from a computer to a substrate.

"Dilution gas" means air or gas from any source whatsoever added to the source gas emitted from a source operation.

"Dip coat" means a method of applying a coating material to a substrate by dipping the part into a tank of coating material.

"Distillates of air" means helium (He), nitrogen (N_2), oxygen (O_2), neon (Ne), argon (Ar), krypton (Kr), and xenon (Xe).

"Domed roof" means a self-supporting fixed roof attached to the top of an external floating roof tank to reduce evaporative losses.

"DOT" means the United States Department of Transportation.

"Double seal floating roof" means a floating roof with two complete and separate seal-envelope combinations, one above the other, containing an enclosed space between them. At least one of the seals must be supported by a mechanism which maintains constant seal contact with the inner surface of the vessel walls, despite surface and altitude irregularities.

"Down time" means, with respect to a solvent cleaning machine, the period when a solvent cleaning machine is not cleaning parts and the sump heating coils, if present, are turned off.

"Drum" means any cylindrical metal shipping container larger than 12 gallons capacity, but no larger than 110 gallons capacity.

"Drum mix asphalt plant" means an asphalt plant where the asphalt cement or other binder is added to the aggregate while the aggregate is still in the rotary dryer.

"Dual-point vapor balance system" means a vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.

"Dwell" means, with respect to the operation of a solvent cleaning machine, the holding of parts after cleaning within the freeboard area and above the solvent vapor zone of a solvent cleaning machine, to allow solvent to drain from the parts or the basket holding the parts back into the solvent cleaning machine.

"Dwell time" means, with respect to the operation of a batch vapor cleaning machine or an in-line vapor cleaning machine, the period of time which begins when a parts basket is placed above the vapor zone of the vapor cleaning machine and which ends when solvent dripping ceases.

"Electrical component" or **"electronic component"** means a component that generates, converts, transmits, or modifies electrical energy. An electrical component or electronic component includes, but is not limited to, a wire, winding, stator, rotor, magnet, contact, relay, printed circuit board, printed wire assembly, wiring board, integrated circuit, resistor, capacitor, and transistors. Electrical component and electronic component do not include a cabinet in which an electrical component or an electronic component is housed.

"Electric-dissipating coating" means a coating that rapidly dissipates a high-voltage electric charge.

"Electric distribution company" means a public utility, as the term is defined in N.J.S.A. 48:2-13, that transmits or distributes electricity to end users within this State.

"Electric distribution system" means that portion of an electric system, which delivers electricity from transformation points on the transmission system to points of connection at a customer's premises. An electric distribution system generally carries less than 69 kilovolts of electricity.

"Electric generating unit" means a combustion or steam generating source used for generating electricity that delivers all or part of its power to the electric power distribution grid for commercial sale.

"Electric-insulating and thermal-conducting coating" means a coating that displays an electrical insulation of at least 1,000 volts DC per mil on a flat test plate and an average thermal conductivity of at least twenty-seven hundredths (0.27) BTU per hour-foot-degree Fahrenheit.

"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.

"Electrostatic prep coat" means a coating that is applied to a plastic part solely to provide conductivity for the subsequent application of a prime, 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 safety data sheet (SDS).

"Electrostatic spray" means a method of applying a spray coating in which opposite electric charges are applied to the substrate and the coating. The coating is attracted to the substrate by the electrostatic potential between them.

"Emergency" means any situation that arises from sudden and reasonably unforeseeable events beyond the control of an owner or operator of a facility, such as an unforeseen system capacity shortage caused by an act of God, that requires immediate corrective action to prevent system collapse or to restore normal operations at the facility.

"Emergency generator" means a combustion source that:

1. Is located at a facility and produces mechanical or thermal energy, or electrical power exclusively for use at the facility; and

2. Is the source of mechanical or thermal energy, or electrical power when the primary source of energy is unavailable as a result of:

    i. A power disruption that results from construction, repair, or maintenance activity at the facility. Operation of the combustion source under this subparagraph is limited to 30 days in any calendar year, not including operation during the performance of normal testing and maintenance procedures, as provided at N.J.A.C. 7:27-19.2(d)1;

    ii. A power outage or failure of the primary source of mechanical or thermal energy, or electrical power, because of an emergency; or

    iii. A voltage reduction issued by PJM and posted on the PJM internet website (www.pjm.com) under the "emergency procedures" menu.

"EMI/RFI shielding" means a coating used on electrical or electronic equipment to provide shielding against electromagnetic interference (EMI), radio frequency interference (RFI), or static discharge.

"Emission statement" means a report of the actual annual emissions of a facility submitted by the owner or operator to the Department pursuant to the requirements of N.J.A.C. 7:27-21.

"Emulsified asphalt" means asphalt which has been liquefied by mixing with water and an emulsifying agent.

"EPA" means the United States Environmental Protection Agency.

"Equipment" means any device capable of causing the emission of an air contaminant either directly or indirectly to the outdoor atmosphere, and any stack or chimney, conduit, flue, duct, vent or similar device connected or attached to, or serving the equipment. This term includes, but is not limited to, a device in which the preponderance of the air contaminants emitted is caused by a manufacturing process.

"Equipment cleaning" means an industrial cleaning unit operation conducted to clean any production equipment that may be cleaned in place (not moved to a cleaning area) to prevent cross-contamination or for maintenance purposes. Examples include, but are not limited to, cleaning of punch presses, electrical contacts, pump parts, packaging equipment, rollers, ink pans, carts, press frames, and table tops.

"Etching filler" means a coating that contains less than 23 percent solids by weight and at least 0.5 percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.

"Exclusion rate" means that rate at or below which the emission of an air contaminant into the outdoor atmosphere is not required to be controlled.

"Exempt organic substance" means an organic substance which is one of the chemical compounds specifically not included in the term "volatile organic compound" or "VOC" as defined in this section.

"External floating roof" means a movable roof in an otherwise open top storage vessel consisting of a floating deck resting on the surface of the liquid contents, a continuous seal supported against the inner surface of the tank shell, and an envelope closing the gap between the floating deck and the seal, the entire deck-seal-envelope combination free to rise and fall with the surface of the liquid during filling and emptying of the storage vessel.

"Extreme high gloss coating (craft)" or **"extreme high gloss topcoat (craft)"** means a coating used for pleasure craft that achieves at least 90 percent reflectance on a 60 degree meter when tested by the American Society for Testing Material Test Method D 523-89.

"Extreme high gloss coating (metal)" means a coating used for metal parts and products that, 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.

"Extreme performance coating" means a coating formulated for and exposed to harsh environmental conditions including, but not limited to:

1. Outside weather conditions all of the time;

2. Temperatures consistently above 95 degrees Celsius or below zero degrees Celsius;

3. Solvents, detergents, abrasives or scouring agents;

4. Chronic exposure to corrosive or acidic agents, chemicals, chemical fumes, chemical mixtures, chemical solutions, chemical atmospheres or chemical fluids; or

5. Repeated heavy abrasion, including mechanical wear.

Extreme performance coatings include, but are not limited to, coatings applied to locomotives, railroad cars, farm machinery, and heavy duty trucks.

"Fabric coating" means the application of any surface coating formulation, except ink and plastisol, to a textile substrate in a fabric coating line.

"Fabric printing operation" means the decorative enhancement of knit or woven cloth including webs, sheets and towels, by applying a pattern or colored design with inks, dyes, or print pastes by techniques including, but not limited to, roller, flat screen, rotary screen, and silk screen printing.

"Facility" means the combination of all structures, buildings, equipment, storage tanks, source operations, and other operations located on one or more contiguous or adjacent properties owned or operated by the same person. For the purposes of this definition, each natural gas pipeline compressor or pump station and each section of natural gas pipeline between such compressor or pump station shall constitute a separate natural gas pipeline facility.

"Facility-wide permit" means a single permit issued by the Department to the owner or operator of a priority industrial facility incorporating the permits, certificates, registrations, or any other relevant Department approvals previously issued to the owner or operator of the priority industrial facility pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., and the appropriate provisions of the Pollution Prevention Plan prepared by the owner or operator of the priority industrial facility pursuant to N.J.S.A. 13:1D-41 and 42. This term shall have the same meaning as defined for the term "facility-wide permit" at N.J.A.C. 7:1K-1.5; if there is any conflict between the definition at N.J.A.C. 7:1K-1.5 and this one, the definition at N.J.A.C. 7:1K-1.5 shall control.

"Federally enforceable" means all limitations and conditions on operation, production, or emissions that can be enforced by EPA. The foregoing limitations and conditions that can be enforced by EPA include, but are not limited to, those established in:

1. Any standards of performance for new stationary sources (NSPS) promulgated at 40 CFR 60;

2. Any national emission standard for hazardous air pollutants (NESHAP) promulgated at 40 CFR 61;

3. Any provision of an applicable SIP;

4. Any permit issued pursuant to requirements established at 40 CFR 51, Subpart I; 40 CFR 52.21; 40 CFR 70; or 40 CFR 71; or

5. Any permit or order issued pursuant to the Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., or this chapter.

"Fiberglass boat" means a vessel in which either the hull or the deck is built from a composite material consisting of a thermosetting resin matrix reinforced with fibers of glass, carbon, aramid, or other material.

"Fill pipe" means a device through which liquid is transferred into a receiving vessel.

"Filled tooling resin" or **"filled production resin"** means a resin to which an inert material has been added to change viscosity, density, shrinkage, or other physical properties.

"Finish primer/surfacer" means a coating applied with a wet film thickness of less than 10 mils prior to the application of a topcoat to provide corrosion resistance, adhesion of subsequent coatings, or a moisture barrier, or to promote a uniform surface necessary for filling in surface imperfections.

"First attempt at repair" means rapid action taken for the purpose of stopping or reducing a leak. First attempts at repair include, but are not limited to, the following practices where practicable: tightening of packing gland nuts, tightening of flanges, and ensuring that the seal flush is operating at design pressure and temperature.

"Fitting" means a component used to attach or connect pipes or piping details including, but not limited to, flanges and threaded connections.

"Fixed roof tank" means a tank with a roof that is permanently affixed to the shell of the tank.

"Flare" means a device used for the destruction of waste or by-product gases by passing them through a flame and then directly into the outdoor atmosphere. Thermal oxidizers are not flares.

"Flexible coating" means any coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.

"Flexible magnetic data storage disc" means a flat, circular plastic film, contained in a non-rigid envelope, with a magnetic coating on which digital information can be stored by selective magnetization of portions of the flat surface.

"Flexible packaging materials" means any paper, plastic, or foil substrate, or any combination of those materials that is coated, waxed, laminated, printed, or otherwise treated for fabrication into bags, pouches or other preformed flexible packages.

"Flexographic printing operation" means a system of transferring images onto a substrate through first applying ink to an inking roller which in turn transfers the ink onto the raised image areas of a rubber or elastomeric plate secured to a second roller, which then transfers the ink onto the substrate.

"Floating roof" means an external or internal pontoon type or double-deck type roof resting on the surface of the liquid contents in a storage vessel, and equipped with a mechanism providing one or more tight seals in the space between the floating roof rim and the vessel shell throughout the entire vertical travel distance of the roof, or any other floating type mechanism approved by the Department for the purpose of preventing air contaminants from being discharged into the outdoor atmosphere.

"Floor cleaning" means an industrial cleaning unit operation conducted to clean floors in any production area of a facility.

"Flow coat" means the process whereby a metal or plastic part or product is conveyed over an enclosed sink, where a coating is applied at low pressure as the item passes under a series of nozzles, and excess coating drains back into the sink, is filtered, and pumped back into a coating holding tank.

"Flow coater" means a piece of equipment for nonatomizing application of applying resins and gel coats to an open mold with a fluid nozzle, with continuous consolidated streams leaving the nozzle, and with no air supplied to the nozzle.

"Fog coat" means a coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture.

"Fountain solution" means a solution used in lithographic printing operations that renders the non-image areas unreceptive to ink.

"Fountain solution reservoir" means the collection tank that accepts recirculated fountain solutions.

"Freeboard height" means, with respect to a solvent cleaning machine, the vertical distance determined as follows:

1. For a cold cleaning machine, the distance from the solvent-containing liquid to the top edge of the machine; or

2. For a vapor cleaning machine, the distance from the top of the solvent vapor layer to the top edge of the machine.

"Freeboard ratio" means, with respect to a solvent cleaning machine, a ratio of the machine's freeboard height to the width of its tank (that is, to the tank's narrower dimension at the tank lip).

"Freeboard refrigeration device" means a set of secondary coils mounted in the freeboard area of a solvent cleaning machine that carries a refrigerant or other chilled substance to provide a chilled air blanket above the solvent vapor. This term includes a solvent cleaning machine's primary condenser, if it is capable of maintaining a temperature in the center of the chilled air blanket of not more than 30 percent of the boiling point for the solvent used.

"Fuel" means solid, liquid or gaseous materials used to produce useful heat by burning.

"Fugitive emissions" means any emissions of an air contaminant released directly or indirectly into the atmosphere which do not pass through a stack or chimney.

"Gaseous leak" means the emission of applicable VOC directly or indirectly to the atmosphere as a gas or vapor from a hole, crevice, or other opening in a component, other than an emission that is in accordance with the component's design during normal operations.

"Gaseous service" means contact with applicable VOC that is in the gaseous state at operating conditions.

"Gasoline" means any petroleum distillate or petroleum distillate/oxygenated blend having a Reid vapor pressure of four pounds per square inch (207 millimeters of mercury) absolute or greater, and commonly or commercially known or sold as gasoline.

"Gasoline dispensing facility" means a stationary facility that dispenses gasoline into the fuel tank of a motor vehicle.

"Gauge float" means a device to indicate the level of the liquid within a tank. The float rests on the liquid surface inside a gauge well in the tank.

"Gauge hatch/sample ports" means a port that consists of a pipe sleeve equipped with a self-closing gasketed cover (to reduce evaporative losses) and allows hand-gauging or sampling of the stored liquid. The gauge hatch/sample port is usually located beneath the gauger's platform, which is mounted on top of the tank shell. A cord may be attached to the self-closing gasketed cover so that the cover can be opened from the platform.

"Gel coat" means a thermosetting resin surface coating formulation containing substances, such as styrene or methyl methacrylate, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to ultraviolet radiation, water or chemical adsorption, and degradation from exposure to the elements. Gel coat layers do not contain any reinforcing fibers and gel coats are applied directly to mold surfaces or to a finished laminate.

"Glass coating" means the application of any surface coating formulation to a glass surface, such as those of glass lamps or bulbs.

"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.

"Graphic arts operation" means the application of one or more surface coating formulations across portions of a surface using one or more letterpress, lithographic, rotogravure or flexographic printers used to produce published material and packaging for commercial or industrial purposes, or any letterpress, lithographic, rotogravure or flexographic printers used to produce vinyl or urethane coated fabric or sheets, or any sheet-fed gravure, screen printing, or fabric printing operations together with any associated drying or curing areas. A single graphic arts operation ends after drying or curing and before other surface coating formulations are applied. For any web line, this term means an entire application system, including any associated drying ovens or areas between the supply roll and take-up roll or folder. This term does not include any surface coating operation.

"Gravure printing operation (sheet-fed)" means a system of transferring images onto a substrate through first applying ink to a cylinder into the surface of which small, shallow cells have been etched forming a pattern, then wiping the lands between the cells free of ink with a doctor blade, and finally contacting the substrate, which is fed in single sheets, onto the cylinder so that the surface of the substrate is pressed into the cells, transferring the ink to the substrate. This term does not include proof presses which are being used to check the quality of the image formation of newly engraved or etched gravure cylinders.

"Guidepole" means an anti-rotation device that is fixed to the top and bottom of a tank, passing through a well in a floating roof. A guidepole may be solid or be equipped with slots or holes for gauging purposes provided the guidepole is equipped with an appropriate sealing device that prevents openings that expose the stored liquid to the atmosphere.

"Hatch" means a system, including a cover which may be opened or closed, that provides access to the interior of a tank or other enclosed container.

"Hazardous air pollutant" or **"HAP"** means an air contaminant listed in or pursuant to subsection (b) of section 112 of the Clean Air Act (42 U.S.C. § 7412).

"Heat-resistant coating" means a coating that must withstand a temperature of at least 400 degrees Fahrenheit during normal use.

"Heatset" means a lithographic printing process in which the printing inks are set by evaporation of the ink oils in a heatset dryer.

"Heatset dryer" means a hot air dryer used in heatset web lithographic printing to heat the printed substrate and to promote the evaporation of ink oils.

"Heatset web lithographic printing" means a lithographic printing operation in which ink is dried rapidly by forced-air heating.

"High bake coating" means a coating designed to cure only at temperatures of more than 90 degrees Celsius (194 degrees Fahrenheit) and used for the surface coating of a plastic automotive/transportation or business machine part.

"High build primer/surfacer" means a coating applied with a wet film thickness of 10 mils or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, or a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

"High gloss coating (craft)" or **"high gloss topcoat (craft)"** means a pleasure craft coating that achieves at least 85 percent reflectance on a 60 degree meter when tested by the American Society for Testing Material Test Method D 523-89.

"High-performance architectural coating" means a coating used to protect architectural subsections and that 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 AAMA 2605-05 (Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels).

"High-temperature coating" means a coating that is certified to withstand a temperature of at least 1,000 degrees Fahrenheit for 24 hours.

"High-volume, low-pressure (HVLP) spray" means a method of applying a spray coating using a spray gun that operates at a level of no more than 10 pounds per square inch of atomized air pressure at the air cap.

"Historic motor vehicle" means any motor vehicle which is at least 25 years old and which is owned as a collectors item and used solely exhibition and education purposes by the owner.

"Hot work" means riveting, welding, flame cutting or other fire or spark-producing operation.

"Hydrocarbons" or **"HC"** means any compound or mixture of compounds whose molecules consist of atoms of hydrogen and carbon only.

"Idle time" means, with respect to a solvent cleaning machine, the period when a solvent cleaning machine is not actively cleaning parts, but the sump heating coil, if present, is turned on.

"Immersion cold cleaning machine" means a cold cleaning machine in which the part or parts to be cleaned are immersed in the solvent during the cleaning process.

"Incinerator" means any device, apparatus, equipment, or structure using combustion or pyrolysis to oxidize, reduce or salvage any material or substance. "Incinerator" does not include thermal or catalytic oxidizers used as control apparatus on equipment, but it does include (without limitation) any thermal destruction facility which is a resource recovery facility, as such terms are defined in N.J.A.C. 7:26-1.4.

"Indirect emissions" means a discharge of any air contaminant into the outdoor atmosphere through any opening that is not a stack or chimney directly connected to the equipment.

"Industrial cleaning" means the use of industrial cleaning solvents at one or more of the following unit operations: equipment cleaning, floor cleaning, large manufactured components cleaning, line cleaning, parts cleaning, small manufactured components cleaning, spray booth cleaning, spray gun cleaning, and tank cleaning. "Industrial cleaning" can occur through processes including, but not limited to, brushing, wiping, flushing, or spraying. "Industrial cleaning" does not include janitorial cleaning.

"Industrial cleaning solvent" means a substance that contains VOCs and that is used in an industrial cleaning unit operation to remove contaminants including, but not limited to, adhesives, dirt, grease, inks, oil, paint, or soil, from the surfaces of parts, products, tools, machinery, equipment, vessels, floors, walls, or other work production related work areas.

"Industrial/commercial/institutional boiler" or **"ICI boiler"** means an indirect heat exchanger that generates steam to supply heat to an industrial, commercial, or institutional operation. This term does not include boilers that serve electric generating units.

"Industrial wastewater treatment system" means any structure or structures by means of which industrial liquid waste or sludges are subjected to any treatment process requiring the issuance of an individual NJPDES permit regulated by the Department pursuant to the New Jersey Pollutant Discharge Elimination System Permit Program, N.J.A.C. 7:14A, under the authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.

"Ink transfer" means a decal, printed using screen printing onto a special release carrier, that will be transferred from the carrier to a substrate. Final transfer of the decal to the substrate may or may not occur at the screen printing facility.

"In-line vapor cleaning machine" means a vapor cleaning machine that uses an automated parts handling system, typically a conveyor, to automatically provide a supply of parts to be cleaned and which is fully enclosed except for the conveyor inlet and exit portals.

"In-service roof landing" means a roof landing in which the tank is not taken out of service.

"Internal combustion engine" means either a reciprocating engine or a combustion turbine in which power, produced by heat and/or pressure from combustion is converted to mechanical work.

"Internal floating roof" means a floating roof located inside a vessel with a fixed roof.

"Janitorial cleaning" means the general and maintenance cleaning of building or facility components including, but not limited to, floors, ceilings, walls, windows, doors, stairs, restrooms, furnishings, kitchens, and exterior surfaces of office equipment. "Janitorial cleaning" includes graffiti removal. "Janitorial cleaning" does not include the cleaning of parts, products or equipment, where such parts, products or equipment are incorporated into or used exclusively in manufacturing a product or the cleaning of work areas, such as laboratory benches, where manufacturing or repair activity is performed.

"KW" or **"kW"** means kilowatt.

"Laboratory operations" means any action, process, or treatment utilizing chemical, physical, or biological factors to conduct experimental research, tests, or demonstrations.

"Ladder and well" means a ladder that passes through a well, and is used to access the top of the internal floating roof.

"Large appliance coating" means the application of any coating to the component parts of large appliances including, but not limited to, doors, cases, lids, panels, and interior supports of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, air conditioners, and other associated products.

"Large manufactured components cleaning" means an industrial cleaning unit operation conducted to clean large parts including, but not limited to, automobile bodies and furniture sheet metal, as a step in a manufacturing process.

"Leak" means a gaseous leak or a liquid leak of applicable VOC.

"Leak-free" means a condition that exists when the reading on a portable hydrocarbon analyzer is less than 500 ppm, expressed as methane, above background, measured using EPA Method 21, as identified in 40 CFR Part 60, Appendix A, Determination of Volatile Organic Compounds Leaks, incorporated herein by reference.

"Leather coating" means the application of any surface coating formulation to a leather substrate in a leather coating line.

"Letterpress printing" or **"letterpress printing operation"** means printing using cast metal type or plates on which the image or printing areas are raised above the non-printing areas, the ink rollers touch only the top surface of the raised areas, and the surrounding (non-printing) areas are lower and do not receive ink. A letterpress printing operation includes, but is not limited to, a heatset letterpress printing operation.

"Light liquid" means a fluid with vapor pressure greater than 0.044 pounds per square inch absolute (2.27 millimeters of mercury) at 68°F.

"Light liquid service" means contact with a fluid that is 10 percent or greater by weight light liquid.

"Line cleaning" means an industrial cleaning unit operation conducted to clean coating lines and any associated tank that transports raw material including, but not limited to, paint or resin, and that are cleaned separately from spray guns and other process equipment.

"Liquid leak" means the release of liquid applicable VOC from a hole, crevice, or other opening in a component subject to N.J.A.C. 7:27-16, other than a release of liquid VOC in accordance with the component's design during normal operations. The presence of a drop, drip, accumulation, pool, or other visible evidence of a liquid, applicable VOC demonstrates that a liquid leak has occurred.

"Liquid mounted primary seal" means a primary seal that is mounted in full contact with the liquid in the annular space between the tank shell and the floating roof.

"Liquid particles" means particles which have volume but are not of rigid shape.

"Liquid service" means contact with applicable VOC that is in the liquid state at operating conditions.

"Lithographic printing" or **"lithographic printing operation"** means printing by a planographic method in which the image and nonimage areas are chemically differentiated. The image area is oil receptive, which allows the pigments in the inks to absorb on the substrate. The non-image area is water receptive, which prevents the pigments in the ink from absorbing on the substrate. This method differs from other printing methods, in which the image is a raised or recessed surface. A lithographic printing operation includes, but is not limited to, a heatset web lithographic printing operation, a coldset web offset lithographic printing operation, and a sheet-fed offset lithographic printing operation.

"Local exhaust ventilation" means a system for capturing air contaminants within 36 inches (91.4 centimeters) of the points at which they emerge from a source operation.

"Low bake coating" means a coating designed to cure only at temperatures at or below 90 degrees Celsius (194 degrees Fahrenheit) and used for the surface coating of a plastic automotive/transportation or business machine part.

"Magnet wire coating" means the application of electrically insulating varnish or enamel to aluminum or copper wire.

"Major VOC facility" means any facility which has the potential to emit 25 or more tons of VOC per year.

"Manufacturing process" means any action, operation or treatment embracing chemical, industrial, manufacturing, or processing factors, methods or forms including, but not

limited to, furnaces, kettles, ovens, converters, cupolas, kilns, crucibles, stills, dryers, roasters, crushers, grinders, mixers, reactors, regenerators, separators, filters, reboilers, columns, classifiers, screens, quenchers, cookers, digesters, towers, washers, scrubbers, mills, condensers, or absorbers.

"Manufacturing process vessel" means any container wherein a manufacturing process, or any part thereof, takes place.

"Marine tank vessel" means any tugboat, tanker, freighter, passenger ship, barge, boat, ship, or watercraft, which is specifically constructed or converted to be capable of carrying liquid cargo in tanks.

"Marine terminal" means any facility, or part thereof, at which liquid cargo is loaded into or unloaded out of marine tank vessels.

"Marine vessel" means any component or structure intended for exposure to a marine environment, including an oil drilling platform and a navigational aid.

"Mask coating" means a thin film coating applied through a template to coat a small portion of a substrate.

"Maximum gross heat input rate" means the maximum amount of fuel a combustion source is able to combust in a given period as stated by the manufacturer of the combustion source. This term is expressed in BTUs per hour, based on the highest BTU value of the fuels combusted.

"Maximum operating level" means the highest achievable level of fluid within a tank, as determined by the structural design of the tank. In the absence of tank specific design information, the maximum operating level is equal to tank capacity.

"Mechanical shoe seal" means a metallic sheet (the shoe) that is held vertically against the vertical tank wall. The shoe is connected by braces to the floating roof and is held tightly against the wall by springs or weighted levers. A flexible coated fabric (envelope) is suspended from the shoe seal to the floating roof to form a vapor barrier over the annular space between the roof and the primary seal.

"Medical device" means an instrument, apparatus, implement, machine, contrivance, implant, in-vitro reagent, or other similar article, including any component or accessory that is:

1. Intended for use in the diagnosis of disease or other conditions or in the cure, mitigation, treatment, or prevention of diseases;

2. Intended to affect the structure or any function of the body; or

3. Defined in the National Formulary or the United States Pharmacopoeia or any supplement thereto, available from the U.S. Pharmacopeial Convention, www.usp.org.

"Medical device and pharmaceutical manufacturing operation" means an operation to manufacture medical devices or pharmaceutical products, including the associated manufacturing and product-handling equipment and material, work surfaces, maintenance tools, and room surfaces that are subject to the Good Manufacturing/Laboratory Practice, available from the U.S. Food and Drug Administration (www.fda.gov), or the Centers for Disease Control /National Institute of Health guidelines for the biological disinfection of surfaces, available from the Centers for Disease Control and Prevention (www.cdc.gov).

"Metal and plastic parts application methods" means any of the following coating application methods: electrostatic spray, HVLP spray, flow coat, roller coat, dip coat (including electrodeposition), airless spray, or air-assisted airless spray.

"Metal container or closure coating" means any coating applied to either the interior or exterior of formed metal cans, drums, pails, lids or crowns, or flat metal sheets that are intended to be formed into cans, drums, pails, lids, or crowns.

"Metallic coating" means a coating that contains more than five grams of metal particles per liter of coating, as applied.

"Metal furniture coating" means the coating in a metal furniture coating line of any metal part which will be assembled with other metal, wood, fabric, plastic, or glass parts to form a piece of furniture.

"Metal particle" means pieces of a pure elemental metal or a combination of elemental metals.

"Military specification coating" means a coating that has a formulation approved by a United States military agency for use on military equipment.

"Miscellaneous industrial adhesive" means an adhesive (including an adhesive primer used in conjunction with certain types of adhesives) used at industrial manufacturing and repair facilities for a wide variety of products and equipment that operate adhesives application processes.

"Mixing vessel" means, with respect to a surface coating operation or graphic arts operation, any equipment used to develop coatings containing VOCs that involves blending two or more input streams.

"Mobile equipment" means equipment which may be driven or is capable of being driven or pulled on a roadway including, but not limited to, automobiles, trucks, including truck cabs, truck bodies and truck trailers, buses, motorcycles, camper shells, mobile cranes,

bulldozers, street cleaning machines, golf carts, ground support vehicles used in support of aircraft activities at airports, and farm equipment.

"Modify" or **"modification"** means any physical change in, or change in the method of operation of, existing equipment or control apparatus that increases the amount of actual emissions of any air contaminant emitted by that equipment or control apparatus or that results in the emission of any air contaminant not previously emitted. This term shall not include normal repair and maintenance. Also, for the purposes of this definition, "air contaminant" shall have the meaning of "category of air contaminants" in a case where the regulatory limit is placed on a grouping of contaminants (such as VOCs) rather than on a single species of contaminant.

"Mold" means the cavity or surface into or on which gel coat, resin, and fibers are placed and from which finished fiberglass parts take their form.

"Mold-seal coating" means the initial coating applied to a new mold or a repaired mold to provide a smooth surface that, when coated with a mold release coating, prevents products from sticking to the mold.

"Monomer VOC" means a relatively low molecular weight organic compound that combines with itself, or other similar compounds, by a cross-linking chemical reaction to become a cured thermosetting resin (polymer). Monomer VOC includes, but is not limited to, styrene and methyl methacrylate.

"Monomer VOC content" means the weight of the monomer VOC, divided by the weight of the material applied.

"Motor vehicle" means any self-propelled vehicle, including, but not limited to, a car, truck, bus, golf cart, motorcycle, tank, and armored personnel carrier.

"Motor vehicle bedliner" means a multi-component coating, used at a motor vehicle material surface coating operation, that is applied to a cargo bed after the application of a topcoat to provide additional durability and chip resistance.

"Motor vehicle cavity wax" means a coating, used at a motor vehicle material surface coating operation facility, that is applied into the cavity of a vehicle primarily for the purpose of enhancing corrosion protection.

"Motor vehicle deadener" means a coating, used at a motor vehicle material surface coating operation, that is applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

"Motor vehicle gasket/gasket sealing material" means a fluid, used at a motor vehicle material surface coating operation, applied to coat a gasket or to replace and perform the same function as a gasket. Motor vehicle gasket/gasket sealing material includes room temperature vulcanization (RTV) seal material.

"Motor vehicle lubricating wax/compound" means a protective lubricating material, used at a motor vehicle material surface coating operation, that is applied to vehicle hubs and hinges.

"Motor vehicle material surface coating operation" means a surface coating operation performed at a facility that is not an automobile or light-duty truck assembly coating facility.

"Motor vehicle sealer" means a high viscosity material, used at a motor vehicle material surface coating operation, for the primary purpose of completely filling body joints of automobiles and light-duty trucks so that there is no intrusion of water, gases, or corrosive materials into the passenger area of the body compartment. "Motor vehicle sealer" 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 (for example, a primer-surfacer). "Motor vehicle sealer" is also known as "motor vehicle sealant," "motor vehicle sealant primer," or "motor vehicle caulk."

"Motor vehicle truck interior coating" means a coating, used at a motor vehicle material surface coating operation, that is applied to the trunk interior to provide chip protection.

"Motor vehicle underbody coating" means a coating, used at a motor vehicle material surface coating operation, that is applied to the undercarriage or firewall to prevent corrosion and/or provide chip protection.

"Multi-colored coating" means a coating that exhibits more than one color when applied, and that is packaged in a single container and applied in a single coat.

"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.

"MW" means megawatt.

"Natural gas/gasoline processing plants" means facilities engaged in the separation of natural gas liquids from field gas and/or fractionation of the liquids into natural gas products such as ethane, propane, butane, and natural gasoline. Excluded from the definition are compressor stations, dehydration units, sweetening units, field treatment, underground storage, liquefied natural gas units, and field gas gathering systems unless these facilities are located as a gas plant.

"Navigational aid" means a buoy or other U.S. Coast Guard waterway marker.

"New Jersey's coastal waters" means the Atlantic Ocean area and all areas under tidal influence within three nautical miles (5,566 meters) of the mean high water line as measured from the New Jersey coast, except that, if at any point along the line of measurement, within or beyond three nautical miles (5,566 meters), there is a meeting of waters under the exclusive jurisdiction of any other State or the United States of America, New Jersey's jurisdiction shall

end at that point. Any point of measurement shall be taken from a point of New Jersey land, permanent or nonpermanent, and extended azimuthally to a distance of three nautical miles (5,566 meters) or to the point where another State or the United States of America has jurisdiction.

"Nonatomized resin application" means any application technology in which the resin is not broken into droplets or an aerosol as it travels from the application equipment to the surface of the part. Nonatomized resin application methods include, but are not limited to, flow coaters, chopper flow coaters, pressure-fed resin rollers, resin impregnators, and hand application (for example, application by paint brush or paint roller).

"Non-contact floating roof" means a roof that is located inside an internal floating roof tank that is supported on pontoons several inches above the liquid surface.

"Non-heatset lithographic printing" means a lithographic printing process in which the printing inks are set by absorption and/or oxidation of the ink oils, not by evaporation of the ink oils in a heatset dryer. For the purposes of this subchapter, use of an infrared heater or printing conducted using ultraviolet-cured or electron beam-cured inks is considered non-heatset lithographic printing.

"Numismatic die" means the metal piece engraved with the design used for stamping coins.

"Offset lithography" means a planographic method of printing in which the image and nonimage areas are on the same plane and where the ink is transferred from an image plate on one cylinder to an image blanket on a different cylinder. The ink is finally transferred from the image blanket to the surface to be printed.

"Oily wastewater" means wastewater generated during the refinery process and which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including cooling water, condensed stripping steam, tank draw-off, and contact process water.

"Onboard refueling vapor recovery system," "ORVR system," or **"ORVR"** means a vehicle emission control system that captures vapors from the vehicle gasoline tank during refueling. The gasoline tank and fill pipe are designed so that, during the vehicle refueling, vapors in the tank travel to an activated carbon packed canister, which adsorbs the vapor. When the engine is in operation, it draws the gasoline vapors into the engine intake manifold to be used as fuel.

"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 a component of a "one-component coating."

"Opaque stain" means all stains that contain pigments but are not classified as semitransparent stains, and includes stains, glazes, and other opaque material applied to wood surfaces.

"Open burning" means any fire from which the products of combustion are emitted directly into the open air, and are not by design directed through a stack or chimney.

"Open molding resin and gel coat operation" means any process in which reinforcing fibers and resins are placed in a mold and are open to the surrounding air while the reinforcing fibers are saturated with resin. This term includes operations in which a vacuum bag or similar cover is used to compress an uncured laminate to remove air bubbles or excess resin, or to achieve a bond between a core material and a laminate. This term also includes, but is not limited to, open molding tooling gel coat operations.

"Open top surface cleaner" means a surface cleaner, including, but not limited to, a surface cleaner equipped with a cover, in which there is at any time, an opening to the atmosphere greater than 25 percent of the surface area of the VOC solvent contained therein or greater than 25 percent of the surface area of a sink-like work area where the surface cleaning occurs.

"Open top tank" means any vessel in which a manufacturing process, or any part thereof, takes place during which there is an opening to the atmosphere greater than 25 percent of the surface area of any liquid substance contained therein.

"Operating certificate" means a "Certificate to Operate Control Apparatus or Equipment" issued by the Department pursuant to the Air Pollution Control Act of 1954, specifically N.J.S.A. 26:2C-9.2, which is valid for a period of five years from the date of issuance, unless sooner revoked by the Department.

"Operating permit" means the permit described in Title V of the Federal Clean Air Act, 42 U.S.C. §§ 7661 et seq., and in N.J.A.C. 7:27-22. This term shall include a general operating permit which is applicable facility wide, but does not include a general operating permit which applies only to a part of a facility. Where a general operating permit applies only to a part of a facility, the general operating permit shall be incorporated into the operating permit. This term also includes an operating permit issued for a temporary facility; for a facility subject to a MACT or GACT standard pursuant to N.J.A.C. 7:27-22.26; or for a component of a facility pursuant to N.J.A.C. 7:27-22.5(j).

"Optical coating" means a coating applied to an optical lens.

"Order" means any and all orders issued by the Department including, but not limited to, administrative orders and administrative consent orders.

"Organic liquid" means any liquid that contains volatile organic compounds (VOCs) including, but not limited to, crude oils and petroleum distillates.

"ORVR-compatible Phase II vapor recovery system" means a Phase II vapor recovery system that is one of the following:

1. A vapor balance system;

2. A vapor recovery system with tank pressure management emission control equipment installed on the atmospheric vent of the system and operated in conjunction with the Phase I and Phase II vapor recovery systems with the purpose of reducing emissions and recovering gasoline vapors during fuel deliveries and refueling vehicles at a gasoline dispensing facility at greater than or equal to 95 percent recovery efficiency for the Phase II system and 98 percent recovery efficiency for the Phase I system. A system with only a pressure/vacuum relief vent valve on the atmospheric vent is not considered an ORVR-compatible Phase II system;

3. A vacuum assist system that has ORVR-compatible nozzles, which are nozzles that are approved as ORVR-compatible in a CARB-certified Phase II system Executive Order or that can be demonstrated to the Department to be ORVR-compatible; or

4. A vapor recovery system used exclusively for the refueling of marine vehicles or aircraft.

"Other wastewater treatment system" means any structure or structures by means of which liquid waste or sludges (other than industrial liquid waste or sludges) are subjected to any treatment process requiring the issuance of an individual NJPDES permit pursuant to the New Jersey Pollutant Discharge Elimination System Permit Program, N.J.A.C. 7:14A, under the authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.

"Out-of-service" means any container, pipe or equipment from which all liquid and sludge has been removed, all connecting lines and piping have been disconnected and blanked off, all valves (except for ventilation valves) have been closed and locked and on which conspicuous signs have been posted that state that it is out-of-service and note the date of removal from service.

"Overall control efficiency" means the product of the capture efficiency and the control device efficiency.

"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.

"Paper coating" means:

1. The application of any coating, excluding plastisol, uniformly distributed across the web, which is put on paper, or on pressure-sensitive tapes regardless of the substrate, including paper, fabric, or plastic film;

2. Related web coating processes on plastic film including, but not limited to, typewriter ribbons, photographic film, and magnetic tape; or

3. Decorative coating on metal foil including, but not limited to, gift wrap and packaging.

This term does not include any graphic arts operation.

"Partial pressure" means the pressure exerted by a specified component in a mixture of gases.

"Particles" means any material, except uncombined water, which exists as liquid particles or solid particles at standard conditions.

"Parts cleaning" means an industrial cleaning unit operation conducted to clean miscellaneous items using an industrial cleaning solvent. Examples of miscellaneous items include, but are not limited to, applicator tips, bearings, brushes, circuit boards, cutoff steel/machined parts, engine blocks, filters, gauges, machine parts, motors and assemblies, oil guns, pumps, screws, tool dies, tools, truck parts, and welded parts.

"Penetrating prime coat" means a low-viscosity liquid asphalt applied to a surface in order to prepare it for paving with an asphalt concrete.

"Permit" means preconstruction permit, operating permit, or facility-wide permit.

"Person" means any individual or entity and shall include, without limitation, corporations, companies, associations, societies, firms, partnerships, and joint stock companies, and shall also include, without limitation, all political subdivisions of any State or any agencies or instrumentalities thereof.

"Petroleum distillate" means any mixture of VOC produced by condensing vapors of petroleum during distillation, including, but not limited to, naphthas, aviation gasoline, motor gasoline, kerosene, diesel oil, domestic fuel oil, and petroleum solvents.

"Petroleum solvent dry cleaning" means a process in which textile and fabric articles are washed in a solution of organic material, and then dried by exposure to a heated air stream. The organic material is produced by petroleum distillation and is comprised of a hydrocarbon range of 8 to 12 carbon atoms per organic molecule.

"Pharmaceutical product" means a preparation or compound, including any drug, analgesic, decongestant, antihistamine, cough suppressant, vitamin, mineral or herb supplement intended for human or animal consumption, that is used to cure, mitigate or treat disease, or improve or enhance health.

"Phase I vapor recovery system" means a system that controls vapors during the transfer of gasoline from a delivery vessel to a gasoline dispensing facility vessel. This system is also known as a Stage I vapor recovery system or a Stage I vapor control system.

"Phase II vapor recovery system" means a system that controls vapors during the transfer of gasoline from a gasoline dispensing facility vessel to a motor vehicle. This system is also known as a Stage II vapor recovery system or a Stage II vapor control system.

"Pigmented coat" means opaque coatings that contain binders and colored pigments and are formulated to conceal the wood surface either as an undercoat or topcoat.

"Pigmented gel coat" means an opaque gel coat used to manufacture parts for sale but does not include a tooling gel coat used to build or repair molds.

"Pipe coating" means the application of any coating to a pipe comprised of any material except plastic.

"PJM Interconnection" or **"PJM"** means the regional transmission organization that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia, and the District of Columbia.

"Planography" means any method of printing from a flat surface.

"Plastic part" or **"plastic product"** means a piece made from a substance that has been formed from a natural or synthetic resin through the application of pressure or heat or both.

"Plastisol" means a surface coating formulation that is a dispersion of finely divided polymeric resin in a high boiling solvent or softening agent that is added to increase flexibility or toughness and includes plastisols to which volatile solvent has been added.

"Platform" means any elevated horizontal surface, either temporary or permanent, used for the purpose of gaining access to a component.

"Pleasure craft" means a vessel that is manufactured or operated primarily for recreational purposes, or leased, rented, or chartered to a person or business for recreational purposes.

"Pleasure craft coating" means a marine coating, except an unsaturated polyester resin (fiberglass) coating, applied to a pleasure craft by brush, spray, roller, or other means.

"Pole float" means a float located inside a guidepole that floats on the surface of the stored liquid. The rim of the float has a wiper or seal that extends to the inner surface of the pole.

"Pole sleeve" means a device that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

"Pole wiper" means a seal that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

"Pollution prevention" shall have the same meaning as defined for this term at N.J.A.C. 7:1K-1.5.

"Polyester" means a synthetic, long-chain polymeric ester produced mainly by reaction of dibasic acids with dihydric alcohols.

"Polyester resin material" means a resin used to fabricate composite products. "Polyester resin material" includes, but is not limited to, an unsaturated polyester resin, such as orthophthalic, isophthalic, halogenated, dicyclopentadiene, bisphenol A, and furan, a vinylester resin, cross linking agent, catalyst, gel coat, inhibitor, accelerator, promoter, and any other material containing VOC that is used in a polyester resin operation.

"Polyester resin operation" means an operation that fabricates, reworks, repairs, or touches up composite products for commercial, military, or industrial use by mixing, pouring, manually applying, molding, impregnating, injecting, forming, filament winding, spraying, pultruding, centrifugally casting, curing, or corn-forming by using polyester resin materials.

"Polymer" means a chemical compound that consists of a large number of repeating monomer VOC.

"Positive pressure ventilation" means any ventilation system in which pressurized air from a compressed air manifold, fan, or similar device is blown into a work area.

"Potential to emit" means the maximum capacity of a source operation or a facility to emit an air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of a source operation or a facility to emit an air contaminant, including control apparatus and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is Federally enforceable. If there is no Federally enforceable limitation on the hours of operation of a source operation, then any determination of the maximum design capacity shall be based on a presumption of operation at 8760 hours per year. This term includes the fugitive emissions emitted by the source operation or facility as calculated in a manner consistent with the provisions of N.J.A.C. 7:27-21 and current guidance issued by the Department pursuant thereto.

"Powder coating" means any coating applied as a dry, finely divided solid that, when melted and fused, adheres to the substrate as a paint film.

"Ppm" means parts per million.

"Ppmvd" means parts per million by volume, dry basis. This is the number of parts in a mixture, by volume, which are of the specified substance, not including the number of parts contributed by water.

"Power outage" means an interruption in the provision of electricity to customers because normally available sources of electrical energy are unavailable, provided the unavailability is due to circumstances beyond the control of the customer.

"Precision optics" means the optical elements used in electro-optical devices that are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes of light energy levels.

"Preconstruction permit" means a legally valid permit, authorizing construction, installation, reconstruction, or modification of a significant source, issued by the Department under N.J.A.C. 7:27-8 pursuant to the New Jersey Air Pollution Control Act and in particular N.J.S.A. 26:2C.

"Prefabricated architectural component coating" means a coating applied to metal parts and products that are to be used as an architectural structure.

"Pressure relief device" means a type of component which is installed for safety to relieve elevated pressure within equipment, or within a conduit or duct serving equipment. Such a component is designed to release material contained within the system when the pressure within the system exceeds a set level.

"Pressure relief valve" means a type of pressure relief device which consists of a valve that automatically opens when the pressure within the system exceeds a set level and closes when the pressure drops below that level.

"Pressure vessel" means a tank, reservoir, or container that is capable of maintaining working pressures sufficient to prevent organic liquid loss or VOC loss to the atmosphere at all times.

"Pretreatment coating" means a coating used to provide surface etching that contains no more than 12 percent solids by weight and at least 0.5 percent acid by weight and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

"Pretreatment wash primer" means a coating used to provide surface etching that contains no more than 25 percent solids by weight and at least 0.1 percent acid by weight and is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.

"Primary condenser" means, with respect to a vapor cleaning machine, a series of circumferential cooling coils located in the machine through which a chilled substance is circulated or recirculated to provide continuous condensation of rising solvent vapors, to create a concentrated vapor zone.

"Primary seal" means a seal mounted below a secondary seal of a rim seal system that consists of two seals. A primary seal, which is in contact with the floating roof tank shell, can be either mechanical shoe, resilient filled, or wiper type.

"Process emission rate" means the mass rate of air contaminants emitted from the final source operation of a process, exclusive of any type of control apparatus or product recovery device.

"Process unit shutdown" means a regularly scheduled work practice or operational procedure that stops production from a process unit or part of a process unit for 24 hours or such other longer time as the owner or operator of the unit establishes to be necessary for the removal of the process material so that repairs to the unit can be carried out in a safe manner. The use of spare equipment without stopping production is not a process unit shutdown.

"Production resin" means any resin used to manufacture parts for sale, but does not include tooling resins used to build or repair molds, or assembly adhesives. Skin coat is a type of production resin.

"Psia" means pounds per square inch absolute.

"Pultrusion" means a continuous manufacturing process for composite products that have a uniform cross-sectional shape whereby continuous strands of fiber-reinforcing material are pulled through a strand-tensioning device into a resin impregnation chamber or bath and then pulled through a shaping die.

"Pump" means a device used to transport fluids by the addition of energy, and includes all associate components used to make connections or seals.

"Rated power output" means the maximum electrical or equivalent mechanical power output stated on the nameplate affixed to an engine or the International Standard Organization (ISO) rated electrical or equivalent mechanical power stated on the nameplate affixed to a turbine by the manufacturer.

"Receiving vessel" means any vessel into which an applicable VOC is introduced including, but not limited to, storage tanks, delivery vessels, and manufacturing process vessels.

"Reciprocating engine" means an internal combustion engine in which a rotating crankshaft is driven by reciprocating motion of piston(s).

"Reconstruction" means the replacement of part(s) of equipment included in a process unit, or the replacement of part(s) of control apparatus, if the fixed capital cost of replacing the part(s) exceeds both of the following amounts:

1. Fifty percent of the fixed capital cost that would be required to construct a comparable new process unit or, if it is part(s) of control apparatus that is being

replaced, 50 percent of the fixed capital cost that would be required to construct comparable new control apparatus; and

2. $ 80,000, in 1995 dollars, adjusted by the Consumer Price Index (CPI).

"Red automotive coating" means a coating that meets all of the following criteria:

1. Yellow limit: the hue of hostaperm scarlet;

2. Blue limit: the hue of monstral red-violet;

3. Lightness limit for metallics: 35 percent aluminum flake;

4. Lightness limit for solids: 50 percent titanium dioxide white;

5. Solid reds: hue angle of -11 to 38 degrees and maximum lightness of 23 to 45 units; and

6. Metallic reds: hue angle of -16 to 35 degrees and maximum lightness of 28 to 45 units.

These criteria are based on the 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.

"Reduce room draft" means, with respect to the operation of a solvent cleaning machine, to decrease the flow or movement of air across the top of the freeboard area of the solvent cleaning machine to less than 50 feet per minute (15.2 meters per minute) by methods including, but not limited to, redirecting fans and/or air vents, moving the machine to a corner or other area in the room where there is less flow or movement of air, or constructing a partial or complete enclosure around the machine.

"Refinishing" means, with respect to automobiles and light duty trucks, the recoating of the main body or other exterior areas of any passenger car or passenger car derivative capable of seating 15 or fewer passengers or any motor vehicle rated at 8,500 pounds (3,856 kilograms) gross weight or less which is designed primarily for purposes of transportation, of property, or a derivative of such vehicle including, but not limited to, pick-ups, vans, and window vans. It shall not include the use of adhesive promoters, zinc phosphate pretreatments, uniforming finishes or blenders, specialty primers for plastics, or low reflective accessory coatings.

"Regenerative cycle combustion turbine" means a combustion turbine that recovers heat from its exhaust gases and uses that heat to preheat the inlet combustion air which is fed into the combustion turbine.

"Regulated leak" means any gaseous leak of applicable VOC at a concentration or level above any applicable limit established in Tables 18A and 18B and any liquid leak of an applicable VOC.

"Reid vapor pressure" or **"RVP"** means the absolute vapor pressure of a petroleum product in pounds per square inch (or kilopascals) at 100 degrees Fahrenheit ((F) (37.8 degrees Celsius ((C)) as measured by "Method 3 Evacuated Chamber Method" promulgated at 40 CFR 80, Appendix E; or any other equivalent test method approved in advance in writing by the Department and the EPA.

"Remote reservoir cold cleaning machine" means a cold cleaning machine in which liquid solvent is pumped into a sink-like work area where the cleaning of parts occurs, and from which the solvent is immediately drained back into an enclosed container or reservoir, so that no solvent is allowed to pool in the work area.

"Repair" means, with respect to a VOC leak, a corrective action taken to eliminate the leak or reduce the leak to below regulated levels. With respect to fiberglass boat manufacturing materials, "repair" means that portion of the fabrication process that requires the addition of polyester resin or other composite materials to portions of a previously fabricated product in order to mend damage.

"Repair coating" means a coating used to re-coat portions of a previously coated product that has sustained mechanical damage to the coating following normal coating operations.

"Research" means investigations directed toward the discovery of facts, scientific principles, reactions, or substances.

"Research and development laboratory" means any facility with the primary purpose of conducting research and development into new processes and products, including academic and technological research and development, provided that such a facility is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner.

"Resilient filled primary seal" means an envelope filled with resilient foam (non-metallic polyurethane) mounted at the rim of the floating roof that makes contact with the shell. A resilient filled nonmetallic primary seal can be liquid-mounted or vapor-mounted.

"Resilient-toroid-type" seal means a core of open-cell foam encapsulated in a coated fabric that is attached to a mounting on the deck perimeter, and is continuous around the floating roof circumference.

"Resin" means any thermosetting resin, with or without pigment, containing substances, such as styrene (CAS No. 100-42-5) or methyl methacrylate (CAS No. 80-62-6) and used to encapsulate and bind together reinforcement fibers in the construction of fiberglass parts. Resin

includes, but is not limited to, filled tooling resin (filled production resin), production resin, and tooling resin.

"Resin and gel coat mixing operation" means any operation in which resin or gel coat, including the mixing of putties or polyputties, is combined with additives that include, but are not limited to, fillers, promoters, or catalysts.

"Resin impregnator" means a mechanical nonatomized resin application method in which dry fiberglass fabric is fed down through a pair of finished metal rollers and the fabric is saturated with resins in a controlled fiber-to-resin ratio for each specific composite product.

"Resist coating" means a coating that is applied to a plastic part before metallic plating to prevent deposits of metal on portions of the plastic part.

"Rigid magnetic data storage disc" means a flat, circular, non-flexible plate with a magnetic coating on which digital information can be stored by selective magnetization of portions of the flat surface.

"Rim mounted secondary seal" means a secondary seal mounted on the rim of the floating roof of a storage tank. Rim mounted secondary seals are effective at reducing losses from the primary seal fabric.

"Rim seal system" means a closure device between the shell of the storage tank and the floating roof edge. A rim seal system may consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

"Rim vent" means a vent used on tanks equipped with a seal design, such as a mechanical shoe seal, that creates a vapor pocket in the seal and rim area. The vent is used to release excess pressure or vacuum that is present in the vapor space bounded by the primary-seal shoe, the floating roof rim, the primary seal fabric, and the liquid level. A rim vent usually consists of a weighted pallet that rests on a gasketed cover.

"Roll coat" means a method of applying a coating to a substrate by means of hard rubber, elastomeric, or metal rolls. A roll coat application is used for high viscosity coatings, particularly adhesives, and for small surface areas.

"Roll-out" means the process of using rollers, squeegees, or similar tools to compact reinforcing material saturated with resin to remove trapped air or excess resin.

"Roof drain" means a drain that permits the removal of rainwater from the surface of external floating roofs. A roof drain may be a closed drainage system that carries rainwater from the surface of the floating roof to the outside of the tank, or an open drainage system consisting of an open pipe that extends a short distance below the bottom of the deck allowing rainwater to drain from the surface of the floating roof into the organic liquid contents of the tank.

"Roof landing" means an event where the liquid level in a floating roof tank is lowered to the point where the floating roof is resting on its legs or is supported from above by cables or hangers, and is no longer floating on the surface of the stored liquid.

"Roof leg" means an adjustable or fixed leg that is attached to the floating roof deck to support or hold the floating roof deck at a predetermined distance off the tank bottom to prevent damage to the fittings located underneath the deck and to allow for tank cleaning or repair. For adjustable legs, the load-carrying element passes through a well or sleeve in the deck.

"Roof opening" means any opening through a floating roof of a storage tank for any deck fitting.

"Rotogravure printing operation (web-fed)" means a system of transferring images onto a substrate through first applying ink to a cylinder into the surface of which small, shallow cells have been etched forming an image or a pattern, then wiping the lands between the cells free of ink with a doctor blade, and finally contacting the substrate, which is fed from a continuous roll, over the cylinder so that the surface of the substrate is pressed into the cells, transferring the ink to the substrate. This term does not include proof presses which are being used to check the quality of the image formation of newly engraved or etched gravure cylinders.

"Rupture disc" means a type of pressure relief device which is designed to fracture, rupture, or burst under pressure when the pressure within the system exceeds a set level. Such a device is commonly a diaphragm held between flanges, which under conditions of normal operation remains intact and prevents gases from being released from the system.

"Safety-indicating coating" means a coating that changes physical characteristics, such as color, to indicate unsafe conditions.

"Screen printing operation" means a system of transferring images onto a substance in which the printing ink passes through a fabric to which a stencil has been applied. The openings in the stencil determine the form and dimensions of the imprint.

"Seal-envelope combination" means a barrier to the passage of VOC vapors between a floating roof and the inner surface of a storage vessel wall, consisting of a seal which maintains constant contact with the wall as the floating roof rises and descends with the level of the stored VOC, and a membrane, diaphragm, fabric, or blanket, known as an envelope, which spans the gap between the floating roof and the seal and which is vapor-tight.

"Sealer" means coatings containing binders that seal a wood surface prior to application of subsequent coatings.

"Secondary seal" means a seal mounted above the primary seal of a rim seal system that consists of two seals. Secondary seals can be shoe mounted or rim-mounted.

"Semiconductor wafer fabrication operation" means an operation performed in order to manufacture semiconductor or related solid state devices, such as semiconductor diodes and

stacks and including rectifiers, integrated microcircuits, transistors, solar cells, and light sensing and emitting devices. Semiconductor wafer fabrication excludes crystal growth and blank wafer production, circuit separation, assembly, and encapsulation.

"Semitransparent stain" means stains that contain dyes and/or semitransparent pigments and are formulated to enhance wood grain and to change the color of the surface, but not to conceal the surface; including sap stain, toner, nongrain raising stains, pad stain, spatter stain, and other semitransparent stains.

"Sheet-fed offset lithographic printing" means a non-heatset lithographic printing process in which individual pages of paper or other substrate are fed into the machine.

"Shipbuilding and repair coating" means the coating used during any building, repair, repainting, converting, or alteration of ships.

"Shock-free coating" means a coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being low capacitance and high resistance, and having resistance to breaking down under high voltage.

"Shoe mounted secondary seal" means a secondary seal mounted on the primary mechanical shoe. Shoe mounted secondary seals are effective at reducing vapor losses from the gaps between the shoe and the tank shell.

"Silicone-release coating" means a coating that contains silicon resin and is intended to prevent food from sticking to metal surfaces, such as baking pans.

"Simple cycle combustion turbine" means a combustion turbine that does not recover heat from its exhaust gases.

"Single-point vapor balance system" means a type of vapor balance system in which the storage tank is equipped with one entry port for a gasoline fill pipe and the same port is used as an exit port for vapor recovery. A single-point vapor balance system utilizes a coaxial drop tube that consists of a pipe within a pipe.

"Skin coat" means a layer of resin and fibers applied over the gel coat to protect the gel coat from being deformed by the next laminate layers. Skin coat is a type of production resin.

"Slop oil" means the floating oil and solids that accumulate on the surface of an oil-water separator.

"Small appliances" means devices used primarily in households and offices including, but not limited to, fans, mixers, blenders, dehumidifiers, toasters, toaster-ovens, slow pot cookers, food processors, portable heaters, lamps, typewriters, staplers, and paper punches.

"Small manufactured-components cleaning" means an industrial cleaning unit operation conducted to clean a small part as a step in the manufacturing process of that small

part. Small parts include, but are not limited to, circuit breaker cases, electrical contacts, engine components, glass windows, machined parts, molded parts, plastic parts, sheet metal panels, steel and copper components, subassemblies, switch covers, switches, threads and bolts, tin/silver-plated terminals, and upholstered parts.

"Small producer" means an operator, in the business of crude oil production, who:

1. Produces an average of less than 6,000 barrels per day of crude oil from all operations within the county; and

2. Does not engage in refining, transportation, or marketing of refined petroleum products.

"Solar-absorbent coating" means a coating that has as its prime purpose the absorption of solar radiation.

"Solid-film lubricant" means a very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene, or other solids that act as a dry lubricant between meeting surfaces.

"Solid particles" means particles of rigid shape and definite volume.

"Solvent/air interface" means, with respect to a solvent cleaning machine, the interface between the concentrated solvent vapor layer and the air. For a vapor cleaning machine, this contact point is defined as the plane at the mid-line height of the primary condenser coils. For a cold cleaning machine, this contact point is defined as the plane of contact between the liquid solvent and the air.

"Solvent cleaning machine" means a device or piece of equipment that uses solvent, in a liquid or vapor state, to remove contaminants, such as dirt, grease, oil, and coatings, from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, vapor cleaning machines, cold cleaning machines, and airless and air-tight cleaning systems.

"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.

"Source gas" means air or gases passed through, or generated by, a source operation and discharged from the source operation.

"Source operation" means any process or any identifiable part thereof that emits or can reasonably be anticipated to emit any air contaminant either directly or indirectly into the outdoor atmosphere. A source operation may include one or more pieces of equipment or control apparatus.

"Special purpose screen printing inks and coatings" means inks and coatings used in screen printing which are used to print ink transfers, or are designed to resist or withstand any of the following: more than two years of outdoor exposure, exposure to chemicals, solvents, acids, detergents, oil products or cosmetics, temperatures in excess of 170 degrees Fahrenheit, vacuum forming, embossing or molding.

"Spray booth cleaning" means an industrial cleaning unit operation conducted to clean all interior surfaces of a spray booth and all equipment within the booth including, but not limited to, conveyors, floor, grating, robots, and spray booth walls.

"Spray gun cleaning" means an industrial cleaning unit operation conducted to clean spray guns, attached paint lines, and any other gun equipment used in applying a coating.

"Stack or chimney" means a flue, conduit or opening designed, constructed or utilized for the purpose of emitting any air contaminant into the outdoor atmosphere.

"Standard conditions" means 70 degrees Fahrenheit ((F) (21.1 degrees Celsius ((C)) and one atmosphere pressure (14.7 pounds per square inch absolute or 760.0 millimeters of mercury).

"Standard Industrial Classification Code" or **"SIC Code"** means the system devised by the United States Office of Management and Budget to classify establishments according to the type of economic activity in which they are engaged.

"State implementation plan" or **"SIP"** means a plan for the attainment of any NAAQS, prepared by a state and approved by the EPA pursuant to Section 110 of the Clean Air Act (42 U.S.C., § 1857 et seq.).

"Stationary combustion turbine" means any simple cycle combustion turbine, regenerative cycle combustion turbine, or combustion turbine portion of a combined cycle steam/electric generating system that:

1. Is not self-propelled, but may be mounted on a vehicle for portability; or

2. Is self-propelled on tracks at a facility, but does not in the course of its normal operation leave the facility.

"Stationary reciprocating engine" means an internal combustion engine that is a reciprocating engine that remains for more than 30 days at a single site (for example, any building, structure, facility, or installation), but does not include a mobile electric generator being used by the military, a locomotive engine or a construction engine. A stationary reciprocating engine:

1. Is not self-propelled, but may be mounted on a vehicle for portability; or

2. Is self-propelled on rails at a facility, but does not in the course of its normal operation leave the facility.

"Steam generating unit" means any furnace, boiler, or other device which combusts fuel for the purpose of producing steam.

"Stencil coat (automotive/transportation/business)" means a coating that is applied over a stencil to a plastic automotive/transportation or business machine part at a thickness of one mil or less of coating solids, most frequently letters, numbers, or decorative designs.

"Stencil coating (metal and plastic)" means an ink or a pigmented coating that is rolled or brushed onto a template or stamp in order to add identifying letters, symbols, and/or numbers. "Stencil coating (metal and plastic)" does not include stencil coat (automotive/transportation/business).

"Storage tank" means any tank, reservoir, or vessel which is a container for liquids or gases, wherein:

1. No manufacturing process, or part thereof, other than filling or emptying takes place; and

2. The only treatment carried out is that necessary to prevent change from occurring in the physical condition or the chemical properties of the liquids or gases deposited into the container. Such treatment may include recirculating, agitating, maintaining the temperature of the stored liquids or gases, or replacing air in the vapor space above the stored liquids or gases with an inert gas in order to inhibit the occurrence of chemical reaction.

"Stripping" means the removal of cured coatings, inks, adhesives, or maskants. Examples include, but are not limited to, wood furniture stripping, metal parts stripping, and dry film stripper operations.

"Submerged fill pipe" means a fill pipe whose point of discharge into the receiving vessel is entirely submerged when:

1. The liquid level is no more than six inches (15.2 centimeters) above the vessel bottom; or

2. At a facility other than a gasoline dispensing facility, in the case of a top or side-entering fill pipe, when the liquid level is no more than three times the inside radius of the fill pipe plus five inches (12.7 centimeters), but no more than 42 inches (106.7 centimeters), above the vessel bottom.

"Superheated vapor system" means, with respect to a vapor cleaning machine, a system that heats the solvent vapor to a temperature that is at least ten degrees Fahrenheit above the

solvent's boiling point. In such a system parts are held in the superheated vapor and then exit the machine.

"Surface cleaner" means a device to remove unwanted foreign matter from the surfaces of non-porous or non-absorbent materials by using VOC solvents in liquid or vapor state.

"Surface coating formulation" means the material used to form a protective, functional, or decorative film including, but not limited to, paint, varnish, ink, or adhesive, applied to or impregnated into a substrate. This term includes such material whether used in a surface coating or graphic arts operation.

"Surface coating formulation as applied" or **"coating as applied"** means the volume, in gallons or liters, of any surface coating formulation used in a surface coating operation, including any diluents or thinners added.

"Surface coating operation" means the application of one or more surface coating formulations across an entire surface, using one or more coating applicators, together with any associated drying or curing areas. A single surface coating operation ends after drying or curing and before other surface coating formulations are applied. For any web coating line, this term means an entire coating application system, including any associated drying ovens or areas between the supply roll and take-up roll, that is used to apply surface coating formulations onto a continuous strip or web. This term does not include any graphic arts operation.

"Synthetic organic chemical or polymer" means one or more of the substances listed in Appendix I.

"Tablet coating" means the application of any surface coating formulation to a formed pharmaceutical product.

"Tank" means any container whose walls are constructed of material which is rigid and self-supporting.

"Tank battery" means, for crude oil production facilities, an aggregation of two or more tanks where the tanks are located so that no one tank is more than 150 feet from another tank as measured from the closest tank edges, and the tanks are located in the same crude oil production field. "Tank battery" means, for non-crude oil production facilities, an aggregation of two or more tanks located within the same facility, regardless of the distance of the tanks from each other.

"Temporary operating certificate" means an operating certificate with a term shorter than five years, issued pursuant to N.J.A.C. 7:27-8.7(d).

"Texture coat" means a coating that is applied to a plastic part that, in its finished form, consists of discrete raised spots of the coating.

"Thermal oxidizer" means a type of control apparatus which reduces the emission of air contaminants by subjecting the gases being emitted to elevated temperatures which cause the air contaminant molecules to decompose within an enclosed space. For the purposes of this subchapter, this term includes catalytic and non-catalytic thermal oxidizers.

"Tileboard" means an interior wall paneling product made of hardwood that is designed for use in high moisture areas, such as kitchens and bathrooms.

"Tooling gel coat" means the gel coat used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which molds will be made.

"Tooling resin" means the resin used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which molds will be made.

"Topcoat (craft)" means any final pleasure craft coating applied to the interior or exterior of a pleasure craft.

"Touch-up" means, for metal and plastic parts, that portion of the process that is necessary to cover minor imperfections. With respect to fiberglass boats, "touch-up" means the application of resin or gel coat to cover minor cosmetic imperfections that occur during fabrication or field installations.

"Touch-up coating" means a coating used to cover minor coating imperfections appearing after the main coating operation.

"Toxic substance" or **"TXS"** means a substance listed in Table 1 of N.J.A.C. 7:27-17.3.

"Transfer efficiency" means the percent by weight, on a dry basis, of the total coating solids applied to an object which adhere to the object.

"Transfer operation" means the moving of any substance from any storage tank, manufacturing process vessel, or delivery vessel into any receiving vessel.

"Translucent coating" means a coating that contains binders and pigment, and is formulated to form a colored, but not opaque, film.

"True vapor pressure" or **"TVP"** means the equilibrium partial vapor pressure exerted by an organic liquid at actual storage temperature.

"Underground storage tank" means any tank defined as such in N.J.A.C. 7:14B.

"Unihose" means, with respect to a gasoline dispenser at a gasoline dispensing facility, a dispenser which has only one hose and one nozzle per dispenser side which is used for dispensing all grades of gasoline.

"Unit operation" means an industrial operation classified or grouped according to its function in an operating environment. A unit operation may consist of one or more items of equipment, for example, both a reactor and a mixing vessel or several mixing vessels.

"Urethane coating" means the application of any surface coating formulation, except plastisol, to urethane coated fabric or urethane sheets that are more than 0.002 inches (50 micrometers) thick, except resilient floor covering and flexible packaging.

"Vacuum assist system" means a vapor recovery system that employs a pump, blower, or other vacuum-inducing device, to collect and/or process vapors at a subject facility.

"Vacuum bagging" means any molding technique in which the reinforcing fabric is saturated with resin and then covered with a flexible sheet that is sealed to the edge of the mold and where a vacuum is applied under the sheet to compress the laminate, remove excess resin, or remove trapped air from the laminate during curing. Vacuum bagging does not include processes that meet the definition of closed molding.

"Vacuum breaker" means a device used to equalize the pressure of the vapor space across the floating roof deck as the deck is either being landed on or floated off its legs.

"Vacuum-metalizing process" means an application process, also known as physical vapor deposition (PVD) process, whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

"Vacuum-metalizing coating (automotive/transportation/business machine)" means a topcoat or basecoat that is used in the vacuum-metalizing process for the surface coating of a plastic automotive/transportation or business machine part.

"Vacuum-metalizing coating (metal and plastic)" means the undercoat applied to the substrate on which metal is deposited or the overcoat applied directly to the metal film using a vacuum-metalizing or physical vapor deposition (PVD) process. "Vacuum-metalizing coating (metal and plastic)" does not include vacuum-metalizing coating (automotive/transportation/business machine).

"Vacuum service" means equipment operating at an internal pressure which is at least 0.725 pounds per square inch (37.5 millimeters of mercury) below ambient pressure.

"Valve" means a device that regulates or isolates the fluid flow in a pipe, tube, or conduit by means of an external actuator.

"Vapor" means the gaseous form of substances which, under standard conditions, are in the solid or liquid state and which can be changed to these states by either increasing the pressure or decreasing the temperature.

"Vapor balance system" means a system for controlling vapor losses during the transfer of a VOC liquid from one vessel to another vessel by means of the simultaneous counter-transfer of displaced vapors from the receiving vessel to the vessel supplying the liquid.

"Vapor cleaning machine" means a solvent cleaning machine that uses either solvent vapor generated by boiling liquid solvent or heated liquid solvent as part of the cleaning or drying cycle. This term includes both batch vapor cleaning machines and in-line vapor cleaning machines, but does not include cold cleaning machines and machines which do not have a solvent/air interface, such as airless and air-tight cleaning systems.

"Vapor-mounted primary seal" means a seal-envelope combination which is mounted so that underneath the seal there is an annular vapor space which is bounded by the bottom of the seal, the vessel wall, the liquid surface, and the floating roof.

"Vapor pressure" means the pressure of the vapor phase of a substance, or the sum of the partial pressures of the vapor phases of individual substances in a mixture of substances, when in equilibrium with the non-vapor phase of the substance or substances.

"Vapor recovery system" or **"vapor control system"** means a system for preventing the emission of organic vapors into the outdoor atmosphere.

"Vapor-tight" means not capable of allowing the passage of gases at the pressures encountered.

"Vapor up control switch" means, with respect to a vapor cleaning machine, a thermostatically controlled switch which shuts off or prevents condensate from being sprayed when there is no vapor. On in-line vapor cleaning machines the switch also prevents the conveyor from operating when there is no vapor.

"Vinyl coating" means the application of any surface coating formulation, except ink and plastisol, to vinyl-coated fabric or vinyl sheets.

"Vinylester resin" means a thermosetting resin containing esters of acrylic or methacrylic acids and having double-bond and ester linkage sites only at the ends of the resin molecules.

"Visible gap" means a gap of a deck fitting or roof opening of more than 1/8 inch (0.32 centimeters) between any gasket or seal and the opening that it is intended to seal.

"Volatile organic compound" or **"VOC"** means a volatile organic compound as that term is defined by the EPA at 40 CFR 51.100(s), as supplemented or amended, which is incorporated by reference herein.

"Voltage reduction" means a reduction in customer supply voltage of at least five percent by an electric distribution company in order to reduce load on an electric distribution system.

"Wash coat" means a coating containing binders that raise wood surfaces, prevent undesired staining, and control penetration.

"Web" means a surface coating operation where a continuous roll of substrate is fed.

"Wiper primary seal" means a continuous annular blade of flexible material (for example, rubber, urethane, or foam filled) fastened to a mounting bracket on the deck perimeter that spans the annular rim space and contacts the tank shell. A wiper seal system may consist of a single primary seal, or dual (multiple) seals where one seal is mounted above the other.

"Working mode cover" means, with respect to a solvent cleaning machine, any cover or other element of the machine's design that shields the machine's openings from outside air disturbances while parts are being cleaned in the machine.

"Worst case operating conditions" means the conditions of operation which result in the maximum VOC emission rate for any hour period for a continuous operation or the maximum VOC batch cycle emission rate for a batch operation, considering any enforceable limitations on the operation including those set forth in any applicable rule or regulation, permit, or operating certificate.

"Zero gap" means no gap between the tank shell and the seal shall exceed 0.06 inch. The cumulative length of all gaps exceeding 0.02 inch shall not be more than five percent of the circumference of the tank, excluding gaps less than 1.79 inches from vertical seams.

"Zero gap pole wiper seal" means a seal with no gap exceeding 0.06 inches between outer surface of the guidepole or gauge well and pole wiper seal.

7:27-16.1A Purpose, scope, applicability, and severability

(a) This subchapter establishes requirements and procedures concerning the control and prohibition of air pollution by volatile organic compounds (VOC). The general purposes of this subchapter are as follows:

1. To require any stationary source operation or group of source operations located at a facility to utilize reasonably available control technology (RACT) to control VOC emissions. RACT is the lowest emission limitation that a particular source is capable of meeting by the application of air pollution control technology and/or pollution prevention measures which are reasonably available considering technological and economic feasibility. Specific applicability thresholds are provided throughout the subchapter. Carbon monoxide limits are included for combustion sources, in order to control VOC emissions, which are also products of incomplete combustion; and

2. To establish standards and emission limits for certain vessels which contain VOCs and which may be carried or transported or are otherwise capable of being moved, including delivery vessels.

(b) As set forth at N.J.A.C. 7:27-17.4(c), this subchapter's requirements for the implementation of control measures, including, but not limited to requirements for the installation and use of control apparatus, or the use of compliant coatings, shall apply with full force to Group II TXS until the Department amends this rule in response to EPA rulemaking or otherwise.

(c) Whenever persons, equipment, control apparatus or any VOC subject to the provisions of this subchapter are also subject to the provisions of any other subchapters of this chapter, the requirements of the relevant provisions of this subchapter and all subchapters of this chapter will apply.

(d) Whenever a VOC subject to the emission rate provisions of this subchapter is also subject to the emission rate provisions of any other subchapters of the chapter, the relevant provisions of the subchapter requiring the lowest allowable rate will apply.

(e) Each owner and each operator of any equipment or source operation subject to this subchapter is responsible for ensuring compliance with all requirements of this subchapter. If there is more than one owner or operator of the equipment or source operation, each owner and each operator is jointly and severally liable for any penalties for violations of this subchapter.

(f) On and after April 25, 2004, no owner or operator of a source operation subject to a VOC emissions limit under this subchapter may comply with the limit through the use of discrete emission reduction (DER) credits.

(g)-(h) (Reserved)

(*i*) If any provision of this subchapter or the application thereof to any person or circumstance is adjudicated to be invalid or unenforceable to any extent, the remainder of this subchapter or its application to any person or circumstance other than those that are the subject of the adjudication shall continue to be unaffected by the adjudication.

7:27-16.2 VOC stationary storage tanks

(a) The provisions of this section shall apply to any stationary storage tank that stores only VOC, or that stores VOC and non-VOC, except as set forth in (e) and (f) below.

(b) No person shall cause, suffer, allow, or permit the following:

1. The storage of any applicable VOC in any stationary storage tank that has a maximum capacity of 2,000 gallons (7,570 liters) or greater and is exposed to the rays of the sun unless:

i. The external surface of the tank is painted and maintained white, except that this provision shall not apply to words and logograms applied to the external surface of the storage tank for purposes of identification provided such symbols do not cover more than 20 percent of the external surface area of the tank's sides and top or more than 200 square feet (18.6 square meters), whichever is less; or

ii. An equivalent method of emission control approved by the Department is used; and

2. The storage of any applicable VOC in any stationary storage tank having a maximum capacity of 10,000 gallons (37,850 liters) or greater unless, in addition to meeting the requirement in (b)1 above, such stationary storage tank is equipped with control apparatus as determined in accordance with the procedures for using Table 2A or as approved by the Department as being equally or more effective in preventing the emission of a VOC into the outdoor atmosphere.

Procedure for Using Table 2A

Step 1: Determine the vapor pressure at standard conditions in pounds per square inch absolute of the VOC to be stored.

Step 2: Select the appropriate line in Table 2A for the vapor pressure determined in Step 1.

Step 3: Determine the maximum tank capacity in thousands of gallons.

Step 4: Find the tank capacity range classification for the vapor pressure determined under Step 1.

Step 5: Determine the control requirements in accordance with the following:

Range I: No control apparatus required under this subsection.

Range II: Conservation vent required.

Range III: Floating roof required.

TABLE 2A
DETERMINANTS OF TYPE CONTROL APPARATUS REQUIRED FOR STORAGE OF VOLATILE ORGANIC COMPOUNDS

Vapor Pressure in PSIA @ 70˚F		**Tank Capacity in Thousands of Gallons**			
		Range I	**Range II**		**Range III**
Greater than	**But not Greater than**	**Not Greater than**	**Greater than**	**But not Greater than**	**Greater than**
* 0.02	0.03	4,500	4,500	14,000	14,000
0.03	0.04	4,500	4,500	11,000	11,000
0.04	0.06	3,500	3,500	8,000	8,000
0.06	0.08	2,500	2,500	6,000	6,000
0.08	0.10	2,000	2,000	4,500	4,500
0.10	0.15	1,600	1,600	3,500	3,500
0.15	0.2	1,050	1,050	2,500	2,500
0.2	0.3	750	750	1,600	1,600
0.3	0.4	550	550	1,250	1,250
0.4	0.5	475	475	1,075	1,075
0.5	0.6	400	400	900	900
0.6	0.7	350	350	750	750
0.7	0.8	300	300	650	650
0.8	1.0	260	260	550	550
1.0	1.2	210	210	475	475
1.2	1.4	190	190	400	400
1.4	1.6	170	170	350	350
1.6	1.8	150	150	300	300
1.8	2.1	125	125	260	260
2.1	2.4	110	110	225	225
2.4	2.7	100	100	200	200
2.7	3.0	90	90	180	180
3.0	3.5	80	80	160	160
3.5	4.0	70	70	145	145
4.0	4.5	60	60	130	130
4.5	5.0	50	50	115	115
5.0	5.5	50	50	105	105
5.5	6.0	50	50	95	95
6.0	6.5	40	40	85	85
6.5	7.0	40	40	75	75
7.0	7.5	40	40	70	70
7.5	8.0	35	35	65	65
8.0	8.5	35	35	60	60
8.5	9.5	30	30	55	55
9.5	10.5	25	25	50	50
10.5	11.5	20	20	45	45
11.5	13.0	10	10	40	40

* Any VOC which has a vapor pressure of 0.02 pounds per square inch absolute at standard conditions is included in this line.

(c) No person shall cause, suffer, allow, or permit the storage of any VOC having a vapor pressure of greater than 13.0 pounds per square inch absolute (672 millimeters of mercury) at the actual temperature existing at or near the liquid surface in any stationary storage tank having a maximum capacity of 1,000 gallons (3,785 liters) or greater unless such tank is equipped with a vapor control system to reduce the rate of VOC emissions to the outdoor atmosphere by at least 90 percent by weight of the uncontrolled VOC emissions from the tank.

(d) No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank subject to the provisions of either (b) above in Ranges II and III or (c) above and equipped with gauging and/or sampling systems unless such systems are vapor-tight.

(e) The provisions of (b) and (c) above shall not apply to a stationary storage tank in Range II located underground at a depth of no less than eight inches (20.3 centimeters) below the surface measured to the highest point of the tank shell, or installed in other manner approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere.

(f) The following exemptions apply:

1. The provisions of (b) above shall not apply to a stationary storage tank, if the tank is:

   i. Maintained under a controlled elevated temperature;

   ii. Equipped with a vapor control system reducing by at least 98 percent the weight of VOC emissions to the outdoor atmosphere; or

   iii. A pressurized storage tank designed to operate in excess of 15 pounds per square inch gauge (psig) without any emissions to the atmosphere except under emergency conditions.

2. Any of the following tanks shall be exempt from (q) below:

   i. Any fixed roof storage tank having a capacity of less than 40,000 gallons;

   ii. Any Range I fixed roof storage tank whose contents has a vapor pressure of less than or equal to two psia at standard conditions; and

   iii. Any Range I or Range II storage tank equipped with a floating roof.

3. Any external floating roof tank in Range III that was in existence on May 18, 2009, and that is not degassed and emptied by September 16, 2009 shall be temporarily exempt from complying with (*l*)1i below if the operator has

demonstrated to the Department that in order to properly bolt the covers for access hatches and gauge float wells, a flange or other comparable device must be welded to the fitting or other hot-work must be performed. The operator shall use equivalent means, such as clamping, to secure the covers during the interim period. However, the owner or operator must comply with (*l*)1i below the first time the tank is degassed and emptied after September 16, 2009.

4. Any external floating roof tank that contains more than 97 percent by volume crude oil or more than 97 percent by volume oily wastewater and/or slop oil regulated by 40 CFR Part 60, Supart QQQ, incorporated herein by reference, shall be exempt from (*l*)4 below, but shall comply with all other applicable requirements of this subchapter.

5. Any floating-roof tank shall not be required to meet the gap seal requirements at (*l*)3i through x below while the roof is resting on its legs during the processes of draining, degassing or refilling the tank.

6. Any floating roof tank subject to a Federally enforceable condition limiting its annual in-service roof landing VOC emissions to less than five tons as calculated by AP-42, Chapter 7, may be exempt from (p) below, at the owner or operator's discretion, provided that the owner or operator shall maintain the records of these calculations pursuant to (s) below and the tank's Operating Permit or Preconstruction Permit, as applicable.

7. Any floating roof tank subject to a Federally enforceable condition in its Operating Permit or Preconstruction Permit, as applicable, limiting the vapor pressure of its contents to less than 1.5 psia at standard conditions, shall be exempt from (p) below only if the tank's records, maintained pursuant to (s)1 below, show that the vapor pressure of the tank's contents is less than 1.5 psia under standard conditions.

8. Any external floating roof tank in Range III that is subject to (*l*)1vi below shall be exempt from (*l*)11 below.

9. Any tank at (b) above is exempt from the vapor-tight condition at (d) above when gauging or sampling is taking place. In addition, a floating roof tank, is exempt from the vapor-tight condition at (d) above when the condition at (n)1 or (*o*)1 below, as applicable, is met during refilling.

(g) (Reserved)

(h) No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank in Range III as determined by Table 2A equipped with an external floating roof, unless any such storage tank containing a VOC having a vapor pressure of 1.0 pounds per square inch absolute (50 millimeters of mercury) or greater at standard conditions and having a maximum capacity of 20,000 gallons (75,700 liters) or greater is

equipped with a double seal-envelope combination or equipment approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere. For the secondary seal, the gap area of gaps exceeding one-eighth inch (0.32 centimeters) in width between the seal and the tank wall shall not exceed 1.0 square inch per foot (6.5 square centimeters per 0.3 meters) of tank diameter. Any secondary seal shall be intact, with no visible holes, tears or other openings. The requirements of this subsection shall remain in effect for any such tank until the rim seal system requirements at (*l*)3 below become effective for that tank.

(*i*) (Reserved)

(j) Any delivery vessel that contains any applicable VOC and is located at a facility and is vented to the atmosphere for more than 30 consecutive days shall be considered a stationary storage tank for the purposes of this section.

(k) (Reserved)

(*l*) No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank unless the provisions of this subsection are met.

1. The owner or operator of an external floating roof tank in Range III shall, no later than September 16, 2009 or the first time the tank is emptied and degassed, whichever occurs first, if the tank was in existence on May 18, 2009, or on initial fill if the tank is constructed on or after May 19, 2009:

   i. Equip each access hatch with a cover that is gasketed and bolted. Equip each gauge float well with a cover that is either gasketed and weighted or gasketed and bolted. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access;

   ii. Equip each gauge hatch/sample well with a cover that is gasketed. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access;

   iii. Gasket or cover each adjustable roof leg with a VOC impervious sock at all times when the roof is floating;

   iv. Gasket each rim vent. Rim vents shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting;

   v. Gasket each vacuum breaker. Vacuum breakers shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off or is being landed on the roof leg supports;

vi. Equip each open floating roof drain with a slotted membrane fabric cover or other device with an equivalent control efficiency that covers at least 90 percent of the area of the opening;

vii. Equip each unslotted guidepole well with a gasketed sliding cover and a flexible fabric sleeve or wiper;

viii. Equip each unslotted guidepole with a gasketed cover at the end of the pole. The cover shall be closed at all times, with no visible gaps, except when gauging or sampling;

ix. Equip each slotted guidepole with a gasketed cover, a pole wiper and a pole sleeve. The pole sleeve shall be extended into the stored liquid;

x. Equip each slotted guidepole having a pole float with a gasketed cover, a pole wiper, and a pole float wiper. The wiper or seal of the pole float shall be at or above the height of the pole wiper;

xi. Cover each slotted guidepole opening with a gasketed cover at all times, with no visible gaps, except when the cover must be opened for access;

xii. Maintain the pole float in a condition such that it floats within the guidepole at all times except when it must be removed for sampling or when the tank is empty;

xiii. Except for vacuum breakers and rim vents, ensure that each opening in the external floating roof shall provide a projection below the liquid surface; and

xiv. Except for vacuum breakers, rim vents, roof drains, and leg sleeves, equip all other openings in the roof with a gasketed cover or seal that is closed at all times, with no visible gaps, except when the cover or seal must be opened for access.

2. In lieu of complying with the requirement of no visible gap at (*l*)1i, ii, iv, v, viii, xi and xiv above, the owner or operator of an external floating roof tank in Range III may, no later than September 16, 2009 if the tank was in existence on May 18, 2009, or on initial fill if the tank is constructed on or after May 19, 2009, maintain all roof openings in a leak-free condition at all times except during preventive maintenance, repair, or inspection periods specified at (r) below.

3. The owner or operator of an external floating roof tank in Range III shall equip the tank with a rim seal system meeting the following requirements prior to the initial fill if the tank was constructed on or after May 19, 2009, or prior to the date

the tank is refilled after being degassed for the first time after May 19, 2009, but no later than May 1, 2020 if the tank was in existence on May 18, 2009:

i. The primary seal shall be a mechanical shoe or liquid mounted;

ii. The secondary seal shall be rim mounted and shall not be attached to the primary seal;

iii. Gaps between the tank shell and the primary seal shall not exceed 1.3 centimeters (1/2 inch) for a cumulative length of 30 percent of the circumference of the tank, and 0.32 centimeters (1/8 inch) for 60 percent of the circumference of the tank. No gap between the tank shell and the primary seal shall exceed 3.8 centimeters (1-1/2 inches). No continuous gap between the tank shell and the primary seal greater than 0.32 centimeters (1/8 inch) shall exceed 10 percent of the circumference of the tank;

iv. Gaps between the tank shell and the secondary seal shall not exceed 0.32 centimeters (1/8 inch) for a cumulative length of 95 percent of the circumference of the tank. No gap between the tank shell and the secondary seal shall exceed 1.3 centimeters (1/2 inch);

v. Mechanical shoe primary seals shall be installed so that one end of the shoe extends into the stored organic liquid and the other end extends a minimum vertical distance of 61 centimeters (24 inches) above the stored organic liquid surface;

vi. The geometry of the shoe shall be such that the maximum gap between the shoe and the tank shell is no greater than doubled the gap allowed by the seal gap criteria specified in (*l*)3iii above for a length of at least 46 centimeters (18 inches) in the vertical plane above the liquid surface;

vii. The primary seal envelope shall be made available for unobstructed inspection by the Department, upon request, along its circumference. In the case of riveted tanks with resilient filled primary seals, at least eight such locations shall be made available; for all other types of seals, at least four such locations shall be made available. If the Department deems it necessary, further unobstructed inspection of the primary seal may be required to determine the seal's condition along its entire circumference;

viii. The secondary seal shall be installed in a way that permits probes up to 3.8 centimeters (1-1/2 inches) in width to be inserted to measure gaps in the primary seal;

ix. There shall be no holes, tears or openings in the secondary seal or in the primary seal envelope surrounding the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal; and

x. Except during preventive maintenance, repair, or inspection periods specified at (r) below that do not exceed 72 hours, both the primary seal and the secondary seal shall cover the annular space between the floating roof and the wall of the storage tank in a continuous fashion, as required at (*l*)3iii and iv above.

4. If an external floating roof tank in Range III stores any VOC with vapor pressure three pounds per square inch absolute or greater at standard conditions, the tank shall be equipped with a domed roof before the tank is refilled after the first time the tank is degassed after May 19, 2009, but no later than May 1, 2020 if the tank was in existence on May 18, 2009, or on initial fill if the tank is constructed on or after May 19, 2009.

5. The owner or operator of a domed external floating roof tank in Range III that is already in operation as of May 19, 2009 shall, prior to the date the tank is refilled after being degassed the first time after May 19, 2009, but no later than May 1, 2020:

i. Comply with (*l*)1i through xiv above;

ii. Equip the tank with a rim seal system consisting of either:

(1) A liquid-mounted primary seal meeting the requirements for primary seals at (*l*)3iii, vii and x above and having no tears or openings; or

(2) A primary and a secondary seal meeting the requirements at (*l*)3i through x above, including compliance dates, except that:

(A) A mechanical shoe primary seal shall have one end extend a minimum vertical distance of 15 centimeters (six inches) above the stored organic liquid surface and the other end extend into the liquid a minimum of 10 centimeters (four inches) instead of meeting the requirement at (*l*)3v above; and

(B) A vapor-mounted wiper primary seal may be used on a tank with a shell that has riveted or lap-welded horizontal seams instead of the liquid mounted or mechanical shoe primary seal required at (*l*)3i above; and

iii. Ensure that the concentration of organic vapor in the vapor space above the domed external floating roof does not exceed 30 percent of its lower explosive limit.

6. If, on or after May 19, 2009, the owner or operator adds a domed roof to an external floating roof tank in Range III, at the time the owner or operator adds the domed roof the owner or operator shall:

i. Equip the tank with a rim seal system consisting of primary and secondary seals meeting the specifications and compliance dates listed at (*l*)3 above; and

ii. Ensure that the concentration of organic vapor in the vapor space above the domed external floating roof does not exceed 30 percent of its lower explosive limit.

7. On or before the date an internal floating roof tank in Range III is refilled after being degassed for the first time after May 19, 2009, but no later than May 1, 2020, if the tank was in existence on May 18, 2009, or on initial fill if the tank is constructed on or after May 19, 2009 the owner or operator of the tank shall:

i. Equip each fixed roof support column and well with a sliding cover that is gasketed or with flexible fabric sleeves;

ii. Equip each ladder well with a gasketed cover. The cover shall be closed at all times, with no visible gaps, except when the well must be opened for access;

iii. Equip and maintain other roof openings according to the specifications at (*l*)1 or 2 above;

iv. Equip the tank with a rim seal system consisting of either:

(1) A liquid-mounted primary seal meeting the requirements for primary seals at (*l*)3iii, vii and x above and having no tears or openings; or

(2) A primary and a secondary seal meeting the requirements at (*l*)3i through x above, except that:

(A) A mechanical shoe primary seal shall have one end extend a minimum vertical distance of 15 centimeters (six inches) above the stored organic liquid surface and the other end extend into the liquid a minimum of 10 centimeters (four inches) instead of meeting the requirement at (*l*)3v above; and

(B) A vapor-mounted wiper primary seal may be used on a tank with a shell that has riveted or lap-welded horizontal seams instead of the liquid mounted or mechanical shoe primary seal required at (*l*)3i above;

v. For an internal floating roof installed prior to July 23, 1984, ensure that the concentration of organic vapor in the vapor space above the internal floating roof shall not exceed 50 percent of its lower explosive limit; and

vi. For an internal floating roof installed after July 23, 1984, ensure that the concentration of organic vapor in the vapor space above the internal floating roof shall not exceed 30 percent of its lower explosive limit.

8. Any VOC stationary storage tank in Range III as determined from Table 2A shall meet one of the following:

i. If the tank was constructed or installed on or after December 17, 1979, the tank shall be provided with a double seal floating roof or other control apparatus approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere. This requirement shall remain in effect for any such tank until (*l*)3, 5, 6 or 7 above becomes applicable for that tank; or

ii. If the tank was constructed or installed prior to December 17, 1979, the requirements of (*l*)3, 5, 6 or 7 above shall apply as applicable.

9. By September 16, 2009 if a Range III fixed-roof tank without an internal floating roof was in existence on May 18, 2009, or by the initial fill if a tank is constructed on or after May 19, 2009, the owner or operator shall:

i. Equip any gauging or sampling device on the tank with a leak-free cover which shall be closed at all times, with no visible gaps, except during gauging or sampling;

ii. Maintain the fixed roof in a leak-free condition with no holes, tears or uncovered openings; and

iii. Install and maintain each roof opening in a leak-free condition at all times.

10. No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank in Range I or II as determined by Table 2A equipped with an external floating roof, unless any such storage tank containing a VOC having a vapor pressure of 1.0 pounds per square inch absolute (50 millimeters of mercury) or greater at standard conditions and having a maximum capacity of 20,000 gallons (75,700 liters) or greater is equipped with a double seal-envelope

combination or equipment approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere. For the secondary seal, the gap area of gaps exceeding one-eighth inch (0.32 centimeters) in width between the seal and the tank wall shall not exceed 1.0 square inch per foot (6.5 square centimeters per 0.3 meters) of tank diameter. Any secondary seal shall be intact, with no visible holes, tears or other openings.

11. No person shall cause, suffer, allow, or permit the storage of any VOC in any stationary storage tank equipped with an external floating roof unless all openings in such roof, excluding emergency roof drains, are covered when not in active use. The tank shall be exempt from this paragraph if the tank meets the exemption criteria at (f)7 above.

(m) If a tank is equipped with an external or internal floating roof, the roof shall float on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled.

(n) When performing a roof landing of an external floating roof tank:

1. When the roof is resting on the leg supports or suspended by cables or hangers, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible; and

2. Any in-service roof landing shall be with the landed height of the floating roof at its minimum setting.

(*o*) When performing a roof landing of an internal floating roof tank:

1. When the roof is resting on its leg supports or suspended by cables or hangers, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible; and

2. After the tank is refilled after being degassed for the first time after May 19, 2009, any in-service roof landing shall be with the landed height of the floating roof at its minimum setting.

(p) The owner or operator of any floating roof tank, not exempt pursuant to (f)6 or (f)7 above, used to store a VOC shall:

1. Submit a complete facility-wide tank VOC control plan to the Department for approval at the address listed at (v) below as follows:

i. For any floating roof tank not exempt pursuant to (f)6 above, and existing as of May 19, 2009, submit to the Department in writing the complete facility-wide tank VOC control plan by December 1, 2009; or

ii. For any new tank, excluding a tank exempt pursuant to (f)6 above, added to a facility, submit to the Department in writing a new or updated complete facility-wide tank VOC control plan by 120 days after the installation of the newly constructed tank(s);

2. Include in the facility-wide tank VOC control plan, for all floating roof tanks, except those floating roof tanks exempt pursuant to (f)6 above, the information in (p)2i and ii below or (p)2i and iii below, as applicable:

i. A list of each tank at the facility and the following for each tank:

(1) The tank type;

(2) The tank volume;

(3) The tank diameter;

(4) The tank contents;

(5) The permit activity number;

(6) Any other identifying numbers; and

(7) The Bureau of Release Prevention schedule for tank inspection.

ii. A schedule to implement one or more of the following emission controls, which must be implemented by May 19, 2019. This schedule shall be consistent with the facility's schedule for tank removal from service for normal inspection and maintenance and with the facility's schedule for the installation of any new tank(s):

(1) A tank configuration such that the bottom of the roof deck can be lowered to one foot or less from the top-most point of the surface of the tank floor;

(2) A method that routes all vapors from the tank to a vapor control device with a control efficiency of at least 90 percent, from the time the roof is landed until it is within 10 percent by volume of being refloated; or

(3) Other measures approved by the Department as being equally or more effective in preventing VOC emissions to the outdoor atmosphere.

iii. An emissions averaging plan to operate all Range III floating roof tanks that store gasoline, except those tanks exempt pursuant to (f)6 above, such

that their average annual in-service roof landing VOC emissions, as calculated in accordance with Chapter 7.1.3.2.2 "Roof Landings" of AP-42, as supplemented or amended and incorporated herein by reference, or as calculated using another method approved by the Department in accordance with (v) below, and after applying any applicable control efficiencies, is less than:

(1) Five tons per tank per calendar year from 2011 through 2013;

(2) Four tons per tank per calendar year from 2014 through 2016;

(3) Three tons per tank per calendar year from 2017 through 2019; and

(4) Two tons per tank per calendar year in 2020 and subsequent years.

(q) On and after May 1, 2010, any part of a degassing and cleaning operation of a stationary storage tank performed during the period May 1 through September 30 shall be performed only as follows:

1. The owner or operator shall degas a tank storing a VOC with a vapor pressure equal to or greater than 0.5 psia at standard conditions as follows:

i. Empty the tank of the VOC liquid;

ii. Minimize VOC vapors in the tank vapor space by one of the following methods:

(1) Exhaust VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency until the organic vapor concentration is 5,000 parts per million by volume (ppmv) or less as methane, or is 10 percent or less of the lower explosive limit, whichever is less;

(2) Displace VOCs contained in the tank vapor space to a vapor control system rated at a minimum 95 percent efficiency by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or

(3) If the tank is a free-water knockout tank, a person may degas the tank vapor space by restricting the outflow of water and floating off the oilpad, such that at least 90 percent of the tank volume is displaced;

iii. Discharge or displace the VOC vapors contained in the tank vapor space to a vapor control system that is vapor-tight and free of liquid leaks; and

iv. As appropriate, temporarily remove for no longer than one hour, a suitable tank fitting, such as a manway, to facilitate connection to an external vapor control system.

2. The owner or operator shall clean a tank storing a VOC with vapor pressure equal to or greater than 0.5 psia at standard conditions only if:

i. At least one of the following cleaning agents is used:

(1) Diesel fuel;

(2) A solvent with an initial boiling point of greater than 302 degrees Fahrenheit;

(3) A solvent with a vapor pressure less than 0.5 psia;

(4) A solvent with 50 grams per liter VOC content or less; or

(5) Some other Department-approved cleaning agent; or

ii. Steam cleaning is performed.

3. The owner or operator shall control emissions from the sludge removed from a tank that stores a VOC with a vapor pressure equal to or greater than 1.5 psia at standard conditions by:

i. During sludge removal, controlling emissions from the receiving vessel by operating a vapor control system that reduces VOC emissions by at least 95 percent;

ii. Transporting removed sludge in containers that are vapor-tight and free of liquid leaks; and

iii. Storing removed sludge, until final disposal, in containers that are vapor-tight and free of liquid leaks, or in tanks that comply with (b) above.

(r) The owner or operator of a VOC stationary storage tank in Range III shall have an inspection performed by an authorized inspector and maintain the tank as follows:

1. The findings of any tank inspection, whether completed or not, shall be recorded on the Inspection Form at N.J.A.C. 7:27-16 Appendix II, incorporated herein by reference, in accordance with the rule's requirements. If an inspection is stopped

before completion, indicate the reason for this action in section J "Comments" of the Inspection Form;

2. During the inspection, the authorized inspector performing the inspection must have a copy of the relevant portions of the Preconstruction Permit or the Operating Permit pertinent to the tank being inspected. The authorized inspector shall compare the permit to the existing tank and actual operating conditions of the tank. The authorized inspector shall record any discrepancies between the permit equipment description and the existing tank, or the permit conditions and the actual operating conditions of the tank, as verified during an inspection, in section J "Comments" of the Inspection Form;

3. Annually inspect the ground level periphery of each tank for possible leaks in the tank shell. Complete section D "Ground Level Inspection" of the Inspection Form;

4. Annually complete all necessary calculations and record all required data accordingly in the Inspection Form and Fugitive Emissions Form at N.J.A.C. 7:27-16 Appendix II;

5. For an external floating roof tank in Range III, demonstrate compliance with (*l*)1 through 3 above, as applicable, by:

   i. Annually, from the platform, visually inspecting the roof to check for permit and rule violations, and visually checking the roof for unsealed roof legs, open hatches, open emergency roof drains, or open vacuum breakers. Indicate presence of any tears in the fabric of the visible seal. Record the findings under section F of the Inspection Form;

   ii. Annually, inspecting the deck fittings for visible gaps using the 1/8 inch probes, or inspecting the deck fittings for a leak-free condition using EPA Method 21 set forth at 40 CFR Part 60 Appendix A, as supplemented or amended and incorporated herein by reference or, instead of EPA Method 21, using another method approved by the Department. Record any leaks above 500 ppm in the Fugitive Emissions Form;

   iii. Annually, inspecting the entire secondary seal for the gap requirements at (*l*)3iv above using the 1/8 inch, 1/2 inch, and 1-1/2 inch probes. Record the gap data in section F(4) of the Inspection Form. Record all cumulative gaps between 1/8 inch and 1/2 inch, between 1/2 inch and 1-1/2 inch, and in excess of 1-1/2 inches, in section G of the Inspection Form. Measure all secondary seal gaps greater than 1/2 inch for length and width, and record in section J "Comments" of the Inspection Form; and

   iv. Every five years and each time the tank is degassed, inspecting the entire primary seal for the gap requirements at (*l*)3iii above using the 1/8 inch,

1/2 inch and 1-1/2 inch probes. The primary seal shall be inspected by holding back the secondary seal. Record the gap data in section F(5) of the Inspection Form. Record all cumulative gaps between 1/8 inch and 1/2 inch; between 1/2 inch and 1-1/2 inch; and in excess of 1-1/2 inches, in section G of the Inspection Form;

6. For a domed external floating roof tank in Range III existing as of May 19, 2009, demonstrate compliance with (*l*)5 above, by:

   i. Annually, using an explosimeter, measuring the organic vapor concentration in the vapor space above the floating roof in terms of the lower explosive limit (LEL), and recording the reading in section E of the Inspection Form;

   ii. Annually, from an opening in the domed or fixed roof, visually inspecting the roof to check for permit and rule violations, and visually checking the roof for unsealed roof legs, open hatches, open emergency roof drains, or open vacuum breakers. Indicate presence of any tears in the fabric of the visible seal. Record the findings under section F of the Inspection Form; and

   iii. Each time the tank is degassed, but no less than once every 10 years, performing the requirements at (r)5ii (excluding EPA Method 21), iii and iv above;

7. For a domed external floating roof tank in Range III that had a dome installed after the operative date of these new rules, demonstrate compliance with (*l*)6 above, by performing the requirements at (r)6 above;

8. For an internal floating roof tank in Range III, demonstrate compliance with (*l*) above, by performing the requirements at (r)6 above;

9. For a fixed roof tank in Range III that is subject to (*l*)9 above, annually demonstrate compliance with (*l*)9 above by inspecting the fittings located on the roof, piping, pressure relief valves and all other valves, to ensure they are leak-free using EPA Method 21 set forth at 40 CFR Part 60 Appendix A incorporated herein by reference, or using another method approved by the Department. Record any readings in excess of 500 ppm in the Fugitive Emissions Form;

10. The owner or operator of any VOC stationary storage tank in Range III shall repair or replace any piping, valve, vent, seal, gasket, or cover of a roof opening that:

   i. Is defective;

   ii. Has a visible gap or is not leak-free; or

iii. Does not meet any applicable requirement of this section; and

11. The owner or operator of a VOC stationary storage tank in Range III shall perform the repair or replacement at (r)10 above:

i. If the tank is already degassed, prior to filling; or

ii. If the tank is not degassed, within 45 days after discovery of the needed repair or replacement. If the repair cannot be completed and the vessel cannot be emptied within 45 days, the owner or operator may use up to two extensions of up to 30 additional days each. Documentation of the owner or operator's decision to use an extension shall include a description of the failure, shall document that alternative storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be completely emptied as soon as practicable.

(s) The owner or operator shall maintain on-site, for each tank, for the time period specified at N.J.A.C. 7:27-16.22(a), unless another time period is specified below:

1. Records that specify each VOC stored and the vapor pressure of each VOC at standard conditions;

2. For the owner or operator of a floating roof tank, records of the roof landing emission information required at N.J.A.C. 7:27-21.5(j)1;

3. If the owner or operator of a floating roof tank has not implemented all control measures pursuant to the tank VOC control plan submitted pursuant to (p) above, or if a floating roof tank is exempt pursuant to (f)5 above, the records of each floating roof landing event including, but not limited to, tank contents before landing and after refilling; landed height of the floating roof; height of any liquid remaining in the bottom of the tank after landing; duration of landing; landing emissions calculated using AP-42, Chapter 7 methodology, and any other records needed to create the "Floating Roof Landing Emission Summary Report" required at N.J.A.C. 7:27-21.5(j)2;

4. Records relating to the installation of vapor control devices described at (t) below;

5. For the lifetime of the tank, all inspection reports required pursuant to (r) above;

6. Records of all tank degassing, cleaning and sludge removal activities performed pursuant to (q) above;

7. Records of all tank integrity testing schedules for Range III tanks that N.J.A.C. 7:1E-4.2(c)1v requires to be included in the "Discharge, Prevention, Containment and Countermeasure Plan; and

8. Repair and replacement documentation required at (r)11ii above.

(t) On and after May 19, 2009, the owner or operator of any floating roof stationary storage tank that installs a vapor control device in accordance with (p)2ii above shall record operating parameters as follows:

1. For a thermal oxidizer, the owner or operator shall record the following on a continuous basis or at a frequency approved by the Department:

   i. The operating temperature at the exit of the combustion chamber;

   ii. The carbon monoxide concentration in the flue gas emitted to the outdoor atmosphere; and

   iii. Upon request of the Department, any other operating parameter relevant to the prevention or control of air contaminant emissions from the tank or the oxidizer;

2. For a vapor control system that uses carbon or other adsorptive material, the owner or operator shall record the following on a continuous basis or at a frequency approved in writing by the Department:

   i. The concentration of the total applicable VOCs in the flue gas emitted to the outdoor atmosphere; or

   ii. Provided that the owner or operator confirms daily that the automatic switching between carbon beds is functioning in accordance with permit conditions, the date of carbon bed replacement; and upon request of the Department, any other operating parameter relevant to the prevention or control of air contaminant emissions from the tank or the adsorber; and

3. For any other vapor control device, upon request of the Department, any operating parameter relevant to the prevention or control of air contaminant emissions from the tank or that vapor control device.

(u) If, during an inspection required at (r) above, or at any other time, the owner or operator determines that a tank does not comply with (*l*) above, the owner or operator shall submit a written report to the Department including the cause of the non-compliance, corrective actions to achieve compliance and measures taken to prevent a re-occurrence of the non-compliance. If the facility has an operating permit, in accordance with N.J.A.C. 7:27-22, the owner or operator shall include this report as part of the periodic compliance reports required at N.J.A.C. 7:27-22.19(d) and (f). If the facility does not have an operating

permit, the owner or operator shall submit this report to the Department within three business days after becoming aware of the non-compliance.

(v) An owner or operator that seeks Department approval for an alternate method for calculating a tank's roof landing emissions pursuant to (p)2iii above shall:

1. Prepare an application that includes:

i. A description of the proposed alternate method;

ii. The parameters in the alternate method; and

iii. Supporting documentation that justifies the use of the alternate method; and

2. Submit a complete application in writing to the Department at:

Department of Environmental Protection
Division of Air Quality
Air Quality Permitting Program
Bureau of Air Permits
401 East State Street
Mail Code 401-02
PO Box 0420
Trenton, NJ 08625-0420

7:27-16.3 Gasoline transfer operations

(a) This section shall apply to any gasoline transfer operation and to the storage, transportation, and dispensing of gasoline for the refueling of vehicles or for use in any other type of operation including, but not limited to, agricultural, aviation, industrial, commercial, construction, and marine operations.

(b) This section shall not apply to the following:

1. The loading of gasoline as cargo into a marine tank vessel. Marine tank vessel loading operations that occur in New Jersey or in New Jersey coastal waters are subject to the provisions at N.J.A.C. 7.27-16.5;

2. The transfer of gasoline into a stationary storage tank during construction ballasting; and

3. The transfer of gasoline into or from portable fuel containers.

(c) No person shall cause, suffer, allow, or permit the transfer of gasoline into a receiving vessel having a maximum capacity of 2,000 gallons (7,570 liters) or greater, unless the following requirements are met:

1. The transfer is made:

   i. Through a submerged fill pipe. If the receiving vessel is a stationary storage tank (either above ground or underground), the submerged fill pipe shall be permanently affixed to the tank; or

   ii. By some other means approved by the Department as being equally or more effective in reducing total applicable VOC emissions into the outdoor atmosphere during transfer; or

2. The manufacturing process vessel was installed before December 17, 1979.

(d) Except as provided in (*i*) below, no person shall cause, suffer, allow, or permit the transfer of gasoline from a delivery vessel into any stationary storage tank having a maximum capacity of 2,000 gallons (7,570 liters) or greater unless the storage tank meets the requirements of N.J.A.C. 7:27-16.2. The storage tank shall either have a floating roof or be equipped and operating with all of the following Phase I vapor recovery system emission controls:

1. A Phase I vapor recovery system that reduces the total applicable VOC emissions into the outdoor atmosphere by no less than 98 percent of the concentration of applicable VOC by volume in the air-vapor mixture displaced during the transfer of gasoline;

2. A pressure/vacuum relief vent valve on each atmospheric vent;

3. A CARB-certified Phase I EVR system pressure/vacuum relief vent valve. A Phase I vapor recovery system installed before December 23, 2017, shall comply with this paragraph on or before December 23, 2018; and

4. A CARB-certified Phase I EVR system, including a dual point vapor balance system, the components of which shall have been approved in one or more CARB-certified Phase I EVR System executive orders in effect at the time of installation, but the components need not all be approved in the same executive order. A Phase I vapor recovery system installed before December 23, 2017, shall comply with this paragraph on or before December 23, 2024, except:

   i. A Phase I vapor recovery system that is using a single-point vapor balance system installed before December 23, 2017, is not required to replace the single-point vapor balance system with a dual-point vapor balance system. The CARB-certified Phase I EVR System Executive Order requirements

for rotatable adapters shall not apply to a gasoline dispensing facility using a single-point vapor balance system.

(e) The owner or operator of a gasoline dispensing facility with an existing Phase II vapor recovery system for the transfer of gasoline into any gasoline-laden vehicular fuel tank shall either:

1. Decommission the system on or before December 23, 2020, in accordance with (h) below and maintain the system in accordance with the requirements of this section until the decommissioning is completed; or

2. For a Phase II vapor recovery system that is ORVR-compatible, either:

i. Decommission the system in accordance with (h) below; or

ii. Maintain the system in accordance with the requirements of this section.

(f) Except as provided in (e) above, the owner or operator of an existing gasoline dispensing facility with an existing Phase II vapor recovery system shall ensure that:

1. The transfer of gasoline into any gasoline-laden vehicular fuel tank is made using a vapor recovery system that is approved by the Department and that reduces the total applicable VOC emissions into the outdoor atmosphere by no less than 95 percent of the concentration of applicable VOC by volume in the air-vapor mixture displaced during the transfer of gasoline;

2. The vapor recovery system is one of the following:

i. A Phase II vapor recovery system that is CARB-certified;

ii. A Phase II vapor recovery system that was certified by CARB prior to July 25, 2001, for which all replacement parts/equipment/components and all subsequent construction modifications:

(1) Are approved in an Executive Order or approval letter issued by CARB on or after July 25, 2001; and

(2) Do not decrease the VOC emission control efficiency of the system; or

iii. A Phase II vapor recovery system that is equivalent for the purpose of VOC emission control to a CARB-certified Phase II vapor recovery system and that is approved by the Department and the EPA;

3. Each dispensing device at a gasoline dispensing facility meets the following requirements:

i. Each nozzle shall have a check valve located in the nozzle;

ii. At a facility with a vacuum assist vapor control system, each nozzle shall be equipped with a splash-guard that prevents spillage during refueling; and

iii. Each dispensing device and its nozzle(s) shall be designed to be compatible, such that:

(1) The nozzle together with its vapor boot fits into the housing in which it is hung on the dispensing device; and

(2) The nozzle's vapor check valve remains in the closed position when the nozzle is properly hung on the dispensing device.

(g) Except as provided in (*i*) below, the owner or operator of a gasoline dispensing facility with a stationary storage tank greater than or equal to 2,000 gallons (7,570 liters) shall ensure that:

1. During the transfer of gasoline into any gasoline-laden vehicular fuel tank, any person refueling a vehicle prevents overfilling and spillage and does not allow the transfer of gasoline to continue after the nozzle automatic shut-off point;

2. At a gasoline dispensing facility that was constructed on or after June 29, 2003, and for which the Department issued a construction permit after June 29, 2003, each dispensing device that dispenses more than one grade of gasoline utilizes a unihose system for dispensing gasoline;

3. At a gasoline dispensing facility without a Phase II vapor recovery system, each nozzle is a CARB-certified enhanced conventional (ECO) nozzle in accordance with CARB certification procedure CP-207, as amended or supplemented. If no nozzle is CARB-certified at the time of the installation, decommissioning, or nozzle replacement, a conventional nozzle may be installed.

i. A gasoline dispensing facility installed before December 23, 2017, shall comply with this paragraph as a part of the decommissioning of a Phase II system, and each time a nozzle is replaced thereafter; and

4. At a gasoline dispensing facility without a Phase II vapor recovery system, each dispenser hose is a CARB-certified low permeation hose in accordance with CARB certification procedures CP-201 and CP-207, as amended or supplemented.

i. A gasoline dispensing facility installed before December 23, 2017, shall comply with this paragraph as a part of the decommissioning of a Phase II system, and each time a dispenser hose is replaced thereafter.

(h) The decommissioning of a Phase II vapor recovery system shall be conducted in accordance with the following:

1. Petroleum Equipment Institute document PEI/RP300-09 "Recommended Practices for Installation and Testing of Vapor-Recovery Systems at Vehicle-Fueling Sites" (available at www.pei.org), incorporated herein by reference, as amended or supplemented, which includes the testing set forth at Table 3A below, and (j) below, as applicable;

2. The decommissioning of a Phase II vapor recovery system shall be conducted or supervised by an individual who is certified by the Department in underground storage tank installation or closure and who also works for a certified firm in accordance with N.J.A.C. 7:14B-13, except neither a certified individual nor a certified firm is required for decommissioning testing performed in accordance with PEI requirements and Table 3A below;

3. All underground piping and/or condensate traps associated with the decommissioned vapor recovery system that are not removed at the time of decommissioning shall be removed at such time in the future that they become exposed as a part of a modification to the gasoline dispensing facility, or if the system fails a static pressure performance test as required in (j) below and the leak is associated with the vapor recovery system underground piping system;

4. At least 14 days prior to commencing work to decommission, the owner or operator of the gasoline dispensing facility shall notify the Department by e-mail to 14dayUSTnotice@dep.nj.gov and include the name, address, and registration number of the facility, name and contact information for the owner and operator, the name and contact information of the certified individual and business conducting the decommissioning, and the date on which the decommissioning is scheduled to begin; and

5. Within 14 days after decommissioning is complete, the owner or operator of the gasoline dispensing facility shall notify the Department by e-mail to 14dayUSTnotice@dep.nj.gov and include the name, address, and registration number of the facility, name and contact information for the owner and operator, the name and contact information of the certified individual and business conducting the decommissioning, the date on which the decommissioning was conducted and a decommissioning checklist in accordance with PEI/RP300-09, or a checklist that may be amended by the Department as applicable.

(*i*) The provisions of (d)3 and 4 and (g)2, 3, and 4 above do not apply to a gasoline dispensing facility installed before December 23, 2017, if:

1. The vapor recovery system and refueling equipment subject to (d) and (g) above is used exclusively for the refueling of marine vehicles, unless the equipment identified in (d)3 or 4 or (g)2, 3, or 4 above is being replaced; or

2. The vapor recovery system and refueling equipment subject to (d) and (g) above is used exclusively for the refueling of aircraft, unless the equipment identified in (d)3 or 4 or (g)2, 3, or 4 above is being replaced.

(j) The owner or operator of a gasoline dispensing facility shall perform tests to demonstrate that the facility's vapor recovery systems or equipment are performing properly, as follows:

1. Each test set forth in Table 3A below that is applicable to the facility shall be conducted in accordance with the schedule for testing given in the Table;

2. Each test required to be performed pursuant to (j)1 above shall be conducted utilizing the applicable CARB test method cited in Table 3A below, or utilizing some other method approved by the Department and the EPA. A copy of the test methods cited in Table 3A above is available at www.arb.ca.gov/vapor/vapor.htm;

3. At least 14 days prior to performing any tests, the owner or operator of the gasoline dispensing facility shall notify the Department by e-mail to 14dayUSTnotice@dep.nj.gov and include the name, address, and registration number of the facility, name and contact information for the owner and operator, the name and contact information of the business conducting the testing, and the date on which the testing is scheduled to begin;

4. On the day of the test, any corrective action, repairs, or equipment replacement made to the vapor recovery system shall be recorded with the test results on the documentation of the test results;

5. A vapor recovery system or equipment shall be deemed to have passed a test conducted pursuant to (j)1 above, if it meets the applicable performance standards and specifications that are set forth in CARB's Vapor Recovery Certification Procedures and/or Test Procedures, including all subsequent revisions thereto, which are incorporated herein by reference. A copy of CARB's Vapor Recovery Certification and Testing Procedures may be downloaded from CARB's website at https://www.arb.ca.gov/vapor/vapor.htm;

6. If the vapor recovery system or equipment at a gasoline dispensing facility fails any test required to be performed pursuant to (j)1 above, the owner or operator of the facility shall:

i. Notify the Department in writing within 72 hours of the failure. Such notification shall be submitted to the Department by e-mail to 14dayUSTnotice@dep.nj.gov and include the name, address, and registration number of the facility, name and contact information for the owner and operator, the name and contact information of the business conducting the testing, the date the testing was conducted, and the results of the testing using the forms in the applicable CARB method; and

ii. Have the system repaired and retested within 14 days of failure of the test and record any repairs on the documentation of the test results;

7. If the vapor recovery system or equipment at a gasoline dispensing facility fails any retesting required to be performed pursuant to (j)1 above, the owner or operator of the facility shall:

i. Notify the Department in writing within 72 hours of the failure. Such notification shall be submitted to the Department by e-mail to 14dayUSTnotice@dep.nj.gov and include the name, address, and registration number of the facility, name and contact information for the owner and operator, the name and contact information of the business conducting the testing, the date the testing was conducted, and the results of the testing using the forms in the applicable CARB method; and

ii. Have the system repaired and retested in accordance with a compliance plan approved by the Department;

8. The owner or operator of the gasoline dispensing facility shall maintain a record of the performance of each of the tests, and of the results obtained, in accordance with (t) below;

9. Upon the request of the Department, the owner or operator of a gasoline dispensing facility shall provide the testing documentation and results required pursuant to (j)8 above and (t) below to the Department, either at the facility or to the Department's offices, as specified by the Department; and

10. Upon the request of the Department, the owner or operator of a gasoline dispensing facility shall demonstrate the efficiency of the facility's vapor recovery system in reducing the total applicable VOC emissions released from the facility into the outdoor atmosphere, as required pursuant to (d)1 and/or (f)1 above, in accordance with test procedures or documentation approved by the Department.

Table 3A
Testing for Gasoline Dispensing Facilities

Test	Applicability	Testing Schedule	Test Method
Static Pressure Performance Test	Applies to any facility required to have a vapor recovery system under (d) above or that decommissions a vapor recovery system under (h) above	Within 90 days from the date of installation of the system, at least once in every 12-month period thereafter, and as part of decommissioning	CARB TP-201.3* for underground storage tanks and CARB TP-206.3B for aboveground storage tanks, as applicable, including all subsequent revisions thereto, which are incorporated herein by reference
Pressure Vacuum Vent Valve Test	Applies to any facility required to have a vapor recovery system under (d) above or that decommissions a vapor recovery system under (h) above	Within 90 days from the date of installation of the system, at least once in every 12-month period thereafter, and as part of decommissioning	CARB TP-201.1E, including all subsequent revisions thereto, which are incorporated herein by reference
Dynamic Backpressure Performance Test	Applies to any facility that has a Phase II vapor recovery system under (f) above	Within 90 days from the date of installation of the system and at least once in every 36-month period thereafter	CARB TP-201.4, including all subsequent revisions thereto, which are incorporated herein by reference
Air to Liquid Volume Ratio Test	Applies to any facility that has a Phase II vacuum assist vapor recovery system under (f) above	Within 90 days from the date of installation of the system and at least once in every 36-month period thereafter	CARB TP-201.5, including all subsequent revisions thereto, which are incorporated herein by reference
Torque Test	Applies to any facility that has rotatable adapters under (d) above	Within 90 days from the date of installation of the system and at least once in every 12-month period thereafter	CARB TP-201.1B, including all subsequent revisions thereto, which are incorporated herein by reference
Tie-Tank Test	Applies to any facility that decommissions a Phase II vapor recovery system under (h) above	As part of decommissioning	CARB TP-201.3C, including all subsequent revisions thereto, which are incorporated herein by reference

*In CARB TP-201.3, the compliance equation for a Phase II vacuum assist system with one to six nozzles shall be used for a gasoline dispensing facility with a Phase I vapor recovery system and no Phase II vapor recovery system.

This compliance equation for a Phase I vapor recovery system is also included in CARB's Vapor Recovery Certification Procedure CP-201.

(k) No person shall cause, suffer, allow, or permit a delivery vessel having a maximum capacity of 2,000 gallons (7,570 liters) or greater, except if it is a railroad tank car or marine tank vessel, to contain gasoline unless:

1. The delivery vessel sustains a pressure change of less than three inches of water (six millimeters of mercury) in five minutes when pressurized to 18 inches of water (34 millimeters of mercury) and evacuated to six inches of water (11 millimeters of mercury);

2. Pressure and vacuum tests are performed on the delivery vessel at least once in every 12-month period, in accordance with test procedures specified by the Department, to determine whether or not the requirements of (k)1 above are met;

3. A certification is affixed to the delivery vessel in a prominent location, which indicates the identification number of the vessel and the date the vessel last passed the pressure and vacuum tests; and

4. A record of certification is kept with the delivery vessel at all times and made available upon request by the Department. The record of certification shall include the name and address of the delivery vessel owner; the delivery vessel identification number; and, for each test performed, the test method used, the testing location, date of test, tester's name and signature, and test results.

(*l*) No person shall cause, suffer, allow, or permit a transfer of gasoline, to or from a delivery vessel, if the transfer is subject to the provisions of (d) above, and (m) or (n) below, and if the delivery vessel being loaded is under a pressure in excess of 18 inches of water (34 millimeters of mercury) gauge or the delivery vessel being unloaded is under a vacuum in excess of six inches of water (11 millimeters of mercury) gauge.

(m) Except as provided in (q) below, no person shall cause, suffer, allow, or permit the transport or transfer of gasoline in a delivery vessel having a maximum capacity of 2,000 gallons (7,570 liters) or greater unless such vessel is vapor-tight at all times while containing any VOC, except during:

1. Emergency conditions;

2. Gauging; or

3. Venting through a vapor control system approved by the Department.

(n) No person shall cause, suffer, allow, or permit the transfer of gasoline or any other substance into a gasoline vapor laden delivery vessel having a maximum capacity of 2,000 gallons (7,570 liters) or greater, unless:

1. The transfer operation is conducted at a gasoline loading facility equipped with a vapor control system that meets the requirement of (*o*) below, the vapor control system is properly connected to the delivery vessel, and the vapor control system is properly operated throughout the duration of the transfer operation; or

2. The delivery vessel is being used for the purpose of holding gasoline from a storage tank during a period in which the storage tank is undergoing repair or maintenance and the duration of this use is limited to less than one month.

(*o*) No person shall cause, suffer, allow, or permit the transfer or loading of gasoline or any other substance into any gasoline vapor laden delivery vessel except at a gasoline loading facility that is equipped and operating with a vapor control system in accordance with the following provisions:

1. At a facility where the daily loading rate does not exceed 15,000 gallons (56,775 liters) of gasoline per day, as determined in accordance with (*o*)3 below, the facility shall be equipped and operating with a vapor balance system or some other vapor control system of equal or higher efficiency. Such vapor balance system shall not have a vent that is open to the atmosphere during transfer and shall not return the vapors to a tank equipped with a floating roof;

2. At a facility where the daily loading rate exceeds, or may exceed, 15,000 gallons (56,775 liters) of gasoline per day, as determined in accordance with (*o*)3 below, the facility shall be equipped and operating with a vapor control system which:

   i. Prevents applicable VOC emissions to the outdoor atmosphere from exceeding the maximum allowable emissions as determined from Table 3B below; or

   ii. Reduces the total applicable VOC emissions to the outdoor atmosphere by no less than 90 percent by weight; and

3. For the purposes of (*o*)1 and 2 above, a gasoline loading facility's daily loading rate shall be its average daily rate during the month in which the facility had its highest monthly throughput in the last 12 months of operation.

TABLE 3B

EMISSION STANDARDS FOR GASOLINE LOADING FACILITIES LOADING MORE THAN 15,000 GALLONS (56,775 LITERS) PER DAY

Concentration of Applicable VOC in Gas Displaced from Delivery Vessel, Volume Percent		**Maximum Allowable Emissions per Volume Unit Loaded**	
Greater Than	**But Not Greater Than**	**Pounds per Ten Thousand Gallons**	**Milligrams per Liter**
50	--	6.7	80
40	50	5.8	70
30	40	5.0	60
20	30	4.2	50
15	20	3.8	45
0	15	3.3	40

(p) Except as provided in (q) below, no person shall cause, suffer, allow, or permit any transfer of gasoline, subject to the provisions of (d), (f), (n), or (*o*) above, if:

1. The delivery vessel being loaded or unloaded, or the vapor control system or other equipment serving the transfer operation, has:

   i. A vapor leak which results in a concentration of applicable VOC greater than or equal to 100 percent of the lower explosive limit of propane, when measured at a distance of 1.0 inch (2.54 centimeters) or less from the location of the leak; or

   ii. A liquid leak;

2. Any component of the delivery vessel designed for preventing the release of gasoline vapors is not installed and operating as designed; or

3. Commencing or continuing the transfer would result in a liquid gasoline spill.

(q) A delivery vessel subject to the provisions of (k) above that is found to be in violation of (m) or (p) above shall be:

1. Repaired and a new certification, in accordance with (k)3 and 4 above, shall be affixed to the delivery vessel within 15 days; or

2. Removed from service until (m) and (p) above are met in full.

(r) No person shall cause, suffer, allow, or permit the transfer of gasoline at a gasoline loading facility, into or from a delivery vessel, or at a gasoline dispensing facility that is required to have a vapor control system pursuant to (d), (f)1, (n), or (o) above unless:

1. The vapor control system is designed to meet the applicable requirements in (d), (f), (n), or (o) above;

2. All hoses, piping, connections, fittings and manholes serving the vapor control system are vapor-tight and free of liquid leaks, except when gauging or sampling is being performed.

3. The vapor control system, including any component thereof, is maintained in proper operating condition and kept free of defects that could impair the effectiveness of the system;

4. The vapor control system is constructed out of materials that will not become degraded when exposed to any grade of gasoline which may be stored, transferred, and/or dispensed; and

5. The vapor control system is operated properly whenever gasoline is stored, transferred, and/or dispensed.

(s) (Reserved)

(t) The owner or operator of a gasoline dispensing facility shall maintain the following records at the facility:

1. A record of the monthly throughput of gasoline;

2. If the facility is required to test a vapor control system pursuant to (j) above:

i. Documentation of the performance of each test required pursuant to (j) above, including the date, the name of the testing company, and the test method used; and

ii. A record of the results of each test performed pursuant to (j) above.

(u) The owner or operator of a gasoline loading facility with a vapor control system pursuant to (*o*) above shall maintain the following records at the facility.

1. On a daily basis, record the total quantity, in gallons or liters, loaded into delivery vessels at the facility;

2. On a continuous basis or at a frequency approved by the Department in writing:

i. For any thermal oxidizer used to control the emission of applicable VOCs, record the operating temperature at the exit of the combustion chamber and the carbon monoxide concentration in the flue gas emitted to the outdoor atmosphere; or

ii. For a vapor control system using carbon or other adsorptive material, record the concentration of the total applicable VOCs in the flue gas emitted to the outdoor atmosphere; or, provided that the owner or operator confirms daily that the automatic switching between carbon beds is functioning in accordance with permit conditions, record the date of carbon bed replacement; and

3. Upon the request of the Department and at the frequency specified by the Department, record any other operating parameter relevant to the prevention or control of air contaminant emissions from the facility.

7:27-16.4 VOC transfer operations, other than gasoline

(a) On and after July 26, 1994, the provisions of this section shall apply to any transfer of an applicable VOC, except:

1. The transfer of gasoline. Gasoline transfer operations are subject to the provisions of N.J.A.C. 7:27-16.3; and

2. The loading of applicable VOC as cargo into a marine tank vessel. Marine tank vessel loading operations occurring in New Jersey or in New Jersey's coastal waters are subject to the provisions of N.J.A.C. 7:27-16.5.

(b) No person shall cause, suffer, allow or permit the transfer of any applicable VOC into any receiving vessel having a maximum capacity of 2,000 gallons (7,570 liters) or greater unless such transfer is made through a submerged fill pipe or by other means approved by the Department as being equally or more effective in preventing the emission of any VOC into the outdoor atmosphere during transfer. Such submerged fill pipe shall be permanently affixed to any underground storage tank of 2,000 gallons (7,570 liters) or greater total capacity into which the VOC is transferred. This subsection shall not apply to a transfer to a manufacturing process vessel installed before December 17, 1979.

(c) On and after May 31, 1995, no person shall cause, suffer, allow, or permit the transfer of any applicable VOC from a delivery vessel into any stationary storage tank having a maximum capacity of 2,000 gallons (7,570 liters) or greater and having a total calculated annual emission rate over 1,000 pounds of applicable VOC as determined pursuant to (d) below unless the storage tank is equipped with and operating one of the following control apparatus:

1. A vapor control apparatus which reduces by no less than 90 percent the concentration of applicable VOC in the air-vapor mixture displaced during the transfer of applicable VOC;

2. A floating roof; or

3. A vapor balance system with:

   i. All atmospheric vents positively closed during transfer;

   ii. A conservation vent adjusted to remain closed during transfer; or

   iii. A hole of 1/4 inch (6.4 millimeters) or less in diameter in the cap on the atmospheric vent.

(d) For the purposes of (c) above, the total calculated annual emission rate for each tank shall be determined in accordance with the following procedure:

1. Calculate the emission factor for each applicable VOC as follows:

$$EF = 0.000024 \times VP \times MW$$

Where:

EF = the emission factor for each applicable VOC being transferred (lb/gal);

VP = the vapor pressure (psia) of each applicable VOC. If the VOC is heated, this term is the vapor pressure of the VOC at the temperature at the point of transfer; if the VOC is not heated, this term is the vapor pressure of the VOC at standard conditions;

MW = the molecular weight of the applicable VOC (lb/lb-mole); and

0.000024 = a constant to convert units;

2. Determine the calculated annual emission rate by multiplying each emission factor calculated in (d)1 above, by the annual quantity, in gallons, of each applicable VOC transferred from delivery vessels into the tank. Sum the calculated annual emission rates for each applicable VOC transferred. For a storage tank for which a permit is in effect, the annual quantity of each applicable VOC transferred shall be considered to be the maximum quantity allowed by the permit. For a storage tank for which no permit is in effect, the annual quantity of applicable VOC transferred shall be the quantity that was transferred during the previous calendar year (from January 1 through December 31); and

3. Compare the total calculated annual emission rate to 1,000 pounds. If the total calculated annual emission rate for the tank is less than 1,000 pounds, this section does not require the use of any control apparatus, except as specified in (b) above. Otherwise, one of the control apparatus described in (c) above must be used.

(e) The provisions of (c) above shall not apply to a storage tank during construction ballast if an applicable VOC is used.

(f) On and after May 31, 1995, no person shall cause, suffer, allow, or permit the transfer of any applicable VOC into any delivery vessel, except railroad tank cars, from a tank having a maximum capacity of 2,000 gallons (7,570 liters) or greater and having a total calculated annual emission rate over 2,000 pounds of applicable VOC from transfer operations, as determined pursuant to (g) below, unless the transfer is directly from a tank equipped with a floating roof or unless any such delivery vessel is connected to one of the following control apparatus:

1. A vapor control apparatus which reduces by no less than 90 percent by weight the total VOC emissions to the outdoor atmosphere; or

2. A vapor balance system with all atmospheric vents positively closed during transfer. Such vapor balance system shall not return the vapors to any tank equipped with a floating roof.

(g) For the purposes of (f) above, the total calculated annual emission rate of applicable VOC transferred into delivery vessels from each tank shall be determined in accordance with the following procedure:

1. Calculate the emission factor for each applicable VOC transferred from the storage tank to regulated delivery vessels as follows:

$$EF = 0.000024 \times VP \times MW$$

Where:

EF = the emission factor for each applicable VOC being transferred (lb/gal);

VP = the vapor pressure (psia) of each applicable VOC. If the VOC is heated, this term is the vapor pressure of the VOC at the temperature at the point of transfer; if the VOC is not heated, this term is the vapor pressure of the VOC at standard conditions;

MW = the molecular weight of the applicable VOC (lb/lb-mole); and

0.000024 = a constant to convert units;

2. Determine the calculated annual emission rate by multiplying each emission factor calculated in (g)1 above, by the annual quantity (in gallons) of each applicable VOC transferred into delivery vessels at the regulated facility. Sum the calculated annual emission rates for each applicable VOC transferred. For a facility for which a permit is in effect, the annual quantity of each applicable VOC transferred shall be considered to be the maximum quantity allowed by the permit. For a facility for which no permit is in effect, the annual quantity of applicable VOC transferred shall be the quantity that was transferred during the previous calendar year (from January 1 through December 31); and

3. Compare the total calculated annual uncontrolled emission rate resulting from the total transfers from the storage tank to 2,000 pounds. If the calculated annual emission rate is less than 2,000 pounds, this section does not require the use of any control apparatus, except as specified in (b) above. Otherwise, one of the control apparatus described in (f) above must be used.

(h) The provisions of (f) above shall not apply to:

1. A delivery vessel used for less than 30 days for the purpose of holding VOC from a storage tank during a period in which the storage tank is undergoing repair or maintenance;

2. A delivery vessel used in groundwater remediation operations for temporary storage and handling of VOC contaminated groundwater and recovered VOC; and

3. Vacuum trucks used for equipment clean-out or other clean-up operations.

(*i*) On and after May 31, 1995, no person shall cause, suffer, allow, or permit any tank truck having a maximum capacity of 2,000 gallons (7,570 liters) or greater to contain applicable VOC unless such tank truck is certified to comply with DOT regulations concerning inspection and pressure testing, codified at 40 CFR 180.407. A record of DOT certification shall be kept with the delivery vessel at all times.

(j) On and after May 31, 1995, no person shall cause, suffer, allow, or permit a transfer to or from a tank truck of applicable VOC, which transfer is subject to the provisions of (c) or (f) above, if the tank truck being loaded is under a pressure in excess of 18 inches of water (34 millimeters of mercury) gauge or the tank truck being unloaded is under a vacuum in excess of six inches of water (11 millimeters of mercury) gauge. This provision shall not apply to the loading or unloading of applicable VOC that is typically stored or transferred at elevated pressure, or under vacuum, into or from a delivery vessel that is designed for pressure or vacuum service.

(k) No person shall cause, suffer, allow, or permit any transfer of applicable VOC, which transfer is subject to the provisions of (c) or (f) above, if any components of the delivery vessel designed for preventing the release of applicable VOC vapors are not installed and operating as designed. Any loading or unloading transfer operations must cease immediately if:

1. On and after May 31, 1995, the delivery vessel being loaded or unloaded, any control apparatus or other equipment serving the transfer operation has a leak that:

i. Results in a concentration of VOC greater than or equal to 100 percent of the lower explosive limit of propane when measured at a distance within 1.0 inch (2.54 centimeters) of the source; or

ii. Is a liquid leak; or

2. The transfer results or would result in a liquid leak of applicable VOC.

(*l*) On and after May 31, 1995, no person shall cause, suffer, allow, or permit the transport or storage of any applicable VOC in a delivery vessel having a maximum capacity of 2,000 gallons (7,570 liters) or greater unless such vessel, while containing any applicable VOC, is vapor-tight at all times, except during:

1. Sample collection;

2. Emergency conditions;

3. Gauging; or

4. Venting through a vapor control apparatus approved by the Department.

(m) After a leaking tank truck, subject to the provisions of (*i*), (k) or (*l*) above is repaired, the owner or operator shall test the delivery vessel before it is loaded with applicable VOC. A record of the repair and test shall be maintained with the delivery vessel for one year.

(n) Any owner or operator of a facility with transfer operations subject to the provisions of (c) or (f) above shall comply with the following schedule:

1. By October 26, 1994, submit to the Chief, Bureau of New Source Review, Environmental Regulation Program, Department of Environmental Protection, CN 401, Trenton, New Jersey 08625-0401, a complete application for each permit required, pursuant to N.J.A.C. 7:27-8, to achieve compliance with (c) or (f) above; and

2. By May 31, 1995, achieve compliance with (c) or (f) above and maintain compliance with this section thereafter.

(*o*) The owner or operator of any VOC loading facility subject to (f) above shall maintain the following records:

1. On a daily basis, record the name and total quantity of each applicable VOC, in gallons or liters, loaded into delivery vessels at the facility;

2. On a continuous basis or at a frequency approved by the Department in writing:

i. For any thermal oxidizer used to control the emission of VOCs, record the operating temperature at the exit of the combustion chamber and the carbon monoxide concentration in the flue gas emitted to the outdoor atmosphere; or

ii. For any control apparatus using carbon or other adsorptive material, record the concentration of the total VOC in the flue gas emitted to the outdoor atmosphere or record the date of carbon bed the replacement and, on a daily basis, check the functioning of the automatic system for switching between carbon beds; and

3. Upon request of the Department and at a frequency specified by the Department, record any other operating parameter relevant to the prevention or control of the emission of air contaminants from the facility.

(p) Upon the request of the Department, any owner or operator utilizing a vapor control system pursuant to (c)1 or (f) above shall demonstrate to the satisfaction of the Department achievement of the required control efficiency through testing performed when the ambient air temperature is 70 degrees Fahrenheit (21 degrees Celsius) or greater, unless the Department, in writing, approves the performance tests at a lower ambient temperature.

(q) After receipt of a written request from an owner or operator for an extension of the deadline set forth in (n)1 above, the Department may authorize a 60-day renewable extension upon showing of good cause. Such extension may be renewed by the Department upon the written request of the owner or operator. Approval of such an extension shall not constitute approval of extension of the May 31, 1995 deadline established in (n)2 above. Written requests for the extension of a deadline submitted pursuant to this subsection shall be addressed to:

Assistant Director, Air and Environmental Quality Enforcement
Division of Enforcement Field Operations
Department of Environmental Protection
P.O. Box 422
401 East State Street, 4th Floor
Trenton, New Jersey 08625-0422

7:27-16.5 Marine tank vessel loading and ballasting operations

(a) The provisions of this section apply to the following marine tank vessel operations conducted at marine terminals in New Jersey:

1. The transfer of applicable VOC, including gasoline, as cargo into a marine tank vessel; and

2. Ballasting conducted in a marine tank vessel, unless the ballasting is conducted in dedicated ballast tanks that never contain anything other than water.

(b) The owner or operator of any marine terminal having an annual throughput of 6,000,000 gallons (22,710,000 liters) or greater for loading gasoline as cargo into marine tank vessels or having a daily throughput, between May 1 and September 30, of 60,000

gallons or greater for loading gasoline as cargo into marine tank vessels shall install and operate a control apparatus, which reduces the total VOC emissions to the outdoor atmosphere resulting from gasoline transfers at the facility by no less than 95 percent by weight.

(c) The owner or operator of any marine terminal that meets the following criteria shall install and operate a control apparatus, which reduces the total VOC emissions to the outdoor atmosphere resulting from applicable VOC transfers at the facility by no less than 95 percent by weight, or shall, by October 26, 1994, submit to the Department a written alternative emission control plan in accordance with N.J.A.C. 7:27-16.17 that shall be implemented in accordance with a schedule in the plan approved in accordance with N.J.A.C. 7:27-16.17:

1. The marine terminal is a major VOC facility;

2. A transfer of some applicable VOC that is not gasoline is conducted at the marine terminal; and

3. Any of the source operations at the terminal which include the transfer of some applicable VOC that is not gasoline has the potential to emit 10 tons per year or more of VOC.

(d) Effective on July 26, 1994, the Department shall not approve an application for a permit for equipment or control apparatus, required pursuant to (b) or (c) above, unless:

1. The system has been designed to collect and control the emissions of applicable VOC resulting from ballasting; or

2. The potential to emit VOC from ballasting is limited to less than two pounds of VOC per 1,000 barrels of ballast transferred.

(e) Effective on July 26, 1994, if a marine tank vessel and marine terminal is equipped with a control apparatus, no person shall cause, suffer, allow, or permit ballasting to be conducted on a marine tank vessel at a marine terminal, unless:

1. The ballasting is conducted in dedicated ballast tanks that only use water;

2. The control apparatus is used during ballasting; or

3. The potential to emit VOC from ballasting is less than two pounds of VOC per 1,000 barrels of ballast transferred.

(f) Effective on July 26, 1994, no person subject to the provision of (b) above, and effective May 31, 1995, no person subject to (c) above, shall cause, suffer, allow, or permit any transfer of any applicable VOC, or ballasting if:

1. The delivery vessel being loaded, any control apparatus or other equipment serving the transfer operation has a leak that:

   i. Results in a concentration of VOC greater than or equal to 100 percent of the lower explosive limit of propane when measured at a distance of 1.0 inch (2.54 centimeters) or less from the source; or

   ii. Is a liquid leak of applicable VOC;

2. Any component of the marine tank vessel or any control apparatus serving the source operation is not installed and operating as designed; or

3. The transfer results or would result in a liquid VOC spill.

(g) Monitoring for gaseous leaks of VOC shall be conducted according to EPA's Reference Method 21 (40 CFR-Part 60-Appendix A), incorporated herein by reference, or any other equivalent test method approved in advance in writing by the Department and acceptable to EPA.

(h) Any testing to determine VOC emissions during the transfer of VOC to a marine tank vessel, conducted in order to determine compliance with this section, shall be performed for at least 60 minutes during the transfer of the last 50 percent of total liquid cargo. For a transfer operation for which the transfer of the last 50 percent of the total liquid cargo is less than a 60 minute duration, the testing shall be performed during the transfer of the entire last 50 percent of the total liquid cargo.

(*i*) Any tests conducted pursuant to this section to determine emissions of VOC shall be carried out in accordance with:

1. New Jersey Air Test Method 3 (N.J.A.C. 7:27B-3);

2. EPA's Reference Method 25 or 25(a) (40 CFR-Part 60-Appendix A); or

3. Any other equivalent test method approved in advance in writing by the Department and acceptable to EPA.

(j) Effective on July 26, 1994, the owner or operator of a marine terminal subject to (b) or (c) above shall maintain at the marine terminal records sufficient to demonstrate compliance with this section. Any records required by this section shall be made available to the Department upon request and shall be maintained for five years. For each transfer of gasoline or other applicable VOC to the marine tank vessel and for performance of ballasting on a marine tank vessel at the marine terminal, the records shall include the following information:

1. The company name and address of the marine terminal;

2. The date;

3. The name and registry of the marine tank vessel;

4. For any transfer operation, the type of VOC and the quantity, in gallons or liters, loaded into the marine tank vessel;

5. The prior cargo carried by the marine tank vessel and the condition (that is, cleaned, crude oil washed, gas freed, etc.) of the cargo tanks on the marine tank vessel prior to their being loaded or ballasted; and

6. For ballasting, the amount of ballast water or other liquid added to ballast tanks which are unsegregated and which may contain VOC vapor.

(k) It is an affirmative defense to liability for a violation of any of the provisions of this section that compliance would have any of the following effects:

1. Require any act or omission that would be in violation of any statute or regulation over which the United States Coast Guard has jurisdiction; or

2. Prevent an act that was necessary to secure the safety of a vessel or the safety of the passengers or crew.

7:27-16.6 Open top tanks and solvent cleaning operations

(a) This section applies to open top tanks and surface cleaners that contain VOC and to solvent cleaning operations.

(b)-(*i*) (Reserved)

(j) The following provisions apply to a cold cleaning machine, that uses two gallons or more of solvents containing greater than five percent VOC content by weight for the cleaning of metal parts, and to any heated cleaning machine:

1. No person shall add solvent to a cold cleaning machine or a heated cleaning machine, or cause, suffer, allow, or permit the machine to be operated, unless the following requirements are met:

i. If the machine is an immersion cold cleaning machine or heated cleaning machine, it shall have:

(1) A freeboard ratio of 0.75 or greater; and

(2) A visible fill line and a high level liquid mark;

ii. The machine shall have a permanent, conspicuous label placed in a prominent location on the machine setting forth the applicable provisions of the operating requirements in (j)2 below; and

iii. The machine shall be equipped with:

(1) A tightly fitting working-mode cover that completely covers the machine's opening and that shall be kept closed at all times except when parts are being placed into or being removed from the machine or when solvent is being added or removed. For a remote reservoir cold cleaning machine which drains directly into the solvent storage reservoir, a perforated drain with a diameter of not more than six inches shall constitute an acceptable cover; and

(2) If the machine is a heated cleaning machine, a thermostat;

2. A person shall operate a cold cleaning machine or a heated cleaning machine in accordance with the following procedures:

i. The solvent level in the machine shall not exceed the fill line when there are no parts in the machine for cleaning and shall not exceed the high level liquid mark during cleaning operations;

ii. Flushing of parts with a solvent spray, using a spray head attached to a flexible hose or other flushing device, shall be performed only within the freeboard area of the machine. The solvent spray shall be a continuous fluid stream, not an atomized or shower spray, and shall be under a pressure that does not exceed ten pounds per square inch gauge;

iii. Parts being cleaned shall be drained for at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts shall be positioned so that solvent drains directly back into the machine;

iv. When the machine's cover is open, the machine shall not be exposed to drafts greater than 40 meters per minute (132 feet per minute), as measured between one and two meters (between 3.3 and 6.6 feet) upwind and at the same elevation as the tank lip;

v. Sponges, fabric, leather, paper products and other absorbent materials shall not be cleaned in the machine;

vi. When a pump-agitated solvent bath is used, the agitator shall be operated to produce a rolling motion of the solvent with no observable splashing of

solvent against the tank walls or the parts being cleaned. Air agitated solvent baths may not be used;

vii. Spills during solvent transfer and use of the machine shall be cleaned up immediately, and the wipe rags or other sorbent material used shall be immediately stored in covered containers for disposal or recycling;

viii. Waste solvent shall be collected and stored in a closed container. The closed container may contain a device that allows pressure relief, provided that it does not allow liquid solvent to drain from the container;

ix. Work area fans shall be located and positioned so that they do not blow across the opening of the degreaser unit; and

x. If the machine is a heated cleaning machine, the solvent shall be maintained at a temperature that is below its boiling point;

3. A person shall not use, in a cold cleaning machine or a heated cleaning machine, any solvent, except water, that has a vapor pressure of one millimeter of mercury or greater, measured at 20 degrees centigrade (68 degrees Fahrenheit); and

4. A person who owns or operates a cold cleaning machine or a heated cleaning machine shall maintain, for not less than two years after the date of purchase of solvent for use in the machine, the information specified below and shall, upon the request of the Department or its representative, provide the information to the Department:

i. The name and address of the person selling the solvent. An invoice, bill of sale, or a certificate that corresponds to a number of sales, if it has the seller's name and address on it, may be used to satisfy this requirement;

ii. A list of VOC(s) and their concentration information in the solvent;

iii. Information about each VOC listed pursuant to ii above. A Material Safety Data Sheet (MSDS) may be used to satisfy this requirement;

iv. The solvents product number assigned by the manufacturer; and

v. The vapor pressure of the solvent measured in millimeters of mercury at 20 degrees centigrade (68 degrees Fahrenheit).

(k) The following provisions apply to a batch vapor cleaning machine:

1. No person shall add solvent to a batch vapor cleaning machine or cause, suffer, allow or permit the machine to be operated, unless the following requirements are met:

i. The machine shall have a freeboard ratio of 0.75 or greater;

ii. The machine shall have a permanent, conspicuous label placed in a prominent location on the machine setting forth the applicable provisions of the operating requirements in (k)4 below;

iii. The machine shall be equipped with:

(1) Unless the machine is fully enclosed, a tightly fitting working-mode cover. The cover shall be kept closed at all times except when parts are being placed into or being removed from the machine or when solvent is being added or removed. The cover shall:

(A) Completely cover the machine's opening;

(B) Be free of cracks, holes and other defects;

(C) Be able to be readily opened and closed without disturbing the vapor zone. If the opening is greater than ten square feet, the cover shall be opened and closed by a powered mechanism; and

(D) If the machine has a lip exhaust, extend below the level of the lip exhaust;

(2) A safety switch (thermostat and condenser flow switch) which shuts off the sump heat if the coolant is not circulating;

(3) A control switch which shuts off the spray pump if vapor is not present in the vapor section in the machine;

(4) A primary condenser; and

(5) A device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils or if the vapor level in the machine rises above the height of the primary condenser;

iv. The machine shall have an automated parts handling system which moves the parts and/or parts baskets at a speed of 11 feet (3.4 meters) per minute or less when the parts are entering or exiting the vapor zone. If the parts basket and parts being cleaned occupy more than 50 percent of the solvent/air interface area, the speed of the parts basket or parts shall not exceed three feet (one meter) per minute;

v. If the machine has a lip exhaust, it shall be designed and operated so that:

(1) The collected solvent vapors pass through a properly operated and maintained carbon adsorber; and

(2) The concentration of VOC in the effluent from the adsorber does not exceed 100 parts per million;

vi. The machine shall be free from the influence of any local exhaust ventilation system unless the ventilation system is equipped with a control device that:

(1) Collects at least 90 percent by volume of the VOC vapors leaving the machine; and

(2) Reduces VOC concentration in the exhaust by at least 95 percent by volume; and

vii. The machine shall be free from the influence of any positive pressure source located within 20 feet (6.1 meters) of the tank rim unless the machine is equipped with a control device that:

(1) Collects at least 90 percent by volume of VOC vapors leaving the machine; and

(2) Reduces VOC concentration in the exhaust by at least 95 percent by volume;

2. No person shall cause, suffer, allow, or permit a batch vapor cleaning machine with a solvent/air interface area of 13 square feet or less to be operated, unless one of the control options listed in Table 6A below is implemented;

TABLE 6A
CONTROL OPTIONS FOR BATCH VAPOR CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE AREA OF 13 SQUARE FEET OR LESS

Number of Option	**Control Option**
1.	A working-mode cover; freeboard ratio of 1.0; and superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine.
2.	A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; and a superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine.

3. A working-mode cover; and a freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point.
4. Reduced room draft; a freeboard ratio of 1.0; and a superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine.
5. A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; and reduced room draft.
6. A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; and a freeboard ratio of 1.0
7. A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; and to ensure that the dwell time is less than 35 percent of the dwell time determined for the part or parts.
8. Reduced room draft; sufficient swell time to ensure that liquid solvent on and in the parts vaporizes within the machine confines or drains back into the machine rather than into the work area; and a freeboard ratio of 1.0.
9 A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; and a carbon adsorber which reduces solvent emissions in the exhaust to a level not to exceed 100 parts per million at any time.
10. A freeboard ratio of 1.0; a superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine; and a carbon adsorber which reduces solvent emissions in the exhaust to a level not to exceed 100 pert per million at any time.

3. No person shall cause, suffer, allow, or permit a batch vapor cleaning machine with a solvent/air interface area of greater than 13 square feet to be operated, unless one of the control options listed in Table 6B below is implemented;

TABLE 6B
CONTROL COMBINATIONS FOR BATCH VAPOR CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE AREA GREATER THAN 13 SQUARE FEET

Number of Option	**Control Option**
1.	A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; a freeboard ratio of 1.0; and a superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine.

2. Sufficient dwell time to ensure that liquid solvent on and in the parts vaporizes within the machine confines or drains back into the machine rather than into the work area; a freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; and reduced room draft. Dwell time shall not be less than 35 percent of the dwell time determined for the part or parts.
3. A working mode cover; freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; and a superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine.
4. Reduced room draft; a freeboard ratio of 1.0; and a superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine.
5. A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; reduced room draft; and a superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine.
6. A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; reduced room draft, and a freeboard ratio of 1.0.
7. A freeboard refrigeration device operated to ensure that the chilled air blanket temperature is no greater than 30 percent of the solvent's boiling point; a superheated vapor system; and a carbon adsorber which reduces solvent emissions in the exhaust to a level not to exceed 100 parts per million at any time.

4. A person shall operate a batch vapor cleaning machine in accordance with the following procedures:

i. During startup of the batch vapor cleaning machine the primary condenser shall be turned on before the sump heater;

ii. Flushing or spraying of parts with a solvent spray, using a spray head attached to a flexible hose or other flushing device, shall be performed within the vapor zone of the machine or within a section of the machine that is not exposed to the ambient air. The solvent spray shall be a continuous fluid stream, not an atomized or shower spray, and shall be under a pressure that does not exceed 10 pounds per square inch gauge;

iii. Parts being cleaned shall be drained for at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. A superheated vapor system shall be an acceptable alternate technology;

iv. When the machine's cover is open, the machine shall not be exposed to drafts greater than 40 meters per minute (132 feet per minute), as measured between one and two meters (between 3.3 and 6.6 feet) upwind and at the same elevation as the tank lip;

v. Sponges, fabric leather, paper products and other absorbent materials shall not be cleaned in the machine;

vi. Spills during solvent transfer and use of the machine shall be cleaned up immediately or the machine shall be shut down. Wipe rags or other sorbent material used shall be immediately stored in covered containers for disposal or recycling;

vii. Waste solvent, still bottoms and sump bottoms shall be collected and stored in closed containers. The closed containers shall contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container;

viii. Work area fans shall be located and positioned so that they do not blow across the opening of the machine;

ix. During shutdown of the machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off;

x. When solvent is added to or drained from the machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface;

xi. The working and downtime covers shall be closed at all times except when parts are entering or exiting from the machine, during maintenance of the machine when the solvent has been removed, or during addition of solvent to the machine;

xii. If a lip exhaust is used on an open top vapor degreaser, the ventilation rate shall not exceed 20 cubic meters per minute per square meter ($m^3/min/m^{2)}$ (that is, 65 cubic feet per minute per square foot ($ft^{3/}min/ft^{2)}$) of degreaser open area; and

xiii. The machine shall be maintained as recommended by the manufacturer of the equipment or by using alternate maintenance practices that have been demonstrated to the Department's satisfaction to achieve the same or better results as those recommended by the manufacturer.

(*l*) The following provisions apply to an in-line vapor cleaning machines:

1. No person shall add any VOC containing solvent to an in-line vapor cleaning machine or cause, suffer, allow, or permit the machine to be operated unless the following requirements are met:

i. The machine shall have a freeboard ratio of 0.75 or greater;

ii. The machine shall have a permanent, conspicuous label placed in a prominent location on the machine setting forth the applicable provisions of the operating requirements in paragraph (*l*)3 below;

iii. The machine shall be equipped with:

(1) Unless the machine is fully enclosed, a tightly fitting cover that shall be kept closed at all times except for when parts are being placed into or being removed from the machine or when solvent is being added or removed. The cover shall:

(A) Completely cover the machine's opening;

(B) Be free of cracks, holes and other defects;

(C) Be able to be readily opened and closed without disturbing the vapor zone. If the opening is greater than ten square feet, the cover shall be opened and closed by a powered mechanism; and

(D) If the machine has a lip exhaust, extend below the level of the lip exhaust;

(2) A safety switch (thermostat and condenser flow switch) which shuts off the sump heat if the coolant is not circulating;

(3) A control switch which shuts off the spray pump if vapor is not present in the vapor section in the machine;

(4) A primary condenser; and

(5) A device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils or if the vapor level in the machine rises above the height of the primary condenser;

iv. The machine shall have an automated parts handling system which moves the parts or parts basket at a speed of 11 feet (3.4 meters) per minute or less when the parts are entering or exiting the vapor zone. If the parts

basket or parts being cleaned occupy more than 50 percent of the solvent/air interface area, the speed of the parts basket or parts shall not exceed three feet (one meter) per minute;

v. If the machine has a lip exhaust, it shall be designed and operated so that:

(1) Collected solvent vapors pass through a properly operated and maintained carbon adsorber; and

(2) The concentration of VOC in the effluent from the adsorber does not exceed 100 parts per million;

vi. The machine shall be protected from drafts, when not in active use, by the installation of covers over the conveyor inlet and conveyor outlet ports and over any other openings; and

vii. The machine shall be protected from drafts, when in active use, by the installation of a silhouette cutout or hanging flaps to minimize the effective openings around the conveyor inlet and conveyor outlet parts;

2. No person shall cause, suffer, allow, or permit an in-line vapor cleaning machine to be operated unless one of the control options listed in Table 6C below is implemented:

TABLE 6C
CONTROL OPTIONS FOR IN-LINE VAPOR CLEANING MACHINES

Number of Option	**Control Option**
1.	A superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine; and a freeboard refrigeration device.
2.	A freeboard refrigeration device; and a carbon adsorber.
3.	A superheated vapor system to heat the parts and evaporate liquid solvent on the parts before they are withdrawn from the cleaning machine; and a carbon adsorber.

3. A person shall operate an in-line cleaning machine in accordance with the following procedures:

i. During startup of the machine the primary condenser shall be turned on before the sump heater;

ii. Flushing or spraying of parts with a solvent spray, using a spray head attached to a flexible hose or other flushing device, shall only be performed within the vapor zone of the machine or within a section of the machine that is not exposed to the ambient air. The solvent spray shall be

a continuous fluid stream, not an atomized or shower spray, and shall be under a pressure that does not exceed 10 pounds per square inch gauge;

iii. Parts being cleaned shall be drained for at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. A superheated vapor system shall be an acceptable alternate technology;

iv. When the machine's cover is open, the machine shall not be exposed to drafts greater than 40 meters per minute (132 feet per minute), as measured between one and two meters (between 3.3 and 6.6 feet) upwind and at the same elevation as the tank lip;

v. Sponges, fabric, leather, paper products and other absorbent materials shall not be cleaned in the machine;

vi. Spills during solvent transfer and use of the machine shall be cleaned up immediately or the machine shall be shut down. Wipe rags or other sorbent material used shall be immediately stored in covered containers for disposal or recycling;

vii. Waste solvent, still bottoms and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container;

viii. Work area fans shall be located and positioned so that they do not blow across the opening of the machine;

ix. During shutdown of the machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off;

x. When solvent is added to or drained from the machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface;

xi. The working and downtime covers shall be closed at all times except when parts are entering or exiting from the machine, during maintenance of the machine when the solvent has been removed, and during addition of solvent to the machine;

xii. If a lip exhaust is used on an open top vapor degreaser, the ventilation rate shall not exceed 20 cubic meters per minute per square meter ($m^3/min/m^2$) (that is, 65 cubic feet per minute per square foot ($ft^3/min/ft^2$)) of degreaser open area;

xiii. The machine shall be maintained as recommended by the manufacturer of the equipment or by using alternate maintenance practices that have been demonstrated to the Department's satisfaction to achieve the same or better results as those recommended by the manufacturer; and

xiv. Openings shall be minimized during operation so that entrances and exits silhouette workloads with an average clearance between the parts and the edge of the degreaser opening of less than 10 centimeter (four inches) or less than 10 percent of the width of the opening.

(m) The following provisions shall apply to an airless cleaning machine or air-tight cleaning machine:

1. No person shall add solvent to an airless cleaning machine or an air-tight cleaning machine, or cause, suffer, allow, or permit the machine to be operated unless the following requirements are met:

i. The machine shall have a permanent, conspicuous label placed in a prominent location on the machine setting forth the applicable provisions of the operating requirements in (m)4 below; and

ii. The machine shall have a carbon adsorber that shall:

(1) Measure and record the concentration of solvent in the exhaust of the carbon adsorber weekly with a colorimetric detector tube designed to measure a concentration of 100 parts per million (ppm) by volume of solvent to air at an accuracy of +/- 25 parts per million by volume. These measurements and recordings shall be conducted while the solvent cleaning machine is in working mode and venting to the adsorber; and

(2) Maintain and operate the machine and adsorber so that emissions from the adsorber exhaust not more than 100 ppm by volume measured while the machine is in the working mode and is venting to the adsorber;

2. The owner or operator of an airless cleaning machine or air-tight cleaning machine, shall maintain for each machine a log of all additions and deletions of VOC containing solvent, including the weight of the solvent contained in any activated carbon or other sorbent material used to control emissions from the cleaning machine;

3. The owner or operator of the machine shall demonstrate that the monthly emissions from the machine, based on a three-month rolling average, are equal to or less than the allowable limits set forth in Table 6D below or, if the volume of the cleaning machine exceeds 2.95 cubic meters, by the use of the following equation:

$$EL = 330\ (vol)^{0.6}$$

Where:

EL = the three-month rolling average monthly emission limit, based on kilograms per/month.

vol = the capacity of machine, given in cubic meters.

TABLE 6D
EMISSION LIMITS FOR CLEANING MACHINES WITHOUT A SOLVENT/AIR INTERFACE

Cleaning Capacity (m^3)	**Emission Limit, Base On A 3-Month Rolling Average (kg/month)**
0.00	0.0
0.05	55
0.10	83
0.15	106
0.20	126
0.25	144
0.30	160
0.35	176
0.40	190
0.45	204
0.50	218
0.55	231
0.60	243
0.65	255
0.70	266
0.75	278
0.80	289
0.85	299
0.90	310
0.95	320
1.00	330
1.05	340
1.10	349
1.15	359

1.20	368
1.25	377
1.30	386
1.35	395
1.40	404
1.45	412
1.50	421
1.55	429
1.60	438
1.65	446
1.70	454
1.75	462
1.80	470
1.85	477
1.90	485
1.95	493
2.00	500
2.05	508
2.10	515
2.15	522
2.20	530
2.25	537
2.30	544
2.35	551
2.40	558
2.45	565
2.50	572
2.55	579
2.60	585
2.65	592
2.70	599
2.75	605
2.80	612
2.85	619
2.90	625
2.95	632

4. A person shall operate an airless cleaning machine or air-tight cleaning machine in accordance with the following procedures.

   i. Parts being cleaned shall be drained for at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. A superheated vapor system shall be an acceptable alternate technology;

ii. Sponges, fabric, leather, paper products and other absorbent materials shall not be cleaned in the machine;

iii. Spills during solvent transfer and use of the machine shall be cleaned up immediately or the machine shall be shut down. Wipe rags or other sorbent material used shall be immediately stored in covered containers for disposal or recycling;

iv. Waste solvent, still bottoms and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container;

v. Work area fans shall be located and positioned so that they do not blow across the opening of the machine;

vi. When solvent is added to or drained from the machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface;

vii. The working and downtime covers shall be closed at all times except when parts are entering or exiting from the machine, during maintenance of the machine when the solvent has been removed, and during addition of solvent to the machine; and

viii. The machine shall be maintained as recommended by the manufacturer of the equipment or using alternate maintenance practices that have been demonstrated to the Department's satisfaction to achieve the same or better results as those recommended by the manufacturer.

(n) No person shall cause, suffer, allow, or permit the use of any oil-water separator unless such separator is covered with a lid while containing any VOC. Sections of oil-water separators containing essential powered mechanical devices operating above the liquid level are not subject to this requirement.

7:27-16.7 Surface coating and graphic arts operations

(a) The provisions of this section shall apply to any surface coating operation or graphic arts operation to which any control criteria set forth in Table 7A, 7B, 7C or 7D applies, except for the following:

1. Any surface coating operation or graphic arts operation located at a major VOC facility and having the potential to emit three pounds per hour or more of VOC shall instead be subject to the provisions of N.J.A.C. 7:27-16.17;

2. On or after June 29, 2004, any refinishing of mobile equipment at mobile equipment repair and refinishing facilities. Thereafter, such refinishing operations shall be subject to the requirements at N.J.A.C. 7:27-16.12 and the refinishing requirements in Table 7A shall no longer be applicable; and

3. Any surface coating operation or graphic arts operation exempted under (*l*) below.

(b) (Reserved)

(c) No person shall cause, suffer, allow, or permit the use of any surface coating operation or graphic arts operation subject to this section, unless:

1. The VOC content of any surface coating formulation as applied does not exceed the applicable maximum allowable VOC content if any, specified in Table 7A, 7B, 7C, or 7D; or

2. Until March 28, 1994, the surface coating operation is included in a mathematical combination of sources which was approved by the Department prior to March 28, 1992.

3. If more than one surface coating formulation subject to the same maximum allowable VOC content limit as set forth in Table 7A, 7B, 7C, or 7D is applied by a single surface coating or graphic arts operation and one or more of any such formulation are not in compliance with any limit specified in the applicable table, the daily weighted mean of the VOC content of the surface coating formulations as applied does not exceed the applicable maximum allowable VOC content as set forth in the applicable Table. This daily weighted mean shall be calculated using the following equation:

$$Daily\ mean\ VOC\ content = \frac{\sum_{i=1}^{n}(C_i)(V_i)}{\sum_{i=1}^{n}(V_i)}$$

Where:

n = number of surface coating formulations subject to the same maximum allowable VOC content standard, applied in one day;

i = subscript denoting an individual surface coating formulation;

(C_i) = maximum actual VOC content per volume of each surface coating formulation (minus water) applied in one day, in pounds per gallon or kilograms per liter, and;

(V_i) = volume of each surface coating formulation (minus water) applied in one day, in gallons or liters, or;

4. The surface coating or graphic arts operation is served by VOC control apparatus satisfying the requirements listed in (c)4i through iii below:

i. The control apparatus for any surface coating operation prevents no less than 90 percent by weight of the VOC content in the surface coating

formulation as applied each hour from being discharged directly or indirectly into the outdoor atmosphere; or

ii. The control apparatus for any graphic arts operation meets the collection and control requirements set forth in (h) below; or

iii. The VOC emissions from the surface coating or graphic arts operation are controlled by the control apparatus so that the operation results in an hourly VOC emission rate no greater than the maximum allowable hourly emission rate calculated on a solids as applied basis in accordance with the following equation:

$$Maximum\ allowable\ houly\ rate = \frac{(1-\frac{y}{d})(z)(x)}{(1-\frac{x}{d})}$$

Where:

x = maximum allowable VOC content per volume of surface coating formulation (minus water), in pounds per gallon (lb/gal) or kilograms per liter (kg/l) as set forth in Table 7A, 7B, 7C, or 7D of this section;

d = density of the VOC of the applied surface coating formulation in pounds per gallon (lb/gal) or kilograms per liter (kg/l);

y = VOC content of the applied surface coating formulation (minus water) in pounds per gallon (lb/gal) or kilograms per liter (kg/l); and

z = volume of the surface coating formulation (minus water) applied per hour in gallons per hour (gal/hr) or liters per hour (l/hr); or

iv. For a surface coating or graphic arts operation that applies more than one surface coating formulation subject to the same maximum allowable VOC content limit as set forth in the applicable table, the control apparatus collects and prevents VOC from being discharged into the outdoor atmosphere so that the actual daily emissions are less than the allowable daily emissions as calculated below:

$$Actual\ daily\ emissions = (1-\eta_c\eta_d)(VOC_a)(V)$$

Where:

VOC_a = daily mean VOC content of the surface coating formulations as calculated by (c)3 above;

V = total daily volume of the surface coating formulations, as applied;

η_c = capture efficiency, i.e. the ratio of the VOC collected by the control apparatus to the VOC in the surface coating formulations as applied, as determined by a method approved by the Department and EPA, and;

η_d = destruction efficiency of the control apparatus, i.e. the ratio of the VOC prevented from being discharged into the outdoor atmosphere to the VOC

collected by the control apparatus, as determined by a method approved by the Department and EPA, and;

$$Allowable\ daily\ emissions = \frac{(1 - \frac{VOC_a}{d})(V)(x)}{(1 - \frac{x}{d})}$$

Where:

x = maximum allowable VOC content per volume of surface coating formulation (minus water), in pounds per gallon (lb/gal) or kilograms per liter (kg/l) as set forth in Table 7A, 7B, 7C, or7D of this section;

d = density of the VOC of the applied surface coating formulation in pounds per gallon (lb/gal) or kilograms per liter (kg/l);

V = total daily volume, in gallons or liters, of the surface coating formulations (minus water) as applied per day; and

VOC_a = daily mean VOC content of the surface coating formulations as calculated by (c)3 above.

(d) No person shall cause, suffer, allow, or permit the installation of any surface coating or graphic arts operation to apply a surface coating formulation which does not contain water deliberately added in a planned proportion unless a coating application system having a transfer efficiency of 60 percent or greater, or as otherwise approved by the Department, is used.

(e) The provisions of (c) and (d) above and (h), (*i*), (j), (r)1 and (s) below shall not apply to any individual surface coating or graphic arts operation in which the total surface coating formulations containing VOC are applied:

1. At rates not in excess of one half gallon per hour and two and one half gallons per day; or

2. For the purpose of developing new surface coating formulations or new equipment for use in surface coating or graphic arts operations, or for the purpose of performing research preceding such development provided such surface coating formulations are applied at rates not in excess of two gallons per hour and three gallons per day.

(f) The owner or operator of any automobile or light duty truck surface coating operation may, as an alternative to complying, pursuant to (c) above, with the content limits set forth in Table 7A, comply with the provisions of Table 7C pertaining to spray prime and spray topcoat surface coating formulations, provided that the transfer efficiency of the spray coating operation is determined in accordance with a method approved by the Department and the EPA.

TABLE 7A

AUTOMOBILE OR LIGHT DUTY TRUCK SURFACE COATING OPERATIONS AT ORIGINAL EQUIPMENT MANUFACTURING FACILITIES CONTROL CRITERIA AND COMPLIANCE DATES

	Maximum Allowable VOC Content per Volume of Coating (minus water)		
Type of Operation	**Pounds per Gallon**	**Kilogram per Liter**	**Final Compliance Date**
Prime			
Electrophoretic dip prime	1.2	0.14	December 31, 1982
Spray prime	2.8	0.34	December 31, 1984
Topcoat			
Spray Topcoat	2.8	0.34	December 31, 1986
Repair	4.8	0.58	December 31, 1986
Custom Topcoating	5.0	0.60	June 15, 1990
Refinishing			
Base Coat	6.0	0.75	June 15, 1990
Clear Coat	4.4	0.54	June 15, 1990
All others	5.0	0.60	June 15, 1990

TABLE 7B

MISCELLANEOUS SURFACE COATING OPERATIONS CONTROL CRITERIA AND COMPLIANCE DATES

	Maximum Allowable VOC Content per Volume of Coating (minus water)		
Type of Operation	**Pounds per Gallon**	**Kilogram per Liter**	**Final Compliance Date**
Group I			
Can Coating			December 31, 1981
Sheet basecoat	2.8	0.34	
Two-piece can exterior			
Two- and three- piece can interior body spray, two- piece and exterior	4.2	0.51	
Side-seam spray	5.5	0.66	
End sealing compound	3.7	0.44	
Coil Coating	2.6	0.31	December 31, 1981
Fabric Coating	2.9	0.35	December 31, 1981
Vinyl Coating	3.8	0.45	December 31, 1981

Paper Coating	2.9	0.35	December 31, 1981
Metal Furniture Coating	3.0	0.36	December 31, 1981
Magnet Wire Coating	1.7	0.20	December 31, 1981
Large Appliance Coating	2.8	0.34	December 31, 1981
Coating of Flat Wood Paneling			December 31, 1983 through May 18, 2009
Printed hardwood plywood panels and particleboard panels	2.7	0.32	
Natural finish hardwood plywood	3.3	0.40	
Hardwood panels	3.6	0.43	
Coating of Flat Wood Paneling and Printed Hardwood			May 19, 2009
Printed interior panels made of hardwood, plywood, or thin particleboard	2.1	0.25	
Natural finish hardwood plywood	2.1	0.25	
Hardwood panels	2.1	0.25	
Exterior Siding	2.1	0.25	
Tileboards	2.1	0.25	
Group II			
Leather Coating	5.8	0.70	December 31, 1987
Urethane Coating	3.8	0.45	December 31, 1987
Tablet Coating	5.5	0.66	December 31, 1987
Glass Coating	3.0	0.36	December 31, 1987
Coating of Wood Furniture			December 31, 1981
Semitransparent stain	6.8	0.82	
Wash Coat	6.1	0.73	
Opaque Stain	4.7	0.56	
Sealer	5.6	0.67	
Pigment Coat	5.0	0.60	
Clear Topcoat	5.6	0.67	
Group III			
Pipe Coating for Metal and Concrete Pipe			

Clear coating	4.3	0.52	May 31 1995, except December 31, 1983 for metal pipe coating
Air dried coating	3.5	0.42	
Extreme performance coating	3.5	0.42	
All other coatings	3.0	0.36	

TABLE 7C

ALTERNATIVE MAXIMUM ALLOWABLE VOC CONTENT IN COATINGS WITH MINIMUM TRANSFER EFFICIENCIES REQUIRED FOR SPRAY COATING OPERATIONS

Maximum Allowable VOC Content per Volume of Coating (minus water)		**Minimum Transfer Efficiency Required**
Pounds per Gallon	**Kilograms per Liter**	
3.0	0.36	34
3.2	0.38	37
3.4	0.41	42
3.6	0.43	47
3.8	0.46	52
4.0	0.48	58
4.2	0.50	65

NOTE: Each combination of VOC content and transfer efficiency in Table 7C is equivalent to a daily emission of 15.1 pounds of VOC per gallon of solids deposited, minus water. Verification of this equivalent emission this equivalent emission ate using the methods prescribed in the "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light Duty Truck Topcoat Operations" (EPA 4593-88-018) shall satisfy compliance with Table 7C.

TABLE 7D

GRAPHIC ARTS OPERATIONS

Part A

COMPLIANCE DATES

Type of Graphic Arts Operation	**Final Compliance Date**
Rotogravure printing operations (web-fed) and flexographic printing operations which produces published material or packaging for commercial or industrial purposes[1]	December 31, 1981
Rotogravure printing operations (web-fed) and flexographic printing operations on vinyl or urethane coated fabric or sheets[1]	December 31, 1987
Fabric printing operations[1]	December 31, 1987
Gravure printing operations (sheet-fed)	May 31, 1995
Screen printing operations	May 31, 1995

Part B

CONTROL CRITERIA FOR ROTOGRAVURE, SHEET-FED GRAVURE AND FLEXOGRAPHIC SOURCE OPERATIONS

Basis	Control Criteria of a Source Operation Constructed Prior to May 19, 2009:	
Surface coating formulations[2] that contain water:	Maximum allowable volume percent VOC in volatile fraction of surface coating formulations (VOC plus water) as applied.	
	25.0 percent	
Surface coating formulations[2] that do not contain water.	Maximum allowable VOC content per volume of surface coating formulation (minus water)	
	Pounds per Gallon	Kilograms per Liter
	2.9	0.35
Basis	Control Criteria of a Source Operation Constructed or Modified on or after May 19, 2009:	
Surface coating formulations[2]	Maximum allowable VOC content of surface coating formulation (minus water): 0.8 pounds VOC/pound solid applied or 0.16 pounds VOC/pound materials applied	

Part C

CONTROL CRITERIA FOR SCREEN PRINTING OPERATIONS

Basis	**Control Criteria Maximum allowable VOC content per volume of surface coating formulation[2]**	
	Pounds per Gallon	**Kilograms per Liter**
Substrate Category: [3]		
Paper	3.3	0.40
Glass and Ceramic	3.3	0.40
Metal	3.3	0.40
Rigid and Flexible Plastic	3.3	0.40
Reflective Sheeting	3.3	0.40
Pressure Sensitive Decals	3.3	0.40
Wood	3.3	0.40
Fabric	2.9	0.35
Surface Coating Formulation:		
Conductive Ink	8.5	1.03
Special Purpose Screen		
Printing Inks and Coatings	6.7	0.81

[1]Control apparatus serving certain graphic arts operations of this type which were constructed prior to July 26, 1994 may have compliance dates on or after July 26, 1994, pursuant to the provisions of (p) below.

[2]This term includes inks and coatings;
[3]Except where conductive ink and special purpose screen printing inks and coatings are used.

Part D

CONTROL CRITERIA FOR FABRIC PRINTING SOURCE OPERATIONS

Basis	**Control Criteria**	
Surface coating formulations [2] that contain water:	Maximum allowable volume percent VOC in volatile fraction of surface coating formulations (VOC plus water) as applied.	
	25.0 percent	
Surface coating formulations[2] that do not contain water:	Maximum allowable VOC content per volume of surface coating formulation (minus water).	
	Pounds per Gallon	Kilograms per Liter
	2.9	0.35

[1]Control apparatus serving certain graphic arts operations of this type which were constructed prior to July 26, 1994 may have compliance dates on or after July 26, 1994, pursuant to the provisions of (p) below.
[2] This term includes inks and coatings; see definition of "surface coating formulation."

(g) The owner or operator of any metal furniture or large appliance surface coating operation may, as an alternative to complying with the applicable maximum allowable VOC content limits per volume of surface coating formulation (minus water) set forth in Group I of Table 7B, pursuant to (c)1 above, apply to the Department for an alternative maximum allowable VOC content limit per volume of surface coating formulation, provided such person can demonstrate to the satisfaction of the Department and the EPA that the surface coating formulation is applied at a transfer efficiency of greater than 60 percent.

(h) The owner or operator of any rotogravure, sheet-fed gravure, flexographic, fabric, or screen printing operation may, as an alternative to complying with the control criteria requirements set forth in Table 7D, pursuant to (c)1 above:

1. For any rotogravure or sheet-fed gravure printing operation installed prior to May 1, 2010, install and use control apparatus that collects at least 75 percent by volume of the source gas emitted, including associated dryers, and prevents from being discharged into the outdoor atmosphere:

   i. At least 95 percent by volume of the VOC collected on an hourly basis if a thermal oxidizer is used to control emissions; or

   ii. At least 90 percent by volume of the VOC collected on an hourly basis if a carbon adsorption system or any other control device is used to control emissions;

2. For any flexograpic printing operation installed prior to May 1, 2010, install and use control apparatus that collects at least 70 percent by volume of the source gas

emitted, including from associated dryers, and prevents from being discharged into the outdoor atmosphere:

i. At least 95 percent by volume of the VOC collected on an hourly basis if a thermal oxidizer is used to control emissions; or

ii. At least 90 percent by volume of the VOC collected on an hourly basis if a carbon adsorption system or any other control device is used to control emissions.

3. For any rotogravure, sheet-fed gravure, or flexographic printing operation installed or modified on or after May 1, 2010, neither (h)1 nor 2 above shall apply; the operation shall install and use control apparatus that collects at least 85 percent by volume of the source gas emitted from the operation, including associated dryers, and prevents from being discharged into the outdoor atmosphere:

i. At least 95 percent by volume of the VOC collected on an hourly basis if a thermal oxidizer is used to control emissions; or

ii. At least 90 percent by volume of the VOC collected on an hourly basis if a carbon adsorption system or any other control device is used to control emissions.

4. For any fabric printing operation, install and use control apparatus that collects at least 70 percent by volume of the source gas emitted, including from associated dryers, and prevents from being discharged into the outdoor atmosphere:

i. At least 95 percent by volume of the VOC collected on an hourly basis if a thermal oxidizer is used to control emissions, except as provided in (p) below; or

ii. At least 90 percent by volume of the VOC collected on an hourly basis if a carbon adsorption system or any other control device is used to control emissions.

5. For any screen printing operation, install and use control apparatus that collects at least 70 percent by volume of the source gas emitted and prevents from being discharged into the outdoor atmosphere:

i. At least 95 percent by volume of the VOC collected on an hourly basis if a thermal oxidizer is used to control emissions; or

ii. At least 90 percent by volume of the VOC collected on an hourly basis if a carbon adsorption system or any other control device is used to control emissions.

(*i*) Notwithstanding the provisions of (c)2 and (c)4ii above, the owner or operator of any tablet coating operation that uses a surface coating formulation that does not comply with the maximum allowable VOC content limits per volume of coating (minus water) set forth in Table 7B, Group II, shall install and use control apparatus which prevents no less than 90 percent by weight of the VOC content in the surface coating formulation as applied each hour from being discharged directly or indirectly into the outdoor atmosphere.

(j) The owner or operator of any wood furniture surface coating operation shall comply with the following requirements:

1. At a facility emitting less than 50 tons (45.36 megagrams) of VOC per year, each surface coating formulation specified in Table 7B, Group II under "Wood Furniture" shall be applied using airless, air-assisted airless, or heated airless spray techniques, or another application method approved by the Department and the EPA as having a transfer efficiency of at least 40 percent; or

2. At a facility emitting 50 tons (45.36 megagrams) of VOC or greater per year, each surface coating formulation specified in Table 7B, Group II under "Wood Furniture" shall be applied using airless, air-assisted airless, heated airless, electrostatic spray techniques, or flat line processes, or another application method approved by the Department and the EPA as having a transfer efficiency of at least 65 percent.

(k) The owner or operator of any pipe coating operation, gravure printing operation (sheet-fed), or screen printing operation subject to (c) above shall comply with the following schedule:

1. By October 26, 1994, submit to the Chief, Bureau of New Source Review, Environmental Regulation Program, Department of Environmental Protection, CN 027, Trenton, New Jersey 08625-0027, a complete application for each permit required, pursuant to N.J.A.C. 7:27-8, to achieve compliance with (c) above; and

2. By May 31, 1995, achieve compliance with (c) above and maintain compliance with this section thereafter.

(*l*) The provisions of this section shall not apply to:

1. The surface coating of aircraft and marine vessel exteriors, exclusive of parts coated prior to installation or assembly;

2. The refinishing of automobiles, if coating use is less than 50 gallons (189 liters) per week;

3. The customized topcoating of automobiles and trucks, if coating use is less than 48 gallons (182 liters) per week; and

4. The on-site coating of stationary structures such as, but not limited to, equipment used for manufacturing processes, storage tanks, bridges, and swimming pools. The coatings used in such on-site coating operations are subject to the provisions at N.J.A.C. 7:27-23.

(m) The owner or operator of any surface coating operation subject to this section applying only surface coating formulations which are subject to and conform with the applicable VOC content limit set forth in Table 7A, 7B, 7C, or 7D shall maintain records of the VOC content of each surface coating formulation (minus water) as applied, in pounds of VOC per gallon of coating or kilograms of VOC per liter of coating; the percent by weight of any exempt organic substance; and the daily volume of each surface coating formulation applied.

(n) The owner or operator of any surface coating operation, or graphic arts operation, which is subject to this section and which uses one or more surface coating formulations which do not conform with the applicable VOC content limit set forth in Table 7A, 7B, 7C, or 7D, shall maintain the following records:

1. For each surface coating formulation including each change of diluent or concentration of diluent as applied, record the following:

   i. The number of hours each surface coating formulation was applied and the date;

   ii. The volume of each surface coating formulation applied;

   iii. The density of each surface coating formulation;

   iv. The density of the VOC in each surface coating formulation;

   v. The percent by weight of VOC in each surface coating formulation;

   vi. The percent by weight of any exempt organic substance in each surface coating formulation;

   vii. The percent by weight of any water in each surface coating formulation;

2. For any surface coating operation that has a thermal oxidizer used to control the emission of VOC, record on a continuous basis or at a frequency approved in writing by the Department the operating temperature at the exit of the combustion chamber and the carbon monoxide concentration in the flue gas emitted to the outdoor atmosphere;

3. For any surface coating operation that has a control apparatus using carbon or other adsorptive material to control the emission of VOC:

   i. Record on a continuous basis or at a frequency approved in writing by the Department the concentration of the total VOC in the flue gas emitted to the outdoor atmosphere; or

   ii. Record the date and time the carbon or other adsorptive material used in the control apparatus is regenerated or replaced; and maintain any other information required to document whether the control apparatus is being used and maintained in accordance with the manufacturer's recommended procedures. The manufacturer's recommendations for use and maintenance are to be readily available on the operating premises, and the person responsible for the surface coating operation shall provide these to the Department upon request; and

4. Upon the request of the Department and at the frequency specified by the Department, record any other operation parameter relevant to the prevention or control of air contaminant emissions from the surface coating operation or control apparatus.

(*o*) The method(s) to be used to determine the composition of a surface coating formulation as required by (m) or (n) above may include utilization of standard formulation sheets, material safety data sheets, the results of analytical tests, or other methods approved in advance and provided that the required information can be readily extracted from the documents.

(p) Notwithstanding the provisions of (h)4 above, the owner or operator of any fabric printing operation subject to this section pursuant to (a)1 above, may continue to use a control apparatus which was installed and continues to be operated in compliance with a permit issued by the Department for the printing operation prior to July 26, 1994 so long as the control apparatus has not been altered or replaced since the date of approval of the current permit. If and when the control apparatus is altered or replaced, the new or altered control apparatus shall at a minimum meet the requirements set forth in (h)4 above.

(q) After receipt of a written request from an owner or operator for an extension of the deadline set forth in (k)1 above, the Department may authorize a 60-day renewable extension upon showing of good cause. Such extension may be renewed by the Department upon the written request of the owner or operator. Approval of such an extension shall not constitute approval of extension of the May 31, 1995 deadline established in (k)2 above. Written requests for the extension of a deadline submitted pursuant to this subsection shall be addressed to:

Assistant Director, Air and Environmental Quality Enforcement
Division of Enforcement Field Operations
Department of Environmental Protection

PO Box 422
401 East State Street, 4th Floor
Trenton, New Jersey 08625-0422

(r) The owner or operator of a letterpress printing operation and the owner or operator of a lithographic printing operation shall comply with the following:

1. On and after May 1, 2010, any heatset web lithographic printing operation or heatset letterpress printing operation shall:

   i. Achieve greater than 95 percent control of VOC emissions from the dryer;

   ii. Achieve less than 20 parts per million by volume as equivalent hexane emitted from the dryer on a dry basis prior to any dilution of the gas stream with ambient air after the gas stream exits the dryer; or

   iii. Achieve for a carbon adsorption unit or any non-thermal control device at least 90 percent by volume of the source gas emitted to the atmosphere.

2. On and after May 19, 2009, any cleaning material used on any lithographic or letterpress printing press shall:

   i. Have a composite VOC vapor pressure less than 10 mm Hg at 20 degrees Celsius; or

   ii. Have a VOC content of less than 70 percent by weight.

3. On and after May 19, 2009, no greater than a total of 110 gallons per calendar year of cleaning materials that do not meet one of the requirements at (r)2 above may be used to clean a lithographic or letterpress printing press.

4. On and after May 19, 2009, a cleaning material used to clean a lithographic or letterpress printing operation is not required to meet (r)2 above for cleaning electronic components of a press, pre-press cleaning operations (for example, platemaking), post-press cleaning operations (for example, binding), or cleaning performed in parts washers or cold cleaners.

5. Record and maintain on-site, logs of the implementation of the cleaning material requirements at (r)2 through 4 above, pursuant to N.J.A.C. 7:27-16.22.

(s) On and after May 19, 2009, the owner or operator of a lithographic printing operation shall comply with the following:

1. Any fountain solution used in a heatset web lithographic printing operation shall not exceed:

i. A VOC content of 1.6 percent by weight or less; or

ii. A VOC content of 3.0 percent by weight or less if the fountain solution is refrigerated to below 60 degrees Fahrenheit.

2. Any fountain solution used for a coldset web offset lithographic printing operation or a sheet-fed offset lithographic printing operation shall not exceed (s)2i or ii below. This exceedance limitation shall not apply to an operation with a sheet size of 187 square inches or less or a total fountain solution reservoir of less than one gallon.

i. A VOC content of 5.0 percent by weight or less; or

ii. A VOC content of 8.5 percent by weight or less if the fountain solution is refrigerated to below 60 degrees Fahrenheit.

3. Record and maintain on-site, logs of the implementation of the fountain solution requirements at (s)1 and 2 above, pursuant to N.J.A.C. 7:27-16.22.

(t) On or after May 19, 2009, no person shall cause, suffer, allow, or permit the use of any flat wood paneling coating, printed hardwood coating, or lithographic, letterpress, rotogravure, sheet-fed gravure or flexographic printing operation without implementing the following best management practices:

1. All coatings, thinners, and cleaning materials containing any VOC shall be stored in closed containers, which shall prevent the contents from coming in contact with and being exposed to the atmosphere;

2. All coatings, thinners, and cleaning materials containing any VOC shall be conveyed in closed containers or pipes, which shall prevent the contents from coming in contact with and being exposed to the atmosphere;

3. Each mixing vessel containing any VOC coating and any other material shall have a cover which is closed, which shall prevent the contents from coming in contact with and being exposed to the atmosphere except when adding to, removing from, or mixing in the vessel;

4. All used shop towels containing any VOC shall be kept in closed containers, which shall prevent the contents from coming in contact with and being exposed to the atmosphere;

5. All coatings, thinners and cleaning material spills containing any VOC shall be cleaned up immediately; and

6. Record and maintain on-site, logs of the implementation of the best management practices required at (t)1 through 5 above, pursuant to N.J.A.C. 7:27-16.22.

(u) The owner or operator of a facility with a paper coating operation that emits total actual VOC emissions, prior to controls, at a rate greater than 15 pounds per day for all paper coating operations and performs related cleaning activities at that facility, shall implement the following best management practices and shall record and maintain on site the documentation of these best management practices, pursuant to N.J.A.C. 7:27-16.22:

1. Each container of VOC-containing cleaning materials or used shop towels shall have a cover that is closed, except when in use or when material is being added to or removed from the container, which shall prevent the contents from coming in contact with and being exposed to the atmosphere;

2. All VOC-containing cleaning materials shall be conveyed in closed containers or pipes, which shall prevent the contents from coming in contact with and being exposed to the atmosphere; and

3. All spills of VOC-containing coatings, thinners, and cleaning materials shall be cleaned up immediately.

7:27-16.8 Boilers

(a) The provisions of this section apply to any boiler which is subject to the provisions of N.J.A.C. 7:27-19.

(b) The owner or operator of any boiler serving an electric generating unit, regardless of size, or any industrial/commercial/institutional boiler with a maximum gross heat input rate of at least 50 million BTU per hour or greater shall:

1. Cause it to emit VOC in concentrations that do not exceed 50 ppmvd at seven percent oxygen;

2. Cause it to emit CO in concentrations that do not exceed 100 ppmvd at seven percent oxygen; and

3. Adjust its combustion process in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule:

i. For any boiler serving an electric generating unit, regardless of size, by May 1 of each calendar year, except the adjustment may occur within seven days of the first period of operation after May 1, if the boiler has not operated between January 1 and May 1 of that year; or

ii. For any industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 50 million BTU per hour or greater:

(1) If not located at a major NO_x facility, in the same quarter of each calendar year beginning in 2007; or

(2) If located at a major NO_x facility, or required by this section prior to November 7, 2005 to adjust the combustion process, in the same quarter of each calendar year.

(c) The owner or operator of any industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate at least five million BTU per hour, but less than 50 million BTU per hour, shall adjust the combustion process annually in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule:

1. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least five million BTU per hour, but less than 10 million BTU per hour, whether or not located at a major NO_x facility, in the same quarter of each calendar year, beginning in 2010; and

2. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 10 million BTU per hour, but less than 20 million BTU per hour, whether or not located at a major NO_x facility, in the same quarter of each calendar year, beginning in 2008; or

3. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 20 million BTU per hour, but less than 50 million BTU per hour:

i. If not located at a major NO_x facility, in the same quarter of each calendar year beginning in 2007; or

ii. If located at a major NO_x facility, or required by this section prior to November 7, 2005 to adjust the combustion process, in the same quarter of each calendar year.

(d) Except as set forth in (b)3ii(1), (c)1 and 2, and (c)3i above, any owner or operator of a boiler subject to this section shall achieve compliance with (b) above by May 31, 1995, and maintain compliance with this subsection thereafter.

(e) The owner or operator of any boiler serving:

1. An electric generating unit or industrial/commercial/institutional boiler subject to this section, except as set forth in (b)3ii(1), (c)1 and 2, and (c)3i above, shall demonstrate compliance with this subchapter in accordance with the procedures at N.J.A.C. 7:27-16.23 before May 31, 1996; and

2. An industrial/commercial/institutional boiler subject to (b)3ii(1) above, shall demonstrate compliance with this subchapter in accordance with the procedures at N.J.A.C. 7:27-16.23 on or before March 7, 2008.

(f) The owner or operator of any boiler serving an electric generating unit subject to this section shall install a continuous emissions monitoring system for CO in accordance with the procedures set forth at N.J.A.C. 7:27-19.18 before May 31, 1995.

(g) The owner or operator of any industrial/commercial/institutional boiler with a maximum gross heat input rate of greater than 250 million BTU per hour shall install a continuous monitoring system for CO in accordance with the procedures set forth at N.J.A.C. 7:27-19.18 before May 31, 1995.

(h) Any source conducting emissions tests for VOC in accordance with this subsection shall do so using the New Jersey Air Test Method 3 (N.J.A.C. 7:27B-3) or any equivalent method approved in advance by the Department and acceptable to EPA.

(*i*) Any source conducting emissions monitoring for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix B, Performance Specification Test No. 2, and 40 CFR 60, Appendix F, Quality Assurance Requirements, including any amendments or supplements thereto, incorporated herein by reference, or any equivalent method approved in advance by the Department and acceptable to EPA.

(j) Any source conducting emissions tests for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix A, Reference Method 10, including any amendments or supplements thereto, incorporated herein by reference, or any equivalent method approved in advance by the Department and acceptable to EPA.

(k) Any owner or operator submitting a Repowering Plan for a combustion source pursuant to N.J.A.C. 7:27-19 may submit facility-specific CO and VOC limits as an alternative to those specified in this section as part of the facility's proposed Repowering Plan.

7:27-16.9 Stationary combustion turbines

(a) The provisions of this section apply to any stationary combustion turbine that is subject to the provisions of N.J.A.C. 7:27-19, except emergency generators.

(b) The owner or operator of any stationary combustion turbine shall cause it to emit CO in concentrations that do not exceed 250 parts per million by volume, dry basis (ppmvd) at 15 percent oxygen.

(c) The owner or operator of any stationary combustion turbine shall cause it to emit VOC in concentrations that do not exceed 50 ppmvd at 15 percent oxygen.

(d) Any owner or operator of a stationary combustion turbine:

1. With a maximum gross heat input rate of at least 30 million BTU per hour or greater, subject to this section shall achieve compliance with this section by May 31, 1995, and maintain compliance with this section thereafter; or

2. With a maximum gross heat input rate of at least 25 million BTU, but less than 30 million BTU per hour, subject to this section shall achieve compliance with this section by March 7, 2007, and maintain compliance with this section thereafter.

(e) The owner or operator of any stationary combustion turbine:

1. With a maximum gross heat input rate of at least 30 million BTU per hour or greater, subject to this section shall demonstrate compliance with this subchapter in accordance with the procedures at N.J.A.C. 7:27-16.23 before May 31, 1996; or

2. With a maximum gross heat input rate of at least 25 million BTU, but less than 30 million BTU per hour, subject to this section shall demonstrate compliance with this subchapter in accordance with the procedures at N.J.A.C. 7:27-16.23 on or before March 7, 2008.

(f) The owner or operator of any stationary combustion turbine subject to this section with a maximum gross heat input rate of at least 25 million BTU per hour, shall adjust the combustion process in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule:

1. For a stationary combustion turbine that has a maximum gross heat input rate of at least 25 million BTU but less than 30 million BTU per hour, according to manufacturer's recommended maintenance schedules beginning in 2007; or

2. For a stationary combustion turbine that has a maximum gross heat input rate of at least 30 million BTU per hour or greater, or required by this section prior to November 7, 2005 to adjust the combustion process, according to manufacturer's recommended maintenance schedules.

(g) Any source conducting emissions tests for VOC in accordance with this section shall do so using New Jersey Air Test Method 3 (N.J.A.C. 7:27B-3) or any equivalent method approved in advance by the Department and acceptable to EPA.

(h) Any source conducting emissions monitoring for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix B, Performance Specification Test No. 2, and 40 CFR 60, Appendix F, Quality Assurance Requirements, including any amendments or supplements thereto, or any equivalent method approved in advance by the Department and acceptable to EPA.

(*i*) Any source conducting emissions tests for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix A, Reference Method 10,

including any amendments or supplements thereto, or any equivalent method approved in advance by the Department and acceptable to EPA.

(j) Any owner or operator submitting a Repowering Plan for a combustion source pursuant to N.J.A.C. 7:27-19 may submit facility-specific CO and VOC limits as an alternative to those specified in this section as part of the facility's proposed Repowering Plan.

7:27-16.10 Stationary reciprocating engines

(a) The provisions of this section apply to any stationary reciprocating engine that is subject to the provisions of N.J.A.C. 7:27-19 except emergency generators.

(b) The owner or operator of any stationary reciprocating engine subject to this section shall cause it to emit CO in concentrations that do not exceed 500 parts per million by volume, dry basis (ppmvd) at 15 percent oxygen.

(c) Any owner or operator of a stationary reciprocating engine:

1. With a maximum rated power output of at least 500 brake horsepower or greater, subject to this section shall achieve compliance with this section by May 31, 1995, and maintain compliance with this section thereafter; or

2. With a maximum rated power output of at least 37 kW, but less than 370 kW, used for generating electricity, subject to this section shall achieve compliance with this section by March 7, 2007, and maintain compliance with this section thereafter.

(d) The owner or operator of any stationary reciprocating engine:

1. With a maximum rated power output of at least 500 brake horsepower or greater, subject to this section shall demonstrate compliance with this subchapter in accordance with the procedures at N.J.A.C. 7:27-16.23 before May 31, 1996; or

2. With a maximum rated power output of at least 37 kW, but less than 370 kW, used for generating electricity, subject to this section shall demonstrate compliance with this subchapter in accordance with the procedures at N.J.A.C. 7:27-16.23 on or before March 7, 2008.

(e) The owner or operator of any stationary reciprocating engine subject to this section with a maximum rated power output of at least 37 kW or greater, whether or not located at a major NO_x facility, shall adjust the combustion process in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule:

1. For a stationary reciprocating engine that has a maximum rated power output of at least 37 kW, but less than 370 kW, used for generating electricity, adjust the

combustion process according to manufacturer's recommended maintenance schedules beginning in 2007; or

2. For a stationary reciprocating engine that has a maximum rated power output of at least 500 brake horsepower or greater, or required by this section prior to November 7, 2005 to adjust the combustion process, according to manufacturer's recommended maintenance schedules.

(f) Any source conducting emissions tests for VOC to determine compliance with this section shall do so using Reference Method 10 found in 40 CFR Part 60-Appendix A or any equivalent method approved in advance by the Department and acceptable to EPA.

(g) Any source conducting emissions monitoring for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix B, Performance Specification Test No. 2, and 40 CFR 60, Appendix F, Quality Assurance Requirements, including any amendments or supplements thereto, or any equivalent method approved in advance by the Department and acceptable to EPA.

(h) Any source conducting emissions tests for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix A, Reference Method 10, including any amendments or supplements thereto, or any equivalent method approved in advance by the Department and acceptable to EPA.

7:27-16.11 Asphalt pavement production plants

(a) The provisions of this section shall apply to any batch mix asphalt plant which is located at a major VOC facility or any drum mix asphalt plant which is located at a major VOC facility. Any batch mix asphalt plant or any drum mix asphalt plant may opt to be subject to the provisions of N.J.A.C. 7:27-16.17.

(b) The owner or operator of a batch mix asphalt plant or a drum mix asphalt plant shall cause it to emit CO in concentrations that do not exceed 500 ppmvd at seven percent oxygen and VOC in concentrations that do not exceed 250 ppmvd at seven percent oxygen.

(c) Any owner or operator of an asphalt pavement production plant subject to this section shall achieve compliance with this section by May 31, 1995, and maintain compliance with this section thereafter.

(d) Any owner or operator of an asphalt pavement production plant subject to this section shall demonstrate compliance with this subchapter in accordance with the procedures at N.J.A.C. 7:27-16.23 before May 31, 1996.

(e) Any owner or operator of any asphalt pavement production plant subject to this section shall adjust the combustion process in accordance with the procedure set forth in its

permit and certificate or at least once per year beginning in 1995, whichever is more stringent.

(f) Any source conducting emissions tests for VOC to determine compliance with this section shall do so using New Jersey Air Test Method 3 (N.J.A.C. 7:27B-3) or any equivalent method approved in advance by the Department and acceptable to EPA.

(g) Any source conducting emissions monitoring for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix B, Performance Specification Test No. 2, and 40 CFR 60, Appendix F, Quality Assurance Requirements, including any amendments or supplements thereto, or any equivalent method approved in advance by the Department and acceptable to EPA.

(h) Any source conducting emissions tests for CO to determine compliance with this section shall do so using the method set forth at 40 CFR 60, Appendix A, Reference Method 10, including any amendments or supplements thereto, or any equivalent method approved in advance by the Department and acceptable to EPA.

7:27-16.12 Surface coating operations at mobile equipment repair and refinishing facilities

(a) This section shall apply on or after June 29, 2004 to surface coating operations performed at mobile equipment repair and refinishing facilities, and to the owners and operators of such facilities.

(b) Notwithstanding the requirements of (a) above, this section shall not apply to the following refinishing or repair operations:

1. A refinishing or repair operation which is subject to the standards set forth at N.J.A.C. 7:27-16.7;

2. An original equipment surface coating operation at an automobile assembly plant; or

3. A refinishing or repair operation performed by a person who does not receive compensation for the application of the coating.

(c) No person shall apply any coating, including, but not limited to, an automotive pretreatment coating, automotive primer-surface coating, automotive primer-sealer, automotive topcoat, or any automotive specialty coating, that contains VOC in excess of the applicable limits specified in Table 12A below, to mobile equipment or mobile equipment components.

Table 12A
MAXIMUM ALLOWABLE VOC CONTENT OF COATINGS USED FOR MOBILE EQUIPMENT REPAIR OR REFINISHING

	Limit	
Coating Type	Pounds per gallon	Grams per liter
Automotive pretreatment	6.5	780
Automotive primer-surfacer	4.8	580
Automotive primer-sealer	4.6	550
Automotive topcoat:		
Single stage-topcoat	5.0	600
2 stage basecoat/clearcoat	5.0	600
3 or 4-stage basecoat/clearcoat	5.2	630
Automotive multi-colored		
Topcoat	5.7	680
Automotive specialty	7.0	840

(d) For the purpose of determining compliance with the limits set forth in Table 12A above, the VOC content of a coating applied, or to be applied, as part of an mobile equipment repair and refinishing operation, shall be calculated as follows:

1. The VOC content of a coating shall be calculated in accordance with the following equation:

$$VOC = \frac{(W_v + W_a - W_w - W_n)}{(V + V_a - V_w - V_n)}$$

Where:

VOC = The VOC content of a given coating, given in pounds per gallon (lbs/gal) or grams per liter (g/l) as applicable;

W_v = Mass of total volatiles, given in pounds or grams as applicable;

W_a = Mass of total VOC in additives or other materials that are added to the coating prior to its application, given in pounds or grams as applicable;

W_w = Mass of the water in coating (if any), given in pounds or grams as applicable;

W_n = Mass of any non-VOC solvent in the coating, given in pounds or grams as applicable;

V = Volume of coating, given in gallons or liters as applicable; and

V_a = Volume of VOC-containing additives or other materials that are added to the coating prior to its application, given in gallons or liters as applicable;

V_w = Volume of the water in coating (if any), given in gallons or liters as applicable; and

V_n = Volume of any non-VOC solvent in the coating, given in gallons or liters as applicable;

2. The VOC content of a multi-stage topcoat shall be calculated in accordance with the following equation:

$$VOCmulti = \frac{VOCbc + \sum_{i=0}^{M} VOCmci + 2(VOCcc)}{M + 3}$$

Where:

VOCmulti = VOC content of multistage topcoat, given in pounds per gallon or grams per liter, as applicable;

VOCbc = VOC content of basecoat, given in pounds per gallon or grams per liter, as applicable;

VOCmci = VOC content of a given midcoat, given in pounds per gallon or grams per liter, as applicable;

VOCcc = VOC content of the clear coat, given in pounds per gallon or grams per liter, as applicable;

i = A given midcoat; and

M = Total number of midcoats; and

3. To determine the composition of a coating in order to perform the calculations above, the reference method for VOC content is Method 24 of appendix A of 40 CFR part 60 except as provided in (d)3i below. To determine the VOC content of a coating, the regulated entity may use Method 24 of appendix A of 40 CFR part 60, an alternative method as provided in (d)3ii below, or any other reasonable means for predicting that the coating has been formulated as intended (for example, quality assurance checks, recordkeeping). However, if there are any inconsistencies between the results of a Method 24 test and any other means for determining VOC content, the Method 24 test results will govern. The Department may require the regulated entity to conduct a Method 24 analysis.

   i. The Department may approve, on a case-by-case basis, a regulated entity's use of an alternative method in lieu of Method 24 for determining the VOC content of coatings, if the alternative method is demonstrated to the satisfaction of the Department and the USEPA, to provide results that are acceptable for purposes of determining compliance with this subchapter.

   ii. The USEPA Test Method 24, which is located in 40 CFR, Chapter I, Part 60, Appendix A-7, and any subsequent changes, is incorporated by reference herein. This test method can be downloaded from the following website: http://www.access.gpo.gov/nara/cfr/cfrhtml00/Title40/40cfr60a00.html.

(e) The owner or operator of a surface coating operation subject to (c) above shall keep a record at the facility of the VOC content of each coating used, calculated in accordance with (d) above. Such records shall be readily available upon request by the Department.

(f) To apply any of the coating types listed in Table 12A above, the owner or operator of a surface coating operation subject to (c) above shall use only one or more of the following application techniques:

1. Flow/curtain coating;

2. Dip coating;

3. Roller coating;

4. Brush coating;

5. Cotton-tipped swab application;

6. Electrodeposition coating;

7. High volume low pressure (HVLP) spraying;

8. Electrostatic spray;

9. Airless spray; and/or

10. Any other coating application method, provided that:

    i. The owner or operator has submitted a demonstration to the Department and EPA that the VOC emissions resulting from this application method do not exceed the emissions that would result from either the HVLP or electrostatic spray application method; and

    ii. Both the Department and EPA have affirmed in writing that they are satisfied with the demonstration and approve the use of the coating application method.

(g) To clean a spray gun used to apply coating(s) at a mobile equipment repair and refinishing facility, the owner or operator of a facility subject to this section shall use one of the following methods:

1. An enclosed spray gun cleaning system that is kept closed when not in use;

2. An unatomized discharge of the remaining coating in the spray gun into a paint waste container that is kept closed when not in use;

3. Disassembly of the spray gun and cleaning of the spray gun in a vat that is kept closed when not in use; or

4. An atomized spray of solvent used for cleaning, into a paint waste container that is fitted with a device designed to capture atomized solvent emissions.

(h) The owner or operator of a mobile equipment repair and refinishing facility subject to this section shall implement the following housekeeping measures:

1. The following materials shall be stored in nonabsorbent, nonleaking containers:

   i. Fresh coatings;

   ii. Used coatings;

   iii. Solvents, including cleaning solvents;

   iv. VOC-containing additives;

   v. Other VOC-containing materials that are added to the coating prior to application;

   vi. VOC-containing waste materials; and

   vii. Cloth, paper, or absorbent applicators, moistened with any of the materials listed in (h)1i through vi above;

2. The containers referenced at (h)1 above shall be kept closed at all times except when being filled or emptied; and

3. Handling and transfer procedures shall minimize spills during the transfer of the following:

   i. Coatings;

   ii. Solvents, including cleaning solvents;

   iii. VOC-containing additives;

   iv. Other VOC-containing materials that are added to the coating prior to application; and

   v. VOC-containing waste materials.

(*i*) The owner or operator of a mobile equipment repair and refinishing facility subject to this section shall ensure that any person who applies coatings at the mobile equipment repair and refinishing facility has completed training in the proper use and handling of the following in order to minimize the emission of air contaminants:

1. Coatings;

2. Solvents, including cleaning solvents;

3. VOC-containing additives;

4. Other VOC-containing materials that are added to the coating prior to application; and

5. VOC-containing waste materials.

(j) The following coating applications are exempt from the requirements of (g), (h) and (*i*) above:

1. The application of a coating through use of an airbrush application method for stenciling, lettering, and other identification marking;

2. The application of a coating sold in nonrefillable aerosol containers; and

3. The application of automotive touch-up repair and refinishing materials.

7:27-16.13 Flares

(a) Any flare in use at a major VOC facility after May 31, 1995, shall:

1. Have been designed to reduce the concentration of VOC from the source operation by no less than 95 percent;

2. Have been installed in accordance with the specifications provided by the manufacturer of the flare; and

3. Be operated and maintained in accordance with the specifications provided by the manufacturer of the flare.

(b) The owner or operator of any existing flare subject to this section shall submit in writing, to the Assistant Director of Air and Environmental Quality Enforcement, Division of Enforcement Field Operations, Department of Environmental Protection, CN 422, Trenton, N.J. 08625-0422, the following information prior to May 31, 1995. The following information shall be submitted with any permit application for any flare to be installed after that date. Such submittal shall be certified in accordance with N.J.A.C. 7:27-1.39.

1. The name of the owner and operator of the flare;

2. The make, model and serial number of the flare;

3. A copy of the manufacturer's specification of the performance standards for the flare;

4. A statement that the flare was installed in accordance with the manufacturer's specifications;

5. A statement that the flare is being operated and maintained in accordance with the manufacturer's specifications; and

6. A statement that the flare will continue to be operated in accordance with the manufacturer's specifications.

(c) The owner or operator of a flare subject to this section shall inspect the flare before May 1 of each year beginning in 1995 to verify that the flare continues to be operated in accordance with the manufacturer's specifications for the operation of the flare. The owner or operator of the flare shall record the following in a permanently bound log book at the conclusion of each inspection:

1. The name of the person conducting the inspection;

2. The date on which the inspection was conducted;

3. An entry indicating which flare was inspected;

4. Any changes or adjustments made to the flare as a result of the inspection; and

5. A statement stating that the flare is currently being operated in compliance with the manufacturer's specifications.

7:27-16.14 Fiberglass boat manufacturing materials

(a) Except as provided at (b) below, this section applies to any fiberglass boat manufacturing facility whose total actual VOC emissions, before add-on controls, exceed 15 pounds per day from all fiberglass boat manufacturing operations, calculated as follows:

1. Include in the calculation of the 15 pounds per day limit any emissions from:

i. Open molding resin and gel coat operations;

ii. Resin and gel coat mixing operations;

iii. Resin and gel coat application equipment cleaning operations; and

iv. Polyester resin putty used to assemble fiberglass parts.

2. Exclude from the calculation of the 15 pounds per day limit any emissions from:

i. Surface coating formulation applied to fiberglass boats or pleasure crafts; and

ii. Industrial adhesive used in the assembly of fiberglass boats, other than a polyester resin putty used to assemble fiberglass parts.

(b) A fiberglass boat manufacturing facility is exempt from this section if it manufactures only boat trailers, or parts of boats, such as hatches, seats, or lockers, and does not manufacture boat hulls or decks from fiberglass or build molds to make fiberglass boat hulls or decks.

(c) The following materials and operations are exempt from (d) and (e) below:

1. Production resin that is applied with nonatomized resin application equipment, and that:

   i. Must meet specifications for use in military vessels;

   ii. The U.S. Coast Guard must approve in accordance with 46 CFR Subchapter Q, Equipment, Construction, and Materials: Specifications and Approval, for use in the construction of lifeboats, rescue boats, and other life-saving appliances; or

   iii. The U.S. Coast Guard must approve for use in the construction of small passenger vessels regulated by 46 CFR Subchapter T, Small Passenger Vessels (Under 100 Gross Tons);

2. Production or tooling resin, or a pigmented, clear, or tooling gel coat purchased for repair or touch-up of fiberglass parts or molds. The total amount of resin and gel coat material exempted from (d) and (e) below shall not exceed one percent by weight of all resin and gel coat purchased at the facility on a 12-month rolling average basis;

3. One hundred percent pure vinylester resin (not a blend of vinylester and polyester), purchased for use as a skin coat and applied with nonatomized resin application equipment, where the total amount of the 100 percent pure vinylester resin purchased does not exceed five percent of all resin purchased at the facility on a 12-month rolling average basis;

4. Surface coating formulation applied to fiberglass boats or pleasure crafts;

5. Industrial adhesive used in the assembly of fiberglass boats, with the exception of polyester resin putty used to assemble fiberglass parts; and

6. Closed molding operations. This exemption does not apply to an open molding resin and gel coat operation that precedes a closed molding operation, such as the application of a gel coat or skin coat layer.

(d) Except as provided at (c) above, the owner or operator of any open molding resin and gel coat operation at any fiberglass boat manufacturing facility to which this section applies shall ensure (d)1, 2, or 3 below. For compliance determination, any non-monomer VOC content of a resin or gel coat in excess of five percent shall be added to the monomer VOC content.

1. The monomer VOC content (percent by weight) in any resin or gel coat purchased for any open molding resin and gel coat operation, or purchased for any other molding operation that is not a closed molding operation, such as a vacuum bagging operation, does not exceed:

   i. The maximum monomer VOC content (percent by weight) limit for the material and application method listed in Table 14A; or

   ii. The weighted average monomer VOC content (percent by weight) limit as determined by Equation 14A for the material and application method listed in Table 14A.

TABLE 14A
MAXIMUM MONOMER VOC CONTENT LIMITS FOR
OPEN MOLDING RESIN AND GEL COAT OPERATIONS
WHERE COMPLIANCE IS DETERMINED PURSUANT TO N.J.A.C.
7:27-16.14(d)1

Material	**Resin Application Method**	**Weighted Average Monomer VOC Content Limit (Percent by Weight)**
Production resin	Atomized (spray)	28
Production resin	Nonatomized	35
Pigmented gel coat	Any method	33
Clear coat gel	Any method	48
Tooling resin	Atomized	30
Tooling resin	Nonatomized	39
Tooling gel coat	Any method	40

EQUATION 14A

$$\text{Weighted Average Monomer VOC Content} = \frac{\sum_{i=1}^{n}(\mathrm{M}_i \mathrm{VOC}_i)}{\sum_{i=1}^{n}(\mathrm{M}_i)}$$

Where:

M_i = the mass of open molding resin or gel coat, *i*, purchased in the past 12 months in an operation, in megagrams;

VOC_i = the monomer VOC content, in percent by weight, of open molding resin or gel coat, *i*, purchased in the past 12 months in an operation; and

n = the number of different open molding resins or gel coats purchased in the past 12 months in an operation;

2. The VOC emissions from each open molding resin and gel coat operation, and from any other molding operation that is not a closed molding operation, such as a vacuum bagging operation, do not exceed a facility-specific monomer VOC emission limit established pursuant to (d)2i through iii below, per 12-month period, of the mass of each material purchased, as follows:

   i. Use Equation 14B to establish the facility-specific monomer VOC emission limit;

   ii. For any open molding resin and gel coat operation included in Equation 14B, use Equation 14C to demonstrate that the monomer VOC mass emissions from the operation do not exceed the facility-specific monomer VOC emission limit calculated using Equation 14B for the same 12-month period. Conduct this demonstration at the end of the first 12-month period and at the end of every subsequent month for only those operations and materials included in the average; and

   iii. For each open molding resin and gel coat operation included in Equation 14B, use Equation 14D to compute the weighted-average monomer VOC emission rate per 12-month period for each open molding resin and gel coat operation included in the average for use in Equation 14C; or

3. A VOC control apparatus installed to control the VOC emissions from an open molding resin operation, or gel coat, prevents VOC emissions from exceeding the maximum facility-specific monomer VOC mass emission limit established using Equation 14B in accordance with (d)2i above.

EQUATION 14B:

$$FSMVEL = 46(M_R) + 159(M_{PG}) + 291(M_{CG}) + 54(M_{TR}) + 214(M_{TG})$$

Where:

FSMVEL (facility-specific monomer VOC emission limit) = the total allowable monomer VOC that can be emitted from an open molding resin and gel coat operation included in the average, in kilograms per 12-month period;

M_R = the mass, in megagrams, of production resin purchased in the past 12 months, excluding materials exempted in (c) above;

M_{PG} = the mass, in megagrams, of pigmented gel coat purchased in the past 12 months, excluding materials exempted in (c) above;

M_{CG} = the mass, in megagrams, of clear gel coat purchased in the past 12 months, excluding materials exempted in (c) above;

M_{TR} = the mass, in megagrams, of tooling resin purchased in the past 12 months, excluding materials exempted in (c) above;

M_{TG} = the mass, in megagrams, of tooling gel coat purchased in the past 12 months, excluding materials exempted in (c) above; and

The numerical coefficient associated with each term on the right-hand side of Equation 14B is the allowable monomer VOC emission rate for that material in units of kilograms of monomer of VOC per megagram of material purchased. For example, "46" means 46 kilograms (kg) of monomer VOC per megagram (Mg) of resin purchased.

EQUATION 14C:

$$\text{Monomer VOC emissions} = (PV_R)(M_R) + (PV_{PG})(M_{PG}) + (PV_{CG})(M_{CG}) + (PV_{TR})(M_{TR}) + (PV_{TG})(M_{TG})$$

Where:

Monomer VOC emissions = the monomer VOC emissions calculated using the monomer VOC emission equations for each operation included in the average, in kilograms;

PV_R = the weighted-average monomer VOC emission rate for production resin purchased in the past 12 months, in kilograms per megagram;

M_R = the mass of production resin purchased in the past 12 months, in megagrams;

PV_{PG} = the weighted-average monomer VOC emission rate for pigmented gel coat purchased in the past 12 months, in kilograms per megagram;

M_{PG} = the mass of pigmented gel coat purchased in the past 12 months, in megagrams;

PV_{CG} = the weighted-average monomer VOC emission rate for clear gel coat purchased in the past 12 months, in kilograms per megagram;

M_{CG} = the mass of clear gel coat purchased in the past 12 months, in megagrams;

PV_{TR} = the weighted-average monomer VOC emission rate for tooling resin purchased in the past 12 months, in kilograms per megagram;

M_{TR} = the mass of tooling resin purchased in the past 12 months, in megagrams;

PV_{TG} = the weighted-average monomer VOC emission rate for tooling gel coat purchased in the past 12 months, in kilograms per megagram; and

M_{TG} = the mass of tooling gel coat purchased in the past 12 months, in megagrams.

EQUATION 14D

$$PV_{OP} = \frac{\sum_{i=1}^{n}(M_i PV_i)}{\sum_{i=1}^{n}(M_i)}$$

Where:

PV_{OP} = the weighted-average monomer VOC emission rate for each open molding operation (PV_R, PV_{PG}, PV_{CG}, PV_{TR}, and PV_{TG}) included in the average, in kilograms of monomer VOC per megagram of material applied. As shown in Equation 14D, PV_{OP} equals the sum of the products of M_i and PV_i for open molding resin or gel coats, one through n, divided by M_i one through n;

n = the number of different open molding resins and gel coats purchased within an operation in the past 12 months;

M_i = the mass of resin or gel coat, *i*, purchased within an operation in the past 12 months, in megagrams; and

PV_i = the monomer VOC emission rate for resin or gel coat, *i*, purchased within an operation in the past 12 months, in kilograms of monomer VOC per megagram of material applied. PV_i is computed using the equations in Table 14B.

Table 14B
MONOMER VOC EMISSION RATE FORMULAS FOR OPEN MOLDING OPERATIONS WHERE COMPLIANCE IS DETERMINED PURSUANT TO N.J.A.C. 7:27-16.14(d)2

Material	**Resin Application Method**	**Monomer VOC Emission Rate (PV*i*) Formula[1]**
Production resin, tooling resin	Atomized	$0.014 \times (\text{resin VOC})^{2.425}$
	Atomized, plus vacuum bagging with roll-out	$0.01185 \times (\text{resin VOC})^{2.425}$
	Atomized, plus vacuum bagging without roll-out	$0.00945 \times (\text{resin VOC})^{2.425}$
	Nonatomized	$0.014 \times (\text{resin VOC})^{2.275}$
	Nonatomized, plus vacuum bagging with roll-out	$0.0110 \times (\text{resin VOC})^{2.275}$
	Nonatomized, plus vacuum bagging with without roll-out	$0.0076 \times (\text{resin VOC})^{2.275}$
Pigmented gel coat, clear gel coat, tooling gel coat	All methods	$0.445 \times (\text{gel coat VOC})^{1.675}$

[1]Resin VOC and gel coat VOC refer to the monomer VOC content as supplied, expressed as a percent by weight value between 0 and 100 percent.

(e) Except as provided at (c) above, the owner or operator of any fiberglass boat manufacturing facility, when using filled production resin or filled tooling resin shall:

1. Determine the filled resin monomer VOC emission rate (PV_F) using Equation 14E:

EQUATION 14E

$$PV_F = \frac{(100 - \text{Percent Filler})}{(100)} * PV_U$$

Where:

PV_F = the as-applied monomer VOC emission rate for the filled production resin or tooling resin, in kilograms monomer VOC per megagram of filled resin, per 12-month period, based on monthly purchase records. As shown in Equation 14E, PV_F shall be equal to 100 minus the weight-percent of filler, divided by 100, with the entire quantity multiplied by PV_U;

PV_U = the monomer VOC emission rate for the neat (unfilled) resin, before filler is added, as calculated using the formulas in Table 14B, per 12-month period, based on monthly purchase records; and

Percent Filler = the weight-percent of filler in the as-applied filled resin system;

2. Ensure that the PV_F determined in (e)1 above does not exceed the filled resin monomer VOC emission limits in Table 14C, where the limit is in kilograms monomer VOC per megagram of filled resin, as applied;

3. Ensure that the non-monomer VOC content of each filled resin does not exceed five percent; and

4. If filled resin is included in the emission averaging procedure in Equation 14D above, then use the value of PV_F calculated using Equation 14E above for the value of PV_i in Equation 14D above.

Table 14C
FILLED RESIN MONOMER VOC EMISSION LIMITS
WHERE COMPLIANCE IS DETERMINED PURSUANT TO
N.J.A.C. 7:27-16.14(e)

Resin	Emission limit (in kilograms monomer VOC per megagram of filled resin 12-month rolling average, based on monthly purchase records)
Filled production resin	46
Filled tooling resin	54

(f) The owner or operator of a fiberglass boat manufacturing facility to which this section applies shall:

1. Use only industrial cleaning solvents that:

   i. Contain no more than five percent VOC by weight; or

   ii. Have a composite vapor pressure of no more than 0.5 millimeters of mercury at 68 degrees Fahrenheit;

2. Use only non-VOC solvents to remove cured resin and gel coat from application equipment; and

3. For all resin and gel coat containers with a capacity of 55 gallons or more, including those used for on-site mixing of putties and polyester resin putties, cover at all times with no visible gaps, except:

   i. When materials are being manually added or removed from a container; and

   ii. When mixing equipment is being placed into or removed from a container.

(g) An owner or operator of a facility subject to (d) or (e) above shall keep the following records in accordance with N.J.A.C. 7:27-16.22(a):

1. Information on each polyester resin material purchased each month including, at a minimum, the following:

   i. The manufacturer's name;

   ii. The type of polyester resin material (for example, production resin, pigmented gel coat, clear gel coat, tooling resin, or tooling gel coat);

   iii. The amount of polyester resin material purchased;

   iv. The percent by weight of monomer VOC content for each polyester resin material;

   v. The percent by weight of the non-monomer VOC content or the total percent by weight of the VOC content;

   vi. The type of application method(s) used; and

   vii. The methodology being used to demonstrate that the polyester resin material is compliant with (d) or (e) above;

2. Information on the use of all monthly calculations performed to demonstrate compliance with the following, as applicable:

   i. N.J.A.C. 7:27-16.14(d)1ii, with the use of Equation 14A;

   ii. N.J.A.C. 7:27-16.14(d)2, with the use of Equations 14B, 14C, and 14D, and Table 14B; and

   iii. N.J.A.C. 7:27-16.14(e), with the use of Equations 14D and 14E;

3. For each industrial cleaning solvent purchased for application equipment cleaning, either the VOC content percent by weight or composite vapor pressure in millimeters of mercury, whichever is applicable;

4. The type of solvent purchased each month to remove cured resin and gel coat from application equipment;

5. Records of covering all resin and gel coat containers as required in f(3) above; and

6. Monthly amount of production and tooling resins, and pigmented, clear and tooling gel coat purchased for part or mold repair and touch-up of fiberglass that do not meet any of the requirements in (d) above.

(h) The owner or operator of a source operation that has a thermal oxidizer used to control the emission of VOCs at a fiberglass boat manufacturing facility to which this section applies shall maintain records in accordance with N.J.A.C. 7:27-16.16(g)2.

(*i*) The owner or operator of a source operation that has a control apparatus using carbon or other adsorptive material to control the emission of VOCs at a fiberglass boat manufacturing facility to which this section applies shall maintain records in accordance with N.J.A.C. 7:27-16.16(g)3.

(j) The owner or operator of a fiberglass boat manufacturing facility to which this section applies shall, upon the request of the Department, record any other operating parameter relevant to the prevention or control of air contaminant emissions from the manufacturing of fiberglass boat materials or control apparatus, pursuant to N.J.A.C. 7:27-16.22.

7:27-16.15 Miscellaneous metal and plastic parts coatings

(a) This section applies to all source operations at a facility whose cumulative actual VOC emissions exceed 2.7 tons during any consecutive 12-month period from all miscellaneous metal and plastic parts surface coating operations, including related cleaning activities, but does not apply to a surface coating operation that uses exclusively powder coating.

(b) The owner or operator of a commercial pleasure craft surface coating operation to which this section applies shall ensure that:

1. The pleasure craft surface coating operation complies with the following VOC emission standard:

   i. The VOC content of any surface coating formulation as applied, excluding repair or touch-up coatings, does not exceed the applicable maximum allowable VOC content specified in Table 15A;

   ii. The pleasure craft surface coating operation is served by a VOC control apparatus that has an overall control efficiency of at least 90 percent; or

   iii. The pleasure craft surface coating operation is served by a VOC control apparatus that has a minimum overall control efficiency as determined by Equation 15A using the applicable coating category in Table 15A.

2. A pleasure craft surface coating operation complying with (b)1i or iii above, except an extreme high gloss coating (craft) operation, shall use one or more of the following application methods at all times and shall not use any other application method:

   i. Metal and plastic parts application methods; or

ii. Another coating application method capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying and approved by the EPA.

EQUATION 15A:

$$OCE = \{1 - [(VOC)_c * (V_n)_a / (VOC)_a * (V_n)_c]\} * 100$$

Where:

OCE = overall control efficiency;

$(VOC)_c$ = maximum allowable VOC content per volume of coating (pound per gallon or kilogram per liter), minus water and exempt organic substances, for the applicable coating category in Table 15A, 15B, 15C, or 15D;

$(VOC)_a$ = VOC content per volume of coating (pound per gallon or kilogram per liter), minus water and exempt organic substances, as applied;

$(V_n)_c$ = the volumetric fraction of solids (expressed as gallon of solids per gallon of coating or liter of solids per liter of coating) minus water and exempt organic substances, for the applicable coating category in Table 15A, 15B, 15C, or 15D, and expressed as $1 - (V_v)_c$;

$(V_v)_c$ = is the volumetric fraction of VOC (expressed as gallon of VOC per gallon of coating or liter of VOC per liter of coating) minus water and exempt organic substances for the applicable coating category in Table 15A, 15B, 15C, or 15D, and expressed as $\{(VOC)_c/d_{VOC})\}$;

$(V_n)_a$ = the volumetric fraction of solids (expressed as gallon of solids per gallon of coating or liter of solids per liter of coating) minus water and exempt organic substances as applied, and expressed as $1 - (V_v)_a$;

$(V_v)_a$ = is the volumetric fraction of VOC (expressed as gallon of VOC per gallon of coating or liter of VOC per liter of coating) minus water and exempt organic substances as applied and expressed as $\{(VOC)_a/d_{VOC})\}$; and

d_{VOC} = the density (expressed as pound per gallon or kilogram per liter) of the VOC as applied minus water and exempt organic substances.

Table 15A
PLEASURE CRAFT SURFACE COATING FORMULATION VOC CONTENT LIMITS

	Maximum Allowable VOC Content per Volume of Coating (minus water and exempt organic substances)	
Coating Category	**Pounds per gallon**	**Kilograms per liter**
Extreme high gloss topcoat (craft)	5.0	0.60
High gloss topcoat (craft)	3.5	0.42
Pre-treatment wash primer	6.5	0.78
Finish primer/surfacer	3.5	0.42
High build primer/surfacer	2.8	0.34
Aluminum substrate antifoulant coating	4.7	0.56
Other substrate antifoulant coating	3.3	0.40
Antifouling sealer/tiecoat	3.5	0.42

All other pleasure craft surface coating formulations	3.5	0.42

(c) Except as set forth in (c)3 below, the owner or operator of a metal parts and products surface coating operation to which this section applies shall ensure that:

1. The metal parts and products surface coating operation complies with the following VOC emission standard:

   i. The VOC content of any surface coating formulation, as applied, does not exceed the applicable maximum allowable VOC content, if any, specified in Table 15B;

   ii. The metal parts and products surface coating operation is served by a VOC control apparatus that has an overall control efficiency of at least 90 percent; or

   iii. The metal parts and products surface coating operation is served by a VOC control apparatus that has a minimum overall control efficiency as determined by Equation 15A above using the applicable coating category in Table 15B.

2. The metal parts and products surface coating operation, except touch-up coatings, repair coatings, or textured finishes, complying with (c)1i or iii above, shall use one or more of the following application methods at all times and shall not use any other application method:

   i. A metal and plastic parts application method; or

   ii. Another coating application method capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying and approved by the EPA.

3. The provisions of (c)1 and 2 above do not apply to the following metal parts and products surface coating operations:

   i. Stencil coatings (metal and plastic);

   ii. Safety-indicating coatings;

   iii. Solid-film lubricants;

   iv. Electric-insulating and thermal-conducting coatings;

   v. Flexible or rigid magnetic data storage disc coatings;

vi. Plastic extruded onto metal parts to form a coating; and

vii. Any military specification coating that has been formulated to meet a higher, less stringent VOC content limit than the maximum allowable for the coating, as identified at Table 15B.

Table 15B
METAL PARTS AND PRODUCTS VOC CONTENT LIMITS

	Maximum Allowable VOC Content per Volume of Coating (minus water and exempt organic substances)			
	Air-Dried Coating		**Baked Coating**	
Coating Category	**Pounds per gallon**	**Kilograms per liter**	**Pounds per gallon**	**Kilograms per liter**
General, one-component coating	2.8	0.34	2.3	0.28
General, multi-component coating	2.8	0.34	2.3	0.28
Camouflage coating	3.5	0.42	3.5	0.42
Electric-insulating varnish	3.5	0.42	3.5	0.42
Etching filler	3.5	0.42	3.5	0.42
Extreme high gloss coating (metal)	3.5	0.42	3.0	0.36
Extreme performance coating	3.5	0.42	3.0	0.36
Heat-resistant coating	3.5	0.42	3.0	0.36
High performance architectural coating	6.2	0.74	6.2	0.74
High-temperature coating	3.5	0.42	3.5	0.42
Metallic coating	3.5	0.42	3.5	0.42
Military specification coating	2.8	0.34	2.3	0.28
Mold-seal coating	3.5	0.42	3.5	0.42
Pan-backing coating	3.5	0.42	3.5	0.42
Prefabricated architectural multi-component coating	3.5	0.42	2.3	0.28
Prefabricated architectural one-component coating	3.5	0.42	2.3	0.28
Pretreatment coating	3.5	0.42	3.5	0.42
Repair and touch-up coating	3.5	0.42	3.0	0.36
Silicone-release coating	3.5	0.42	3.5	0.42
Solar-absorbent coating	3.5	0.42	3.0	0.36
Vacuum-metalizing (metal and plastic)	3.5	0.42	3.5	0.42
Drum coating, new, exterior	2.8	0.34	2.8	0.34
Drum coating, new, interior	3.5	0.42	3.5	0.42
Drum coating, reconditioned, exterior	3.5	0.42	3.5	0.42
Drum coating, reconditioned, interior	4.2	0.5	4.2	0.50

(d) Except as set forth in (d)3 below, the owner or operator of a plastic parts and products surface coating operation to which this section applies shall ensure that:

1. The plastic parts and products surface coating operation complies with the following VOC emission standard:

   i. The VOC content of a surface coating formulation, as applied, does not exceed the applicable maximum allowable VOC content, if any, specified in Table 15C;

   ii. The plastic parts and products surface coating operation is served by a VOC control apparatus that has an overall control efficiency of at least 90 percent; or

   iii. The plastic parts and products surface coating operation is served by a VOC control apparatus that has a minimum overall control efficiency as determined by Equation 15A above using the applicable coating category in Table 15C.

2. The plastic parts and products surface coating operation, except an airbrush operation using five gallons or less per 12-month period of coating, complying with (d)1i or 1iii above, shall use one or more of the following application methods at all times and shall not use any other application method:

   i. A metal and plastic parts application method; or

   ii. Another coating application method capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying and approved by the EPA.

3. The provisions of (d)1 above do not apply to the following plastic parts and products surface coating operations:

   i. Touch-up and repair coatings;

   ii. Stencil coats (automotive/transportation) applied on clear or translucent substrates;

   iii. Clear or translucent coatings;

   iv. Coatings applied at a paint-manufacturing facility while conducting performance tests on the coatings;

   v. An individual coating category used in volumes of less than 50 gallons in any 12-month period 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.

TABLE 15C
PLASTIC PARTS AND PRODUCTS SURFACE COATING
FORMULATION VOC CONTENT LIMITS

	Maximum Allowable VOC Content per Volume of Coating (minus water and exempt organic substances)	
Coating Category	**Pounds per gallon**	**Kilograms per liter**
General, one-component	2.3	0.28
General, multi-component	3.5	0.42
Electric-dissipating coating and shock-free coating	6.7	0.80
Extreme performance	3.5 (two-pack coatings)	0.42 (two-pack coatings)
Metallic coating	3.5	0.42
Military specification coating	2.8 (one-pack), 3.5 (two-pack)	0.34 (one-pack), 0.42 (two-pack)
Mold-seal coating	6.3	0.76
Multi-colored coatings	5.7	0.68
Optical coatings	6.7	0.80
Vacuum-metalizing (metal and plastic)	6.7	0.80

(e) Except as set forth in (e)3 below, the owner or operator of an automotive/transportation or business machine plastic parts and products surface coating operation to which this section applies shall ensure that:

1. The automotive/transportation and business machine plastic parts and products surface coating operation complies with the following VOC emission standard:

i. The VOC content of a surface coating formulation, as applied, and excluding repair and touch-up coatings, does not exceed the applicable maximum allowable VOC content, if any, specified in Table 15D;

ii. The automotive/transportation and business machine plastic parts and products surface coating operation is served by a VOC control apparatus that has an overall control efficiency of at least 90 percent; or

iii. The automotive/transportation and business machine plastic parts and products surface coating operation is served by a VOC control apparatus that has a minimum overall control efficiency as determined by Equation 15A above using the applicable coating category in Table 15D.

2. The automotive/transportation or business machine plastic parts and products surface coating operation, complying with (e)1i or iii above, shall use one or more of the following application methods at all times and shall not use any other application method:

i. A metal and plastic parts application method; or

ii. Another coating application method capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying and approved by the EPA.

3. The provisions of (e)1 above do not apply to the following automotive/transportation and business machine plastic parts and products surface coating operations:

i. Texture coatings;

ii. Vacuum metalizing (automotive/transportation) coatings;

iii. Gloss reducers (applied at a thickness of no more than 0.5 mils of coating solid);

iv. Texture topcoats;

v. Adhesion primers;

vi. Electrostatic prep coatings;

vii. Resist coatings; and

viii. Stencil coats (automotive/transportation).

TABLE 15D
AUTOMOTIVE/TRANSPORTATION AND BUSINESS MACHINE PLASTIC PARTS AND PRODUCTS SURFACE COATING FORMULATION VOC CONTENT LIMITS

	Maximum Allowable VOC Content per Volume of Coating (minus water and exempt organic substances)	
Coating Category	**Pounds per gallon**	**Kilograms per liter**
Automotive/transportation coatings[1]: High bake coatings – interior and exterior parts		
Flexible coating primer	4.5	0.54
Non-flexible coating primer	3.5	0.42
Base coats	4.3	0.52
Clear coating (plastic)	4.0	0.48
Non-basecoat/clear coating (plastic)	4.3	0.52
Automotive/transportation coatings[1]: Low bake/air-dried coatings – exterior parts		
Primers	4.8	0.58
Basecoat	5.0	0.60
Clear coating (plastic)	4.5	0.54
Non-basecoat/clear coating (plastic)	5.0	0.60
Automotive/transportation coatings[1]: Low bake/air-dried coatings – interior parts	5.0	0.60
Automotive/transportation coatings[1]: Touch-up and repair coatings	5.2	0.62
Business machine coatings		
Primers	2.9	0.35
Topcoat	2.9	0.35
Texture coat	2.9	0.35
Fog coat (Applied at a thickness no more than 0.5 mils of coating solids)	2.2	0.26
Touch-up and repair	2.9	0.35

[1]For red, yellow, and black automotive coatings, except touch-up and repair coatings, the limit shall be determined by multiplying the appropriate limit in Table 15D by 1.15.

(f) The owner or operator of a motor vehicle material surface coating operation to which this section applies shall ensure that:

1. The motor vehicle material surface coating operation complies with the following VOC emission standard:

i. The VOC content of a surface coating formulation, as applied, does not exceed the applicable maximum allowable VOC content, if any, specified in Table 15E; or

ii. The motor vehicle material surface coating operation is served by a VOC control apparatus that has an overall control efficiency of at least 90 percent.

2. The motor vehicle materials surface coating operation, complying with (f)1i above shall use one or more of the following application methods at all times and shall not use any other application method:

i. A metal and plastic parts application method; or

ii. Another coating application method capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying and approved by the EPA.

TABLE 15E
MOTOR VEHICLE MATERIALS SURFACE COATING
FORMULATION VOC CONTENT LIMITS

	Maximum Allowable VOC Content per Volume of Coating (minus water and exempt organic substances)	
Coating Category	**Pounds per gallon**	**Kilograms per liter**
Motor vehicle cavity wax	5.4	0.65
Motor vehicle sealer	5.4	0.65
Motor vehicle deadener	5.4	0.65
Motor vehicle gasket/gasket sealing material	1.7	0.20
Motor vehicle underbody coating	5.4	0.65
Motor vehicle trunk interior coating	5.4	0.65
Motor vehicle bedliner	1.7	0.20
Motor vehicle lubricating wax/compound	5.8	0.70

(g) The owner or operator of a facility with a metal or plastic parts and products surface coating operation to which this section applies shall implement the following best management practices at the facility, and shall record and maintain on site the documentation of these best management practices, pursuant to N.J.A.C. 7:27-16.22:

1. Each container of VOC-containing coating, thinner, cleaning materials or used shop towels shall have a cover that is closed, except when in use or when material is being added to or removed from the container, which shall prevent the contents from coming in contact with and being exposed to the atmosphere;

2. A mixing vessel that contains any VOC-containing material shall have a cover that is closed, except when in use or when materials are being added to or removed from the vessel;

3. All VOC-containing coatings, thinners, and cleaning materials shall be conveyed in closed containers or pipes, which shall prevent the contents from coming in contact with and being exposed to the atmosphere; and

4. All spills of VOC-containing coatings, thinners, and cleaning materials shall be cleaned up immediately.

(h) The owner or operator of a surface coating operation implementing (b)1i, (c)1i, (d)1i, (e)1i, or (f)1i above, shall maintain records of the VOC content of each surface coating formulation as applied, as follows:

1. Pounds of VOC per gallon of coating or kilograms of VOC per liter of coating;

2. The daily volume of each surface coating formulation applied; and

3. The calculations performed pursuant to (j) below.

(*i*) The owner or operator of a surface coating operation implementing (b)1ii, (c)1ii, (d)1ii, or (e)1ii above, shall maintain records as follows:

1. All of the values used in Equation 15A to determine the overall control efficiency;

2. The calculated overall control efficiency;

3. The daily volume of each surface coating formulation applied; and

4. The calculations performed pursuant to (j) below.

(j) For the purpose of determining compliance with the limits set forth in (b)1, (c)1, (d)1, (e)1, and (f)1 above, the VOC content of a coating applied, or to be applied, shall be calculated in accordance with Equation 15B below. For purposes of Equation 15B, the method for determining the VOC content of a given coating shall be Method 24 of Appendix A at 40 CFR Part 60, incorporated herein by reference. The owner or operator may use an alternative method for determining compliance (for example, quality assurance checks, recordkeeping, standard formulation sheets, or safety data sheets); however, if there are any inconsistencies between the results of Method 24 and the alternative method, the Method 24 test results shall govern.

EQUATION 15B:

$$\mathrm{VOC} = \frac{(W_v + W_a - W_w - W_n)}{(V + V_a - V_w - V_n)}$$

Where:

VOC = The VOC content of a given coating, in pounds per gallon (lbs/gal) or kilograms per liter (kg/l), as applicable;

W_v = Mass of total volatiles, in pounds or kilograms, as applicable;

W_a = Mass of total VOC in additives or other materials that are added to the coating prior to its application, in pounds or kilograms, as applicable;
W_w = Mass of the water in coating (if any), in pounds or kilograms, as applicable;
W_n = Mass of any non-VOC solvent in the coating, in pounds or kilograms, as applicable;
V = Volume of coating, in gallons or liters, as applicable;
V_a = Volume of VOC-containing additives or other materials that are added to the coating prior to its application, in gallons or liters, as applicable;
V_w = Volume of the water in coating (if any), in gallons or liters, as applicable; and
V_n = Volume of any non-VOC solvent in the coating, in gallons or liters, as applicable.

(k) The owner or operator of a source operation that has a thermal oxidizer used to control the emission of VOCs shall maintain records in accordance with N.J.A.C. 7:27-16.16(g)2.

(*l*) The owner or operator of a source operation that has a control apparatus using carbon or other adsorptive material used to control the emission of VOCs shall maintain records in accordance with N.J.A.C. 7:27-16.16(g)3.

(m) The owner or operator of a source operation that is exempt from the VOC limitations pursuant to (c)3, (d)3, and (e)3 above shall maintain records that demonstrate that the source operation qualifies for the exemption.

(n) The owner or operator of a source operation to which this section applies shall, upon the request of the Department, record any other operating parameter relevant to the prevention or control of air contaminant emissions from the miscellaneous metal and plastic parts coatings or control apparatus, pursuant to N.J.A.C. 7:27-16.22.

7:27-16.16 Other source operations

(a) The provisions of this section apply to any source operation, except source operations in the following categories (note: source operations in those categories designated by an asterisk (*) that have the potential to emit three pounds per hour or more of VOC and that are located at a major VOC facility are regulated by N.J.A.C. 7:27-16.17):

1. VOC storage operations;

2. Gasoline transfer operations;

3. VOC transfer operations, other than gasoline;

4. Marine transfer operations;

5. Open top tanks and surface cleaners;

6. Surface coating and graphic arts operations;

7. Boilers;

8. Stationary combustion turbines;

9. Stationary reciprocating engines;

10. Asphalt pavement production plants;

11. Natural gas pipeline blowdown events;

12. Flares;

13. Petroleum solvent dry cleaning operations;

14. *Fiberglass manufacturing furnaces;

15. *Glass manufacturing furnaces;

16. *Fuel burning for steam generation for space heating;

17. *Sulfuric acid plant burners;

18. Any source operation regulated pursuant to N.J.A.C. 7:27-16.14 or 16.17; and

19. Any source operation exempted from this subchapter pursuant to N.J.A.C. 7:27-16.27.

(b) Source operations to which this section apply are not limited to those involved in manufacturing and include, without limit, the following: agitators, autoclaves, bakery ovens, blenders, centrifuges, distillation processes, driers, extruders, fermentation processes, fiberglass boat or vessel manufacturing operations, except any source operation regulated pursuant to N.J.A.C. 7:27-16.14, fiberglass product manufacturing operations, foam blowing operations, fumigation chambers, mills, mixers, ovens, reactors, receivers, roasters, sterilization operations, and synthetic fiber manufacturing operations. The provisions of this section do not apply to any insignificant source operation as defined in N.J.A.C. 7:27-8.2 or 22.1.

(c) No person shall cause, suffer, allow, or permit any VOC to be emitted into the outdoor atmosphere from any source operation subject to the provisions of this section, in excess of the maximum allowable emission rate, as determined in accordance with the procedure in (d) below.

(d) For the purposes of (c) above, the maximum allowable emission rate for a source operation subject to this section shall be determined in accordance with the following procedure:

1. Determine the vapor pressure at standard conditions in pounds per square inch absolute of the VOC emitted from the source operation.

2. Determine the percent by volume of the VOC in the source gas emitted from the source operation. Whenever dilution gas is added to the source gas from a source operation, the source gas shall be considered to have the gas discharge rate and composition prior to such dilution, in accordance with the following:

   i. If the source operation discharges under a ventilation hood, concentration of VOC and the flow rate of the source gas may be measured or otherwise determined in the duct connecting the hood to the inlet of the ventilation fan.

   ii. If the emissions and ventilation air are conveyed through ducts from the source operation to the outdoor atmosphere with no interruption, the concentration of VOC and the rate of the source gas are to be determined inside the ducts.

   iii. For all other source operations including, but not limited to, evaporation from steps in chemical manufacturing processes, the concentration of VOC and the rate of the source gas shall be measured at a point no farther than six inches (15 centimeters) downstream from the point at which the vapors leave the process equipment.

3. If the vapor pressure of the VOC is less than 14.7 psia, from Table 16B, find the source gas range classification by selecting the appropriate line for the vapor pressure as determined in (d)1 above and the appropriate column for the percent by volume of the VOC in the source gas emitted from the source operation as determined in (d)2 above.

4. If the vapor pressure of the VOC is equal to or greater than 14.7 psia:

   i. The source gas range classification is Range A if the percent by volume of the VOC in the source gas emitted from the source operation as determined in (d)2 above is not greater than 0.1 percent (1,000 ppm).

   ii. The source gas range classification is Range B if the percent by volume of the VOC in the source gas emitted from the source operation as determined in (d)2 above is greater than 0.1 percent (1,000 ppm) and is not greater than 1 percent (10,000 ppm).

iii. The source gas range classification is Range I if the percent by volume of the VOC in the source gas emitted from the source operation as determined in (d)2 above is greater than one percent (10,000 ppm) and is not greater than 97 percent.

iv. The source gas range classification is Range G if the percent by volume of the VOC in the source gas emitted from the source operation as determined in (d)2 above is greater than 97 percent and is not greater than 99.5 percent.

v. The source gas range classification is Range H if the percent by volume of the VOC in the source gas emitted from the source operation as determined in (d)2 above is greater than 99.5 percent.

5. From Table 16A, Column 2, determine the maximum allowable percent of process emissions for the source gas range as determined in (d)3 and 4 above.

6. The maximum allowable emission rate is the pounds (kilograms) per hour (or per batch cycle hour) equivalent to the percent of the process emissions shown in Column 2 or the Exclusion Rate shown in Column 3, whichever is greater.

TABLE 16A

MAXIMUM ALLOWABLE HOURLY VOC EMISSIONS FROM SOURCE OPERATIONS

Column 1	Column 2	Column 3	
Range Determined From Table 16B	Maximum Allowable emissions, Percent of Process Emissions by Weight	Exclusion Rates As of June 15, 1990 Continuous or Batch Cycle Emissions	
		Pounds Per Hour	Kilograms Per Hour
Range A	15	3.5	1.59
Range B	15	3	1.36
Range C	15	2.5	1.14
Range D	12	2	0.91
Range E	10	1.5	0.68
Range F	8	1	0.46
Range G	2	0.5	0.23
Range H	0.3	0	0
Range I	15	3.5	1.59

Table 16B

DETERMINANTS OF CONTROLS REQUIRED FOR PROCESS SOURCE GASES

Concentration of VOC by Volume, Percent

Vapor Pressure, PSIA @ 70°F		Range A	Range B		Range C		Range D		Range E		Range F		Range G	Range H
Greater Than	But not Greater than	Not Greater Than	Greater than	But not Greater than	Greater Than	But not Greater than	Greater Than	But not Greater than	Greater Than	But not Greater than	Greater Than	But not Greater than		
0.0	0.1					---	---	---	1.0	18.0	18.0			
0.1	0.2					---	1.0	7.0	7.0	29.0	29.0			
0.2	0.3					6.0	6.0	13.0	13.0	40.0	40.0			
0.3	0.4					9.0	9.0	18.0	18.0	45.0	45.0			
0.4	0.5					12.0	12.0	22.0	22.0	50.0	50.0			
0.5	0.6					14.0	14.0	25.0	25.0	56.0	56.0			
0.6	0.7					16.0	16.0	28.0	28.0	60.0	60.0			
0.7	0.8					18.0	18.0	31.0	31.0	64.0	64.0			
0.8	0.9					20.0	20.0	34.0	34.0	67.0	67.0			
0.9	1.0					22.0	22.0	37.0	37.0	70.0	70.0			
1.0	1.2					26.0	26.0	41.0	41.0	74.5	74.5		Greater Than 97% But Not Greater Than 99.5%	
1.2	1.4					29.0	29.0	45.0	45.0	77.5	77.5			
1.4	1.6					32.0	32.0	49.0	49.0	80.5	80.5			
1.6	1.8					34.5	34.5	52.0	52.0	83.0	83.0			
1.8	2.1	0.1% (1000 PPM)	0.1% (1000 PPM)	1.0% (10,000 PPM)	1.0% (10,000 PPM)	38.0	38.0	55.0	55.0	86.0	86.0			Greater Than 99.5%
2.1	2.4					41.5	41.5	58.0	58.0	88.0	88.0			
2.4	2.7					45.0	45.0	61.0	61.0	90.0	90.0	97% Vapor		
2.7	3.0					48.0	48.0	64.0	64.0	91.5	91.5			
3.0	3.5					52.0	52.0	68.0	68.0	93.5	93.5			
3.5	4.0					55.0	55.0	71.0	71.0	95.5	95.5			
4.0	4.5					58.0	58.0	74.0	74.0	97.0				
4.5	5.0					61.0	61.0	76.0	76.0	97.0				
5.0	5.5					64.0	64.0	78.0	78.0	97.0				
5.5	6.0					66.5	66.5	79.5	79.5	97.0				
6.0	6.5					68.6	68.6	81.0	81.0	97.0				
6.5	7.0					70.5	70.5	82.5	82.5	97.0				
7.0	7.5					72.0	72.0	84.0	84.0	97.0				
7.5	8.0					73.5	73.5	85.0	85.0	97.0				
8.0	8.5					75.0	75.0	86.0	86.0	97.0				
8.5	9.5					77.5	77.5	87.5	87.5	97.0				
9.5	10.5					80.0	80.0	89.0	89.0	97.0				
10.5	11.5					82.0	82.0	90.5	90.5	97.0				
11.5	13.0					84.5	84.5	92.0	92.0	97.0				
13.0	14.7					87.0	87.0	93.0	93.0	97.0				

(e) The provisions of (c) above shall not apply to a source gas in Range A or B discharged into the outdoor atmosphere through a local exhaust ventilation system whose intake is located within six inches (15 centimeters) of the point at which the source gas is discharged to an internal work space, provided such exhaust ventilation system:

1. Collects at least 60 percent by volume of a Range A source gas or 85 percent by volume of a Range B source gas emitted from the source operation; and

2. Is equipped with a vapor control system which prevents from being discharged into the outdoor atmosphere at least 85 percent by volume of the VOC collected, on an hourly basis.

(f) For the purpose of this section:

1. Source gases from a single source operation which are emitted from different vents in different range classifications as determined from Table 16B shall be considered as being discharged from separate source operations for each of which the maximum allowable emission rate must be determined separately.

2. Source operations normally falling within the category subject to the provisions of this section but used for research or development purposes are exempt from compliance with (c) above provided they do not exceed the hourly exclusion rates for their ranges, as set forth in Table 16A, Column 3, as applicable; or provided:

   i. No more than two times the applicable hourly exclusion rate set forth in Table 16A, Column 3 is emitted in any one hour or over a batch cycle average; and

   ii. No more than three times the applicable hourly exclusion rate set forth in Table 16A, Column 3 is emitted in any 24-hour period.

3. The maximum allowable emission rate for source gases physically combined (manifolded) for more than one source operation is the sum of the maximum allowable emission rates for the separate source gases as determined under N.J.A.C. 7:27-16.16(c) and (e). The process emission rate shall be used as the maximum allowable emission rate of a separate source gas if it is less than the applicable exclusion rate contained in Table 16A, Column 3;

4. Until March 28, 1994, the provisions of 3 above may apply to source gases which are mathematically combined, providing approval for such a mathematical combination of sources has been obtained from the Department prior to March 28, 1992;

5. As of March 28, 1992, the Department shall not approve any mathematical combining of source gases; and

6. Any approval of a permit or certificate issued by the Department authorizing the demonstration of compliance through a mathematical combination of sources shall expire as of March 28, 1994. Any person who, as a result of this expiration, must alter any equipment or control apparatus in order to operate in conformance

with any requirement of this subchapter shall do so in accordance with the following schedule:

i. By September 24, 1992, apply to the Department for a permit to carry out the alteration; and

ii. By March 28, 1994, comply with the requirements of this chapter and with any provisions or conditions set forth in any alteration permit issued which authorizes the alteration of the equipment or control apparatus.

(g) Any person responsible for a source operation subject to (c) above shall maintain the following records for each source operation:

1. For each different kind of batch or continuous process for which the source operation is used:

i. Record the following information determined in accordance with the procedure for using Table 16A in (d) above: the chemical name and vapor pressure of each VOC used, the percent concentration by volume of VOC in the source gas, the volumetric gas flow rate, the source gas range classification, and the maximum allowable emission rate; also record the maximum actual emission rate and maintain the calculations and any test data used to determine the actual emission rate for each process; and, if the source operation is used for more than one process, record the dates on which the source operation is used for each process; or

ii. Conduct an analysis of the source operation, which demonstrates that, under worst case operating conditions that maximize the VOC emissions after any control, the VOC emission rate of the source operation is in compliance with this section; and maintain process records sufficient to demonstrate whether the VOC emission rate of the source operation from actual operations does not exceed the VOC emission rate under worst case operating conditions;

2. For any source operation that has a thermal oxidizer used to control the emission of VOCs, record on a continuous basis or at a frequency approved in writing by the Department the operating temperature at the exit of the combustion chamber and the carbon monoxide concentration in the flue gas emitted to the outdoor atmosphere; also maintain production records sufficient to demonstrate whether the processes conducted generate VOC emissions within the design parameters of the thermal oxidizer;

3. For any source operation that has a control apparatus using carbon or other adsorptive material used to control the emission of VOC:

i. Record on a continuous basis or at a frequency approved in writing by the Department the concentration of the total VOC in the flue gas emitted to the outdoor atmosphere; or

ii. Record the date and time the carbon or other adsorptive material used in the control apparatus is regenerated or replaced; also maintain production records sufficient to demonstrate whether the processes conducted generate VOC emissions within the design parameters of the control apparatus and any other information required to document whether the control apparatus is being used and maintained in accordance with the manufacturer's recommended procedures. The manufacturer's recommendations for use and maintenance are also to be readily available on the operating premises, and the person responsible for the source operation shall provide these to the Department upon request; and

4. Upon the request of the Department and at the frequency specified by the Department, record any other operating parameter relevant to the prevention or control of air contaminant emissions from the source operation or control apparatus.

7:27-16.17 Alternative and facility-specific VOC control requirements

(a) This section establishes procedures and standards for the establishment of VOC control requirements for any source operation that:

1. Is located at a major VOC facility whose owner or operator seeks approval of a facility-specific VOC control plan that would apply to any source operation or equipment that has the potential to emit at least three pounds per hour (potential batch cycle emission rate of three pounds per hour for batch processes), and:

i. Is not regulated elsewhere in this subchapter; and

ii. Is not specifically exempted elsewhere in this subchapter because the source operation is within a category that is exempted or because the source operation operates below exclusion rates or threshold levels for control; or

2. Is regulated under N.J.A.C. 7:27-16.2 through 16.16 or 16.18 through 16.21, whose owner or operator seeks approval of an alternative VOC control plan, which would apply to the equipment or source operation notwithstanding any control requirement or emission limit which would otherwise apply under this subchapter; or

3. Was issued an alternative or facility-specific VOC control plan prior to May 19, 2009.

(b) Except as provided at (q) below, the owner or operator of any facility that contains a source operation subject to (a)1 above shall:

1. (Reserved)

2. Beginning on May 31, 1995, comply with either (b)2i or ii below:

i. Use control apparatus that the Department has determined (pursuant to (*1*) below) will collect at least 90 percent by weight of the VOC emissions from the source operation and prevent from being discharged into the outdoor atmosphere at least 90 percent by weight of the VOC collected; or

ii. Operate the facility in accordance with a facility-specific VOC control plan approved by the Department pursuant to (j) below.

(c) The following requirements apply to an owner or operator seeking approval of an alternative VOC control plan pursuant to (a)2 or 3 above:

1. The owner or operator shall submit to the Department at the address listed in (s) below a proposed alternative VOC control plan prepared in accordance with (d) below. Submission of a proposed alternative VOC control plan does not relieve an owner or operator of any facility, equipment or source operation from complying by the compliance dates in other sections of this subchapter. If and when the Department approves an alternative VOC control plan, the owner or operator shall be subject to the conditions and requirements of the plan and of the Department's approval;

2. Any alternative VOC control plan approved by the Department after May 19, 2009 shall have a term of 10 years;

3. Any owner or operator that has an alternative VOC control plan approved prior to May 19, 2009 by the Department and that plans to continue operating with an alternative VOC control plan, shall submit a proposed plan by August 17, 2009. The owner or operator may request a 60-day extension pursuant to N.J.A.C. 7:27-16.17(*o*) to submit the proposed plan:

i. If the owner or operator submits a proposed plan by August 17, 2009 or by the date of any extension approved by the Department, the owner or operator's existing alternative VOC control plan shall terminate on the date specified in the implementation schedule of the alternative VOC control plan that the Department approves; and

ii. If the owner or operator does not submit a proposed plan by August 17, 2009, the owner or operator's existing VOC control plan shall terminate on August 17, 2009;

4. If the owner or operator of a facility has an approved alternative VOC control plan for a source operation that was issued after May 19, 2009, and intends to modify, alter or reconstruct, such that the VOC emission limit would change, the existing alternative VOC control plan shall terminate on the start date of the modified, altered or reconstructed source operation or item of equipment. If the owner or operator plans to continue operating under an alternative VOC control plan, the owner or operator shall apply, and obtain approval of, a new alternative VOC control plan prior to operation of the modified, altered or reconstructed source operation or item of equipment; and

5. If the owner or operator of a facility that has an approved alternative VOC control plan for a source operation that was issued after May 19, 2009, intends to continue operating under a VOC emission limit beyond the expiration date of the existing plan, the owner or operator shall apply for a new alternative VOC control plan at least one year prior to the termination date of the existing plan. The existing plan shall terminate on its termination date or on the date of the Department's final action on the proposed new plan, whichever is later.

(d) An owner or operator submitting a proposed alternative or facility-specific VOC control plan pursuant to (b)2ii or (c) above shall include the following information in the plan:

1. A list of each source operation at the facility to be included in the plan:

   i. For a submission pursuant to (b)2ii above, the list shall include each source operation that is not regulated under N.J.A.C. 7:27-16.2 through 16.16, 16.20 or 16.21, and has the potential to emit at least three pounds of VOC per hour; or

   ii. For a submission pursuant to (c) above, the list shall include each source operation for which the owner or operator seeks an alternative to compliance under N.J.A.C. 7:27-16.2 through 16.16, 16.20 or 16.21;

2. The following information for each source operation listed pursuant to (d)1 above:

   i. A brief description of the source operation, and its permit number and any other identifying numbers;

   ii. The maximum rated capacity of the source operation;

   iii. The source operation's potential to emit VOC;

   iv. A list of all VOC control technologies available for use with the source operation;

v. A list of all alternative processes and pollution prevention measures that the owner or operator is considering using with or in place of the source operation to reduce VOC emissions;

vi. An analysis of the technological feasibility of installing and operating each control technology and process alternative identified in (d)2iv and v above;

vii. For each control technology and process alternative which is technologically feasible to install and operate, an estimate of the cost of installation and annual operation;

viii. An estimate of the remaining useful life of the existing source operation;

ix. An estimate of the reduction in VOC emissions attainable through the use of each control technology and process alternative identified in (d)2iv and v above;

x. The VOC control technology or technologies or process alternatives which the owner or operator proposes to employ and an implementation schedule;

xi. For any construction, alteration or installation of any equipment or control apparatus that the owner or operator proposes in the plan, a complete application for each permit required. The permit may be a preconstruction permit and certificate under N.J.A.C. 7:27-8, an operating permit under N.J.A.C. 7:27-22, or a facility-wide permit as defined at N.J.A.C. 7:1K-1.5;

xii. A proposed VOC emission limit for the source operation or for the proposed process alternative; and

xiii. Proposed recordkeeping requirements sufficient to document the owner or operator's continued compliance with the plan;

3. Any other information the Department requests that is reasonably necessary to enable it to determine whether the application satisfies the requirements of (j) below; and

4. A certification signed by the owner or operator, satisfying the requirements of N.J.A.C. 7:27-1.39.

(e) Notwithstanding the provisions of (b) above, the owner or operator of a facility that had actual annual emissions of VOC in 1990 and each year thereafter of less than 25 tons, may comply with the requirements of this section by obtaining the Department's approval

of a compliance plan and implementing such a plan. To comply in this manner, the owner or operator shall submit a proposed compliance plan pursuant to (f)1 below, obtain the Department's approval of the plan pursuant to (k) below, and implement the plan pursuant to (f)2 below.

1. The owner or operator shall submit to the Department a proposed compliance plan that includes the following information, and is certified by the owner or operator pursuant to N.J.A.C. 7:27-1.39;

   i. Documentation establishing that the actual annual emissions of VOC from the facility in 1990 and each year thereafter were less than 25 tons. If the facility did not commence operations until after 1990, the documentation shall address each year beginning with the year that operations commenced. The documentation shall include records maintained at the facility and any report of actual emissions, including any emission statement, submitted for the facility to the Department for the relevant years;

   ii. A statement of the owner or operator's intent to reduce the facility's potential to emit VOC to less than 25 tons per year;

   iii. A description of how the reduction of the facility's potential to emit is to be achieved;

   iv. Complete applications for amendments to any existing permit or for any new permit required to achieve the reduction of the facility's potential to emit VOC to less than 25 tons per year; and

   v. Proposed recordkeeping requirements sufficient to document the owner or operator's continued compliance with the plan.

2. By May 31, 1995, the owner or operator of the facility shall reduce the facility's potential to emit VOC to less than 25 tons per year and achieve compliance with all new or amended permits.

(f) Within 30 days after receiving a proposed facility-specific VOC control plan submitted pursuant to (b)2 above, or a proposed compliance plan submitted pursuant to (f) above, the Department will notify the owner or operator in writing whether the submission includes sufficient information to commence review. If the submission does not contain sufficient information to complete the review, the Department will include in the notice a list of the deficiencies, a statement of the additional information required to make the submission complete, and a time by which the owner or operator must make a complete submission. The Department may refrain from reviewing the substance of the submission until the additional information is provided to the Department.

(g) Failure by an owner or operator to submit the additional information requested by the Department pursuant to (g) above within the time stated in the Department's notification shall constitute a violation of this subchapter. In such case, the Department may deny the submission and pursue its other remedies.

(h) The Department shall seek comments from the general public before making any final decision to approve or disapprove a proposed alternative or facility-specific VOC control plan. The Department shall publish a Notice of Opportunity for Public Comment in a newspaper for general circulation in the area in which the major VOC facility is located. In addition, the Department shall submit any approved alternative or facility-specific VOC control plan to EPA for approval as a revision to New Jersey's State Implementation Plan.

(*i*) Within six months after receiving a complete proposed alternative or facility-specific VOC control plan, the Department shall approve, approve and modify, or disapprove the proposed plan and notify the owner or operator of the decision in writing. The Department shall approve the proposed plan only if it satisfies the following requirements:

1. The proposed plan contains all of the information required under (d) above;

2. The proposed plan considers all control technologies available for the control of VOC emissions from the type of equipment or source operation in question;

3. For any control technologies described in (j)2 above which the owner or operator does not propose to use on the equipment or source operation, the proposed plan demonstrates that the control technology:

   i. Would be less effective in controlling VOC emissions from the equipment or source operation than the proposed measures;

   ii. Is unsuitable for use with the source operation, or duplicative of control technology or pollution prevention measure which the plan proposes to use;

   iii. Would carry costs disproportionate to the improvement in the reduction of the VOC emissions rate which the control technology is likely to achieve, or disproportionately large in comparison to the total reduction in VOC emissions which the control technology is likely to achieve over its useful life; or

   iv. Would carry costs disproportionate to the costs incurred for the control of VOC emissions from the same type of source operations used by all other persons in the owner or operator's industry;

4. The emission limit proposed for each source operation is the lowest rate which can practicably be achieved at a cost within the limits described in (j)3iii and iv above;

5. The cost of achieving an additional emission reduction beyond each proposed limit would be disproportionate to the size and environmental impact of that additional emission reduction; and

6. For any pollution prevention or other emission reduction measures proposed by the owner or operator, the proposed plan demonstrates that the measures:

   i. Result in actual reductions in VOC emissions;

   ii. Result in VOC emission reductions which are quantifiable; and

   iii. Result in VOC emission reductions which are Federally enforceable.

(j) Within six months after receiving a complete compliance plan submitted pursuant to (f) above, the Department shall approve, approve and modify, or disapprove the proposed compliance plan and notify the owner or operator of the decision in writing. The Department shall approve the proposed compliance plan only if it satisfies the following conditions:

1. The compliance plan contains all of the information required under (f) above;

2. The compliance plan demonstrates to the Department's satisfaction that actual emissions of VOC, including fugitive VOC emissions, in 1990 (or the first year of the facility's operations, if operations commenced after 1990) and each year thereafter are less than 25 tons;

3. The proposed recordkeeping requirements are sufficient to enable the Department to verify that the owner or operator is complying with the plan; and

4. The compliance plan demonstrates that the potential to emit VOC will be less than 25 tons if the plan is approved and implemented.

(k) As a condition of an approval issued under this section, the Department may impose requirements upon the operation of the source operation(s) necessary to minimize any adverse impact upon human health, welfare and the environment.

(*l*) Before altering any source operation which is included in an approved alternative or facility-specific VOC control plan, approved compliance plan or demonstration (except as authorized or required in the approval), the owner or operator shall:

1. Pursuant to this section, apply for and obtain the Department's approval of an amendment to the approved compliance plan, VOC control plan, or

demonstration, reflecting the proposed alteration. If the owner or operator does not obtain the Department's approval of the amendment before commencing operation of the altered equipment or source operation, the Department may (in addition to assessing penalties under N.J.A.C. 7:27A-3.10) modify the VOC control plan, compliance plan or demonstration to reflect the alteration, in a manner satisfying the criteria set forth in (j), (k) or (*l*) above, respectively; and

2. Apply for and obtain any preconstruction permit and certificate, operating permit, or facility-wide permit, or change thereto, required for the alteration. Each application must be submitted with the application to amend the VOC control plan.

(m) The Department will revoke an approval of an alternative VOC control plan by written notice to the holder of the approval if EPA denies approval of the proposed VOC plan as a revision to the State Implementation Plan. The Department may revoke an approval of an alternative or facility-specific VOC control plan, compliance plan or demonstration by written notice to the holder of the approval, if:

1. Any material condition of the approval is violated;

2. The Department determines that its decision to grant the approval was materially affected by a misstatement or omission of fact in the owner or operator's submission or any supporting documentation; or

3. The Department determines that continued use of the subject source operation pursuant to the approval poses a potential threat to the public health, welfare or the environment.

4. For an alternative or facility-specific VOC control plan, EPA denies approval of the plan as a revision to the State Implementation Plan.

(n) A person may request an adjudicatory hearing in accordance with the procedure at N.J.A.C. 7:27-1.32, if:

1. The Department has denied the person's application for approval under this section for any other reason than an EPA rejection of the SIP revision;

2. The person seeks to contest one or more conditions of the Department's approval imposed under (m) above; or

3. The Department has revoked the person's approval pursuant to (*o*)1 through 3 above.

(*o*) After receipt of a written request from an owner or operator, the Department may authorize one non-renewable 60-day extension of the deadline set forth in (c)3 above.

Written requests for the extension of a deadline shall be submitted to the address listed below:

Administrator
Air Compliance and Enforcement
Department of Environmental Protection
PO Box 422
401 East State Street, 4th floor
Trenton, New Jersey 08625-0422

(p) The owner or operator submitting a proposed alternative or facility-specific VOC control plan, compliance plan or demonstration shall send it to the Department at the following address:

Department of Environmental Protection
Division of Air Quality
Air Quality Permitting Program
Bureau of Air Permits
401 East State Street
Mail Code 401-02
PO Box 420
Trenton, New Jersey 08625-0420

(q) If a source operation is covered by a preconstruction permit and operating certificate or an operating permit, either of which requires the source operation to utilize a control apparatus which attains at least 90 percent capture and 90 percent control, the owner or operator need only be in compliance with that permit or certificate to be deemed in compliance with this section; the owner or operator need not submit the demonstration required by (b) above.

7:27-16.18 Leak detection and repair

(a) The provisions of this section shall apply to any owner or operator of the following:

1. Any petroleum refinery;

2. Any natural gas/gasoline processing plant;

3. Any synthetic organic chemical or polymer manufacturing facility; or

4. Any chemical plant, other than a synthetic organic chemical or polymer manufacturing facility, which is a major VOC facility.

(b) The provisions of this section shall apply only to equipment in contact with a substance that:

1. At any petroleum refinery, is 10 percent by weight or greater applicable VOC;

2. At any natural gas/gasoline processing plant, is one percent by weight or greater applicable VOC; or

3. At any synthetic organic chemical or polymer manufacturing facility, is ten percent by weight or greater gaseous applicable VOC or light liquid VOC and the equipment is used to produce greater than 1,100 tons per year (1,000 megagrams per year) of synthetic organic chemicals or polymers, or any combination thereof; or

4. At any chemical plant, other than a synthetic organic chemical or polymer manufacturing facility, is 10 percent by weight or greater applicable VOC, and the total quantity of applicable VOC processed in the equipment is greater than 550 tons per year. The total quantity processed shall include the total annual quantity of applicable VOC charged to all operations for which the equipment is used and does not include any in-process recycled and in-process refluxed applicable VOC and any applicable VOC which is generated during the process.

(c) After the applicable date set forth in Table 18A, no person subject to this section shall cause, suffer, allow or permit a regulated leak of any applicable VOC from any pressure relief device or any other component without moving parts (including, without limitation, flanges, manholes, hatches, instrument connections, sealed connections, joints and fittings), unless one of the following conditions is satisfied:

1. The person first attempts to repair the regulated leak, and completes the repair, as soon as is practicable but not beyond the time allotted for each of those actions in Table 18A;

2. The leak is an overpressure release discharge from a pressure relief device, for which the pressure relief device is designed, and the release is properly reported pursuant to any applicable law or rule; or

3. The leak is a discharge to an emergency device (such as a flare) that is designed to combust gases generated during process upsets for emergency events.

(d) After the applicable date set forth in Table 18B, no person subject to this section shall cause, suffer, allow or permit a regulated leak of any applicable VOC from any agitator or any other component with moving parts (including, without limitation, valves, pumps, compressors, agitators and diaphragms), unless the person first attempts to repair the leak, and completes the repair, as soon as is practicable but not beyond the time allotted for each of those actions in Table 18B.

(e) In determining the concentration of VOC in a gaseous leak from a component, the applicable VOC shall be measured at a distance within 0.4 inches (one centimeter) of the source in accordance with:

1. The EPA test reference method 21 set forth at 40 CFR part 60 Appendix A, using methane as the reference compound, unless the owner or operator chooses to use a more appropriate calibration gas with an established response factor for the instrument and to record and report the concentration in terms of methane; or

2. Any other equivalent test method approved in advance in writing by the Department and acceptable to EPA.

TABLE 18A

TIME LIMITS FOR LEAK REPAIR OF COMPONENTS WITHOUT MOVING PARTS

Type of Leak	**Maximum Number of Days from Date Leak Was Detected until the First Attempt at Repair**	**Maximum Number of Days from Date Leak Was Detected until the Repair Is Complete**	**Date Provisions Becomes Effective**
Liquid Leak	2	15	July 26, 1994
Gaseous Leak having a concentration of applicable VOC above background concentration equal to or greater than:			
10,000 ppm	5	15	July 26, 1994
1,000 ppm but less than 10,000 ppm	N/A	15	July 26, 1994

TABLE 18B

TIME LIMITS FOR LEAK REPAIR OF AGITATORS AND OTHER COMPONENTS WITH MOVING PARTS

Type of Leak	**Maximum Number of Days from Date Leak Was Detected until the First Attempt at Repair**	**Maximum Number of Days from Date Leak Was Detected until the Repair Is Complete**	**Date Provision Becomes Effective**
From an Agitator:			
Liquid Leak	2	15	July 26, 1994
Gaseous Leak having a concentration of applicable VOC greater than 10,000 ppm above background concentration	5	15	July 26, 1994
From Other Components with Moving Parts:			
Liquid Leak	2	15	July 26, 1994

Gaseous Leak having a concentration of applicable VOC above background concentration equal to or greater than:			
10,000 ppm	5	15	July 26, 1994
5,000 ppm but less than 10,000 ppm	N/A	15	April 1, 1995
1,000 ppm but less than 5,000 ppm	N/A	15	April 1, 1996

(f) The owner or operator of a petroleum refinery shall develop and implement a leak detection and repair program for any component subject to the provisions of (c) and (d) above. The program shall include the following provisions:

1. The minimum frequency of testing of components shall be as follows:

   i. Annually, test all agitators, pumps and valves in light liquid service;

   ii. Quarterly, test all compressors, valves, and pressure relief devices in gaseous service, unless on both of the last two occasions when such testing was conducted at the petroleum refinery the owner or operator determined that:

      (1) Less than two percent of all the pumps, valves, compressors, and pressure relief devices tested had a regulated leak. In such an instance the owner or operator may elect to conduct such testing once every two quarters; or

      (2) Less than one percent of all the pumps, valves, compressors, and pressure relief devices tested had a regulated leak. In such an instance the owner or operator may elect to conduct such testing once every four quarters;

   iii. Monthly, visually inspect all pumps;

   iv. Semi-annually, visually inspect any other type of component in light liquid service; and

   v. Test any other type of component in gaseous service within 15 days after the component has been returned to service following having been taken apart or disconnected and reassembled;

2. By no later than five days after a pressure relief device has vented to the atmosphere, the pressure relief device shall be tested;

3. By no later than five days after repair, any component from which a regulated leak was detected shall be tested;

4. By July 1, 1982, the initial leak tests required in (f)1i, (f)1ii, and (f)1iii above shall be completed, and by May 31, 1995 the initial leak tests required in (f)1iv above shall be completed;

5. A readily visible identification tag shall be affixed to any component detected to have a regulated leak. The tag must bear a number identifying the component and the date on which the regulated leak was detected. The tag must remain in place until the regulated leak is repaired;

6. Any component detected to have a regulated leak shall be repaired, in accordance with the schedules set forth in Tables 18A or 18B above, unless a refinery process unit shutdown is necessary to repair the regulated leak. In such case, the regulated leak shall be repaired during the next process unit shutdown and prior to the next start-up;

7. Notwithstanding paragraphs (f)1 through 6 above, a component that does not come in contact with applicable VOC at any time during a specified monitoring period need not be monitored during that period, but, instead, must only be monitored within 30 days of when the component next comes in contact with applicable VOC; and

8. Notwithstanding paragraphs (f)1 through 6 above, equipment that is not operating need not be started up solely for the purpose of monitoring components within a specified monitoring frequency period, but, instead, components of such equipment must be monitored within 30 days of when the equipment is next restarted.

(g) The owner or operator of any natural gas/gasoline processing plant shall develop and implement a leak detection and repair program for any component subject to the provisions of (c) and (d) above. The program shall include the following provisions:

1. The minimum frequency of testing of components shall be as follows:

i. Quarterly, test all pumps, valves, compressors, and pressure relief devices, unless on both of the past two occasions such testing was conducted at any natural gas/gasoline processing plant the owner or operator determined that:

(1) Less than two percent of all the pumps, valves, compressors, and pressure relief devices tested had a regulated leak. In such an instance the owner or operator may elect to conduct such testing once every two quarters; or

(2) Less than one percent of all the pumps, valves, compressors, and pressure relief devices tested had a regulated leak. In such an

instance the owner or operator may elect to conduct such testing once every four quarters;

ii. Weekly, visually inspect all pumps; and

iii. Once every two years, test any other type of component;

2. By no later than five days after a pressure relief device has vented to the atmosphere, the pressure relief device shall be tested;

3. By no later than five days after repair, any component from which a regulated leak was detected shall be tested;

4. By March 31, 1987, the initial leak tests shall be completed;

5. A readily visible identification tag shall be affixed to any component detected to have a regulated leak. The tag must bear a number identifying the component and the date on which the regulated leak was detected. The tag must remain in place until the regulated leak is repaired;

6. Any component detected to have a regulated leak shall be repaired, in accordance with the schedules set forth in Tables 18A or 18B above, unless a process unit shutdown is necessary to repair the regulated leak. In such case, the regulated leak shall be repaired during the next process unit shutdown and prior to the next start-up;

7. Notwithstanding paragraphs (g)1 through 6 above, a component that does not come in contact with applicable VOC at any time during a specified monitoring period need not be monitored during that period, but, instead, must only be monitored within 30 days of when the component next comes in contact with applicable VOC; and

8. Notwithstanding paragraphs (g)1 through 6 above, equipment that is not operating need not be started up solely for the purpose of monitoring components within a specified monitoring frequency period, but, instead, components of such equipment must be monitored within 30 days of when the equipment is next restarted.

(h) The owner or operator of a synthetic organic chemical or polymer manufacturing facility subject to this section shall develop and implement a leak detection and repair program for any component subject to the provisions of (c) and (d) above. The program shall include the following provisions:

1. The minimum frequency of testing of components shall be as follows:

i. Quarterly test all agitators, pumps and valves in light liquid service, and compressors and pressure relief devices on equipment in gas service, unless on both of the past two occasions such testing was conducted at a synthetic organic chemical or polymer manufacturing facility the owner or operator determined that:

(1) Less than two percent of all the compressors, valves, and pressure relief devices tested had a regulated leak. In such an instance the owner or operator may elect to conduct such testing once every two quarters; and

(2) Less than one percent of all the compressors, valves, and pressure relief devices tested had a regulated leak. In such an instance the owner or operator may elect to conduct such testing once every four quarters;

ii. Weekly, visually inspect all pumps in light liquid service;

iii. Semi-annually, visually inspect any other type of component in light liquid service; and

iv. Test any type of component in gaseous service within 15 days after the component has been returned to service following having been taken apart or disconnected and reassembled;

2. By no later than five days after a pressure relief device has vented to the atmosphere, the pressure relief device shall be tested;

3. By no later than five days after repair, any component from which a regulated leak was detected shall be tested;

4. By March 31, 1987, the initial leak tests pursuant to (h)1i and (h)1ii above shall be completed, and by May 31, 1995, the initial leak tests required pursuant to (h)1iii above shall be completed;

5. A readily visible identification tag shall be affixed to any component detected to have a regulated leak. The tag must bear a number identifying the component and the date on which the regulated leak was detected. The tag must remain in place until the regulated leak is repaired;

6. Any leaking component detected to have a regulated leak shall be repaired, in accordance with the schedules set forth in Tables 18A or 18B above, unless a process unit shutdown is necessary to repair the regulated leak. In such case, the regulated leak shall be repaired during the next process unit shutdown and prior to the next start-up;

7. Notwithstanding paragraphs (h)1 through 6 above, a component that does not come in contact with applicable VOC at any time during a specified monitoring period need not be monitored during that period, but, instead, must only be monitored within 30 days of when the component next comes in contact with applicable VOC; and

8. Notwithstanding paragraphs (h)1 through 6 above, equipment that is not operating need not be started up solely for the purpose of monitoring components within a specified monitoring frequency period, but, instead, components of such equipment must be monitored within 30 days of when the equipment is next restarted.

(*i*) The owner or operator of a chemical plant that is a major VOC facility shall develop and implement a leak detection and repair program for any equipment subject to the provisions of (c) and (d) above if such equipment is not subject to the provisions of (f), (g), or (h) above. The program shall include the following provisions:

1. The minimum frequency of testing of components shall be as follows:

i. Annually, test all agitators, pumps, valves, and pressure relief devices in light liquid service;

ii. Quarterly, test all compressors, valves, and pressure relief devices in gas service, unless on both of the past two occasions such testing was conducted at a chemical plant the owner or operator determined that:

(1) Less than two percent of all the compressors, valves, and pressure relief devices tested had a regulated leak. In such an instance the owner or operator may elect to conduct such testing once every two quarters; and

(2) Less than one percent of all the compressors, valves, and pressure relief devices tested had a regulated leak. In such an instance the owner or operator may elect to conduct such testing once every four quarters;

iii. Monthly, visually inspect all single mechanical seals and packed seal pumps; and

iv. Every six months, visually inspect any other type of component in light liquid service; and

v. Test any other type of component in gaseous service within 15 days after the component has been returned to service following having been taken apart or disconnected and reassembled;

2. By no later than five days after a pressure relief device has vented to the atmosphere, the pressure relief device shall be tested;

3. By no later than five days after repair, any component from which a regulated leak was detected shall be retested;

4. By May 31, 1995, the initial leak tests shall be initiated at the frequency required by (*i*)1i through (*i*)1v above;

5. A readily visible identification tag shall be affixed to any component detected to have a regulated leak. The tag must bear a number identifying the component and the date on which the regulated leak was detected. The tag must remain in place until the regulated leak is repaired;

6. Any component detected to have a regulated leak shall be repaired, in accordance with the schedules set forth in Tables 18A or 18B above, unless a process unit shutdown is necessary to repair the regulated leak. In such case, the regulated leak shall be repaired during the next process unit shutdown and prior to the next start-up;

7. Notwithstanding paragraphs (*i*)1 through 6 above, a component that does not come in contact with applicable VOC at any time during a specified monitoring period need not be monitored during that period, but, instead, must only be monitored within 30 days of when the component next comes in contact with applicable VOC; and

8. Notwithstanding paragraphs (*i*)1 through 6 above, equipment that is not operating need not be started up solely for the purpose of monitoring components within a specified monitoring frequency period, but, instead, components of such equipment must be monitored within 30 days of when the equipment is next restarted.

(j) Any owner or operator of a petroleum refinery subject to (f) above shall comply with (j)1 below beginning July 1, 1982, and shall comply with (j)2 below beginning October 1, 1982. Any owner or operator of a natural gas/gasoline processing plant or synthetic organic chemical/polymer manufacturing facility subject to (g) or (h) above, respectively, shall comply with (j)1 below beginning April 1, 1987, and shall comply with (j)2 below beginning July 1, 1987. Any owner or operator of a chemical plant subject to (*i*) above shall comply with (j)1 and 2 below beginning May 31, 1995:

1. A log of information about components detected to have regulated leaks shall be maintained. The log shall be retained for a minimum of five years and be made available immediately upon request by the Department. The log shall contain the following data for each instance in which a component is detected to have a regulated leak:

i. The name of the process unit where the component detected to have a regulated leak is located;

ii. The type of component;

iii. The tag identification number of the component;

iv. The date on which the regulated leak was detected;

v. The date on which the component detected to have a regulated leak was repaired;

vi. The date and instrument reading of the retest procedure after a component detected to have a regulated leak is repaired;

vii. A record of the calibration of the monitoring instrument;

viii. An identification of those regulated leaks that cannot be repaired without a process unit shutdown; and

ix. The total number of components monitored and the total number of components detected to have a regulated leak.

2. Within 30 days following the last day of every third month, a report shall be submitted to the Department's regional enforcement office that lists all components detected to have a regulated leak during the previous three calendar months that have not been repaired within the applicable time limits set forth in Tables 18A and 18B, all components detected to have a regulated leak whose repair is awaiting a process unit shutdown, all components not tested because they were not in contact with applicable VOC or not in operation during their specified monitoring period, the total number of components inspected, and the total number of components detected to have a regulated leak.

(k) Components that are insulated, encased, or enclosed may be tested for leaks at a distance within 0.4 inches (one centimeter) of the surface of the insulation, encasement, or enclosure.

(*l*) Notwithstanding the provisions of (f), (g), (h), and (*i*) above, difficult to monitor components installed prior to May 31, 1995, are exempt from quarterly testing requirements, and instead such testing shall be conducted on an annual basis.

(m) The reduced testing provisions pursuant to (*l*) above shall not apply to components installed on or after May 31, 1995, at a facility subject to this section. Instead, all such components installed on or after May 31, 1995 shall be tested in accordance with the other provisions of this section.

(n) The provisions of (f), (g), (h), and (*i*) above shall not apply to a pressure relief device which is connected to an operating flare or to a vapor recovery device, a storage tank valve, a valve that is not externally regulated, or a valve or other component in vacuum service.

(*o*) No owner or operator of any facility listed in (*o*)1 through 4 below shall install or operate a valve, except for a safety pressure relief valve, at the end of a pipe or line containing applicable VOC unless the pipe or line is sealed with a second valve, a blind flange, a plug or a cap. The sealing device may be removed only when a sample is being taken, during actual use in the process, or during maintenance. A fill line that is used to regularly fill containers is considered to be in actual use in the process for the purpose of this provision. Owners and operators of the following types of facilities are subject to this prohibition, beginning on the dates set forth below:

1. Any petroleum refinery subject to (f) above, after July 1, 1982:

2. Any natural gas/gasoline processing plant subject to (g) above, after July 1, 1987;

3. Any synthetic organic chemical or polymer manufacturing facility subject to (h) above, after July 1, 1987; or

4. Any chemical plant subject to (*i*) above, beginning May 31, 1995.

(p) The provisions of (f), (g), (h), and (*i*) above shall not apply to the following components:

1. A component which is primarily used in a laboratory operation or research facility;

2. A component that cannot be tested without immediate danger to the personnel conducting the test, or a component that cannot be tested because it is not accessible, and cannot practicably be made accessible, for conducting the test. For such components, the owner or operator shall document in writing:

   i. The reason that the component cannot be safely tested, or cannot practicably be made accessible for testing with monitoring equipment; and

   ii. Under which circumstances and by what method, if any, the component can be tested. Further, when those circumstances do arise, the owner or operator shall cause testing that complies with this section to be performed and shall respond to the results of that testing as this section otherwise requires;

3. A pump that is inherently sealless by design, for example, a magnetic drive, canned motor, or diaphragm pump;

4. A pump equipped with dual mechanical seals, provided that the barrier fluid is not an applicable VOC and that:

   i. Each dual mechanical seal is operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure;

   ii. Each dual mechanical seal is equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a VOC control apparatus;

   iii. Each dual mechanical seal is equipped with a closed-loop system that purges the barrier fluid into a process stream; or

   iv. Each barrier fluid system is equipped with a device that provides detection for the failure of the seal system, the barrier fluid system, or both;

5. A leakless design Bellows type valve; and

6. Process equipment enclosed in such a manner that all emissions from any component with a leak is vented through a system that routes those emissions to a controlled emission point, provided that:

   i. The enclosure is maintained under negative pressure at all times while the process unit is in operation; or

   ii. The potential points of leakage from the enclosure are subjected to the same leak detection and repair requirements as the components would be if they were not enclosed.

(q) Notwithstanding the other subsections of this section, the owner or operator of a facility subject to the provisions of this section may use pressure testing with gas or liquid as an alternative method to comply with leak detection requirements.

1. If the pressure testing alternative is used for continuous processing equipment, the frequency of pressure testing shall be no less than the frequency set forth in (f), (g), (h) and (*i*).

2. If the pressure testing alternative is used for batch product processes:

   i. Each time batch processing equipment is reconfigured, the batch product-process equipment shall be pressure tested for leaks before applicable VOC is first fed into the equipment and the equipment is placed in applicable VOC service, provided, however, that when the seal is broken between two items of equipment or when equipment is changed in a section of the batch product-processing equipment train, pressure testing is required only for the new or disturbed equipment; and

ii. Notwithstanding (i) above, each batch product process that operates in applicable VOC service during a calendar year shall be pressure tested at least once during the calendar year.

3. When pressure testing with a gas, the following procedures shall be used:

i. The product-process equipment shall be pressurized with a gas to the operating pressure of the equipment, but the equipment shall not be tested at a pressure greater than the pressure setting of the lowest relief valve setting in the portion of the equipment being tested;

ii. Once the test pressure is obtained, the gas source shall be shut off;

iii. The test shall continue for not less than 15 minutes unless it can be determined in a shorter period of time that the allowable rate of pressure drop is exceeded; and

iv. The pressure shall be measured at the beginning and at the end of the test period using a pressure measurement device (gauge, manometer, or equivalent) which has a precision of plus or minus 2.5 mm Hg. If the rate of pressure change is greater than one pound per square inch per hour, or if there is visible, audible or olfactory evidence of fluid loss, a regulated leak is detected.

4. When pressure testing with a liquid, the following procedures shall be used:

i. The product-process equipment shall be filled with the test liquid. Once the equipment is filled, the liquid source shall be shut off;

ii. The test shall be conducted for a period of at least 60 minutes, unless it can be determined in a shorter period of time that there is a regulated leak; and

iii. Each seal in the equipment being tested shall be inspected for indications of fluid loss. If there are any indications of liquid dripping or of fluid loss a regulated leak is detected.

(r) The owner or operator of a facility subject to the provisions of this section is exempt from the requirement to repair any regulated leak within the applicable time limits set forth in this section, so long as no applicable VOC is fed to the source operation of which the component is a part until testing confirms that the leak has successfully been repaired.

(s) An affirmative defense to liability for a violation of this section's requirements regarding time limits for repairs shall be available to any person who can demonstrate that:

1. Failure to comply with those time limits was caused by an inability to obtain the necessary parts through the exercise of due diligence; and

2. Keeping the necessary part in stock or otherwise available would have been technically or economically unreasonable; and

3. The parts were obtained and the repairs were made as quickly as the exercise of due diligence permitted.

(t) A leak shall not constitute a violation of this section so long as the component from which it appears has been monitored or inspected in accordance with this section and so long as the leak has been repaired in accordance with this section.

7:27-16.19 Application of cutback and emulsified asphalts

(a) On or after April 16, 2009, no person shall use or apply, during the period from April 16 through October 14, cutback asphalt or emulsifed asphalt, unless:

1. The asphalt contains no greater than 0.1 percent VOC by weight; or

2. The asphalt produces no greater than 6.0 milliliters of oil distillate, in accordance with ASTM Method D244, Standard Test Methods and Practices for Emulsified Asphalts, or AASHTO T 59, Standard Method of Test for Testing Emulsified Asphalts, both as supplemented or amended and incorporated herein by reference. ASTM Method D244 is available from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, Pennsylvania 19428-2959, or from its website www.astm.org. AASHTO T 59 is available from the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street N.W., Suite 249, Washington, DC 20001, or from its website www.transportation.org.

(b) On or after April 16, 2009, no person shall store cutback asphalt or emulsified asphalt during the period from April 16 through October 14 that does not meet the requirements at (a) above, unless the cutback asphalt or emulsified asphalt is stored in a sealed container.

7:27-16.20 Petroleum solvent dry cleaning operations

(a) No person shall cause, suffer, allow, or permit VOC emissions to the outdoor atmosphere from a petroleum solvent dry cleaning dryer unless such dryer is:

1. Equipped with a vapor control system which prevents VOC emissions from exceeding 7.7 pounds (3.5 kilograms) per 220 pounds (100 kilograms) dry weight of articles dry cleaned; or

2. A solvent recovery dryer operated in a manner such that the dryer remains closed and the recovery phase continues until a final recovered solvent flow rate of 0.013 gallons (50 milliliters) per minute is attained.

(b) No person shall cause, suffer, allow, or permit any VOC emissions to the outdoor atmosphere from a petroleum solvent filtration system unless:

1. The VOC content in all filtration wastes is reduced to no more than 2.2 pounds (1.0 kilograms) per 220 pounds (100 kilograms) dry weight of articles dry cleaned, before disposal, and exposure to the atmosphere; or

2. The system is a cartridge filtration system operated such that the filter cartridges are drained in their sealed housings for eight hours or longer before their removal.

(c) No owner or operator of a petroleum solvent dry cleaning facility shall cause, suffer, allow, or permit any VOC to be emitted into the outdoor atmosphere from:

1. Visibly leaking equipment including, but not limited to, washers, dryers, solvent filters, settling tanks, and vacuum stills; and

2. Containers of VOC or VOC-laden waste standing open to the outdoor atmosphere.

(d) The provisions of (a) above shall not apply to petroleum solvent dry cleaning facilities that consume less than 15,000 gallons (56,775 liters) of petroleum solvent annually.

(e) Any person subject to the provisions of (a) above shall comply with the following schedule:

1. By February 2, 1987, a plan shall be submitted to the Department for approval describing the measures which will be applied in order to achieve compliance. The plan submittal shall include completed applications for all preconstruction permits and operating certificates required by N.J.A.C. 7:27-8;

2. By May 1, 1987, construction or installation of equipment and control apparatus in accordance with the approved plan shall commence; and

3. By October 31, 1987, compliance with this section shall be achieved.

(f) The total amount of any VOC consumed by a petroleum solvent dry cleaning operation in each calendar year shall not exceed 9.9 pounds per 220 pounds of dry weight of articles cleaned.

(g) Any person responsible for the emission of any VOC from a petroleum solvent dry cleaning operation subject to this section shall maintain a monthly record setting forth the

chemical name of the VOC used in the operation, the volume of VOC consumed in the operation, and the dry weight of articles cleaned.

7:27-16.21 Natural gas pipelines

(a) The owner or operator of any natural gas pipeline shall by October 26, 1994 prepare a Control Measure Plan that shall:

1. Identify each control technology or procedure available to the owner or operator for achieving reductions in VOC emissions from a blowdown event. Such control technology or procedures may include, without limitation, pipeline pressure reductions, the use of mobile compressors for recompressing, and the use of control apparatus; and

2. Identify in detail the criteria that the owner or operator will use to select the control technology or procedure, or combination thereof, that will achieve the greatest reductions in VOC reasonably achievable for each blowdown event.

(b) The owner or operator of any natural gas pipeline shall by May 31, 1995 achieve some reduction in VOC emissions from each blowdown event and shall implement the control technologies or procedures that the Control Measure Plan indicates would be appropriate for each blowdown event.

(c) On or before March 1 of each year beginning in 1996, the owner or operator of each natural gas pipeline shall submit a report to the Chief, Bureau Field Operations setting forth the location, date and duration of each blowdown event, a description of the emissions reduction procedures and technology used, and a quantification of the amount of VOC emission reductions achieved for each event.

(d) The owner or operator of any natural gas pipeline subject to (a) above shall retain the Control Measure Plan at the office having operating responsibility for the section of pipeline for which the blowdown event will occur and shall provide a copy of such plan to the Department within three days of receipt of a written request from the Department.

(e) If after reviewing a Control Measure Plan, the Department determines that it fails to satisfy the requirements set forth in (a) above, the Department shall notify the owner or operator that it has 30 days to submit to the Department appropriate amendments to its plan. Failure to do so shall constitute a violation of this section. However, an owner or operator may request an adjudicatory hearing regarding the Department's determination in accordance with the procedure at N.J.A.C. 7:27-1.32.

(f) The Department may require amendments to a Control Measure Plan if:

1. The Plan does not contain all of the information required under (a) above;

2. The Plan does not consider all control technology and procedures used or considered for use by other persons in the owner or operator's industry, taking into account the potential for the creation of a safety hazard or the potential for unreasonable interference with enjoyment of life and property;

3. The Plan would be ineffective in controlling VOC emissions during blowdown events;

4. The emission reductions being achieved are not the greatest reductions which can be practicably achieved at reasonable costs; or

5. Implementation of the plan results or would result in any violation of law or regulation; or

6. EPA denies approval of the proposed Control Measure Plan as a revision to the State Implementation Plan.

(g) After receipt of a written request from an owner or operator for an extension of the deadline set forth in (a) above, the Department may authorize a 60-day renewable extension upon showing of good cause. Such extension may be renewed by the Department upon the written request of the owner or operator. Approval of such an extension shall not constitute approval of extension of the May 31, 1995 deadline established in (b) above. Written requests for the extension of a deadline submitted pursuant to this subsection shall be addressed to:

Assistant Director, Air & Environmental Quality Enforcement
Division of Enforcement Field Operations
Department of Environmental Protection
PO Box 422
401 East State Street, 4th Floor
Trenton, New Jersey 08625-0422

7:27-16.22 Emission information, recordkeeping and testing

(a) Any person subject to any record keeping provision of this subchapter shall maintain the required records for a period of no less than five years and shall make those records available upon the request of the Department or the EPA, or any duly authorized representative of the Department or the EPA.

(b) Any person who owns or operates a source operation subject to any recordkeeping requirement set forth in this subchapter may submit a request in writing to the Department for approval to maintain records other than those specified at N.J.A.C. 7:27-16.2(s), 16.3(s), 16.4(*o*), 16.5(j), 16.6(*l*), 16.7(m) and (n), 16.13(c), 16.16(g), 16.18(j), 16.20(g) or 16.21(c). The Department and EPA may approve any such request if the person demonstrates to the satisfaction of the Department and EPA that the alternate

records to be maintained are at least as effective in documenting that the source operation is operating in compliance with the applicable requirements.

(c) Any person responsible for the emission of VOC shall, upon request of the Department, the EPA, or any duly authorized representative of the Department or the EPA, provide information relating to the location, rate, duration, composition, and properties of the effluent and such other information as the Department may prescribe.

(d) Any person responsible for the emission of VOC shall, upon request of the Department, the EPA, or any duly authorized representative of the Department or the EPA, provide facilities and necessary equipment for determining the quantity and identity of any VOC emitted into the outdoor atmosphere and shall conduct such testing using N.J.A.C. 7:27B-3 or another method approved by the Department and the EPA. Test data shall be recorded in a permanent log at such time intervals as specified by the Department and shall be maintained for a period of not less than two years and shall be available for review by the Department, the EPA, or any duly authorized representative of the Department or the EPA.

(e) Any person responsible for the emission of VOC shall, upon request of the Department, provide sampling facilities and testing facilities exclusive of instrumentation and sensing devices as may be necessary for the Department to determine the nature and quantity of the VOC being emitted into the outdoor atmosphere. During such testing by the Department, the equipment and all components connected, or attached to, or serving the equipment shall be used and operated under normal routine operating conditions or under such other conditions as may be requested by the Department. The facilities may be either permanent or temporary, at the discretion of the person responsible for their provision, and shall conform to all applicable laws and regulations concerning safe construction and safe practice.

(f) All testing and monitoring pursuant to the provisions of this subchapter shall be conducted using N.J.A.C. 7:27B-3 or other method approved in advance by the Department and acceptable to EPA.

(g) Hourly emissions limits apply to any consecutive 60 minute period, and testing performed to verify compliance shall be based on a 60 minute period during which the equipment or control apparatus is used and operated under conditions acceptable to the Department and consistent with the operational parameters and limits set forth in any permit or certificate in effect. If circumstances require that test periods be less than, or more than 60 minutes (such as when an operational duration is less than 60 minutes or when detectability limits are approached for low concentration gas streams), the Department may require different test periods in its review and approval of test protocols.

(h) (Reserved)

(*i*) Any person who reports information to the Department pursuant to the requirements set forth at N.J.A.C. 7:27-16.2(s), 16.3(s), 16.7(m) and (n), 16.16(g), or 16.20(g) may assert

a confidentiality claim for that information in accordance with the procedures set forth at N.J.A.C. 7:27-1.6 through 1.30.

7:27-16.23 Procedures for demonstrating compliance

(a) The owner or operator of equipment or a source operation subject to N.J.A.C. 7:27-16.8, 16.9, 16.10, 16.11 or 16.13 that is subject to an emission limit under this subchapter shall demonstrate compliance with the emission limit pursuant to (a)1 below if a continuous emissions monitoring system has been installed on the equipment or source operation for the air contaminant in question, or pursuant to (a)2 below if no such system has been installed for the air contaminant.

1. With respect to an emission limit for any air contaminant monitored by a continuous emissions monitoring system installed on the equipment or source operation, compliance with the limit is based upon the average of emissions over one calendar day, not including periods of equipment downtime.

2. With respect to an emission limit for any air contaminant that is not monitored by a continuous emissions monitoring system installed on the equipment or source operation, compliance with the limit is based upon the average of three one-hour tests, each performed over a consecutive 60-minute period specified by the Department and performed in compliance with N.J.A.C. 7:27-16.22.

(b) For any equipment or source operation subject to (a) above which was in operation before January 1, 1995, the owner or operator shall demonstrate compliance with this subchapter in accordance with (a)1 or 2 above by May 31, 1996, and thereafter at the frequency set forth in the permit or certificate for such equipment or source operation.

(c) For any equipment or source operation subject to (a) above which commences operations or is altered after January 1, 1995, the owner or operator shall demonstrate compliance with this subchapter in accordance with (a) or (b) above within 180 days from the date on which the source operation commences operation, and thereafter at the frequency set forth in the permit or certificate for such equipment or source operation.

(d) An exceedance of any applicable VOC or CO emission limit set forth in this subchapter, determined through testing or monitoring performed pursuant to (a) or (b) above or otherwise, is a violation of this subchapter.

7:27-16.24 Industrial cleaning

(a) Except as provided at (b) below, this section applies to industrial cleaning at a facility that purchases for use more than 855 gallons of industrial cleaning solvents, in aggregate, during any period of 12 consecutive months.

(b) This section does not apply to the use or purchase of industrial cleaning solvents at the following source operations:

1. Mobile equipment repair and refinishing;
2. Stationary storage tank;
3. Open top tank and solvent cleaning;
4. Aerospace coating;
5. Auto and light-duty truck assembly;
6. Fiberglass boat manufacturing;
7. Flexible packaging printing;
8. Large appliance coating;
9. Letterpress printing;
10. Lithographic printing;
11. Metal and wood furniture coating;
12. Miscellaneous metal parts coating;
13. Paper coating;
14. Plastic parts coating;
15. Shipbuilding and repair coating;
16. Electrical and electronic component manufacturing;
17. Precision optics manufacturing;
18. Numismatic die manufacturing;
19. Research and development laboratory;
20. Medical device and pharmaceutical manufacturing;
21. Quality assurance testing for coatings, inks, and adhesives;
22. Architectural coating;
23. Metal container, closure, and coil coating;

24. Graphic arts printing and coating, except screen printing;

25. Magnet wire coating;

26. Semiconductor wafer fabrication manufacturing;

27. Flexible magnetic data storage disc manufacturing;

28. Rigid magnetic data storage disc manufacturing;

29. Stripping of cured inks, coatings, and adhesives;

30. Flat wood paneling and printed hardwood coating;

31. Coil coating;

32. Polyester resin operations;

33. Miscellaneous industrial adhesives;

34. Wood products coating; and

35. Marine vessel coating.

(c) The owner or operator of an industrial cleaning operation subject to this section, other than at a digital printing operation, or at an adhesive, surface coating formulation, ink, or resin manufacturing facility, shall implement at least one of the following VOC control measures:

1. The use of only industrial cleaning solvents that meet the maximum VOC content listed in Table 24A;

2. The use of only industrial cleaning solvents that have composite vapor pressures equal to or less than eight millimeters of mercury (mmHg) at 20 degrees Celsius; or

3. The installation, operation, and maintenance, in accordance with the manufacturer's recommendations, of air pollution control equipment that reduces uncontrolled VOC emissions to the atmosphere from industrial cleaning by an overall control efficiency of 85 percent or more.

TABLE 24A
MAXIMUM ALLOWABLE VOC CONTENT OF INDUSTRIAL CLEANING SOLVENTS

Type of Industrial Cleaning	**Maximum Allowable VOC Content (grams per liter)**
Cleaning of equipment used in screen printing	500
All other types of industrial cleaning	50

(d) The owner or operator of a facility that conducts industrial cleaning subject to this section shall implement the following best management practices at such a facility and shall record and maintain on site the documentation of these best management practices, pursuant to N.J.A.C. 7:27-16.22:

1. All VOC-containing cleaning materials and VOC-containing used shop towels shall be kept in closed containers when not in use, which shall prevent the contents from coming in contact with and being exposed to the atmosphere;

2. Each container of VOC-containing cleaning materials shall have a cover that is kept closed, except when material is being added to or removed from the container, which shall prevent the contents from coming in contact with and being exposed to the atmosphere;

3. Any spill of VOC-containing coatings, thinners, or cleaning materials shall be cleaned up immediately; and

4. All VOC-containing cleaning materials shall be conveyed in closed containers or pipes, which shall prevent the contents from coming in contact with and being exposed to the atmosphere.

(e) The owner or operator of a facility that conducts industrial cleaning subject to this section shall maintain, on site, a record of the purchased industrial cleaning solvents, pursuant to N.J.A.C. 7:27-16.22, as follows:

1. The name and address of the person selling the industrial cleaning solvent and the date of the sale. An invoice, bill of sale, or a certificate that corresponds to one or more sales may be used to satisfy this requirement if it includes the seller's name and address;

2. A list of VOCs and information concerning their concentration in the industrial cleaning solvent;

3. The safety data sheet (SDS) for each industrial cleaning solvent purchased;

4. The product number assigned to the industrial cleaning solvent by the manufacturer; and

5. For each industrial cleaning solvent purchased, either:

i. The vapor pressure of the industrial cleaning solvent measured in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit); or

ii. The VOC content in grams per liter.

(f) The owner or operator of a source operation that has a thermal oxidizer used to control the emission of VOCs shall maintain records in accordance with N.J.A.C. 7:27-16.16(g)2.

(g) The owner or operator of a source operation that has a control apparatus using carbon or other adsorptive material used to control the emission of VOCs shall maintain records in accordance with N.J.A.C. 7:27-16.16(g)3.

(h) The owner or operator of a source operation to which this section applies shall, upon the request of the Department, record any other operating parameter relevant to the prevention or control of air contaminant emissions from the use of industrial cleaning solvents or control apparatus, pursuant to N.J.A.C. 7:27-16.22.

7:27-16.25 (Reserved)

7:27-16.26 (Reserved)

7:27-16.27 Exceptions

(a) The provisions of this subchapter shall not apply to any stationary vessel or delivery vessel maintained under a pressure greater than one atmosphere provided that any vent serving such vessel has the sole function of relieving pressure under abnormal emergency conditions.

(b) The provisions of this subchapter do not apply to the emissions of VOC from the following source operations:

1. Natural gas pipelines that are not major VOC facilities, with the exception of blowdown events as set forth in N.J.A.C. 7:27-16.21;

2. Open burning; and

3. Aerosol coating products.

APPENDIX I

CHEMICALS DEFINING SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING

CAS #	Chemical
105-57-7	Acetal
75-07-0	Acetaldehyde
107-89-1	Acetaldol
60-35-5	Acetamide
103-84-4	Acetanilide
64-19-7	Acetic acid
108-24-7	Acetic anhydride
67-64-1	Acetone
75-86-5	Acetone cyanohydrin
75-05-8	Acetonitrile
96-86-2	Acetophenone
75-36-5	Acetyl chloride
74-86-2	Acetylene
107-02-8	Acrolein
79-06-1	Acrylamide
79-10-7	Acrylic acid
107-13-1	Acrylonitrile
124-04-9	Adipic acid
111-69-3	Adiponitrile
++	Alkyl naphthalenes
107-18-6	Allyl alcohol
107-05-1	Allyl chloride
1321-11-5	Aminobenzoic acid
111-41-1	Aminoethylethanolamine
123-30-8	p-Aminophenol
628-63-7, 123-92-2	Amyl acetates
71-41-0, +	Amyl alcohols
110-58-7	Amyl amine
543-59-9	Amyl chloride
110-66-7, +	Amyl mercaptans
1322-06-1	Amyl phenol
62-53-3	Aniline
142-04-1	Aniline hydrochloride
29191-52-4	Anisidine

100-66-3	Anisole
118-92-3	Anthranilic acid
84-65-1	Anthraquinone
100-52-7	Benzaldehyde
55-21-0	Benzamide
71-43-2	Benzene
98-48-6	Benzenedisulfonic acid
98-11-3	Benzenesulfonic acid
134-81-6	Benzil
76-93-7	Benzilic acid
65-85-0	Benzoic acid
119-53-9	Benzoin
100-47-0	Benzonitrile
119-61-9	Benzophenone
98-07-7	Benzotrichloride
98-88-4	Benzoyl chloride
100-51-6	Benzyl alcohol
100-46-9	Benzylamine
120-51-4	Benzyl benzoate
100-44-7	Benzyl chloride
98-87-3	Benzal chloride
92-52-4	Biphenyl
80-05-7	Bisphenol A
108-86-1	Bromobenzene
27497-51-4	Bromonaphthalene
106-99-0	Butadiene
106-98-9	l-butene
123-86-4	n-butyl acetate
141-32-2	n-butyl acrylate
71-36-3	n-butyl alcohol
78-92-2	s-butyl alcohol
75-65-0	t-butyl alcohol
109-73-9	n-butylamine
13952-84-6	s-butylamine
75-64-9	t-butylamine
98-73-7	4-tert-butyl benzoic acid
107-88-0	1,3-butylene glycol
123-72-8	n-butyraldehyde

107-92-6	Butyric acid
106-31-0	Butyric anhydride
109-74-0	Butyronitrile
105-60-2	Caprolactam
75-15-50	Carbon disulfide
558-13-4	Carbon tetrabromide
56-23-5	Carbon tetrachloride
9004-35-7	Cellulose acetate
79-11-8	Chloroacetic acid
108-42-9	m-chloroaniline
95-51-2	o-chloroaniline
106-47-8	p-chloroaniline
35913-09-8	Chlorobenzaldehyde
108-90-7	Chlorobenzene
+	Chlorobenzoic acid
+	Chlorobenzotrichloride
1321-03-5	Chlorobenzoyl chloride
25497-29-4	Chlorodifluoromethane
75-45-6	Chlorodifluoroethane
67-66-3	Chloroform
25586-43-0	Chloronaphthalene
88-73-3	o-chloronitrobenzene
100-00-5	p-chloronitrobenzene
25167-80-0	Chlorophenols
126-99-8	Chloroprene
7790-94-5	Chlorosulfonic acid
108-41-8	m-chlorotoluene
95-49-8	o-chlorotoluene
106-43-4	p-chlorotoluene
75-72-9	Chlorotrifluoromethane
108-39-4	m-cresol
95-48-7	o-cresol
106-44-5	p-cresol
1319-77-3	Mixed cresols
1319-77-3	Cresylic acid
4170-30-0	Crotonaldehyde
3724-65-0	Crotonic acid
98-82-8	Cumene

80-15-9	Cumene hydroperoxide
372-09-8	Cyanoacetic acid
506-77-4	Cyanogen chloride
108-80-5	Cyanuric acid
108-77-0	Cyanuric chloride
110-82-7	Cyclohexane
108-93-0	Cyclohexanol
108-04-1	Cyclohexanone
110-83-8	Cyclohexene
108-91-8	Cyclohexylamine
111-78-4	Cyclooctadiene
112-30-1	Decanol
123-42-2	Diacetone alcohol
27576-04-1	Diaminobenzoic acid
+	Dichloroaniline
541-73-1	m-dichlorobenzene
95-50-1	o-dichlorobenzene
106-46-7	p-dichlorobenzene
75-71-8	Dichlorofluoromethane
107-06-2	1,2-dichloroethane (EDC)
111-44-4	Dichloroethyl ether
96-23-1	Dichlorohydrin
26952-23-8	Dichloropropene
101-83-7	Dicyclohexylamine
109-89-7	Diethylamine
111-46-6	Diethylene glycol
112-36-7	Diethylene glycol diethyl ether
111-96-6	Diethylene glycol dimethyl ether
112-34-5	Diethylene glycol monobutyl ether
124-17-4	Diethylene glycol monobutyl ether acetate
111-90-0	Diethylene glycol monoethyl ether
112-15-2	Diethylene glycol monoethyl ether acetate
111-77-3	Diethylene glycol monomethyl ether
64-67-5	Diethyl sulfate
75-37-6	Difluoroethane
25167-70-8	Diisobutylene
26761-40-0	Diisodecyl phthalate
27554-26-3	Diisooctyl phthalate

674-82-8	Diketene
124-40-3	Dimethylamine
121-69-7	N,N-dimethylaniline
115-10-6	N,N-dimethyl ether
68-12-2	N,N-dimethylformamide
57-14-7	Dimethylhydrazine
77-78-1	Dimethyl sulfate
75-18-3	Dimethyl sulfide
67-68-5	Dimethyl sulfoxide
120-61-6	Dimethyl terephthalate
99-34-3	3,5-dinitrobenzoic acid
51-28-5	2,4-dinitrophenol
25321-14-6	Dinitrotoluene
123-91-1	Dioxane
646-06-0	Dioxolane
122-39-4	Diphenylamine
101-84-8	Diphenyl oxide
102-08-9	Diphenyl thiourea
25265-71-8	Dipropylene glycol
25378-22-7	Dodecene
28675-17-4	Dodecylaniline
27193-86-8	Dodocylphenol
106-89-8	Epichlorohydrin
64-17-5	Ethanol
+	Ethanolamines
141-78-6	Ethyl acetate
141-97-9	Ethyl acetoacetate
140-88-5	Ethyl acrylate
75-04-7	Ethylamine
100-41-4	Ethylbenzene
74-96-4	Ethyl bromide
9004-57-3	Ethylcellulose
75-00-3	Ethyl chloride
105-39-5	Ethyl chloroacetate
105-56-6	Ethylcyanoacetate
74-85-1	Ethylene
96-49-1	Ethylene carbonate
107-07-3	Ethylene chlorohydrin

107-15-3	Ethylenediamine
106-93-4	Ethylene dibromide
107-21-1	Ethylene glycol
111-55-7	Ethylene glycol diacetate
110-71-4	Ethylene glycol dimethyl ether
111-76-2	Ethylene glycol monobutyl ether
112-07-2	Ethylene glycol monobutyl ether acetate
110-80-5	Ethylene glycol monoethyl ether
111-15-9	Ethylene glycol monoethyl ether acetate
109-86-4	Ethylene glycol monomethyl ether
110-49-6	Ethylene glycol monomethyl ether acetate
122-99-6	Ethylene glycol monophenyl ether
2807-30-9	Ethylene glycol monopropyl ether
75-21-8	Ethylene oxide
60-29-7	Ethyl ether
104-76-7	2-ethylhexanol
122-51-0	Ethyl orthoformate
95-92-1	Ethyl oxalate
41892-71-1	Ethyl sodium oxalacetate
50-00-0	Formaldehyde
75-12-7	Formamide
64-18-6	Formic acid
110-17-8	Fumaric acid
98-01-1	Furfural
56-81-5	Glycerol
26545-73-7	Glycerol dichlorohydrin
25791-96-2	Glycerol triether
56-40-6	Glycine
107-22-2	Glyoxal
118-74-1	Hexachlorobenzene
67-72-1	Hexachloroethane
36653-82-4	Hexadecanol
124-09-4	Hexamethylenediamine
629-11-8	Hexamethylene glycol
100-97-0	Hexamethylenetramine
74-90-8	Hydrogen cyanide
123-31-9	Hydroquinone
99-06-9	p-hydroxybenzoic acid

26760-64-5	Isoamylene
78-83-1	Isobutanol
110-19-0	Isobutyl acetate
115-11-7	Isobutylene
78-84-2	Isobutyraldehyde
79-31-2	Isobutyric acid
25339-17-7	Isodecanol
26952-21-6	Isooctyl alcohol
78-78-4	Isopentane
78-59-1	Isophorone
121-91-5	Isophthalic acid
78-79-5	Isoprene
67-63-0	Isopropanol
108-21-4	Isopropyl acetate
75-31-0	Isopropylamine
75-29-6	Isopropyl chloride
25168-06-3	Isopropylphenol
463-51-4	Ketene
++	Linear alkyl sulfonate
123-01-3	Linear alkylbenzene
110-16-7	Maleic acid
108-31-6	Maleic anhydride
6915-15-7	Malic acid
141-79-7	Mesityl oxide
121-47-1	Metanilic acid
79-41-4	Methacrylic acid
563-47-3	Methallyl chloride
67-56-1	Methanol
79-20-9	Methyl acetate
105-45-3	Methyl acetoacetate
74-89-5	Methylamine
100-61-8	n-methylaniline
74-83-9	Methyl bromide
37365-71-2	Methyl butynol
74-87-3	Methyl chloride
108-87-2	Methylcyclohexane
1331-22-2	Methylcyclohexanone
75-09-2	Methylene chloride

101-77-9	Methylene dianiline
101-68-8	Methylene diphenyl diisocyanate
78-93-3	Methyl ethyl ketone
107-31-3	Methyl formate
108-11-2	Methyl isobutyl carbinol
108-10-1	Methyl isobutyl ketone
80-62-6	Methyl methacrylate
77-75-8	Methylpentynol
98-83-9	a-methylstyrene
110-91-8	Morpholine
85-47-2	a-naphthalene sulfonic acid
120-18-3	b-naphthalene sulfonic acid
90-15-3	a-naphthol
135-19-3	b-naphthol
75-98-9	Neopentanoic acid
88-74-4	o-nitroaniline
100-01-6	p-nitroaniline
91-23-6	o-nitroanisole
100-17-4	p-nitroanisole
98-95-3	Nitrobenzene
+	Nitrobenzoic acid (o, m, & p)
79-24-3	Nitroethane
75-52-5	Nitromethane
88-75-5	2-Nitrophenol
25322-01-4	Nitropropane
1321-12-6	Nitrotoluene
27215-95-8	Nonene
25154-52-3	Nonylphenol
27913-28-8	Octylphenol
123-63-7	Paraldehyde
115-77-5	Pentaerythritol
109-66-0	n-pentane
109-67-1	l-pentene
127-18-4	Perchloroethylene
594-42-3	Perchloromethyl mercaptan
94-70-2	o-phenetidine
156-43-4	p-phenetidine
108-95-2	Phenol

+	Phenolsulfonic acids
91-40-7	Phenyl anthranilic acid
++	Phenylenediamine
75-44-5	Phosgene
85-44-9	Phthalic anhydride
85-41-6	Phthalimide
108-99-6	b-picoline
110-85-0	Piperazine
+	Polybutenes
25322-68-3	Polyethylene glycol
25322-69-4	Polypropylene glycol
123-38-6	Propionaldehyde
79-09-4	Propionic acid
71-23-8	n-propyl alcohol
107-10-8	Propylamine
540-54-5	Propyl chloride
115-07-1	Propylene
127-00-4	Propylene chlorohydrin
78-87-5	Propylene dichloride
57-55-6	Propylene glycol
75-56-9	Propylene oxide
110-86-1	Pyridine
106-51-4	Quinone
108-46-3	Resorcinol
27138-57-4	Resorcylic acid
69-72-7	Salicyclic acid
127-09-3	Sodium acetate
532-32-1	Sodium benzoate
9004-32-4	Sodium carboxymethyl cellulose
3926-62-3	Sodium chloracetate
141-53-7	Sodium formate
139-02-6	Sodium phenate
110-44-1	Sorbic acid
100-42-5	Styrene
110-15-6	Succinic acid
110-61-2	Succinonitrile
121-57-3	Sulfanilic acid
126-33-0	Sulfolane

1401-55-4	Tannic acid
100-21-0	Terephthalic acid
+	Tetrachloroethanes
117-08-8	Tetrachlorophthalic anhydride
78-00-2	Tetraethyl lead
119-64-2	Tetrahydronaphthalene
85-43-8	Tetrahydrophghalic anhydride
75-74-1	Tetramethyl lead
110-60-1	Tetramethylenediamine
110-18-9	Tetramethylethylenediamine
108-88-3	Toluene
95-80-7	2,4,-diaminotoluene
584-84-9	Toluene-2,4-diisocyanate
26471-62-5	Toluene diisocyanates (mixture)
1333-07-9	Toluenesulfonamide
+	Toluenesulfonic acids
98-59-9	Toluenesulfonyl chloride
26915-12-8 +	Toluidines
+	Trichlorobenzenes
71-55-6	1,1,1-trichloroethane
79-00-5	1,1,2-trichloroethane
79-01-6	Trichloroethylene
75-69-4	Trichlorofluoromethane
96-18-4	1,2,3-trichloropropane
76-13-1	1,1,2-trichlorotrifluoroethane
121-44-8	Triethylamine
112-27-6	Triethylene glycol
112-49-2	Triethylene glycol dimethyl ether
7756-94-7	Triisobutylene
75-50-3	Trimethylamine
57-13-6	Urea
108-05-4	Vinyl acetate
75-01-4	Vinyl chloride
75-35-4	Vinylidene chloride
25013-15-4	Vinyl toluene
1330-20-7	Xylenes (mixed)
95-47-6	o-xylene
106-42-3	p-xylene

1300-71-6	Xylenol
1300-73-8	Xylidine
1634-04-4	Methyl tert-butyl ether
9002-88-4	Polyethylene
9003-07-0	Polypropylene
9003-53-6	Polystyrene

.....

+ CAS numbers for the various isomers and mixtures have not been listed here.

++ CAS numbers not available.

APPENDIX II

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
N.J.A.C. 7:27-16.2 VOC STATIONARY STORAGE TANKS INSPECTIONS

Equipment Needed:

Organic Vapor Analyzer (OVA) calibrated with methane in accordance with EPA Method 21, as supplemented or amended and incorporated herein by reference; explosimeter calibrated with methane (for internal floating roof tanks); liquid resistant measuring tape or device; tank probe (to measure gaps in tank seals - 1/8 inch, 1/2 inch, 1-1/2 inch); **explosivity meter**; flashlight.

Inspection Procedures (N.J.A.C. 7:27-16.2(r)):

A. Any inspection shall be performed by an authorized inspector.
B. The findings of any tank inspection, whether completed or not, shall be recorded on the Inspection Form at N.J.A.C. 7:27-16, Appendix II, prescribed by the Department in accordance with the rule's requirements. If an inspection is stopped before completion, indicate the reason for this action in section J "Comments" of the Inspection Form.
C. During the inspection, the person(s) conducting the inspection must have a copy of the **relevant portions of the** Preconstruction Permit or the Operating Permit pertinent to the tank being inspected. Any discrepancies between the permit equipment description and the existing tank or the permit conditions and the actual operating conditions of the tank as verified during an inspection must be recorded in section J "Comments" of the Inspection Form.
D. Inspect the ground level periphery of each tank for possible leaks in the tank shell. Complete section D "Ground Level Inspection" of the Inspection Form.
E. For external floating roof tanks:
    1. From the platform, visually inspect the roof and check for permit or rule violations. Record the information as shown under section F of the Inspection Form.
    2. During visual inspection of the roof, check for unsealed roof legs, open hatches, open emergency roof drains or vacuum breakers and record the findings on the Inspection Form accordingly. Indicate presence of any tears in the fabric of both seals.
    3. Inspect the roof fittings using the 1/8 inch probes or conduct a EPA Method 21 inspection, as supplemented or amended and incorporated herein by reference, of the roof fittings for a leak-free condition. Record any leaks above 500 ppm in the Fugitive Emissions Form.
    4. Inspect the entire secondary seal using the 1/8 inch and 1/2 inch probes. Record the gap data in section F(4) of the Inspection Form.
    5. When required (which is every five years), inspect the entire primary seal using the 1/8 inch, 1/2 inch, and 1-1/2 inch probes. Inspect the primary seal by holding back the secondary seal. Record the gap data in section F(5) of the Inspection Form.
    6. Record all cumulative gaps between 1/8 inch and 1/2 inch; between 1/2 inch and 1-1/2 inch; and in excess of 1-1/2 inches, for both primary and secondary seals in section G of the Inspection Form. Secondary seal gaps greater than 1/2 inch should be measured for length and width, and recorded in section J "Comments" of the Inspection Form.
F. For internal floating roof and domed tanks:
    1. Using an explosimeter, measure the concentration of the vapor space above the internal floating roof in terms of lower explosive limit (LEL), and record the reading in section E of the Inspection Form.
    2. Visually inspect the deck fittings and the visible seal of the rim seal system, and record findings in section E of the Inspection Form.
    3. Conduct gap measurements of the deck fittings and rim seal system each time the tank is emptied and degassed but no less than once every 10 years.
G. For fixed roof tanks:
    1. Inspect the pressure relief valves, piping, valves and fittings located on the roof for leak-free condition. Record any readings in excess of 500 ppm in the Fugitive Emissions Form.
H. Complete all necessary calculations and record all required data accordingly in the Inspection Form and Fugitive Emissions Form.

INSPECTION FORM

PLEASE COMPLETE FORM LEGIBLY IN BLACK INK

Program Interest No. _____ Permit Activity No. _____ Tank ID No. E _____

Inspection Date _____ Time _____

Is this a Follow-up Inspection? No☐ Yes☐ If yes, Date of Previous Inspection _____

A. COMPANY INFORMATION:

Company Name _____

Location Address _____ City _____ Zip _____

Mailing Address _____ City _____ Zip _____

Contact Person _____ Title _____

Phone _____

B. INSPECTION CONDUCTED BY:

Name _____ Title _____

Company Name _____Phone _____

Mailing Address _____ City _____ Zip _____

C. TANK INFORMATION:

Capacity _____(gals) Installation Date _____ Tank Diameter _____(ft) Tank Height _____(ft)

Product Type _____ Product Vapor Pressure _____(psia)

Type of Tank: Riveted☐ Welded☐ Other☐ (describe) _____

Color of Shell _____ Color of Roof _____

Roof Type: Pontoon☐ Double Deck☐ Other☐ (describe) _____

External floating roof☐ Internal floating roof or domed tank☐

D. GROUND LEVEL INSPECTION:

1) Product Temperature _____°F 2) Product level _____(ft)

3) List type and location of leaks found in tank shell.

_____

4) List any discrepancies between the existing equipment and the equipment description on the Permit.

_____

5) Is tank in compliance with Permit conditions? No ☐ Yes ☐ If no, explain _____

_____

_____

E. INTERNAL FLOATING ROOF OR DOMED TANK:

1) Check vapor space between floating roof and fixed roof with explosimeter. _____Percent LEL.

2) Conduct visual inspection of roofs and the visible seal of the rim seal system.

3) Are all roof openings covered? No☐ Yes☐ If no, explain in Comments section (J) and proceed to part (H)(6).

F. EXTERNAL FLOATING ROOF TANK (or DOMED TANK AND INTERNAL FLOATING ROOF TANK when needed)

1) On the diagram (below) indicate the location of the ladder, roof drain(s), anti-rotation device(s), platform, gauge well, and vents or other appurtenances. *Note information in relation to North (to the top of the worksheet).*

2) Describe any uncovered openings found on the roof in the Comments section (J).

3) Identify any tears in the seal fabric. Describe and indicate on diagram (below):

4) Secondary Seal Inspection

a. Type of Secondary Seal: _____

b. Does 1/2" probe drop past seal? No☐ Yes☐ If yes, measure length(s) and show on diagram.

c. Does 1/8" probe drop past seal? No ☐ Yes ☐ If yes, measure length(s) and show on diagram.

d. Record dimensions of gap for gaps

> 1/8" _____

> 1/2" _____

NOTE: Record the actual width and cumulative length of gaps in feet and inches.
(Do not include gaps > 1/2" in 1/8" measurements)

5) Primary Seal Inspection

a) Type of Primary Seal:☐ Shoe:☐ Tube:☐ Other _____

b) Shoe seal: Does 1-1/2" probe drop past seal? No☐ Ye ☐ If yes, measure length(s) and show on diagram.

c) Shoe seal: Does 1/2" probe drop past seal? No☐ Yes☐ If yes, measure length(s) and show on diagram.

d) Tube seal: Does 1/2" probe drop past seal? No☐ Yes☐ If yes, measure length(s) and show on diagram.

e) All seal types: Does 1/8" probe drop past seal? No☐ Yes☐ If yes, measure length(s) and show on diagram.

f) Record dimensions of gaps for gaps

> 1/8" _____

> 1/2" _____

>1-1/2" _____

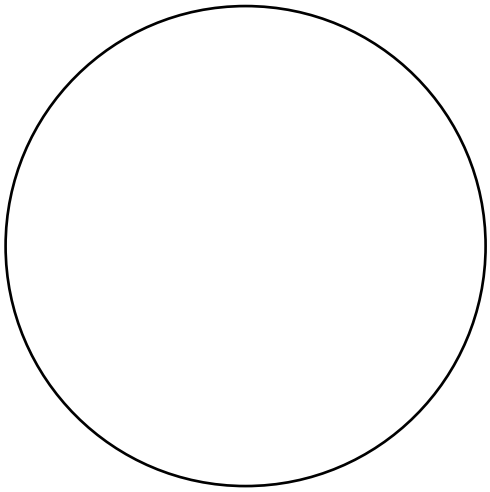
NOTE: Record the actual width and cumulative length of gaps in feet and inches.
(Do not include gaps > 1/2" in 1/8" measurements, or gaps > 1-1/2" in 1/2" measurements)

6) Deck Fitting Inspection

(Circle one) Does 1/8" probe drop past gasket seal or does seal fail EPA Method 21? No☐ Yes☐ If yes, identify fitting.

NOTE: Show defects using symbols. Show seal gaps and lengths.

N



Legend	
Equipment	
AD	Antirotational device
GW	Gauge well
⊤	Leg stand
RD	Roof drain
*	Emergency roof drain
∞	Vacuum breaker
▲	Vent
PL	Platform & ladder
Defects	
LT	Leg top
╪	Leg pin
OH	Open hatch
V\	Torn seal
|-P-|	Primary seal gap
|-S-|	Secondary seal gap

IF INTERNAL FLOATING ROOF OR DOMED TANK, PROCEED TO PART H(6) WHEN APPROPRIATE:

G. CALCULATIONS - complete all applicable portions of the following:

Record dimensions of indicated gaps (from F(4)(d), F(5)(b), and F(5)(f)). Record in feet and inches.

Gaps in primary seal between 1/8 and 1/2 inch: _____

Gaps in primary seal between 1/2 and 1-1/2 inch: _____

Gaps in primary seal greater than 1-1/2 inches: _____

Gaps in secondary seal between 1/8 and 1/2 inch: _____

Gaps in secondary seal greater than 1/2 inch: _____

Multiply diameter (ft) of tank to determine appropriate gap limits:

5 percent circumference = diameter X 0.157 = _____60 percent circ. = diam. X 1.88 = _____

10 percent circumference = diameter X 0.314 = _____90 percent circ. = diam. X 2.83 = _____

30 percent circumference = diameter X 0.942 = _____95 percent circ. = diam. X 2.98 = _____

H. DETERMINE COMPLIANCE STATUS OF TANK:

1) Were any openings found on the roof? No☐ Yes☐

2) Were any tears in the seals found? No☐ Yes☐

3) Is the product level lower than the level at which the roof would be floating? No☐ Yes☐

4) Secondary Seal:

Did 1/2" probe drop between shell and seal? No☐ Yes☐

Did cumulative 1/8"- 1/2" gap exceed 95 percent circumference length? No☐ Yes☐

5) Primary Seal:

Shoe: Did 1-1/2" probe drop between shell and seal? No☐ Yes☐

Did cumulative 1/2" - 1-1/2" gap exceed 30 percent circumference length, and

did cumulative 1/8 - 1/2" gap exceed 60 percent circumference length? No☐ Yes☐

Did any single continuous 1/8" - 1-1/2" gap exceed 10 percent circumference. length? No☐ Yes☐

Tube: Did 1/2" probe drop between shell and seal? No☐ Yes☐

Did cumulative 1/8"- 1/2" gap exceed 95 percent circumference length? No☐ Yes☐

6) Internal floating roof (installed before 6/1/84):

Did percent LEL exceed 50 percent? No☐ Yes☐

(installed after 6/1/84) or domed tank: Did percent LEL exceed 30 percent? No☐ Yes☐

7) Does tank have permit conditions? No☐ Yes☐

Does tank comply with these conditions? No☐ Yes☐

I. IF THE INSPECTION WAS TERMINATED PRIOR TO COMPLETION FOR ANY REASON, PLEASE EXPLAIN:

_____

_____

J. COMMENTS:

Use this section to complete answers to above listed items and to describe repairs made to the tank; include date and time repairs were made.

_____

_____

_____

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K. Certifications

"I certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information."

Authorized inspector who completed the inspection:

_____ Date: _____
(Signature) (API Certification Number)

*[Compliance status determined by: _____ Date: _____
(Signature)

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attached documents and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information."

Individual with Direct Knowledge: _____ Date: _____

(Signature of person with direct knowledge of, and responsibility for, the information on this form)

N.J.A.C. 7:27-16.2(s) requires all inspection reports required pursuant to N.J.A.C. 7:27-16.2(r) to be maintained on-site for the lifetime of the tank.

FUGITIVE EMISSIONS FORM

Company Information

Program Interest No.

Company Name

Address

Contact/Phone Number

Permit Activity Number	Report Date

Tank ID	Type	Fitting	Date	Leak Concen-tration	Type of Repair	Date	Post-Repair Leak Con-centration

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
NEW JERSEY ADMINISTRATIVE CODE
TITLE 7
CHAPTER 27
SUBCHAPTER 19

Control and Prohibition of Air Pollution from Oxides of Nitrogen

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Please note: The Department has made every effort to ensure that this text is identical to the official, legally effective version of this rule, set forth in the New Jersey Register. However, should there be any discrepancies between this text and the official version of the rule, the official version will prevail.

REGULATORY HISTORY

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7:27-19.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

"Air contaminant" means any substance, other than water or distillates of air, present in the atmosphere as solid particles, liquid particles, vapors or gases.

"Alter" means to effect an alteration of equipment or control apparatus.

"Alteration" means one of the following changes to equipment or control apparatus, or to a source operation, for which a permit has been issued:

1. If the equipment, control apparatus, or source operation is subject to preconstruction permit requirements, a change which requires a permit revision under N.J.A.C. 7:27-8.18; or

2. If the equipment, control apparatus, or source operation is at a facility for which an operating permit has been issued, a change which requires a minor modification or a significant modification of the permit under N.J.A.C. 7:27-22.23 or 24.

"Alternative maximum allowable emission rate" means a maximum allowable emission rate, set by the Department on a site-specific basis pursuant to N.J.A.C. 7:27-19.13.

"Ambient air quality standard" means a limit on the concentration of an air contaminant in the general outdoor atmosphere as set forth in N.J.A.C. 7:27-13 or 40 CFR 50.

"Anthracite coal" means coal that is classified as anthracite according to the ASTM Standard Specification for Classification of Coals by Rank, ASTM D 388-77, incorporated herein by reference, as amended or supplemented. This specification can be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

"Asphalt" means a solid, semisolid, or liquid material, produced by mixing bituminous substances together with gravel, crushed rock or similar materials, and used commonly as a coating or paving.

"Asphalt pavement production plant" means a batch type asphalt plant or drum mix asphalt plant operated to manufacture asphalt pavement.

"ASTM" means the American Society for Testing and Materials.

"Averaging" means complying with the requirements of this subchapter pursuant to N.J.A.C. 7:27-19.6, Emissions averaging.

"Averaging unit" means an individual source operation or item of equipment which is included in a designated set for the purpose of averaging pursuant to N.J.A.C. 7:27-19.6.

"Base year" means calendar year 1990 or other calendar year determined pursuant to N.J.A.C. 7:27-19.20(d)1, in connection with a plan for seasonal fuel switching.

"Batch type asphalt plant" means an asphalt plant where the aggregate and asphalt cement or other binder are mixed in equipment other than a rotary dryer.

"Bituminous coal" means coal that is classified as bituminous according to the ASTM Standard Specification for Classification of Coals by Rank, ASTM D 388-77, incorporated herein by reference, as amended or supplemented. This specification can be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

"Blown glass" means glassware shaped by blowing air into a molten glass gather.

"Borosilicate recipe" means a formula for making glass using 60 to 80 percent silicon dioxide, five to 35 percent boric oxides, and four to 23 percent other oxides.

"Boiler serving an electric generating unit" means a steam generating unit used for generating electricity including a unit serving a cogeneration facility.

"Brake horsepower" or **"bhp"** means a measure of mechanical power generated by a reciprocating engine determined by a brake attached to the shaft coupling.

"Brake horsepower-hour" or **"bhp-hr"** means a unit of energy or work, equal to the work done by a mechanism with a power output of one brake horsepower over a period of one hour.

"British thermal unit" or **"BTU"** means the quantity of heat required to raise the temperature of one avoirdupois pound of water one degree Fahrenheit at 39.1 degrees Fahrenheit.

"Calendar day" means the 24 hour period from 12:00 o'clock midnight to 12:00 o'clock midnight the following day.

"Carbon monoxide (CO)" means a colorless, odorless, tasteless gas at standard conditions, having a molecular composition of one carbon atom and one oxygen atom.

"Certificate" means either an operating certificate or a temporary operating certificate.

"CFR" means the United States Code of Federal Regulations.

"Class I renewable energy" means electric energy produced from solar technologies, photovoltaic technologies, wind energy, fuel cells, geothermal technologies, wave or tidal action,

methane gas from landfills and methane gas from a biomass facility that cultivates and harvests the biomass in a sustainable manner.

"Class II renewable energy" means electric energy produced at a resource recovery facility or hydro power facility, if the facility is located where retail competition is permitted, and if the Department has determined that the facility meets the highest environmental standards and minimizes any impacts to the environment and local communities.

"Clean Air Act" or **"CAA"** means the Federal Clean Air Act, 42 U.S.C. §§ 7401 et seq., as amended and supplemented.

"Clean distributed generation" means any piece of electric generating equipment that has been verified according to N.J.A.C. 7:27-8.2(f)2 to emit less than:

1. 0.40 pounds of NO_x per megawatt hour;

2. 0.25 pounds of CO per megawatt hour;

3. 0.10 pounds of PM per megawatt hour; and

4. 0.01 pounds of SO_2 per megawatt hour.

"Cleaner fuel" means a fuel other than a combustion source's primary fuel, the combustion of which results in a rate of NO_x emissions that is less than the rate of NO_x emissions when the primary fuel is combusted, all other circumstances being equal.

"Coal" means anthracite coal, bituminous coal, coke, lignite, nonbanded coal, and/or subbituminous coal.

"Coke" means a fused, cellular, porous substance that remains after free moisture and the major portion of the volatile materials have been distilled from bituminous coal and other carbonaceous material by heating it in the absence of air or with a limited supply of air.

"Combined cycle combustion turbine" means a combustion turbine that recovers heat from the turbine exhaust gases to heat water or generate steam.

"Combustion source" means a source operation or item of equipment which combusts fuel.

"Combustion turbine" means an internal combustion engine fueled by liquid or gaseous fuel, in which blades are driven by combustion gases to generate mechanical energy in the form of a rotating shaft that drives an electric generator or other industrial equipment.

"Commercial container glass" means clear or colored glass made of soda-lime recipe, which is formed into bottles, jars, ampoules or other containers, but does not include specialty container glass.

"Commercial fuel" means solid, liquid, or gaseous fuel which is ordinarily produced, manufactured, or sold for the purpose of creating heat.

"Comparable demand day" means, for any day in which an averaging unit is not operating, a day on which demand for electric power was within 10 percent of the demand on the day in question.

"Construction engine" means a mobile engine used for construction at a facility for a limited time period. Construction engine includes a mobile electric generator that is used until regular electric power lines are available to replace the function of the electric generator at the facility. Construction engine does not include:

1. An engine attached to a foundation;

2. An engine (including any replacement engines) at the same facility for more than 12 months;

3. An engine (including any replacement engines) at a seasonal source for at least 90 days per year for at least two years; or

4. An engine that is moved from one facility to another in an attempt to circumvent the residence time criteria in 2 or 3 above.

"Continuous emissions monitor" or **"CEM"** means a device that continuously measures the emissions from one or more source operations.

"Continuous monitoring system" or **"CMS"** means a system designed to continuously measure various parameters at a facility, which parameters may affect or relate to a facility's emissions. Components of a CMS include, but are not limited to, any continuous emissions monitor (CEM), continuous opacity monitor (COM), continuous process monitor (CPM), or any other constantly operating measuring device and recording device approved by the Department to perform one or more of the functions of a CMS. Ambient monitors, which measure the impact or concentration of air contaminants emitted by the source operation or facility in nearby areas, are not considered part of a facility's CMS.

"Control apparatus" means any device which prevents or controls the emission of any air contaminant directly or indirectly into the outdoor atmosphere.

"Criteria pollutant" means any air contaminant for which a NAAQS has been promulgated under 40 CFR 50 or for which a New Jersey Ambient Air Quality Standard has been promulgated in N.J.A.C. 7:27-13.

"Cyclone-fired boiler" means a boiler which combusts fuel in a horizontal water-cooled cylinder before releasing the combustion gases into the boiler.

"Delivery vessel" means any mobile storage tank including, but not limited to, tank trucks or railroad tank cars. This term does not include marine tank vessels.

"Demand response" means a measurable, verifiable load reduction that can be dispatched from a central location (for example, the distribution dispatch center PJM).

"Department" means the New Jersey Department of Environmental Protection.

"Designated set" means the averaging units which an owner or operator is authorized by the Department to include in an averaging plan pursuant to N.J.A.C. 7:27-19.6.

"Distillates of air" means helium (He), nitrogen (N_2), oxygen (O_2), neon (Ne), argon (Ar), krypton (Kr), and xenon (Xe).

"Dry bottom boiler serving an electric generating unit" means a boiler serving an electric generating unit in which ash is removed from the boiler in a solid state.

"Drum mix asphalt plant" means an asphalt plant where the asphalt cement or other binder is added to the aggregate while the aggregate is still in the rotary dryer.

"Dual fuel" means a type of burner capable of combusting more than one type of commercial fuel.

"Dual fuel engine" means compression ignited stationary internal combustion engine that is capable of burning liquid fuel and gaseous fuel.

"Duct burner" means an item of equipment used with a combustion turbine or a stationary reciprocating engine to increase the steam generating capacity of heat recovery steam generators. A duct burner consists of pipes and small burners that are placed in the exhaust duct upstream of the heat recovery steam generator; the duct burner allows firing of fuel to supplement or replace the exhaust heat energy of the turbine or engine. A duct burner is a type of indirect heat exchanger.

"Electric distribution company" means a public utility, as the term is defined in N.J.S.A. 48:2-13, that transmits or distributes electricity to end users within this State.

"Electric distribution system" means that portion of an electric system, which delivers electricity from transformation points on the transmission system to points of connection at a customer's premises. An electric distribution system generally carries less than 69 kilovolts of electricity.

"Electric generating unit" or **"EGU"** means a combustion or steam generating source used for generating electricity that delivers all or part of its power to the electric power distribution grid for commercial sale.

"Emergency" means any situation that arises from sudden and reasonably unforeseeable events beyond the control of an owner or operator of a facility, such as an unforeseen system capacity shortage caused by an act of God, that requires immediate corrective action to prevent system collapse or to restore normal operations at the facility.

"Emergency capacity" means the generation of electricity by an electric generating unit at a rate in excess of the unit's maximum normal power output rating. This maximum normal power output rating shall be that agreed upon by PJM and the owner or operator of the unit, and published by the owner or operator.

"Emergency generator" means a combustion source that:

1. Is located at a facility and produces mechanical or thermal energy, or electrical power exclusively for use at the facility; and

2. Is the source of mechanical or thermal energy, or electrical power when the primary source of energy is unavailable as a result of:

   i. A power disruption that results from construction, repair, or maintenance activity at the facility. Operation of the combustion source under this subparagraph is limited to 30 days in any calendar year, not including operation during the performance of normal testing and maintenance procedures, as provided at N.J.A.C. 7:27-19.2(d)1;

   ii. A power outage or failure of the primary source of mechanical or thermal energy because of an emergency; or

   iii. A voltage reduction issued by PJM and posted on the PJM internet website (www.pjm.com) under the "emergency procedures" menu.

"Energy efficiency measure" means a program that is aimed at reducing the electricity used by specific end-use devices and systems. Such savings are generally achieved by substituting technically more advanced equipment to produce the same level of end-use services (for example, lighting, heating and motor drive) with less electricity.

"EPA" means the United States Environmental Protection Agency.

"Equipment" means any device capable of causing the emission of an air contaminant either directly or indirectly to the outdoor atmosphere, and any stack or chimney, conduit, flue, duct, vent or similar device connected or attached to, or serving the equipment. This term includes, but is not limited to, a device in which the preponderance of the air contaminants emitted is caused by a manufacturing process.

"Face-fired boiler" means a furnace firing design in which the burners are mounted on one or more walls of the furnace.

"Facility" means the combination of all structures, buildings, equipment, storage tanks, source operations, and other operations located on one or more contiguous or adjacent properties owned or operated by the same person. This term does not include delivery vessels.

"Facility-wide permit" means a single permit issued by the Department to the owner or operator of a priority industrial facility incorporating the permits, certificates, registrations, or any other relevant Department approvals previously issued to the owner or operator of the priority industrial facility pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., and the appropriate provisions of the Pollution Prevention Plan prepared by the owner or operator of the priority industrial facility pursuant to N.J.S.A. 13:1D-41 and 42. This term shall have the same meaning as defined for the term "facility-wide permit" at N.J.A.C. 7:1K-1.5; if there is any conflict between the definition at N.J.A.C. 7:1K-1.5 and this one, the definition at N.J.A.C. 7:1K-1.5 shall control.

"Federally enforceable" means all limitations and conditions on operation, production, or emissions which can be enforced by EPA pursuant to authorities which include, but are not limited to, those established in:

1. Any standards of performance for new stationary sources (NSPS) promulgated at 40 CFR 60;

2. Any national emission standard for hazardous air pollutants (NESHAP) promulgated at 40 CFR 61;

3. Any provision of an applicable SIP;

4. Any permit issued pursuant to requirements established at 40 CFR 51, Subpart I; 40 CFR 52.21; 40 CFR 70; or 40 CFR 71; or

5. Any permit issued pursuant to requirements established under the Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., and this chapter.

"Fiberglass" means material consisting of fine filaments of glass that are combined into yarn and woven or spun into fabrics, or that are used as reinforcement in other materials or in masses as thermal or as acoustical insulating products for the construction industry.

"Fixed capital cost" means the capital needed to provide all the depreciable components of a facility, item of equipment or source operation.

"Flat glass" means glass produced by the float, sheet, rolled or plate glass process and formed into windows, windshields, table tops or similar products.

"Fuel" means combustible material burned in boilers, furnaces or other machinery to generate heat or other forms of energy. This term includes commercial fuel and non-commercial fuel.

"Fuel-bound nitrogen" means the nitrogen content, in weight fraction, of a fuel.

"Fuel oil" means a liquid or liquefiable petroleum product burned for the generation of light, heat or power and derived directly or indirectly from crude oil.

"Gas" or **"gaseous fuel"** means any gaseous substance that can be used to create useful heat and/or mechanical energy.

"Glass" means a hard, amorphous inorganic substance made by fusing silicates, and sometimes borates and phosphates, with certain basic oxides.

"Glass manufacturing furnace" means equipment which uses heat for the production of glass.

"Glass removed" means the amount of glass coming out of a glass melting furnace, expressed in short tons per day.

"Heat input" means heat derived from the combustion of fuel put into any boiler, furnace or other piece of equipment. This term does not include the heat from preheated combustion air, recirculated flue gases or exhaust gases from other sources.

"Heavier than No. 2 fuel oil" means any fuel oil with an SSU viscosity greater than 45 at 100 degrees Fahrenheit.

"High electric demand day" or **"HEDD"** means the day following a day in which the next day forecast load is estimated to have a peak value of 52,000 megawatts or higher as predicted by the PJM Interconnection 0815 update to its Mid Atlantic Region Hour Ending Integrated Forecast Load, available from PJM Interconnection at http://oasis.pjm.com/doc/projload.txt.

"High electric demand day unit" or **"HEDD unit"** means an electrical generating unit, capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2005, and that operated less than or equal to an average of 50 percent of the time during the ozone seasons of 2005 through 2007.

"Higher heating value" means the total heat obtained from the complete combustion of a fuel which is at 60 degrees Fahrenheit when combustion begins, and the combustion products of which are cooled to 60 degrees Fahrenheit before the quantity of heat released is measured.

"Incinerator" means any device, apparatus, equipment, or structure using combustion or pyrolysis for destroying, reducing or salvaging any material or substance, but does not include thermal or catalytic oxidizers used as control apparatus on manufacturing equipment. For the purposes of this subchapter, this term includes (without limitation) any thermal destruction facility which is a resource recovery facility, as such terms are defined in N.J.A.C. 7:26-1.4.

"Indirect heat exchanger" means equipment in which heat from the combustion of fuel is transferred by conduction through a heat-conducting material to a substance being heated, so that the latter is not contacted by, and adds nothing to, the products of combustion. Examples of indirect heat exchangers include boilers, duct burners and process heaters.

"Industrial/commercial/institutional boiler" or **"ICI boiler"** means an indirect heat exchanger that generates steam to supply heat to an industrial, commercial, or institutional operation. This term does not include boilers that serve electric generating units.

"Innovative control technology" means a NO_x control measure that has a substantial likelihood of achieving lower continuous levels of NO_x emissions than are required under this subchapter, but has not been adequately demonstrated and is not available to be implemented before May 31, 1995. An item of equipment or control apparatus, a change in a process, or a pollution prevention strategy may qualify as an innovative control technology.

"Internal combustion engine" means either a reciprocating engine or a combustion turbine in which power, produced by heat and/or pressure from combustion is converted to mechanical work.

"Interim period" means the period of time beginning on May 31, 1995, and ending when phased compliance under N.J.A.C. 7:27-19.21 or 19.23 is to be completed, or the period of time for phased compliance under N.J.A.C. 7:27-19.22 as indicated by 2 below, as applicable.

1. For purposes of phased compliance for repowering pursuant to N.J.A.C. 7:27-19.21, the interim period ends on the date when repowering of a combustion source is to be completed.

2. For purposes of phased compliance for reasons of practicability pursuant to N.J.A.C. 7:27-19.22, the interim period begins on May 19, 2009 and ends on the date when an owner or operator is to attain full compliance with this subchapter, but no later than May 19, 2010.

3. For purposes of phased compliance for innovative control technology pursuant to N.J.A.C. 7:27-19.23, the interim period ends on the date when the innovative control technology is to be fully implemented.

"KW" or **"kW"** means kilowatt.

"Lb/MMBTU" means pound per million British Thermal Units, which is based on higher heating value.

"Lean-burn engine" means a stationary reciprocating engine that operates at an air-to-fuel ratio that is fuel-lean of stoichiometric and that cannot operate with an exhaust oxygen concentration of less than one percent.

"Lignite" means coal that is classified as lignite A or B according to the ASTM Standard Specification for Classification of Coals by Rank, ASTM D 388-77, incorporated herein by reference, as amended or supplemented. This specification can be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

"Liquid particles" means particles which have volume but are not of rigid shape.

"Major NO_x facility" means any facility which has the potential to emit 25 or more tons of NO_x per year.

"Manufacturing process" means any action, operation or treatment embracing chemical, industrial, manufacturing, or processing factors, methods or forms including, but not limited to, furnaces, kettles, ovens, converters, cupolas, kilns, crucibles, stills, dryers, roasters, crushers, grinders, mixers, reactors, regenerators, separators, filters, reboilers, columns, classifiers, screens, quenchers, cookers, digesters, towers, washers, scrubbers, mills, condensers or absorbers.

"Maximum allowable emission rate" means the maximum amount of an air contaminant that may be emitted into the ambient air during one of the following:

1. A prescribed interval of time, such as one hour or one day;

2. Unit of activity, such as the burning of one gallon of fuel; or

3. Unit of output such as the generation of one megawatt hour of electricity.

"Maximum gross heat input rate" means the maximum amount of fuel a combustion source is able to combust in a given period as stated by the manufacturer of the combustion source. This term is expressed in BTUs per hour, based on the higher heating value of the fuel.

"MMBTU" means million British Thermal Units.

"Modify" or **"modification"** means any physical change, or change in the method of operation of existing equipment or control apparatus, that increases the amount of actual emission of any air contaminant emitted by that equipment or control apparatus or that results in the emission of any air contaminant not previously emitted. This term shall not include normal repair and maintenance.

"MW" means megawatt.

"MWh" means megawatt-hour.

"National Ambient Air Quality Standard (NAAQS)" means an ambient air quality standard promulgated at 40 CFR 50.

"Natural gas" means:

1. A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

2. Liquid petroleum gas, as defined by the ASTM Standard Specification for Liquid Petroleum Gases, D1835-82, incorporated herein by reference, as amended and supplemented. This specification can be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, P O Box C 700, West Conshohocken, PA 19428-2959.

"Natural gas reburning" means a control technology where natural gas is injected into a boiler downstream of the main combustion zone in order to reduce the amount of NO_x in the exhaust gas.

"NESHAP" means a National Emission Standard for a Hazardous Air Pollutant as promulgated under 40 CFR Part 61 or 40 CFR Part 63.

"Net energy output" means the gross output minus any of the energy output consumed to generate the output.

"Nitrogen dioxide (NO_2)" means a gaseous compound at standard conditions, having a molecular composition of one nitrogen atom and two oxygen atoms.

"Nitrogen oxide (NO)" means a gaseous compound at standard conditions, having a molecular composition of one nitrogen atom and one oxygen atom.

"Nonbanded coal" means coal that is classified as nonbanded according to the ASTM Standard Definition of Terms Relating to Megascopic Description of Coal and Coal Beds and Microscopical Description and Analysis of Coals, ASTM D 2796-77, incorporated herein by reference, as amended or supplemented. This document may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

"Non-commercial fuel" means solid, liquid or gaseous fuel which is not ordinarily produced, manufactured, or sold for the purpose of creating heat.

"Non-high electric demand day unit" or **"non-HEDD unit"** means an electrical generating unit, capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2005, and that operated more than an average of 50 percent of the time during the ozone seasons of 2005 through 2007.

"No. 2 and lighter fuel oil" means any fuel oil with an SSU viscosity less than or equal to 45 at 100 degrees Fahrenheit.

"NSPS" means Standards of Performance for New Stationary Sources as promulgated under 40 CFR 60, commonly referred to as New Source Performance Standards.

"On-specification used oil" means used oil that meets the specifications established in the Recycling Rules at N.J.A.C. 7:26A-6.2(a).

"Operating certificate" or **"certificate"** means a "Certificate to Operate Control Apparatus or Equipment" issued by the Department pursuant to N.J.S.A. 26.2C-1 et seq., and in particular N.J.S.A. 26:2C-9.2, and implementing rules at N.J.A.C. 7:27-8.

"Operating permit" means the permit described in Title V of the Federal Clean Air Act, 42 U.S.C. §§ 7661 et seq., and in N.J.A.C. 7:27-22. This term shall include a general operating permit which is applicable facility wide, but does not include a general operating permit which applies only to a part of a facility. Where a general operating permit applies only to a part of a facility, the general operating permit shall be incorporated into the operating permit. This term also includes an operating permit issued for a temporary facility; for a facility subject to a MACT or GACT standard pursuant to N.J.A.C. 7:27-22.26; or for a component of a facility pursuant to N.J.A.C. 7:27-22.5(j).

"Output" means, with respect to an internal combustion engine, the shaft work output from the engine plus the energy reclaimed by any useful heat recovery system.

"Oxides of nitrogen (NO_x)" means all oxides of nitrogen, except nitrous oxide, as measured by test methods approved by the Department and EPA, such as the test methods set forth at 40 CFR 60 Appendix A Method 7E.

"Particles" means any material, except uncombined water, which exists as liquid particles or solid particles at standard conditions.

"Peak daily heat input rate," for a combustion source or for a designated set that has no operating history, means the maximum gross heat input rate of the source or of all the sources in the designated set. For a combustion source or for a designated set that has an operating history, "peak daily heat input rate" means the average of the daily heat inputs to a combustion source or to a designated set on the five days on which the heat input was highest, over the following period:

1. For a combustion source or for a designated set that has been operating for at least five years, the five years preceding the date on which the owner or operator applied to the Department for approval of an emissions averaging plan, pursuant to N.J.A.C. 7:27-19.6; and

2. For a combustion source that has been operating for less than five years, the entire period during which the combustion source has been operating.

"Permit" means preconstruction permit, operating permit, or facility-wide permit.

"Person" means any individual or entity and shall include, without limitation, corporations, companies, associations, societies, firms, partnerships and joint stock companies, and shall also include, without limitation, all political subdivisions of this State or any agencies or instrumentalities thereof.

"Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

"PJM Interconnection" or **"PJM"** means the regional transmission organization that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia, and the District of Columbia.

"Portable" means not attached to a permanent foundation, and designed and capable of being carried or moved from one location to another by means of wheels, skids, carrying handles, dolly, trailer, platform, or similar device.

"Potential to emit" means the capability of a source operation or of a facility to emit an air contaminant at maximum design capacity, except as constrained by any Federally enforceable condition. Such Federally enforceable conditions may include, but are not limited to, the effect of installed control apparatus, restrictions on the hours of operation, and restrictions on the type or amount of material combusted, stored, or processed.

"Pounds/MWh" means NO_x emissions in pounds per megawatt-hour of total net energy output, where total net energy output consists of electric output plus useful heat output.

"Power outage" means an interruption in the provision of electricity to customers because normally available sources of electrical energy are unavailable, provided the unavailability is due to circumstances beyond the control of the customer.

"Ppmv" means a measurement of the concentration of a specified substance in air, expressed as the number of parts of the specified substance per million parts of air, by volume, including the number of parts contributed by water.

"Ppmvd" means a measurement of the concentration of a specified substance in air, expressed as the number of parts of the specified substance per million parts of air, by volume, not including the number of parts contributed by water.

"Preconstruction permit" or **"permit"** means a "Permit to Construct, Install, or Alter Control Apparatus or Equipment" issued by the Department pursuant to N.J.S.A. 26C-1 et seq., in particular N.J.S.A. 26:2C-9.2, and implementing rules at N.J.A.C. 7:27-8.

"Pressed glass" means glassware formed by placing a blob of molten glass in a metal mold, then pressing it with a metal plunger or follower to form the inside shape. The resultant

piece, termed mold-pressed, has an interior form independent of the exterior, in contrast to mold-blown glass, in which the interior corresponds to the outer form.

"Primary fuel" means the fuel that provided the greatest heat input (expressed in BTU) to a combustion source in the base year.

"Process heater" means an item of equipment in which heat from fuel combustion is transferred to fluids contained in tubes without coming into contact with the fluid. A process heater is a type of indirect heat exchanger.

"Rated power output" means the maximum electrical or equivalent mechanical power output stated on the nameplate affixed to an engine or the International Standard Organization (ISO) rated electrical or equivalent mechanical power stated on the nameplate affixed to a turbine by the manufacturer.

"Rebricking" means the replacement of damaged or worn bricks of a glass manufacturing furnace while the furnace does not contain molten glass.

"Reciprocating engine" means an internal combustion engine in which a rotating crankshaft is driven by reciprocating motion of piston(s).

"Reconstruction" means the replacement of components of an existing facility, item of equipment or source operation to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct an entirely new facility, item of equipment or source operation.

"Refinery fuel gas" means gaseous fuel derived from the refining process and used as a fuel at the refinery where it was produced.

"Refining process" means the combination of physical and chemical operations including, but not limited to, distillation, cracking, and reformulation, performed on crude oil (or derivatives of crude oil) in order to produce petroleum products.

"Regenerative cycle combustion turbine" means a combustion turbine that recovers heat from its exhaust gases and uses that heat to preheat the inlet combustion air which is fed into the combustion turbine.

"Renewable energy" means class I renewable energy or class II renewable energy.

"Repowering" means the series of actions described in paragraphs 1 and 2 below by an owner or operator:

1. The permanent ceasing of the operations of the steam generator in a steam generating unit, the combustion turbine in a simple-cycle or combined-cycle combustion turbine, or any other combustion source; and

2. The installation in the State of a new combustion source or the purchase of heat or power from the owner of a new combustion source that is located in the State that:

   i. Has a maximum gross heat output rate that is at least 50 percent of the maximum gross heat output rate of the combustion source that is shut down under 1 above, or has a power output rate that is at least 50 percent of the power output rate of the combustion source that is shut down; and

   ii. Incorporates technology capable of controlling multiple combustion emissions simultaneously with improved fuel efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990.

"Rich-burn engine" means a stationary reciprocating engine that is not a lean-burn engine.

"Rotary dryer" means a cylindrical device, which rotates about an axis, through which hot gases are passed for the purpose of removing moisture from any solid.

"Sampling" means the selective collection of a quantity of raw materials, process intermediates, products, by-products or wastes.

"Selective noncatalytic reduction" or **"SNCR"** means a noncombustion technology that reduces NO_x emissions without a catalyst by injecting a reducing agent (such as ammonia, urea or cyanuric acid) into the flue gas, downstream of the combustion zone; the injection of the reducing agent converts NO_x to molecular nitrogen, water, and (if the reducing agent is urea or cyanuric acid) carbon dioxide (CO_2).

"Shed load" means the systematic reduction through prior arrangement of system demand by temporarily decreasing load in response to transmission system or area capacity shortages, system instability, or voltage control considerations.

"Shift load" means the systematic reduction of system demand by temporarily decreasing load in response to transmission system or area capacity shortages, system instability, or voltage control considerations, through prior arrangement programs designed to encourage consumers to move their use of electricity from on-peak time to off-peak times.

"Significant air quality impact level" means an increase, greater than or equal to that specified in Table 1 at N.J.A.C. 7:27-18.4, in the ambient air concentration of a criteria pollutant.

"Simple cycle combustion turbine" means a combustion turbine that does not recover heat from its exhaust gases.

"Soda lime recipe" means a formula for making glass using 60 to 75 percent silicon dioxide and 25 to 40 percent other oxides and no lead oxides.

"Solid particles" means particles of rigid shape and definite volume.

"Source emission testing" means the testing of a discharge of any air contaminant from equipment, control apparatus or source operation through any stack or chimney.

"Source operation" or **"source"** means any process or any identifiable part thereof, that emits or can reasonably be anticipated to emit any air contaminant either directly or indirectly into the outdoor atmosphere. A source operation may include one or more pieces of equipment or control apparatus.

"Specialty container glass" means clear or colored glass made of soda-lime recipe, which is produced to meet the specifications of any standard set forth by The United States Pharmacopeia or The National Formulary, incorporated herein by reference, and which is used for pharmaceutical, cosmetic or scientific purposes. The referenced specifications can be obtained from the United States Pharmacopeial Convention, Inc., 12601 Twinbrook Parkway, Rockville, MD 20852.

"SSU viscosity" means the number of seconds it takes 60 cubic centimeters of an oil to flow through the standard orifice of a Saybolt Universal viscometer at 100 degrees Fahrenheit.

"Stack or chimney" means a flue, conduit or opening designed, constructed, or used for the purpose of emitting any air contaminant into the outdoor atmosphere.

"Standard conditions" means 70 degrees Fahrenheit (21.1 degrees Celsius) and one atmosphere pressure (14.7 pounds per square inch absolute or 760.0 millimeters of mercury).

"State implementation plan" or **"SIP"** means a plan or portion thereof, or any revision thereto, prepared by a state and approved by the EPA pursuant to 42 U.S.C. § 7410, which includes enforceable emission limitations or other control measures, means or techniques, and provides for implementation, maintenance, and enforcement of one or more NAAQS.

"Stationary combustion turbine" means any simple cycle combustion turbine, regenerative cycle combustion turbine, or combustion turbine portion of a combined cycle steam/electric generating system that:

1. Is not self-propelled but may be mounted on a vehicle for portability; or

2. Is self-propelled on tracks at a facility, but does not in the course of its normal operation leave the facility.

"Stationary reciprocating engine" means an internal combustion engine that is a reciprocating engine that remains for more than 30 days at a single site (for example, any building, structure, facility, or installation), but does not include a mobile electric generator being used by the military, a locomotive engine or a construction engine. A stationary reciprocating engine:

1. Is not self-propelled, but may be mounted on a vehicle for portability; or

2. Is self-propelled on rails at a facility, but does not in the course of its normal operation leave the facility.

"Steam generating unit" means any furnace, boiler, or other device which combusts commercial fuel for the purpose of producing steam.

"Subbituminous coal" means coal that is classified as subbituminous according to the ASTM Standard Specification for Classification of Coals by Rank, ASTM D 388-77, incorporated herein by reference, as amended or supplemented. This document may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

"Tangential-fired boiler" means a furnace firing design where the burners are mounted at the corners of the furnace chamber.

"Testing" means a procedure for determining the kind and amount of one or more air contaminants, potential air contaminants or air contaminant precursors present. This term includes, but is not limited to, sampling, sample custody, analysis, and reporting of findings.

"Use" means to engage in any form or manner of operation of equipment or control apparatus subsequent to the installation of such equipment or control apparatus. This term includes any trial operation.

"Used oil" means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use, is contaminated by physical or chemical impurities, or unused oil that is contaminated by physical or chemical impurities through storage or handling.

"Viscosity" means the measure of a fluid's resistance to flow.

"Volatile organic compound," or **"VOC,"** means a volatile organic compound as that term is defined by the EPA at 40 CFR 51.100(s), as supplemented or amended, which is incorporated by reference herein.

"Voltage reduction" means a reduction in customer supply voltage of at least five percent by an electric distribution company in order to reduce load on an electric distribution system.

"Wet bottom boiler" means a boiler serving an electric generating unit in which the ash is removed from the boiler in a molten state.

7:27-19.2 Purpose, scope and applicability

(a) This subchapter establishes requirements and procedures concerning the control and prohibition of air pollution by oxides of nitrogen. The general purpose of this subchapter

is to require the owner or operator of certain stationary source operations to use reasonably available control technology (RACT) to prevent or control NO_x emissions. EPA defines RACT to mean the lowest emission limitation that a particular source is capable of meeting by the application of air pollution control technology which is reasonably available considering technological and economic feasibility.

(b) The following types of equipment and source operations are subject to the provisions of this subchapter:

1. Any boiler serving an electric generating unit, located at a major NO_x facility;

2. Until March 7, 2007, any industrial/commercial/institutional boiler or other indirect heat exchanger that has a maximum gross heat input rate of at least 20 million BTUs per hour, located at a major NO_x facility. On and after March 7, 2007, the applicability of this subchapter to an industrial/commercial/institutional boiler or other indirect heat exchanger shall be determined by (c)1 below;

3. Until March 7, 2007, any stationary combustion turbine that has a maximum gross heat input rate of at least 30 million BTUs per hour, located at a major NO_x facility. On and after March 7, 2007, the applicability of this subchapter to an stationary combustion turbine shall be determined by (c)2 below;

4. Any stationary reciprocating engine capable of producing an output of 500 brake horsepower or more and located at a major NO_x facility. In addition, on and after March 7, 2007, the applicability of this subchapter to a stationary reciprocating engine or group of stationary reciprocating engines, used for generating electricity, shall be determined by (c)3 and 4 below;

5. Any rotary dryer located at an asphalt pavement production plant;

6. Any glass manufacturing furnace producing commercial container glass, and having a maximum potential production rate of at least 14 tons of glass removed from the furnace per day and having the potential to emit more than 10 tons of NO_x per year;

7. Any glass manufacturing furnace producing specialty container glass, and having a maximum potential production rate of at least seven tons of glass removed from the furnace per day and having the potential to emit more than 10 tons of NO_x per year;

8. Any glass manufacturing furnace producing borosilicate recipe glass, and having a maximum potential production rate of at least five tons of glass removed from the furnace per day, and having the potential to emit more than 10 tons of NO_x per year;

9. Any glass manufacturing furnace producing blown glass, fiberglass, flat glass, or pressed glass having the potential to emit more than 10 tons of NO_x per year;

10. Any municipal solid waste incinerator;

11. Any sewage sludge incinerator;

12. Any simple cycle combustion turbine combusting natural gas and compressing gaseous fuel at a major NO_x facility;

13. Any stationary reciprocating engine capable of producing an output of 200 bhp or more but less than 500 bhp, combusting natural gas, and compressing gaseous fuel at a major NO_x facility; and

14. Any other equipment or source operation not specifically listed at (b)1 through 13 above or (c) below that has the potential to emit more than 10 tons of NO_x per year.

(c) On and after March 7, 2007, in addition to the types of equipment and source operations listed at (b) above, the following types of equipment or source operations shall be subject to the provisions of this subchapter:

1. Any industrial/commercial/institutional boiler or other indirect heat exchanger that has a maximum gross heat input rate of at least five million BTU per hour, whether or not it is located at a major NO_x facility;

2. Any stationary combustion turbine that has a maximum gross heat input rate of at least 25 million BTU per hour, located at a major NO_x facility;

3. Any stationary reciprocating engine used for generating electricity, whether or not it is located at a major NO_x facility, that has a maximum rated power output of:

   i. One hundred forty-eight kilowatt or greater; or

   ii. Thirty-seven kilowatt or greater, if the engine has either commenced operation at the facility or is modified on or after March 7, 2007; and

4. Any group of two or more stationary reciprocating engines used for generating electricity, each of which has a maximum rated power output of 37 kW or greater, but less than 148 kW, and whose total combined power output is 148 kW or greater, whether or not the group of engines is located at a major NO_xfacility.

(d) Notwithstanding the provisions of (b) and (c) above, compliance with the recordkeeping requirements applicable to emergency generators set forth at N.J.A.C. 7:27-19.11 shall satisfy all requirements in this subchapter for any equipment that is solely used as an

emergency generator, as defined at N.J.A.C. 7:27-19.1. Emergency generators shall not be used:

1. Except as specified at paragraph 2 of the definition of emergency generator at N.J.A.C. 7:27-19.1, and during the performance of normal testing and maintenance procedures, as recommended in writing by the manufacturer and/or as required by a Federal or State statute or regulation;

2. For normal testing and maintenance under 1 above, except as set forth in this paragraph, on days when the Department forecasts air quality anywhere in New Jersey to be "unhealthy for sensitive groups," "unhealthy," or "very unhealthy" as defined in the EPA's Air Quality Index, at http://airnow.gov, incorporated herein by reference, as amended and supplemented, unless required in writing by a Federal or State law or regulation. Procedures for determining the air quality forecasts for New Jersey are available at the Department's air quality permitting web site at http://www.state.nj.us/dep/aqpp/aqforecast. However, public water systems, wastewater and stormwater systems, and sludge management facilities may perform normal testing and maintenance on their emergency generators, regardless of air quality, during the 48 hours prior to a National Weather Service-designated named storm impacting the facility's area of the State. These entities must notify the Department by calling the hotline at 1-877-WARN-DEP (1-877-927-6337) before conducting such normal testing and maintenance if the air quality forecast at http://www.njaqinow.net/ is unhealthy or worse; and

3. As a source of energy or power after the primary energy or power source has become operable again. If the primary energy or power source is under the control of the owner or operator of the emergency generator, the owner or operator shall make a reasonable, timely effort to repair the primary energy or power source.

(e) Notwithstanding the provisions of (b) and (c) above, this subchapter does not apply to any equipment or source operation for which the EPA determines (when the EPA approves a plan or plan revision) that net air quality benefits are greater in the absence of reductions of oxides of nitrogen from such equipment or source operation.

(f) The owner or operator of a facility containing any equipment or source operation listed in (b)1 through 8 above may apply to the Department for an exemption from this subchapter. The following conditions apply to such exemptions:

1. An owner or operator shall apply for such an exemption in accordance with the procedures set forth in N.J.A.C. 7:27-19.14;

2. The Department shall approve an exemption only if the facility satisfies the following requirements:

   i. The facility's potential to emit NO_x is less than 25 tons per year; and

ii. The facility's potential to emit NO_x on any calendar day from May 1 to September 30 is less than 137 pounds per day; and

3. If an exemption was approved for any equipment prior to June 6, 2000, but that equipment no longer qualifies for such an exemption due to amendments in this section operative on June 6, 2000, the owner or operator of such equipment shall comply with the requirements in this subchapter applicable to that equipment by October 6, 2001.

(g) Notwithstanding the provisions of (b) and (c) above, this subchapter does not apply to a stationary reciprocating engine that:

1. Is not connected to the electric power distribution grid;

2. Is not replacing power from the electric power distribution grid (for example, PJM demand curtailment program, peak shavings, demand response, or replacing power to equipment currently powered by the electric power distribution grid); and

3. Is portable and supplying power only to portable equipment.

7:27-19.3 General provisions

(a) Each owner and each operator of any equipment or source operation subject to this subchapter is responsible for ensuring compliance with all requirements of this subchapter. If there is more than one owner and operator of the equipment or source operation, each owner and each operator is jointly and severally liable for any penalties for violations of this subchapter.

(b) The emission limitations specified in this subchapter became operative on May 31, 1995, unless otherwise specified.

(c) For any alteration of equipment or source operations necessary to comply with the NO_x emission limits in this subchapter, which alteration does not involve a reconstruction of the equipment or source operation, the use of control measures which incorporate current advances in the art of air pollution control for those types of control measures shall be deemed to satisfy the requirements of N.J.A.C. 7:27-8.12 or 22.35. For example, if a boiler serving an electric generating unit achieves compliance with an emission limit under this subchapter by installing a low-NO_x burner, the requirements of N.J.A.C. 7:27-8.12 or 22.35 are satisfied if the low-NO_x burner installed incorporates current advances in the art of air pollution control for low-NO_x burners.

(d) By February 7, 2006, the owner or operator of any facility, equipment or source operation that is subject to NO_x emissions limit at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e) shall:

1. Apply for permits for all equipment and control apparatus necessary for compliance with this subchapter; and

2. If the owner or operator seeks to comply with this subchapter pursuant to the facility-specific NO_x emission limit provision of N.J.A.C. 7:27-19.13, submit to the Department a facility-specific NO_x control plan pursuant to N.J.A.C. 7:27-19.13.

(e) After receipt of a written request from an owner or operator for an extension of the deadline set forth in (d) above or after receipt of a written request from an owner or operator for an extension of the deadline set forth at N.J.A.C. 7:27-19.13(b)5, the Department will authorize one 90-day non-renewable deadline extension. Written requests for the extension of a deadline submitted pursuant to this subsection shall be addressed to:

Administrator
Air Compliance and Enforcement
Department of Environmental Protection
PO Box 422
401 East State Street, 4th Floor
Trenton, New Jersey 08625-0422

(f) In lieu of complying with the applicable emission limits set forth at N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9, 19.10 or 19.28, the owner or operator of any equipment or source operation listed in N.J.A.C. 7:27-19.2(b) may comply with one of the following, or with a combination of (f)1 and 3 below. The owner or operator of any equipment or source operation listed in N.J.A.C. 7:27-19.2(c) may comply with (f)1, 2 or 4 below. On and after May 1, 2015, the owner or operator of any HEDD unit shall not use the alternatives in this subsection to comply with any applicable maximum allowable emission rate at N.J.A.C. 7:27-19.4 or 19.5.

1. An emissions averaging plan approved by the Department pursuant to N.J.A.C. 7:27-19.6 and 19.14, which includes the combustion source in question as an averaging unit;

2. An alternative maximum allowable emission rate for the unit, approved by the Department pursuant to N.J.A.C. 7:27-19.13;

3. A seasonal fuel switching plan for the unit, approved by the Department pursuant to N.J.A.C. 7:27-19.14 and 19.20; or

4. A plan for phased compliance for the unit, approved by the Department pursuant to N.J.A.C. 7:27-19.14 and N.J.A.C. 7:27-19.21 or 19.23.

(g)-(h) (Reserved)

(*i*) The owner or operator of any facility, equipment or source operation which commences operation on or after January 23, 1994 shall ensure that such facility, equipment of source operation complies with the applicable requirement(s) of this subchapter from the date of commencement of operation or from the date the requirement is operative, whichever is later.

(j) A person required to provide a notice to the Department under this subchapter shall send the notice to the applicable address listed below:

1. If the notice concerns a combustion source located in Burlington County, Mercer County, Middlesex County, Monmouth County, or Ocean County, the person shall send the notice to:

   Department of Environmental Protection
   Bureau of Air Compliance & Enforcement - Central
   4 Station Plaza
   Mail Code 22-03A
   PO Box 420
   Trenton, NJ 08625-0420

2. If the notice concerns a combustion source located in Bergen County, Essex County, Hudson County, Hunterdon County, Morris County, Passaic County, Somerset County, Sussex County, Union County, or Warren County, the person shall send the notice to:

   Department of Environmental Protection
   Bureau of Air Compliance & Enforcement - Northern
   7 Ridgedale Avenue
   Cedar Knolls, NJ 07927

3. If notice concerns a combustion source located in Atlantic County, Camden County, Cape May County, Cumberland County, Gloucester County, or Salem County, the person shall send the notice to:

   Department of Environmental Protection
   Bureau of Air Compliance & Enforcement - Southern
   2 Riverside Drive, Suite 201
   Camden, NJ 08103-1013

4. If the notice concerns an averaging plan pursuant to N.J.A.C. 7:27-19.6, the person shall determine the county in which the averaging unit with the biggest potential to emit NO_x is located, and send the notice to the address applicable to that county under (j)1 through 3 above.

7:27-19.4 Boilers serving electric generating units

(a) The owner or operator of any boiler serving an electric generating unit shall cause it to emit NOx at a rate no greater than the applicable maximum allowable NOx emission rate specified in Tables 1, 2 and 3 below, as applicable, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f) or unless otherwise specified in an enforceable agreement with the Department. Table 1 is operative through December 14, 2012. Table 2 is operative starting December 15, 2012 through April 30, 2015, except that a coal-fired boiler serving an electric generating unit may be eligible for up to a one-year extension of the December 15, 2012 compliance date pursuant to (f) below. Table 3 is operative on and after May 1, 2015. A boiler serving an electric generating unit is also subject to the state-of-the-art requirements at N.J.A.C. 7:27-8.12 and 22.35, lowest achievable emission rate requirements at N.J.A.C. 7:27-18, and best available control technology requirements at 40 CFR 52.21, incorporated herein by reference, as applicable.

TABLE 1

(Operative through December 14, 2012)

Maximum Allowable NO_x Emission Rates for Boilers Serving Electric Generating Units

(pounds per million BTU)

	Firing Method		
Fuel/Boiler Type	**Tangential**	**Face**	**Cyclone**
Coal -Wet Bottom	1.0	1.0	0.60
Coal - Dry Bottom	0.38	0.45	0.55
Oil and/or Gas	0.20	0.28	0.43
Gas Only	0.20	0.20	0.43

TABLE 2

(Operative from December 15, 2012 through April 30, 2015)

Maximum Allowable NO_x Emission Rates for Boilers Serving Electric Generating Units

(pounds per megawatt hour)

	Firing Method		
Boiler Type	**Tangential**	**Face**	**Cyclone**
Coal	1.50	1.50	1.50
Oil and/or Gas	2.00	2.80	4.30
Gas only	2.00	2.00	4.30

TABLE 3
(Operative on and after May 1, 2015)
Maximum Allowable NO_x Emission Rates for Boilers Serving
Electric Generating Units
(pounds per megawatt hour)

Fuel	
Coal	1.50
Heavier than No. 2 fuel oil	2.00
No. 2 and lighter fuel oil	1.00
Gas only	1.00

(b) The owner or operator of any boiler serving an electric generating unit shall install on the boiler a continuous emissions monitoring system satisfying the requirements of N.J.A.C. 7:27-19.18.

(c) The owner or operator of any boiler serving an electric generating unit shall adjust the boiler's combustion process before May 1st of each calendar year in accordance with N.J.A.C. 7:27-19.16, except the adjustment may occur within seven days of the first period of operation after May 1, if the boiler has not operated between January 1 and May 1 of that year.

(d) The owner or operator of a boiler serving an electric generating unit shall demonstrate compliance with its applicable maximum allowable NO_x emission rate in Table 2 or 3 as follows:

1. Using the methods at N.J.A.C. 7:27-19.15(a), any coal-fired boiler that is subject to an emission rate at Table 2 above shall demonstrate compliance with the maximum allowable NO_x emission rate in Table 2 either by June 15, 2013 or, if the boiler or control apparatus is altered to meet the Table 2 emission rate, by the date determined by N.J.A.C. 7:27-19.15(c), whichever date is earlier, and thereafter according to the schedule in the approved permit, except that a coal-fired boiler may be eligible for up to a one-year extension of the June 15, 2013 compliance demonstration date pursuant to (f) below; and

2. Using the methods at N.J.A.C. 7:27-19.15(a), any boiler that combusts any fuel other than coal and that is subject to an emission rate at Table 3 above shall demonstrate compliance with the applicable maximum allowable NO_x emission rate in Table 3 by November 1, 2015 or, if the boiler or control apparatus is altered to meet the applicable Table 3 emission rate, by the date determined by N.J.A.C. 7:27-19.15(c), whichever date is earlier, and thereafter according to the schedule in the approved permit.

(e) When calculating a 24-hour NO_x emission rate for an affected coal-fired unit, the owner or operator may exclude emissions from:

1. A unit that has ceased firing fossil fuel, the period of time, not to exceed eight hours, from initial firing of the unit until the unit is fired with coal and synchronized with a utility electric distribution system; and

2. A unit that is to be shut down, the period of time in which the unit is not longer synchronized with any utility electric distribution system and is no longer fired with coal.

(f) The owner or operator of a coal-fired boiler that is subject to Table 2 at (a) above may request up to a one-year extension past the December 15, 2012 Table 2 emission limit compliance deadline required at (a) and the June 15, 2013 compliance demonstration deadline required at (d)1 above by sending a written request to the address at N.J.A.C. 7:27-19.30(c)3. The request shall document the reasons the extension is needed. The Department will approve an extension request only if compliance by December 15, 2012 is not possible due to circumstances beyond the control of the owner or operator that are not reasonably foreseeable, including, but not limited to, the unavailability of a control apparatus needed to comply with the December 15, 2012 compliance deadline or a contractor needed to install the control apparatus.

(g) Each owner or operator identified at N.J.A.C. 7:27-19.29(a) shall submit to the Department a 2009 HEDD Emission Reduction Compliance Demonstration Protocol and annual reports pursuant to N.J.A.C. 7:27-19.29.

(h) Each owner or operator of a boiler serving an electric generating unit that is a HEDD unit shall submit to the Department a 2015 HEDD Emission Limit Achievement Plan and annual progress updates, as applicable, pursuant to N.J.A.C. 7:27-19.30.

7:27-19.5 Stationary combustion turbines

(a) The owner or operator of a simple cycle combustion turbine shall comply with (a)1 through 3 below, as applicable.

1. Until March 7, 2007, the owner or operator of any stationary simple cycle combustion turbine that has a maximum gross heat input rate of at least 30 million BTUs per hour shall cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 4 below, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f).

2. March 7, 2007 through May 19, 2009, the owner or operator of any simple cycle combustion turbine that has a maximum gross heat input rate of at least 25 million BTUs per hour and is a NO_x Budget source shall cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in

Table 4 below, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f).

3. May 20, 2009 through April 30, 2015, the owner or operator of any simple cycle combustion turbine that is a HEDD unit shall cause it to emit NO_x at a rate no greater than the lesser of the applicable maximum allowable NO_x emission rate specified in Table 4 below, or the maximum allowable NO_x emission rate contained in its preconstruction permit or operating permit, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f).

TABLE 4 [1]

Maximum Allowable NO_x Emission Rate for Simple Cycle Combustion Turbines

(Pounds per million BTU)

Fuel Used	**Maximum Allowable NO_x Emission Rate**
Oil	0.4
Gas	0.2

[1] Through March 6, 2007, Table 4 applies to any stationary simple cycle combustion turbine that has a maximum gross heat input rate of at least 30 MMBTU per hour.
March 7, 2007 through May 19, 2009, Table 4 applies to any simple cycle combustion turbine that has a maximum gross heat input rate of at least 25 million MMBTU per hour and is a NOx Budget source.
May 20, 2009 through April 30, 2015, Table 4 applies to any simple cycle combustion turbine that is a HEDD Unit.

(b) The owner or operator of a combined cycle combustion turbine or a regenerative cycle combustion turbine shall comply with (b)1 through 3 below, as applicable.

1. Until March 7, 2007, the owner or operator of any combined cycle combustion turbine or a regenerative cycle combustion turbine that has a maximum gross heat input rate of at least 30 million BTUs per hour shall cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 5 below, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f).

2. March 7, 2007 through May 19, 2009, the owner or operator of any combined cycle combustion turbine or a regenerative cycle combustion turbine that has a maximum gross heat input rate of at least 25 MMBTU per hour and is a NO_x Budget source shall cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 5 below, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f).

3. May 20, 2009 through April 30, 2015, the owner or operator of any combined cycle combustion turbine or a regenerative cycle combustion turbine that is a HEDD unit shall cause it to emit NO_x at a rate no greater than the lesser of the applicable maximum allowable NO_x emission rate specified in Table 5 below, or

the maximum allowable NO_x emission rate contained in its preconstruction permit or operating permit, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f).

TABLE 5 [1]

Maximum Allowable NO_x Emission Rate for Combined Cycle or Regenerative Cycle Combustion Turbines

(Pounds per million BTU)

Fuel Used	**Maximum Allowable NO_x Emission Rate**
Oil	0.35
Gas	0.15

[1] Through March 6, 2007, Table 5 shall apply to any combined cycle or regenerative cycle combustion turbine that has a maximum gross heat input rate of at least 30 MMBTU per hour.
March 7, 2007 through May 19, 2009, Table 5 shall apply to any combined cycle or regenerative cycle combustion turbine that has a maximum gross heat input rate of at least 25 MMBTU per hour and that is a NO_x Budget source.
May 20, 2009 through April 30, 2015, Table 5 shall apply to any combined cycle or regenerative cycle combustion turbine that is a HEDD Unit.

(c) In lieu of complying with the emission limits set forth in (a) and (b) above, the owner or operator of a stationary combustion turbine may comply with all of the following requirements:

1. The owner or operator of the stationary combustion turbine shall apply for and obtain the Department's written approval, in accordance with N.J.A.C. 7:27-19.14 and based on the standards in N.J.A.C. 7:27-19.14 and (c)2 and 3 below;

2. The owner or operator shall establish that there is an insufficient supply of water to the turbine suitable for NO_x emission control, due to either of the following circumstances beyond the control of the owner or operator:

   i. A legally enforceable limit on the amount of water which the owner or operator's facility may use; or

   ii. The need to provide for an alternate supply of water, because the existing supply is insufficiently filtered and de-ionized to be suitable for injection;

3. The owner or operator shall establish that there is no commercially available dry low-NO_x combustor suitable for use in the specific stationary combustion turbine;

4. The owner or operator shall maintain the Department's approval in effect;

5. The owner or operator shall comply with all conditions of the Department's approval; and

6. The owner or operator annually shall adjust the combustion process of the turbine in accordance with N.J.A.C. 7:27-19.16, before May 1 of each year.

(d) The owner or operator of a stationary combustion turbine shall:

1. On and after March 7, 2007 through May 19, 2009, if the stationary combustion turbine has a maximum gross heat input rate of at least 25 million BTU per hour and is not a NO_x budget source, cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 6 below, unless the owner or operator is complying with (c)1 through 5 above or N.J.A.C. 7:27-19.3(f); and

2. On and after May 20, 2009, if the stationary combustion turbine is a non-HEDD unit, cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 6 below, unless the owner or operator is complying with (c)1 through 5 above or N.J.A.C. 7:27-19.3(f).

TABLE 6 [1]

Maximum Allowable NO_x Emission Rate for Stationary Combustion Turbines

Type of Turbine	**Type of Fuel**	**Maximum Allowable NO_x Emission Rate**
Combined cycle combustion turbine or a regenerative cycle combustion turbine	Gas	1.3 pounds of NO_x per MWh
	Oil	2.0 pounds of NO_x per MWh
Simple cycle combustion turbine	Gas	2.2 pounds of NO_x per MWh
	Oil	3.0 pounds of NO_x per MWh

[1] March 7, 2007 through May 19, 2009, Table 6 applies to any stationary combustion turbine that has a maximum gross heat input rate of at least 25 million BTU per hour and that is not a NO_x Budget source.
On and after May 20, 2009, table 6 applies to any stationary combustion turbine that is a non-HEDD unit.

(e) The owner or operator of any stationary combustion turbine that has a maximum gross heat input rate of at least 25 million BTU per hour shall adjust the turbine's combustion process in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule:

1. For any stationary combustion turbine that has a maximum gross heat input rate of at least 25 million BTU but less than 30 million BTU per hour, according to manufacturer's recommended maintenance schedules beginning in 2007; or

2. For any stationary combustion turbine that has a maximum gross heat input rate of at least 30 million BTU per hour or greater, or required prior to November 7, 2005 to adjust the combustion process, according to manufacturer's recommended maintenance schedules.

(f) To calculate pounds/MWh for units where energy is used for other than electric generation, for example useful heat from a combined heat and power unit, that useful energy should be converted to equivalent MWh and added to the electric output. The pounds/MWh is based on net energy output, for both electric output and useful heat output.

(g) On and after May 1, 2015, the owner or operator of a stationary combustion turbine that is a HEDD unit or a stationary combustion turbine that is capable of generating 15 MW or more and that commenced operation on or after May 1, 2005 shall:

1. Cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 7 below; and

2. If the preconstruction permit or operating permit for such a combustion turbine allows it to combust either liquid fuel oil or gaseous fuel, cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate for gaseous fuel specified in Table 7 during operation on high electric demand days, regardless of the fuel combusted, unless combusting gaseous fuel is not possible due to gas curtailment.

TABLE 7 [1]

Maximum Allowable NO_x Emission Rate for any Stationary Combustion Turbine that is a HEDD Unit

(Pounds per megawatt hour)

Type of Turbine	**Type of Fuel**	**Maximum Allowable NO_x Emission Rate**
Combined cycle combustion turbine or a regenerative cycle combustion turbine	Gas	0.75 pounds of NO_x per MWh
	Oil	1.20 pounds of NO_x per MWh
Simple cycle combustion turbine	Gas	1.00 pounds of NO_x per MWh
	Oil	1.60 pounds of NO_x per MWh

[1] On and after May 1, 2015, Table 7 applies to any stationary combustion turbine that is a HEDD unit or a stationary combustion turbine that is capable of generating 15 MW or more and that commenced operation on or after May 1, 2005.

(h) Any stationary combustion turbine that is constructed, installed, reconstructed or modified is also subject to state-of-the-art requirements at N.J.A.C. 7:27-8.12 and 22.35, lowest achievable emission rate requirements at N.J.A.C. 7:27-18, and best available control technology requirements at 40 CFR 52.21, incorporated herein by reference, as applicable.

(*i*) The owner or operator of a stationary combustion turbine shall demonstrate compliance with the applicable maximum allowable NO_x emission rate pursuant to N.J.A.C. 7:27-19.15 in accordance with the following schedule:

1. For a non-HEDD turbine, compliance with the applicable maximum allowable NO_x emission rate in Table 6 shall be demonstrated by November 15, 2009, and thereafter according to the schedule in the approved permit. If, within the period May 19, 2004 to May 20, 2009, the owner or operator provided to the Department satisfactory compliance demonstration test results that comply with Table 6, the owner or operator shall be exempt from demonstrating compliance again prior to November 15, 2009; and

2. For a stationary combustion turbine that is subject to the emission rate(s) at (g) above compliance with the applicable maximum allowable NO_x emission rate in Table 7 shall be demonstrated by November 1, 2015, or, if the HEDD unit is altered to meet the Table 7 emission rate, by November 1, 2015 or the date determined by N.J.A.C. 7:27-19.15(c), whichever date is earlier, and thereafter according to the schedule in the approved permit.

(j) Each owner or operator identified at N.J.A.C. 7:27-19.29(a) shall submit to the Department a 2009 HEDD Emission Reduction Compliance Demonstration Protocol and annual reports pursuant to N.J.A.C. 7:27-19.29.

(k) Each owner or operator of a stationary combustion turbine that is a HEDD unit shall submit to the Department a 2015 HEDD Emission Limit Achievement Plan and annual progress updates, as applicable, pursuant to N.J.A.C. 7:27-19.30.

(*l*) Beginning November 6, 2019, any simple cycle combustion turbine combusting natural gas and compressing gaseous fuel at a major NO_x facility shall not emit more than 42 parts per million by volume, dry basis, (ppmvd) of NO_x, corrected to 15 percent oxygen.

7:27-19.6 Emissions averaging

(a) The Department may authorize an owner or operator to comply with an averaging plan approved by the Department pursuant to this section and N.J.A.C. 7:27-19.14. An owner or operator in compliance with such an approved averaging plan is not required to have each averaging unit comply with any emission limit set forth in this subchapter which would be applicable in the absence of an approved averaging plan.

(b) An owner or operator of two or more source operations or items of equipment may request that the Department authorize an averaging plan for two or more averaging units designated by the owner or operator. The owner or operator seeking authorization for averaging shall submit a written application to the Department in accordance with N.J.A.C. 7:27-19.14(a), (b) and (c). The owner or operator shall include the following information in the application:

1. Information sufficient to identify each averaging unit, including its location, a brief description of the unit (for example, "dry-bottom coal-fired boiler serving an electric generating unit" or "oil-fired simple-cycle combustion turbine"), its permit number, any other identifying numbers, and any other information

necessary to distinguish it from other equipment owned or operated by the applicant;

2. The maximum gross heat input rate of each averaging unit, expressed in BTUs per hour;

3. The type of fuel or fuels combusted in each averaging unit;

4. The maximum allowable NO_x emission rate which the owner or operator proposes to impose upon each averaging unit, expressed in pounds per million BTU;

5. The peak daily heat input rate of each averaging unit or of the designated set, expressed in MMBTU;

6. A demonstration that in operating at the peak daily heat input rate of all the averaging units together or of the designated set would satisfy the following equation:

$$TPEE \leq TPAE$$

Where:

i. TPEE means total peak estimated emissions and is equal to the sum of the peak estimated emissions for each averaging unit or the peak estimated emission of the designated set. The peak estimated emissions for each averaging unit equals the maximum emission rate listed in (b)4 above for that averaging unit, multiplied by the peak daily heat input rate listed in (b)5 above for that averaging unit. The peak estimated emissions of the designated set equals the sum of the maximum emission rates listed in (b)4 above for each averaging unit multiplied by the daily heat input rate to that averaging unit at the time of the peak daily heat input rate to the designated set as listed in (b)5 above; and

ii. TPAE means total peak allowable emissions, and is equal to the sum of the total peak allowable emissions for each averaging unit or the peak allowable emissions of the designated set. The peak allowable emissions for each averaging unit equals the applicable NO_x emission limit set forth in N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9, 19.10 or 19.20 for that averaging unit, multiplied by the peak daily heat input rate listed in (b)5 above for that averaging unit. The TPAE of the designated set means the applicable NO_x emission limit for each averaging unit multiplied by the heat input rate to that averaging unit at the time of the peak daily heat input rate to the designated set. For an averaging unit that is included in a seasonal fuel switching plan under N.J.A.C. 7:27-19.20, the applicable NO_x emission limit from May 1 through September 30 is the limit established under N.J.A.C. 7:27-19.20(d) or 19.20(g)3 as applicable, and

the applicable NO_x emission limit from October 1 through April 30 is the limit established under N.J.A.C. 7:27-19.20(g)4;

7. The method to be used to measure the actual NO_x emission rate of each averaging unit;

8. The name and phone number of the individual responsible for the recordkeeping required under (g) below; and

9. Any other information which the Department requests, which is reasonably necessary to enable it to determine whether the averaging units designated by the owner or operator will comply with the requirements of this section.

(c) The Department shall approve an averaging plan only if the following requirements are satisfied:

1. Each averaging unit can satisfy the maximum allowable NO_x emission rate which the owner or operator proposed under (b)4 above for that averaging unit;

2. The request for authorization satisfies all requirements of (b) above; and

3. The owner and operator of the averaging units to be included in the designated set enter into a Federally enforceable agreement with the Department (such as the inclusion of conditions in the applicable permits or operating certificates, or both), requiring any averaging unit for which the NO_x emission rate specified under (b)4 above is less than the applicable maximum allowable NO_x emission rate specified at N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9, 19.10 or 19.20 to continue to emit NO_x at a rate no greater than that specified under (b)4 above.

(d) The owner or operator of the designated set shall operate each unit in the designated set in compliance with the following:

1. The actual NO_x emissions from each averaging unit in the designated set, averaged over the appropriate time period specified in (f) below, shall not exceed the maximum allowable NO_x emission rate specified in (b)4 above for that averaging unit; and

2. The sum of the actual NO_x emissions from all averaging units in the designated set, averaged over the appropriate time period specified in (f) below, shall not exceed the sum of the allowable NO_x emissions for all averaging units in the designated set. The allowable NO_x emissions for each averaging unit is calculated according to the following formula:

$$\text{Allowable } NO_x \text{ emissions} = H \times AL$$

Where:

i. H means the actual heat input to the averaging unit during the appropriate time interval specified in (f) below. The heat input is expressed in millions of BTUs, based on the higher heating value of the fuel burned; and

ii. AL means the applicable NO_x emission limit set forth in N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9, 19.10 or 19.20 for that averaging unit, expressed in pounds of NO_x per million BTUs. For an averaging unit that is included in a seasonal fuel switching plan under N.J.A.C. 7:27-19.20, the applicable NO_x emission limit from May 1 through September 30 is the limit established under N.J.A.C. 7:27-19.20(g) 3, and the applicable NO_x emission limit from October 1 through April 30 is the limit established under N.J.A.C. 7:27-19.20(g)4.

(e) The owner or operator of the designated set shall calculate the actual NO_x emissions of each averaging unit using emissions data from a continuous emissions monitoring system satisfying the requirements of N.J.A.C. 7:27-19.18. The owner or operator may comply with this requirement using emissions data derived in accordance with a monitoring plan for limited installation of continuous emissions monitoring systems approved by the Department under N.J.A.C. 7:27-19.18(e).

(f) The owner or operator shall demonstrate compliance with this section as follows:

1. The owner or operator shall determine whether the operations of the designated set and of each averaging unit comply with this section for each calendar day during the period beginning May 1 and ending September 30 of each year. The owner or operator shall base the calculations required under (d)1 and 2 above upon the heat input and NO_x emissions for each averaging unit over the entire calendar day. The owner or operator shall perform the calculations and make a record of them within three working days after the date which is the subject of the calculation; and

2. The owner or operator shall determine whether the operations of the designated set and of each averaging unit comply with this section for the 30-day period ending on October 1 of each year, and the 30-day period ending on each subsequent day through April 30 of the following year. The owner or operator shall base the calculations required under (d)1 and 2 above upon the heat input and NO_x emissions for each averaging unit over the entire 30-day period. The owner or operator shall perform the calculations and make a record of them by the 15th day of each month, for all 30-day periods ending in the preceding month.

(g) The owner or operator of a designated set shall maintain the records listed below for five years from the date on which each record was made. The owner or operator shall maintain such records in a permanently bound log book or an electronic method, in a format that enables the Department to readily determine whether the designated set and

each averaging unit are in compliance. The owner or operator shall maintain the following records:

1. The unique identifier for each averaging unit included in the designated set as specified in (b)1 above;

2. The time period for which the data is being recorded;

3. The date upon which the data was recorded;

4. The amount, type and higher heating value of the fuel(s) consumed over the subject time period;

5. The amount of NO_x (expressed in pounds or tons) emitted by each averaging unit over the subject time period;

6. Whether the amount exceeds the allowable rate for the averaging unit specified under (b)4 above;

7. The sum of the amounts listed in (g)5 above for all averaging units;

8. The allowable NO_x emissions calculated pursuant to (d)2 above; and

9. Any other information required to be maintained as a condition of approval granted pursuant to (b) above.

(h) The owner or operator of a designated set shall submit quarterly reports to the Department on April 30, July 30, October 30 and January 30 of each year, for the immediately preceding calendar quarter ending March 31, June 30, September 30 and December 31, respectively. The owner or operator shall submit the report to the Department at the address set forth in (k) below. The owner or operator shall include the following information in the quarterly report:

1. The information listed in (g)2 and 3 above;

2. In the report for the quarter ending March 31, the compliance determination required under (f)2 above for each 30-day period ending on a calendar day within the quarter;

3. In the report for the quarter ending June 30:

   i. The compliance determination required under (f)2 above for each 30-day period ending on a calendar day from April 1 through May 14, inclusive; and

ii. The compliance determination required under (f)1 above for each calendar day from May 15 through June 30, inclusive;

4. In the report for the quarter ending September 30, the compliance determination required under (f)1 above for each calendar day from July 1 through September 30; and

5. In the report for the quarter ending December 31, the compliance determination required under (f)2 above for each 30-day period ending on a calendar day within the quarter.

(*i*) If the emissions from the designated set or from any averaging unit do not comply with (d) above for any time period described in (f) above, the owner or operator of the designated set shall deliver (as opposed to send) written notice of the non-compliance to the Department within two working days after the date on which the owner or operator was required to calculate compliance under (f) above. The owner or operator shall provide the notice in writing to the Regional Enforcement Officer, at the address specified at N.J.A.C. 7:27-19.3(i) for the county in which the averaging unit with the highest NO_x emission rate is located. The owner or operator shall include the following information in the notification:

1. The name of the owner or operator;

2. The name and telephone number of the person specified in (b)7 above;

3. All information required to be recorded under (h) above;

4. A statement of the reason(s) for the non-compliance, if known; and

5. Certification of the notification, in accordance with N.J.A.C. 7:27-1.39.

(j) An owner or operator of an averaging unit which cannot be operated due to sudden and reasonably unforeseeable circumstances beyond the control of the owner or operator, including, but not limited to, a Generator Forced/Unplanned Outage as defined by PJM Manual 35: Definitions and Acronyms, Revision: 14, Effective Date: October 21, 2008 at http://www.pjm.com/documents/manuals/ /media/documents/manuals/m35.ashx, which definition is incorporated herein by reference, as supplemented or amended, and for which the NO_x emission rate specified under (b)4 above is less than the applicable maximum allowable NO_x emission rate under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, or 19.10 shall take the following actions:

1. Within two working days after the averaging unit ceased operating, deliver (as opposed to send) written preliminary notice to the Department. This preliminary notice shall be followed up within 30 calendar days of the occurrence of the incident certifying the information in accordance with N.J.A.C. 7:27-1.39. In the

written notice, the owner or operator shall identify the unit which is or was not operating, and state why it is or was not operating;

2. If circumstances beyond the control of the owner or operator make it impracticable either to repair the averaging unit within 15 calendar days after it ceased operating, or to comply with the averaging plan without operating the unit (for example, through reducing the operations of another unit and purchasing electric power from another source), include in the notice described in (j)1 above an explanation of those circumstances and an estimate of the time required to repair the averaging unit; and

3. In determining whether the designated set is in compliance with (d)2 above, assume that the NO_x emissions and heat input for the non-operational averaging unit for each of the first 15 days of non-operation (or such longer period, not to exceed six months, as the Department determines is necessary to repair the averaging unit based on the information submitted under (j)2 above) are equal to the actual emissions and heat input for that unit on the most recent comparable demand day. For each day after the end of the period described above, assume that the NO_x emissions and heat input for the non-operational averaging unit are zero.

(k) A person required to submit a quarterly report to the Department under (h) above shall send the quarterly report to the applicable address listed below:

1. If the averaging unit with the highest NO_x emission limit is located in Burlington County, Mercer County, Middlesex County, Monmouth County, or Ocean County, the person shall send the quarterly report to:

   Department of Environmental Protection
   Bureau of Air Compliance & Enforcement - Central
   4 Station Plaza
   Mail Code 22-03A
   PO Box 420
   Trenton, NJ 08625-0420

2. If the averaging unit with the highest NO_x emission limit is located in Bergen County, Essex County, Hudson County, Hunterdon County, Morris County, Passaic County, Somerset County, Sussex County, Union County, or Warren County, the person shall send the quarterly report to:

   Department of Environmental Protection
   Bureau of Air Compliance & Enforcement - Northern
   7 Ridgedale Avenue
   Cedar Knolls, NJ 07927

3. If the averaging unit with the highest NO_x emission limit is located in Atlantic County, Camden County, Cape May County, Cumberland County, Gloucester County, or Salem County, the person shall send the quarterly report to:

   Department of Environmental Protection
   Bureau of Air Compliance & Enforcement - Southern
   2 Riverside Drive, Suite 201
   Camden, NJ 08103-1013

7:27-19.7 Industrial/commercial/institutional boilers and other indirect heat exchangers

(a)-(c) (Reserved)

(d) The owner or operator of any industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 250 million BTUs per hour shall install a continuous emissions monitoring system in accordance with N.J.A.C. 7:27-19.18.

(e)-(f) (Reserved)

(g) On and after March 7, 2007, the owner or operator of an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least five million BTU per hour, whether or not it is located at a major NO_x facility, shall adjust the combustion process annually in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule:

1. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least five million BTU per hour, but less than 10 million BTU per hour, in the same quarter of each calendar year, beginning in 2010;

2. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 10 million BTU per hour, but less than 20 million BTU per hour, in the same quarter of each calendar year beginning in 2008;

3. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 20 million BTU per hour or greater, in the same quarter of each calendar year beginning in 2007; or

4. If the industrial/commercial /institutional boiler or other indirect heat exchanger is not operated during the quarter of the calendar year in which the annual adjustment is to be performed pursuant to (g)1, 2, or 3 above, the owner or

operator shall perform the adjustment within seven days after the boiler or other indirect heat exchanger is next operated.

(h) On and after March 7, 2007, the owner or operator of an industrial/commercial/ institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 50 million BTU per hour, located at a major NO_x facility, shall cause the boiler or other indirect heat exchanger to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 8 below, in accordance with the following, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f):

1. For an industrial/commercial/institutional boiler or other indirect heat exchanger that is not located at a petroleum refinery:

   i. The owner or operator shall cause the industrial/commercial/institutional boiler or other indirect heat exchanger to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 8 below through April 30, 2010, if compliance is achieved without physically modifying the boiler or other indirect heat exchanger; or

   ii. The owner or operator shall cause the industrial/commercial/institutional boiler of other indirect heat exchanger to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 8 below through April 30, 2011, if compliance is achieved by physically modifying the boiler or other indirect heat exchanger; and

2. For an industrial/commercial/institutional boiler or other indirect heat exchanger that is located at a petroleum refinery, the dates at (h)1 above shall not apply. The owner or operator shall cause the industrial/commercial/institutional boiler or other indirect heat exchanger to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 8 below.

TABLE 8
Maximum Allowable NOx Emission Rates for
Industrial/Commercial/Institutional Boilers or other Indirect Heat Exchangers
(pounds per million BTU)

Heat Input Rate (million BTU per hr)	**Fuel/Boiler Type**	**Firing Method**		
		Tangential	**Face**	**Cyclone**
at least 50 but < 100	Natural gas only	0.10	0.10	0.10
	No. 2 Fuel oil only	0.12	0.12	0.12
	Refinery fuel gas and other gaseous fuels	0.20	0.20	N/A
	Other liquid fuels	0.30	0.30	0.30
	Coal – Wet Bottom	1.0	1.0	0.55
	Coal – Dry Bottom	0.38	0.43	0.55

at least 100 or greater	Natural gas only	0.10	0.10	0.10
	Refinery fuel gas and other gaseous fuels	0.20	0.20	N/A
	Fuel oil and/or natural gas	0.20	0.28	0.43
	Coal – Wet Bottom	1.0	1.0	0.60
	Coal – Dry Bottom	0.38	0.45	0.55

(*i*) The owner or operator of an industrial/commercial/ institutional boiler or other indirect heat exchanger, with a maximum gross heat input rate of at least 25 million BTU per hour, whether or not it is located at a major NOx facility, but which is not located at a petroleum refinery, shall cause the boiler or other indirect heat exchanger to emit NOx at a rate no greater than the applicable maximum allowable NOx emission rate specified at Table 9 below in accordance with the following schedule, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f):

1. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 25 million BTU per hour, but less than 50 million BTU per hour:

   i. On and after May 1, 2011, if compliance is achieved without physically modifying the boiler or other indirect heat exchanger; or

   ii. On and after May 1, 2012, if compliance is achieved by physically modifying the boiler or other indirect heat exchanger; and

2. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 50 million BTU per hour:

   i. On and after May 1, 2010, if compliance is achieved without physically modifying the boiler or other indirect heat exchanger; or

   ii. On and after May 1, 2011 if compliance is achieved by physically modifying the boiler or other indirect heat exchanger.

TABLE 9

Maximum Allowable NO_x Emission Rates for Industrial/Commercial/ Institutional Boilers or Other Indirect Heat Exchangers Fired by Gas or Liquid Fuels
(pounds per million BTU)

Heat Input Rate (million BTU per hr)	**Fuel Type**	**Rate (pounds per million BTU)**
at least 25 but < 100	Natural gas only	0.05
	No. 2 Fuel oil only	0.08
	Other gaseous fuels (This does not include refinery fuel gas)	0.20

	Other liquid fuels	0.20
	Dual fuel using fuel oil and/or natural gas	0.12
	Natural gas only	0.10
	No. 2 Fuel oil only	0.10
at least 100 or greater	Other gaseous fuels (This does not include refinery fuel gas)	0.20
	Other liquid fuels	0.20
	Dual fuel using fuel oil and/or natural gas	0.20

7:27-19.8 Stationary reciprocating engines

(a) The owner or operator of a rich-burn stationary reciprocating engine capable of producing an output of 500 brake horsepower or greater, fueled by gaseous fuel, shall cause it to emit no more than 1.5 grams of NO_x per bhp-hr. Beginning March 7, 2007, a rich-burn stationary reciprocating engine capable of producing an output of 37 kW or greater, fueled by gaseous fuel, and used for generating electricity, is subject to (e) below, and not to this subsection.

(b) The owner or operator of a lean-burn stationary reciprocating engine capable of producing an output of 500 brake horsepower or greater, fueled by gaseous fuel, shall cause it to emit no more than 2.5 grams of NO_x per bhp-hr. Beginning March 7, 2007, a lean-burn stationary reciprocating engine capable of producing an output of 37 kW or greater, fueled by gaseous fuel, and used for generating electricity, is subject to (e) below, and not to this subsection.

(c) The owner or operator of a lean-burn stationary reciprocating engine capable of producing an output of 500 brake horsepower or greater, fueled by liquid fuel, shall cause it to emit no more than 8.0 grams of NO_x per bhp-hr. Beginning March 7, 2007, a lean-burn stationary reciprocating engine capable of producing an output of 37 kW or greater, fueled by liquid fuel, and used for generating electricity, is subject to (e) below, and not to this subsection.

(d) In lieu of complying with a NO_x emission limit under (a), (b) or (c) above, the owner or operator of a stationary reciprocating engine may comply with N.J.A.C. 7:27-19.3(f).

(e) On and after March 7, 2007, the owner or operator of a stationary reciprocating engine used for generating electricity whether or not it is located at a major NO_xfacility, shall meet the following requirements, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f):

1. For an engine that has a maximum rated power output of 148 kW or greater, cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 10 below;

TABLE 10

Maximum Allowable NO_x Emission Rates for Stationary Reciprocating Engines Applicable to Paragraph (e)1 above and (e)4 below Used for Generating Electricity

Engine/Fuel Type	**Maximum Allowable NO_x Emission Rate (grams per Bhp-hr)**
Rich - Burn fueled by Gaseous or Liquid Fuel	1.5
Lean – Burn fueled by Gaseous Fuel	1.5 or an emission rate which is equivalent to 80 percent NO_x reduction from the uncontrolled NO_X emission level
Lean-Burn fueled by Liquid Fuel	2.3
Lean-Burn fueled by Dual-Fuels (gas and liquid fuel)	2.3

2. For an engine that has a maximum rated power output of 37 kW or greater and that has commenced operation at the facility on or after March 7, 2007, cause it to emit NO_x at a rate no greater than 0.90 grams per bhp-hr;

3. For an engine that has a maximum rated power output of 37 kW or greater and that has been modified on or after March 7, 2007, cause it to emit NO_x at a rate no greater than 0.90 grams per bhp-hr or an emission rate which is equivalent to a 90 percent NO_x reduction from the uncontrolled NO_x emission level;

4. For a group of two or more stationary reciprocating engines, each of which has a rated power output of 37 kW or greater, but less than 148 kW, and whose total combined power output is 148 kW or greater, cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 10 above.

5. For a modified engine to take advantage of a percent reduction standard specified in Table 10 at (e)1 above, or (e)3 above in lieu of the default emission standard, the equivalent grams per bhp-hr limit must be incorporated into a Preconstruction Permit or Operating Permit. To support the permit application, a stack test conducted in accordance with N.J.A.C. 7:27-19.15(a)2, utilizing a protocol developed using the protocol templates in Technical Manual 1004, available at the Department's website at www.state.nj.us/dep/aqpp/techman.html, must be used to establish the baseline emission rate prior to modification. The engine must have had the combustion processes adjusted using the procedures at N.J.A.C. 7:27-19.16 prior to the stack test. The protocol and test results must be approved by the Bureau of Technical Services (BTS).

(f) The owner or operator of any stationary reciprocating engine that has a maximum rated power output of at least 37 kW or greater, used for generating electricity, and whether or not it is located at a major NO_x facility, shall adjust the engine's combustion process in

accordance with the procedures set forth at N.J.A.C. 7:27-19.16 and the following schedule:

1. For stationary reciprocating engine that has a maximum rated power output of at least 37 kW but less than 370 kW used for generating electricity, according to manufacturer's recommended maintenance schedules beginning in 2007: or

2. For stationary reciprocating engine that has a maximum rated power output of at least 370 kW or greater, or required prior to November 7, 2005 to adjust the combustion process, according to manufacturer's recommended maintenance schedules.

(g) Beginning November 6, 2019, the owner or operator of a two-stroke lean-burn engine capable of producing an output of 200 bhp or more but less than 500 bhp, combusting natural gas, and compressing gaseous fuel at a major NO_x facility shall cause it to emit no more than 3.0 grams of NO_x per bhp-hr.

(h) Beginning November 6, 2019, the owner or operator of a four-stroke lean-burn engine or four-stroke rich-burn engine capable of producing an output of 200 bhp or more but less than 500 bhp, combusting natural gas, and compressing gaseous fuel at a major NO_x facility shall cause it to emit no more than 2.0 grams of NO_x per bhp-hr.

7:27-19.9 Asphalt pavement production plants

(a) The owner or operator of an asphalt pavement production plant shall cause it to emit NO_X at a rate no greater than the applicable maximum allowable NO_x emission concentrations specified in Table 11 below, in accordance with the schedule specified at (f) below.

TABLE 11
Maximum Allowable NO_x Emission Concentrations for Asphalt Pavement Production Plants
(ppmvd at seven percent O_2)

Fuel Type	**NO_x Emission Concentration**
Natural gas	75
No. 2 fuel oil	100
No. 4 fuel oil, heavier fuel oils or on-specification used oil or any mixture of these three oils	125

(b) At least annually, the owner or operator of an asphalt pavement production plant subject to (a) above shall adjust the combustion process of the aggregate dryer in accordance with N.J.A.C. 7:27-19.16.

(c) In lieu of complying with a NO_x emission limit under (a) above, the owner or operator of an asphalt pavement production plant may comply with N.J.A.C. 7:27-19.3(f).

(d) The owner or operator of an asphalt pavement production plant shall perform the following best management practices:

1. Reduce aggregate moisture content by:

   i. Covering the aggregate stockpile to prevent high water content due to rain; or

   ii. Designing and operating stockpiles for water drainage and removing sand and aggregate from piles at a sufficient height above the base to avoid charging wet mix to the dryer;

2. Conduct monthly inspections of the flights in the dryer when the dryer is in use to determine the degree of wear and the need for replacement. If necessary, replace or modify a flight with an appropriate flight for the applicable combustion zone; and

3. Annually inspect the air system and repair air system leaks to minimize excess air.

(e) The owner or operator of an asphalt pavement production plant shall record and maintain onsite logs of the implementation of the best management practices required in (d) above. Each record shall be maintained in accordance with N.J.A.C. 7:27-19.19.

(f) The owner or operator of an asphalt pavement production plant shall comply with the NO_x emission concentrations at (a) above in accordance with the following schedule:

1. An asphalt pavement production dryer with a maximum gross heat input rate of less than 100 MMBTU/hr, shall comply:

   i. On and after May 1, 2011, if compliance is achieved without physically modifying the dryer; or

   ii. On and after May 1, 2012, if compliance is achieved by physically modifying the dryer.

2. An asphalt pavement production dryer with a maximum gross heat input of at least 100 MMBTU/hr, shall comply:

   i. On and after May 1, 2010, if compliance is achieved without physically modifying the dryer; or

   ii. On and after May 1, 2011, if compliance is achieved by physically modifying the dryer.

7:27-19.10 Glass manufacturing furnaces

(a) The owner or operator of any commercial container glass manufacturing furnace listed in N.J.A.C. 7:27-19.2(b)6, specialty container glass manufacturing furnace listed in N.J.A.C. 7:27-19.2(b)7, borosilicate recipe glass manufacturing furnace listed in N.J.A.C. 7:27-19.2(b)8, or pressed glass manufacturing furnace, blown glass manufacturing furnace or fiberglass manufacturing furnace listed in N.J.A.C. 7:27-19.2(b)9 shall cause the furnace to emit no more than 4.0 pounds of NO_x per ton of glass removed from the furnace.

(b) The owner or operator of any flat glass manufacturing furnace listed in N.J.A.C. 7:27-19.2(b)9 shall cause the furnace to emit no more than 9.2 pounds of NO_x per ton of glass removed from the furnace.

(c) (Reserved)

(d) A glass manufacturing furnace subject to this subchapter shall comply with the requirements of (a) and (b) above beginning on and after May 1, 2010 on the first date of startup after which rebricking of the furnace is completed.

(e) Beginning in calendar year 1994, the owner or operator of a glass manufacturing furnace subject to this subchapter shall adjust the combustion process of the furnace in accordance with N.J.A.C. 7:27-19.16 before May 1 of each calendar year.

(f) In lieu of complying with a NO_x emission limit under (a) or (b) above, the owner or operator of a glass manufacturing furnace may comply with one of the following, or with a combination of (f)1 and 3 below:

1. An emissions averaging plan approved by the Department pursuant to N.J.A.C. 7:27-19.6 and 19.14, which includes the combustion source in question as an averaging unit;

2. An alternative maximum allowable emission rate for the furnace, approved by the Department pursuant to N.J.A.C. 7:27-19.13; or

3. A seasonal fuel switching plan for the furnace, approved by the Department pursuant to N.J.A.C. 7:27-19.14 and 19.20.

7:27-19.11 Emergency generators - recordkeeping

(a) The owner or operator of an emergency generator with a maximum rated power output of 37 kW or greater, shall maintain on site and record in a logbook or computer data system, the following information:

1. Once per month, the total operating time from the generator's hour meter;

2. For each time the emergency generator is specifically operated for testing or maintenance:

   i. The reason for its operation;

   ii. The date(s) of operation and the start up and shut down time;

   iii. The total operating time for testing or maintenance based on the generator's hour meter; and

   iv. The name of the operator; and

3. If a voltage reduction is the reason for the use of the emergency generator, a copy of the voltage reduction notification from PJM or other documentation of the voltage reduction.

(b) The owner or operator of an emergency generator shall maintain the records required under (a) above for a period of no less than five years after the record was made and shall make the records readily available to the Department or the EPA upon request.

7:27-19.12 Municipal solid waste (MSW) incinerators

(a) The owner or operator of a MSW incinerator of any size shall cause it to emit NO_x at a maximum allowable emission concentration of 150 ppmvd at seven percent oxygen based on a calendar day average:

1. On and after July 18, 2009, if compliance is achieved by optimizing the existing NO_x air pollution control system without modifying the MSW incinerator; or

2. On and after May 1, 2011, if compliance is achieved by installing a new NO_x air pollution control system on an existing MSW incinerator or by physically modifying an existing MSW incinerator.

(b) In lieu of complying with the maximum allowable emissions concentration at (a) above, the owner or operator of a MSW incinerator may comply by obtaining an alternative maximum allowable NO_x emission rate approved by the Department pursuant to N.J.A.C. 7:27-19.13.

(c) The owner or operator of any MSW incinerator shall install a NO_x continuous emissions monitoring system on a MSW incinerator satisfying the requirements of N.J.A.C. 7:27-19.18 and shall demonstrate compliance with (a) or (b) above using the NO_x continuous emissions monitoring system.

7:27-19.13 Alternative and facility-specific NO_x emission limits

(a) This section establishes procedures and standards for the establishment of alternative maximum allowable NO_x emission rates, maximum allowable NO_x emission concentrations, or other NO_x regulatory parameters, and facility-specific maximum allowable NO_x emission rates, maximum allowable NO_x emission concentrations, or other NO_x regulatory parameters in the following circumstances:

1. If the owner or operator of a major NO_x facility seeks approval of a maximum allowable emission rate, maximum allowable emission concentration, or other regulatory parameter for any source operation or item of equipment of a category not listed in N.J.A.C. 7:27-19.2(b) or (c) that has the potential to emit more than 10 tons of NOx per year, except as provided in (p) below. Such a rate, concentration, or other limit approved by the Department pursuant to N.J.A.C. 7:27-19.13 shall be called a facility-specific NO_x emission limit (FSEL). The owner or operator shall obtain this FSEL by submitting a proposed facility-specific NO_x control plan pursuant to (b) below;

2. If the owner or operator of a source operation or item of equipment listed in N.J.A.C. 7:27-19.2(b) or (c) seeks approval of an alternative maximum allowable emission rate, alternative maximum allowable emission concentration, or other alternative regulatory parameter, which would apply to the equipment or source operation in lieu of the maximum allowable emission rate, maximum allowable emission concentration, or other regulatory parameter, respectively, that would otherwise apply under this subchapter. The owner or operator shall obtain this alternative rate, alternative concentration or other alternative limit by submitting a request for an alternative emission limit (AEL) pursuant to (b) below; or

3. If the owner or operator of a source operation or item of equipment was issued a facility-specific or an alternative emissions limit for that source operation or item of equipment prior to May 1, 2005, and if the owner or operator would like to continue to operate under this limit, the owner or operator shall submit a proposed facility-specific NO_x control plan or a request for an alternative emission limit, as applicable, pursuant to (b) below.

(b) The owner or operator of a facility described in (a) above shall obtain the Department's written approval of a facility-specific NO_x control plan or an alternative emission limit as follows:

1. Any facility-specific NO_x control plan, including the facility-specific emission limit, approved by the Department after May 19, 2009 shall not have an expiration date, except in accordance with (b)6 and (j) below;

2. Any alternative emission limit approved by the Department after May 19, 2009 shall have a term of 10 years, unless the source operation or item of equipment with the alternative emission limit is modified, altered or reconstructed during the

term of the plan. If the source operation or item is modified, altered or reconstructed, (b)6 or (k) below, as applicable shall also apply;

3. Any owner or operator in (a)1 shall submit to the Department in writing a proposed facility-specific NO_x control plan for the facility. In the proposed facility-specific NO_x control plan, the owner or operator shall include:

   i. A list of each source operation or item of equipment at the facility that has the potential to emit more than 10 tons of NO_x per year and is not listed in N.J.A.C. 7:27-19.2(b) or (c). In the list, the owner or operator shall briefly describe the source operation or item of equipment, and list its permit number and any other identifying numbers; and

   ii. The information listed in (d) below.

4. Any owner or operator of a facility described in (a)2 above shall submit to the Department a written request for an alternative emission limit for each applicable source operation or item of equipment. In the request, the owner or operator shall include the information listed in (c) below;

5. Any owner or operator of a facility described in (a)3 above shall submit to the Department a written request for an alternative emission limit or a proposed facility-specific NO_x control plan by August 17, 2009. The owner or operator may request a 90-day extension pursuant to N.J.A.C. 7:27-19.3(e) to submit the request or proposed plan;

   i. In the proposed facility-specific NO_x control plan, the owner or operator shall include the information listed at (b)3i and ii above. In a request for an alternative emission limit, the owner or operator shall include the information listed at (c) below;

   ii. If the owner or operator submits a request or proposed plan by August 17, 2009 or by the date of any extension approved by the Department, the owner or operator's existing alternative emission limit or facility-specific emission limit, as applicable, shall terminate on the date stated in the implementation schedule of the request or proposed plan that the Department approves; and

   iii. If the owner or operator does not submit a request or proposed plan or extension request by August 17, 2009, the owner or operator's existing alternative emission limit emission rate or facility-specific emission limit shall terminate on August 17, 2009;

6. If the owner or operator of a facility has an approved alternative emission limit or an approved facility-specific emission limit for a source operation or item of equipment, and intends to modify, alter or reconstruct that source operation or

item of equipment, such that the alternative or facility-specific emission limit would change, the existing alternative or facility-specific emission limit shall terminate on the start-up date of the modified, altered or reconstructed source operation or item of equipment. If the owner or operator plans to continue operating under an alternative or facility-specific emission limit, the owner or operator shall, pursuant to this section, apply for and obtain approval of a new alternative emission limit or facility-specific NO_x control plan prior to operation of the modified, altered or reconstructed source operation or item of equipment; and

7. If the owner or operator of a facility that has an approved 10-year term alternative emission limit plans to continue operating under an alternative emission limit beyond the existing limit's expiration date, the owner or operator shall submit a request for a new alternative emission limit at least one year prior to the termination date of the existing alternative emission limit. The existing alternative emission limit shall terminate on its termination date or on the date of the Department's final action on the proposed new alternative emission limit, whichever is later.

(c) The owner or operator of a source operation or item of equipment listed in N.J.A.C. 7:27-19.2(b) may request approval of an alternative emission limit in accordance with this section. In the request, the owner or operator shall include:

1. A brief description of the equipment or source operation which is the subject of the request, and its permit number and any other identifying numbers;

2. A demonstration that the source operation or item of equipment is not reasonably able to comply with this subchapter through any alternative means of compliance established under this subchapter (for example, through seasonal combustion of natural gas pursuant to N.J.A.C. 7:27-19.4(b), or through compliance with an averaging plan under N.J.A.C. 7:27-19.6); and

3. The information listed in (d) below.

(d) In addition to the information required under (b) or (c) above, as applicable, the owner or operator shall include the following information in a proposed facility-specific NO_x control plan or request for an alternative emission limit:

1. For each source operation or item of equipment listed in (b)3i above or (c)1 above, as applicable, a list of all NO_x control technologies available for use with the equipment or source operation;

2. An analysis of the technological feasibility of installing and operating each control technology identified in (d)1 above;

3. For each control technology which is technologically feasible to install and operate, an estimate of the cost of installation and operation;

4. An estimate of the remaining useful life of each source operation or item of equipment listed in (b)3i above or (c)1 above, as applicable;

5. An estimate of the reduction in NO_x emissions attainable through the use of each control technology which is technologically feasible to install and operate;

6. For each source operation or item of equipment listed in (b)3i above or (c)1 above, as applicable, the NO_x control technology or technologies which the owner or operator proposes to employ and an implementation schedule;

7. For each source operation or item of equipment listed in (b)3i above or (c)1 above, as applicable, a proposed NO_x emission limit;

8. Any other information which the Department requests which is reasonably necessary to enable it to determine whether the application satisfies the requirements of (g) below; and

9. A certification signed by the owner or operator, satisfying the requirements of N.J.A.C. 7:27-1.39.

(e) Within 30 days after receiving a proposed NO_x control plan or request for an alternative emission limit, the Department shall notify the owner or operator in writing whether the submission includes all of the information required under (d) above and under (b) or (c) above, as applicable. If the proposed NO_x control plan or request for an alternative emission limit is incomplete, the following shall apply:

1. The Department shall include in the notice a list of the deficiencies, a statement of the additional information required to make the proposed plan or request complete, and a time by which the owner or operator must submit a complete proposed plan or request;

2. The Department may refrain from reviewing the substance of the proposed plan or request (or any part thereof) until it is complete;

3. The owner or operator shall submit a complete proposed plan or request within the time stated in the Department's notification;

4. If the owner or operator fails to submit a complete proposed plan within the time stated in the Department's notification, the failure is a violation of this subchapter; and

5. If the owner or operator fails to submit a complete request for an alternative emission limit within the time stated in the Department's notification, the Department may deny the request.

(f) The Department shall seek comments from the general public before making any final decision to approve or disapprove a proposed NO_x control plan or request for an alternative emission limit. The Department shall publish notice of opportunity for public comment in a newspaper of general circulation in the area in which the major NO_x facility is located.

(g) Within six months after receiving a complete proposed NO_x control plan or request for an alternative emission limit, the Department shall approve, approve and modify, or disapprove the proposed plan or request and notify the owner or operator of the decision in writing. The Department shall approve the proposed plan or request only if it satisfies the following requirements:

1. The proposed plan or request contains all of the information required under (d) above and under (b) or (c) above, as applicable;

2. The proposed plan or request considers all control technologies available for the control of NO_x emissions from the type of equipment or source operation in question;

3. For any control technologies described in (g)2 above which the owner or operator does not propose to use on the equipment or source operation, the proposed plan or request demonstrates that the control technology:

   i. Would be ineffective in controlling NO_x emissions from the equipment or source operation;

   ii. Is unsuitable for use in the equipment or source operation, or duplicative of control technology which the plan proposes to use;

   iii. Would carry costs disproportionate to the improvement in the reduction of the NO_x emissions limit which the control technology is likely to achieve, or disproportionately large in comparison to the total reduction in NO_x emissions which the control technology is likely to achieve over its useful life; or

   iv. Would carry costs disproportionate to the costs incurred for the control of NO_x emissions from the same type of equipment or source operations used by other persons in the owner or operator's industry;

4. The emission limit proposed for each source operation and item of equipment is the lowest limit, which can practicably be achieved at a cost within the limits described in (g)3iii and iv above;

5. The cost of achieving an additional emission reduction beyond each proposed emission limit would be disproportionate to the size and environmental impact of that additional emission reduction; and

6. Any significant net emission of any criteria pollutant (as determined pursuant to N.J.A.C. 7:27-19.17 or 19.18, as applicable) do not cause or significantly contribute to a violation of a National Ambient Air Quality Standard, an exceedance of a Federal Prevention of Significant Deterioration increment if applicable, or any violation of the Clean Air Act, 42 U.S.C. 7401 et seq. A significant net emission increase of any criteria pollutant, and the determination of when such an increase causes or significantly contributes to an exceedance of a National Ambient Air Quality Standard, shall be determined pursuant to N.J.A.C. 7:27-18.

(h) Any alternate emission limit pursuant to (c) above or NO_x control plan pursuant to (b) above approved by the Department will be submitted to EPA for approval as a revision to the State Implementation Plan (SIP) for ozone.

(*i*) As a condition of an approval issued under this section, the Department may impose requirements upon the operation of any of the equipment or source operations at the subject facility listed pursuant to (b)3i or (c)1 above necessary to minimize any adverse impact upon human health, welfare and the environment.

(j) Before altering any equipment or source operation which is included in an approved facility-specific NO_x control plan, the owner or operator shall:

1. If the alteration would change any of the information required in (b) or (d) above, apply for and obtain pursuant to the procedures set forth at (b) and at (d) through (j) above the Department's approval of an amended facility-specific NO_x control plan, reflecting the proposed alteration. If the owner or operator does not obtain the Department's approval before commencing operation of the altered equipment or source operation, the Department may (in addition to assessing penalties under N.J.A.C. 7:27A-3.10) modify the facility-specific NO_x control plan to reflect the alteration, in a manner satisfying the criteria set forth in (g) above; and

2. Apply for and obtain such permits and certificates, or changes thereto, as are required under N.J.A.C. 7:27-8 or 22, N.J.A.C. 7:1K-1.5, and any other applicable law or regulation.

(k) An approval of an alternative emission limit is void upon the alteration of equipment or source operation which is subject to the rate unless:

1. The Department approves continued application of the existing alternative emission limit if the proposed alteration does not materially affect the basis of the Department's original approval; or

2. The owner or operator, before altering any equipment or source operation which is subject to an alternative emission limit, applies for and obtains the Department's approval of:

   i. A revised alternative emission limit pursuant to this section, reflecting the proposed alteration; and

   ii. Such permits and certificates as are required under N.J.A.C. 7:27-8 or 22, N.J.A.C. 7:1K-1.5, and any other applicable law or regulation.

(*l*) The Department will revoke an approval of a NO_x control plan by written notice to the holder of the approval if EPA denies approval of the proposed NO_x plan as a revision to the State Implementation Plan. The Department may revoke an approval of a NO_x control plan by written notice to the holder of the approval, if:

1. Any material condition of the approval is violated;

2. The Department determines that its decision to grant the approval was materially affected by a misstatement or omission of fact in the proposed plan or any supporting documentation;

3. The Department determines that continued use of the subject equipment or source operation pursuant to the approval poses a potential threat to the public health, welfare or the environment.

(m) A person may request an adjudicatory hearing in accordance with the procedure at N.J.A.C. 7:27-1.32, if:

1. The Department denied the person's application for approval of a plan or alternative limit under this section;

2. The person seeks to contest one or more conditions of the Department's approval imposed under (i) above; or

3. The Department has revoked the person's approval pursuant to (*l*)1, 2 or 3 above.

(n) The owner or operator of a facility described in (a)1 above shall implement the NO_x control plan (including, without limitation, complying with the emission limit set forth in the plan) approved by the Department by May 31, 1995, or by March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e), and maintain compliance with the plan and all conditions of the Department's approval thereafter. The owner or operator of a source operation or item of equipment for which the Department has approved an alternative emission limit shall cause it to emit NO_x at a rate no greater than the approved alternative emission limit.

(*o*) The owner or operator submitting a proposed NO_x control plan or request for an alternative emission limit shall send it to the Department at the following address:

Department of Environmental Protection
Division of Air Quality
Air Quality Permitting Program
Bureau of Air Permits
401 East State Street
Mail Code 401-02
PO Box 420
Trenton, New Jersey 08625-0420

(p) A major NO_x facility satisfies the requirements of this section if its only equipment or source operations with the potential to emit 10 tons or more of NO_x per year are thermal oxidizers. The owner or operator of such a facility is not required to submit a facility-specific NO_x control plan for the facility.

7:27-19.14 Procedures for obtaining approvals under this subchapter

(a) This section establishes the procedure for obtaining any of the following from the Department:

1. An exemption from this subchapter, pursuant to N.J.A.C. 7:27-19.2(f);

2. Approval of a fuel switching plan under N.J.A.C. 7:27-19.20, and authorization to operate under the plan;

3. Approval of a plan for phased compliance under N.J.A.C. 7:27-19.21, 19.22 or 19.23, and authorization to operate under the plan;

4. Approval of compliance with the requirements of N.J.A.C. 7:27-19.5(c) for a stationary combustion turbine;

5. Approval of an emissions averaging plan under N.J.A.C. 7:27-19.6, and authorization to operate under the plan; or

6. Approval of an alternative monitoring plan pursuant to N.J.A.C. 7:27-19.18(b).

(b) The person seeking an approval listed in (a) above shall submit a written application to the Department at the following address:

Department of Environmental Protection
Division of Air Quality
Air Quality Permitting Program
Bureau of Air Permits

401 East State Street
Mail Code 401-02
PO Box 420
Trenton, NJ 08625-0420

(c) The person seeking the approval under (a) above shall include the following information in the application submitted under (b) above:

1. Any information required under N.J.A.C. 7:27-19.2(f), 19.5(c), 19.6(b), 19.18(c), 19.20 or 19.21, as applicable;

2. The name, address and telephone number of the owner and the operator of the equipment or source operation which is the subject of the application;

3. The street address of the facility at which the subject equipment or source operation is located;

4. The type of equipment or source operation which is the subject of the application, and its make, model and serial number;

5. For requests submitted under N.J.A.C. 7:27-19.5(c), a proposed maximum allowable emission rate for the subject stationary combustion turbine;

6. A certification of the application, satisfying the requirements of N.J.A.C. 7:27-1.39; and

7. Any other information which the Department requests which is reasonably necessary to enable it to determine whether the application satisfies the requirements of (e) below.

(d) Within 30 days after receiving an application, the Department shall notify the applicant in writing whether the application includes all of the information required under (c) above. If the application is incomplete:

1. The Department shall include in the notice a list of the deficiencies, a statement of the additional information required to make the application complete, and the time by which the applicant must submit a complete application;

2. The Department may refrain from reviewing the substance of the application (or any part thereof) until it is complete;

3. The applicant shall submit a complete application within the time stated in the Department's notification; and

4. The Department may reject the application if the applicant fails to submit a complete application within the time stated in the Department's notification.

(e) Within six months after receiving a complete application, the Department shall grant its approval under this section only if:

1. The applicant satisfies all eligibility requirements set forth in N.J.A.C. 7:27-19.5(c), 19.6(c), 19.20, or 19.21 as applicable; and

2. Any significant net emission of any criteria pollutant (as determined pursuant to N.J.A.C. 7:27-19.17 or 19.18, as applicable) do not cause or significantly contribute to a violation of a National Ambient Air Quality Standard as determined pursuant to N.J.A.C. 7:27-18, an exceedance of a Federal Prevention of Significant Deterioration increment if applicable, or any violation of the Clean Air Act, 42 U.S.C. 7401 et seq. A significant net emission increase of any criteria pollutant, and the determination of when such an increase causes or significantly contributes to an exceedance of a National Ambient Air Quality Standard, shall be determined pursuant to N.J.A.C. 7:27-18.

(f) As a condition of an approval issued under this section (other than an approval of an exemption pursuant to N.J.A.C. 7:27-19.2(f)), the Department may impose requirements upon the operation of the subject equipment or source operation necessary to minimize any adverse impact upon human health, welfare and the environment.

(g) An approval issued under this section is void upon the alteration of equipment or source operation which is the subject of the approval unless:

1. The owner or operator applies for and obtains the Department's approval of a revised approval pursuant to this section, reflecting the proposed alteration; and

2. Before altering the equipment or source operation subject to the approval, the owner or operator applies for and obtains such permits and certificates as are required under N.J.A.C. 7:27-8 or 22, N.J.A.C. 7:1K-1.5, and any other applicable law or regulation.

(h) The Department may revoke an approval issued under this section, by written notice to the holder of the approval, if:

1. Any material condition of the approval is violated;

2. The Department determines that its decision to grant the approval was materially affected by a misstatement or omission of fact in the request for the approval or any supporting documentation;

3. The Department determines that as a result of a change in circumstances since the date of the approval, the subject equipment or source operations are able to comply with the applicable section of this subchapter. In revoking an approval pursuant to this paragraph, the Department shall specify an effective date for the

revocation which provides the owner or operator with a reasonable amount of time to comply with the applicable section of this subchapter; or

4. The Department determines that continued use of the subject equipment or source operation pursuant to the approval poses a potential threat to public health, welfare or the environment.

(i) A person may request an adjudicatory hearing in accordance with the procedure at N.J.A.C. 7:27-1.32, if:

1. The Department has denied the person's application for an approval under this section;

2. The person seeks to contest conditions of the approval imposed under (f) above; or

3. The Department has revoked the person's approval pursuant to (h) above.

(j) If an item of equipment or a source operation has exceeded the maximum allowable emission rate applicable under this subchapter without an approval pursuant to this section, it shall not be a defense to an enforcement action that an application for an approval is pending.

7:27-19.15 Procedures and deadlines for demonstrating compliance

(a) Except as set forth in (d) and (e) below, the owner or operator of equipment or a source operation subject to an emission limit under this subchapter shall demonstrate compliance with the emission limit as follows:

1. If a continuous emissions monitoring system has been installed on the equipment or source operation, or if any other provision of this subchapter requires emissions from the equipment or source operation to be monitored by a continuous emissions monitoring system under N.J.A.C. 7:27-19.18, the owner or operator shall calculate the average NO_x emission rate using the data from such a system for the NO_x concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NO_x concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department determines will yield the same result. Compliance with the limit shall be based upon the average of emissions:

i. Between May 1 and September 30, over each calendar day; and

ii. From October 1 through April 30 of the following year, over the 30-day period ending on each such day; or

2. If no continuous emissions monitoring system has been or is required to be installed on the equipment or source operation, compliance with the limit shall be based upon the average of three one-hour tests, each performed over a consecutive 60-minute period specified by the Department, and performed in compliance with N.J.A.C. 7:27-19.17. Any NO_x testing conducted pursuant to this section shall be conducted concurrently with CO testing. The applicable NO_x emission limits in this subchapter will not be considered to have been met unless the concurrent CO testing demonstrates compliance with the CO limit in N.J.A.C. 7:27-16.8, 16.9, 16.10, 16.11, or the permit limit for CO, whichever is more stringent, is also met.

(b) Except as set forth in (d) and (e) below, for any equipment or source operation subject to this subchapter that was in operation before January 1, 1995, the owner or operator shall demonstrate compliance with this subchapter in accordance with (a)1 or 2 above by May 31, 1996, and thereafter at the frequency set forth in the permit for such equipment or source operation, except that the owner or operator of any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e), and that is in operation before November 7, 2005 shall demonstrate compliance with this subchapter in accordance with (a)1 or 2 above by March 7, 2008. Test results that demonstrate compliance with a new requirement within the five years preceding November 7, 2005 shall be accepted by the Department as satisfying this test requirement, if the testing and test report were reviewed by the Department and found satisfactory.

(c) Except as set forth in (d) and (e) below, for any equipment or source operation subject to this subchapter which commences operations or is altered after January 1, 1995, the owner or operator shall demonstrate compliance with this subchapter in accordance with (a)1 or 2 above within 180 days from the date on which the source commences operation, and thereafter at the frequency set forth in the permit for such equipment or source operation.

(d) For any equipment or source operation at an asphalt pavement production plant subject to a NO_x emissions limit at N.J.A.C. 7:27-19.9(a), the owner or operator shall demonstrate compliance with this subchapter in accordance with (a)2 above, within 365 days from the date at N.J.A.C. 7:27-19.9(f)1 or 2, and thereafter at the frequency set forth in the permit for such equipment or source operation.

(e) The owner or operator of any glass manufacturing furnace identified at N.J.A.C. 7:27-19.2(b)6 through 9 shall demonstrate compliance with the emission limit at N.J.A.C. 7:27-19.10(a), (b) or (f)2, as applicable, as follows:

1. Within 180 days after the first date after May 19, 2009 on which rebricking of the furnace is completed, and thereafter at the frequency set forth in the permit for such glass manufacturing furnace, the owner or operator shall demonstrate compliance in accordance with (e)2 or 3 below, whichever is applicable.

2. If a continuous emissions monitoring system has not been installed on the glass manufacturing furnace the owner or operator shall:

   i. Determine the average pounds of NO_x emitted per hour by averaging three one-hour tests in accordance with (a)2 above;

   ii. Determine the average tons of glass removed per hour during the same time period as the three one-hour tests in (e)2i above;

   iii. Divide the average pounds of NO_x emitted per hour determined in (e)2i by the average tons of glass removed per hour determined in (e)2ii. The quotient is pounds of NO_x emitted per of ton glass removed;

   iv. Compare the quotient to the emission limit specified at N.J.A.C. 7:27-19.10(a), (b) or (f)2, as applicable; and

   v. Comply with the CO testing requirements at (a)2 above.

3. If a continuous emissions monitoring system has been installed on the glass manufacturing furnace, on a daily basis the owner or operator shall:

   i. Determine the average pounds of NO_x emitted per day in accordance with (a)1i or ii above, as applicable;

   ii. Determine the tons of glass removed per day during the same day as in (e)3i above;

   iii. Divide the average pounds of NO_x emitted per day determined in (e)3i by the tons of glass removed per day determined in (e)3ii. The quotient is pounds of NO_x emitted per ton of glass removed; and

   iv. Compare the quotient to the emission limit at N.J.A.C. 7:27-19.10(a), (b) or (f)2, as applicable.

(f) An exceedance of any applicable NO_x emission limit set forth in this subchapter, determined through testing or monitoring performed pursuant to (a) through (e) above or otherwise, is a violation of this subchapter.

7:27-19.16 Adjusting combustion processes

(a) When any provision of this subchapter requires the adjustment of a combustion process for any equipment or source operation, other than stationary combustion turbines and reciprocating engines, the owner or operator of the equipment or source operation shall:

1. Inspect the burner, and clean or replace any components of the burner as necessary;

2. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern consistent with the manufacturer's specifications;

3. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly;

4. Minimize total emissions of NO_x and CO consistent with the manufacturer's specifications;

5. Measure the concentrations in the effluent stream of NO_x and CO in ppmvd, and O_2 in percent, before and after the adjustment is made; and

6. Convert the emission values of the NO_x and CO concentrations measured pursuant to (a)5 above to pounds per million BTU (lb/MM BTU) according to the following formula:

$$\text{lb/MM BTU} = \text{ppmvd} \times \text{MW} \times \text{F dry factor} \times O_2 \text{ correction factor} \div 387{,}000{,}000$$

Where:

ppmvd is the concentration in parts per million by volume, dry basis, of NO_x or CO

MW is the Molecular Weight for:

NO_x = 46 lb/lb-mole

CO = 28 lb/lb-mole

F dry factor for:

Natural gas = 8,710 dscf/MM BTU

Residual or fuel oil = 9,190 dscf/MM BTU

O_2 correction factor: (20.9%) ÷ (20.9% - O_2 measured)

O_2 measured is percent oxygen on a dry basis

(b) The owner or operator of the equipment or source operation adjusted pursuant to (a) above shall ensure that each adjustment is recorded in a log book or computer data system and retained for a minimum of five years, to be made readily accessible to the Department upon request. Such record shall contain the following information for each adjustment:

1. The date of the adjustment and the times at which it began and ended;

2. The name, title and affiliation of the person who made the adjustment;

3. The NO_x and CO concentrations in the effluent stream, in ppmvd, before and after each actual adjustment was made;

4. The concentration of O_2 (in percent dry basis) at which the CO and NO_x concentrations were measured pursuant to (a)5 above;

5. A description of any corrective action taken;

6. Results from any subsequent tests performed after taking any corrective action, including concentrations and converted emission values in pounds per million BTU (lb/MM BTU);

7. The type and amount of fuel used over the 12 months prior to the annual adjustment; and

8. Any other information which the Department or the EPA has required as a condition of approval of any permit or certificate issued for the equipment or source operation.

(c) The owner or operator shall ensure that an annual adjustment combustion process report is submitted electronically to the Department according to the schedule listed in (d) below, and in the format the Department specifies at its website. The report shall contain the following information:

1. The concentrations of NO_x and CO in the effluent stream in ppmvd, and O_2 in percent dry basis, measured before and after the adjustment of the combustion process pursuant to (a)5 above;

2. The converted emission values in lb/MM BTU for the measurements taken before and after the adjustment of the combustion process;

3. A description of any corrective actions taken as a part of the combustion adjustment; and

4. The type and amount of fuel used over the 12 months prior to the annual adjustment.

(d) The owner or operator of an industrial/commercial/institutional boiler or other indirect heat exchanger shall ensure that the annual adjustment combustion process report required in (c) above is submitted to the Department within 45 days after the adjustment of the combustion process is completed, based on the gross heat input of the boiler or heat exchanger as follows:

1. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least five million but less than 10 million BTU per hour, beginning in 2012;

2. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 10 million but less than 20 million BTU per hour, beginning in 2010;

3. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input of rate at least 20 million BTU per hour or greater, beginning in 2009;

(e) The owner or operator of the adjusted equipment or source operation shall ensure that the operating parameter settings are established and recorded after the combustion process is adjusted and that the adjusted equipment or source operation is maintained to operate consistent with the annual adjustment.

(f) An exceedance of an emission limit that occurs during an adjustment of the combustion process under (a) above or (g) below is not a violation of this subchapter if it occurs as a result of the adjustment. After the combustion adjustment has been completed, the maximum emission rate of any contaminant shall not exceed the maximum allowable emission rate applicable under this subchapter or under an operating permit issued pursuant to N.J.A.C. 7:27-22 or an applicable certificate issued pursuant to N.J.A.C. 7:27-8.

(g) The owner or operator of a stationary combustion turbine or reciprocating engine shall ensure that the adjustment of the combustion process is carried out according to the manufacturer's recommended procedures and maintenance schedules.

(h) The owner or operator of a stationary combustion turbine or reciprocating engine adjusted pursuant to (g) above shall ensure that each adjustment is recorded in a log book or computer data system and retained for a minimum of five years, to be made readily accessible to the Department upon request. Such record shall contain the following information for each adjustment:

1. The date of the adjustment and the times at which it began and ended;

2. The name, title, and affiliation of the person who performed the procedure and adjustment;

3. The type of procedure and maintenance performed;

4. The concentrations of NO_x CO and O_2, measured before and after the adjustment was made; and

5. The type and amount of fuel use over the 12 months prior to the adjustment.

7:27-19.17 Source emissions testing

(a) Upon request by the Department or EPA, the owner or operator of any equipment or source operation subject to this subchapter shall:

1. Conduct tests to determine the emissions from such equipment or source operation to determine the nature and quantity of VOC, NO_x, or CO being emitted into the outdoor atmosphere;

2. Provide information concerning the location, rate, duration, concentration, and properties of the emissions of NO_x, CO or VOC from such equipment or source operations, and such other information as may be reasonably necessary to assess air emissions;

3. Provide information concerning the rate at which the equipment or source operation is combusting fuel during tests conducted under (a)1 above, and the maximum gross heat input value of the equipment or source operation; and

4. Provide the log prepared under (e) below, or any part thereof requested by EPA or the Department.

(b) Upon the Department's request, the owner or operator of any equipment or source operation subject to this subchapter shall provide the Department with temporary or permanent sampling facilities satisfying the requirements of N.J.A.C. 7:27B-1.4. The owner or operator shall construct such facilities in accordance with all applicable laws, ordinances and regulations, including those which regulate construction practices.

(c) During any testing conducted pursuant to this section, the equipment or source operation, and all components connected, attached to, or serving the equipment, shall be used and operated under normal routine operating conditions, under maximum capacity operating conditions, or under such other conditions within the capacity of the equipment as the Department or EPA requests.

(d) A person conducting testing pursuant to this section shall use the test method which the Department specifies, based upon the circumstances specific to the facility or to the equipment or source operation being tested. The Department shall specify one of the following methods:

1. The methods set forth at 40 CFR 60, Appendix A, method 7E; or

2. Any other method which EPA and the Department have approved in advance in writing. If EPA approves a method, and the Department determines that the method yields results at least as consistent as the appropriate method listed under (d)1 above, and which has no greater tendency to understate emissions, the Department shall approve the method.

(e) The owner or operator of the tested equipment or source operation shall record any test data collected under this section, and maintain it for at least five years after the date on which the testing was conducted.

7:27-19.18 Continuous emissions monitoring

(a) Any person required to install a continuous emissions monitoring system under this subchapter shall:

1. Obtain a system approved in advance by the Department. The Department shall approve a system if its design and specifications satisfy the requirements established by EPA at 40 CFR Part 60, Appendix B, Performance Specification Tests No. 2, and 40 CFR Part 60, Appendix F, Quality Assurance Requirements;

2. Install the system in compliance with the EPA regulations listed in (a)1 above, and in compliance with the manufacturer's specifications;

3. Conduct performance tests of the system in accordance with the EPA regulations listed in (a)1 above, and obtain confirmation from the Department that the system satisfies the performance requirements of those regulations;

4. Install and operate the system in compliance with the manufacturer's specifications; and

5. Continuously monitor and record NO_x emissions from the equipment or source operation subject to the monitoring requirement.

(b) A person required under this subchapter to install continuous emissions monitoring systems on equipment or source operations of a given type at a facility may satisfy this requirement without installing a continuous emissions monitor on every unit of such equipment or source operations at the facility, by using an alternative monitoring methodology set forth in an alternative monitoring plan, approved in advance in writing by the Department, which is as reliable for demonstrating compliance for that unit as a continuous emissions monitoring system which satisfies the criteria in (a) above would be.

(c) A person seeking approval of an alternative monitoring plan pursuant to (b) above shall submit a written application to the Department. The applicant shall include in the application all of the information required under N.J.A.C. 7:27-19.14(c)2, 3, 4 and 6. The applicant shall include in the application for the alternative monitoring plan the following information for each item of equipment or source operation for which a continuous emissions monitor is required under this subchapter and to which the alternative monitoring plan would apply:

1. The make and model of each unit of equipment or source operation;

2. The facility at which the equipment or source operation is used;

3. A description of the conditions under which the equipment or source operation is used;

4. The results of all source emissions testing conducted within the five years preceding the application for each unit of equipment or source operation listed in (c)1 above;

5. A statement that the applicant proposes to install or not install a continuous emissions monitor which satisfies the criteria set forth in (a) above;

6. A demonstration that the monitoring methodology set forth in the alternative monitoring plan is as reliable for demonstrating compliance as a continuous emissions monitor which satisfies the criteria listed in (a)1 above; and

7. Any other information which the Department requests which is reasonably necessary to enable it to determine whether the application satisfies the requirements of (e) below.

(d) Within 30 days after receiving an application, the Department shall notify the applicant in writing whether the application includes all of the information required under (c) above. If the application is incomplete:

1. The Department shall include in the notice a list of the deficiencies, a statement of the additional information required to make the application complete, and the time by which the applicant must submit a complete application;

2. The Department may refrain from reviewing the substance of the application (or any part thereof) until it is complete;

3. The applicant shall submit a complete proposed plan or request within the time stated in the Department's notification; and

4. The Department may reject the application if the applicant fails to submit a complete application within the time stated in the Department's notification.

(e) The Department shall approve an alternative monitoring plan only if:

1. The proposed alternative monitoring methodology is equivalent for purposes of reliably determining compliance to a continuous emissions monitor which satisfies the criteria listed in (a)1 above by the following:

i. For each item of equipment or source operation on which a continuous emissions monitoring system is not to be installed, the owner or operator identifies another item of equipment or source operation at the facility which is:

(A) Of the same make and model;

(B) Is used under substantially the same conditions;

(C) Will have a continuous emissions monitoring system installed on it; and

(D) Has an emissions rate which will not differ significantly from the emission rate from the corresponding equipment or source operation on which the continuous emissions monitoring system is to be installed; or

ii. For each item of equipment or source operation which a continuous emissions monitor is not to be installed, the owner or operator proposes a monitoring protocol for that equipment or source operation that provides quality-assured, representative monitoring data that can be used to determine continuous compliance consistent with EPA's proposed Enhanced Monitoring guidance, 40 CFR 64 (Federal Register Vol. 58, No. 203, p. 54648-54699). The proposed monitoring protocol should take into consideration site specific factors such as:

(A) Control system design;

(B) Operating processes at the facility;

(C) Demonstrated margin of compliance;

(D) The potential variability of emissions; and

(E) Established monitoring procedures utilized at the facility to meet other regulatory requirements; and

2. Under the plan, a continuous emissions monitoring system will be installed on each boiler serving an electric generating unit at the facility if required under 40 CFR 75 or 76.

(f) As a condition of an approval issued under this section, the Department may impose requirements upon the operation of any equipment or source operation subject to a monitoring plan necessary to minimize any adverse impact upon human health, welfare and the environment.

(g) The approval of a plan under this section is void upon the alteration of any item of equipment or source operation included in the plan (whether or not the item of equipment or source operation has a continuous emissions monitoring system installed) unless:

1. The owner or operator applies for and obtains the Department's approval of a revised plan pursuant to this section, reflecting the proposed alteration; and

2. Before altering the equipment or source operation subject to the plan, the owner or operator applies for and obtains such permits and certificates as are required under N.J.A.C. 7:27-8 or 22, N.J.A.C. 7:1K-1.5, and any other applicable law or regulation.

(h) The owner or operator shall comply with the approved plan, and with all conditions imposed by the Department under (f) above.

(*i*) The Department may revoke an approval issued under this section, by written notice to the owner or operator of the facility which is the subject of the plan, if:

1. Any material condition of the Department's approval of the plan is violated;

2. The Department determines that its decision to grant the approval was materially affected by a misstatement or omission of fact in the request for the approval or any supporting documentation; or

3. The Department determines that the alternative monitoring methodology is not equivalent to a continuous emissions monitor which satisfies the criteria of (a)1 above.

(j) In revoking an approval pursuant to (i) above, the Department shall specify an effective date for the revocation which provides the owner or operator with a reasonable amount of time to install a continuous emissions monitor on the item of equipment or source operation in question.

(k) A person may request an adjudicatory hearing in accordance with the procedure at N.J.A.C. 7:27-1.32, if:

1. The Department has denied the person's application for approval of a plan under this section;

2. The person seeks to contest conditions imposed by the Department under (f) above; or

3. The Department has revoked its approval of the person's plan pursuant to (i) and (j) above.

(*l*) The owner or operator of an item of equipment or source operation required to have a continuous monitoring system shall not operate the equipment or source operation without such a system, except in accordance with a plan approved under this section. If an item of equipment or a source operation required to have a continuous emissions monitoring system is operating without such a system, without first having received approval of a plan authorizing such operation, it shall not be a defense to an enforcement action that an application for approval of a plan is pending.

(m) A person seeking approval of an alternative monitoring plan shall send the application to the Department at the following address:

Department of Environmental Protection
Division of Air Quality
Air Quality Permitting Program
Bureau of Technical Services
Emission Measurement Section
Mail Code 380-01A
PO Box 420
Trenton, New Jersey 08625-0420

7:27-19.19 Recordkeeping and recording

(a) Any person required to record or maintain information or records pursuant to this subchapter shall maintain the required information or records for a period of no less than five years after the record was made. Such person shall make the records available to the Department or to EPA upon request.

(b) Any person required to record or maintain information or records pursuant to this subchapter may submit a request to the Department, in writing, for approval to maintain alternate records. The Department may approve the request if the person demonstrates to the satisfaction of the Department that the alternate records or information are at least as effective as those required by this subchapter in documenting compliance with this subchapter.

(c) The recordkeeping requirements in (d) and (f) below apply to the owner or operator of any combustion source that is:

1. Included in a fuel switching plan approved under N.J.A.C. 7:27-19.14 and 19.20; or

2. Included in a plan for phased compliance approved under N.J.A.C. 7:27-19.14 and N.J.A.C. 7:27-19.21 or 19.23

(d) For each combustion source listed in (c) above, the owner or operator shall record the following information for each day from May 1 through September 30, for the 30-day period ending on October 1, and for each 30-day period ending on each subsequent day through April 30 of the following year:

1. Information sufficient to identify the combustion source, including a brief description (for example, "dry-bottom coal-fired boiler serving an electric generating unit"), its location, its permit number, the company stack designation, and any other identifying numbers, and any other information necessary to distinguish it from other equipment owned or operated by the owner or operator;

2. The day or 30-day period, as applicable, for which the record is being made;

3. The amount, type and higher heating value of each fuel consumed during each day from May 1 through September 30, during the 30-day period ending on October 1, and during each 30-day period ending on each subsequent day through April 30 of the following year;

4. The quantity of NO_x emitted during the day or 30-day period, as applicable, determined in accordance with N.J.A.C. 7:27-19.15(a) and expressed in pounds or tons;

5. The allowable quantity of NO_x emissions as expressed in pounds or tons for the day or 30-day period as determined according to N.J.A.C. 7:27-19.20, 19.21 or 19.23; and

6. Any other information required to be maintained as a condition of an approval granted under N.J.A.C. 7:27-19.14 and N.J.A.C. 7:27-19.20, 19.21 or 19.23.

(e) The owner or operator of any combustion source that is temporarily combusting fuel oil or other liquid fuel in place of natural gas pursuant to N.J.A.C. 7:27-19.25 shall keep on site a record of the number of hours such fuel has been combusted.

(f) The owner or operator of a combustion source listed in (c) or (e) above shall keep the records required under (d) and (e) above at the facility in a permanently bound log book or by an electronic method that is easily accessible on site and at the time of inspection, in a format that enables the Department to readily determine whether the combustion source is in compliance.

(g) The reporting requirements below apply to the owner or operator of any combustion source that is listed in (c) or (e) above as follows:

1. If a continuous emissions monitoring system has been installed on the equipment or source operation, an owner or operator shall submit to the Department a quarterly report in accordance with the requirement to report excess emissions contained in the Preconstruction Permit and Operating Certificate or an Operating Permit for the equipment or source operation. For an owner or operators subject to (c) above, the information pursuant to (d) above shall be submitted with the report for each day or 30-day period of a violation. If no violations occurred during the quarter, the owner or operator should provide certification that no violations occurred and that the records are maintained at the facility. Certification of the notification should be in accordance with N.J.A.C. 7:27-1.39; or

2. If no such continuous emissions monitoring system has been installed the owner or operator shall submit to the Department on March 1 of each year an annual report for the preceding calendar year. Such annual report shall include any violations which occurred during the previous year. If no violations occurred

during the year, the owner or operator shall provide certification that no violations occurred and that the records are maintained at the facility. Certification of the notification shall be in accordance with N.J.A.C. 7:27-1.39.

7:27-19.20 Fuel switching

(a) The owner or operator of a combustion source included in a plan for fuel switching is authorized to comply with the plan if the Department approves the plan pursuant to this section and N.J.A.C. 7:27-19.14. The owner or operator's compliance with the plan is in lieu of causing the combustion source to comply with the emission limit under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10 that would otherwise apply to the combustion source.

(b) A combustion source may be included in a fuel switching plan only if it will be deriving from a cleaner fuel a greater percentage of its total heat input than it derived in the base year.

(c) An owner or operator seeking approval of a plan for fuel switching shall submit an application to the Department by June 22, 1995, in accordance with N.J.A.C. 7:27-19.14(a), (b) and (c). In addition to the information required under N.J.A.C. 7:27-19.14(c), the owner or operator shall include in the application the following information regarding each combustion source that is to combust a cleaner fuel seasonally:

1. Information sufficient to identify the combustion source, including a brief description, (for example, "dry-bottom coal-fired boiler serving an electric generating unit" or "oil-fired simple-cycle combustion turbine"), its location, its permit number, its company stack designation, any other identifying numbers, and any other information necessary to distinguish it from other equipment owned or operated by the applicant;

2. The maximum gross heat input rate of the combustion source, expressed in million BTUs per hour;

3. The type of fuel or fuels combusted in the combustion source;

4. The maximum allowable NO_x emission rate for the combustion source, determined under (d) below, together with the calculations made to determine that rate;

5. The method to be used to measure the actual NO_x emission rate of each combustion source;

6. A statement that the owner or operator will operate each combustion source included in the plan in accordance with the requirements of (g) below;

7. The name and business telephone number of the individual responsible for recordkeeping and reporting required under N.J.A.C. 7:27-19.19; and

8. Any other information that the Department requests, which is reasonably necessary to enable it to determine whether the source operations and items of equipment subject to fuel switching will comply with the requirements of this section.

(d) The maximum daily and annual NO_x emission rate for a combustion source included in the fuel switching plan is determined as follows (except that for a coal-fired, wet-bottom boiler serving an electric generating unit that uses the tangential or face firing method, only (d)1 through 3 apply):

1. Establish the base year. The base year is calendar year 1990, unless the Department approves the use of calendar year 1991, 1992 or 1993 as the base year. The Department shall approve the use of 1991, 1992 or 1993 as the base year only if the owner or operator demonstrates that the alternative year is more representative of the normal operation of the combustion source;

2. For each fuel that the combustion source combusted during the base year (established under (d)1 above), determine the heat input (in MMBTU) that the combustion source derived from the combustion of that fuel during the base year;

3. Determine the maximum allowable NO_x emissions rate (in lb/MMBTU) for the combustion of each fuel, under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10, as applicable;

4. For each fuel, multiply the heat input in the base year (determined under (d)2 above) by the maximum allowable emissions rate (determined under (d)3 above);

5. Add all of the amounts determined under (d)4 above;

6. Divide the total determined under (d)5 above by the sum of all of the heat inputs that the combustion source derived from the combustion of each fuel (determined under (d)2 above). The result is the maximum allowable NO_x emission rate, expressed in lb/MMBTU, provided, however, that the maximum allowable NO_x emission rate shall not be greater than the rate under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10 that would apply if the combustion source were combusting the primary fuel that it had used in the base year;

7. The calculations under (d)4, 5 and 6 above can be expressed in the following equation:

$$M = \frac{(HI_1 \; x \; L_1) + (HI_2 \; x \; L_2) + \cdots + (HI_N \; x \; L_N)}{(HI_1 + HI_2 + \cdots + HI_N)}$$

Where:

i. M is the maximum allowable NO_x emission rate, in lb/MMBTU;

ii. HI_1 is the heat input that the combustion source derived from the combustion of Fuel 1 during the base year, expressed in MMBTU;

iii. L_1 is the maximum allowable emissions rate (in lb/MMBTU) for the combustion of Fuel 1, under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10, as applicable;

iv. HI_2 is the heat input that the combustion source derived from the combustion of Fuel 2 during the base year, expressed in MMBTU;

v. L_2 is the maximum allowable emissions rate (in lb/MMBTU) for the combustion of Fuel 2, under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10, as applicable;

vi. N is number of fuels combusted during the base year;

vii. HI_N is the heat input that the combustion source derived from the combustion of Fuel N during the base year, expressed in MMBTU; and

viii. L_N is the maximum allowable emissions rate (in lb/MMBTU) for the combustion of Fuel N, under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10, as applicable.

(e) The Department shall approve a plan for fuel switching only if the application satisfies all requirements of (c) above and N.J.A.C. 7:27-19.14. A plan for fuel switching shall be deemed to meet these requirements if it provides for a combustion source to attain compliance with the emission limits under (g)3, 4 and 5 below partly through combustion of cleaner fuel and partly through the use of other NO_x control measures, and satisfies all other requirements of (c) above and N.J.A.C. 7:27-19.14.

(f) Any owner or operator seeking to comply with this subchapter by fuel switching in accordance with this section shall obtain the Department's written approval of the application pursuant to N.J.A.C. 7:27-19.14 before May 1, 1995, and maintain that approval in effect.

(g) Beginning in calendar year 1995, the owner or operator shall operate each combustion source included in the plan in compliance with the following:

1. All conditions of the Department's written approval of the fuel switching plan shall be met;

2. From May 1 through September 30 of each year, the combustion source shall combust the cleaner fuel exclusively, or derive a higher percentage of its total heat input from cleaner fuel than the percentage it derived from May 1 through September 30 of the base year;

3. During each calendar day from May 1 through September 30 of each year, the combustion source shall emit NO_x at an average rate no higher than the maximum allowable NO_x emission rate determined under (d) above; provided however, that a coal-fired, wet-bottom boiler serving an electric generating unit that uses the tangential or face firing method, the maximum allowable NO_x emission rate shall be 1.0 lb/MMBTU;

4. During the 30-day period ending on October 1 of each year, and each 30-day period ending on each subsequent day thereafter until April 30 of the following year, the combustion source shall emit NO_x at an average rate no higher than the rate under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10 that would apply if the combustion source were combusting the primary fuel that it had used in the base year; provided however, that a coal-fired, wet-bottom boiler serving an electric generating unit that uses the tangential or face firing method shall emit NO_x at a rate no higher than 1.5 lb/MMBTU; and

5. During each calendar year, the combustion source shall emit NO_x at an average rate no higher than the maximum NO_x emission rate determined under (d) above; provided however, that a coal-fired, wet-bottom boiler serving an electric generating unit that uses the tangential or face firing method shall emit NO_x at a rate no higher than 1.5 lb/MMBTU. Compliance with this requirement shall be determined based on averaging over each calendar year.

(h) The owner or operator shall determine the NO_x emissions from each combustion source included in an approved fuel switching plan in accordance with N.J.A.C. 7:27-19.15(a).

(*i*) The owner or operator shall demonstrate compliance with this section as follows:

1. Each calendar day from May 1 through September 30 of each year, the owner or operator shall determine whether each combustion source included in the plan is in compliance with the applicable daily NO_x emission limit under (g)3 above. The owner or operator shall perform the calculations necessary to verify compliance and make a record of them within three working days after the date that is the subject of the calculation;

2. For the 30-day period ending on October 1, and for each 30-day period ending on each subsequent day until April 30 of the following year, the owner and operator shall determine whether each combustion source included in the plan is in compliance with the applicable 30-day NO_x emission limit under (g)4 above; and

3. By January 15 of each year, the owner or operator shall determine whether the total actual NO_x emissions from each combustion source included in the plan (determined under (k) below) complied with the limit on annual NO_x emissions (determined under (j) below) during the preceding calendar year.

(j) The limit on annual NO_x emissions is calculated as follows:

1. For each fuel that the combustion source combusted during the year, determine the heat input (in MMBTU) that the combustion source derived from the combustion of that fuel during the year;

2. Add all of the amounts determined under (j)1 above;

3. Multiply the sum determined under (j)2 above by the maximum NO_x emissions rate determined under (d) above. The result is the limit on annual NO_x emissions, expressed in pounds;

4. The calculations under (j)2 and 3 above can be expressed in the following equation:

$$L = M \times (AHI_1 + AHI_2 + ... + AHI_N)$$

Where:

i. L is the limit on annual NO_x emissions, in pounds;

ii. M is the maximum allowable emissions rate determined under (d) above;

iii. AHI_1 is the heat input that the combustion source derived from the combustion of Fuel 1 during the year, expressed in MMBTU;

iv. AHI_2 is the heat input that the combustion source derived from the combustion of Fuel 2 during the year, expressed in MMBTU;

v. N is number of fuels combusted during the year; and

vi. AHI_N is the heat input that the combustion source derived from the combustion of Fuel N during the year, expressed in MMBTU.

(k) The actual annual NO_x emissions from the combustion source are calculated as follows:

1. Determine the heat input (expressed in MMBTU) that the combustion source actually derived from each fuel it combusted during the year;

2. Determine the average rate (in lb/MMBTU) at which the combustion source actually emitted NO_x when combusting each fuel listed in 1 above, in accordance with N.J.A.C. 7:27-19.15(a);

3. For each fuel combusted during the year, multiply the heat input (determined under (k)1 above) by the average rate of NO_x emissions (determined under (k)2 above);

4. Add all of the amounts determined under (k)3 above;

5. The calculations under (k)3 and 4 above can be expressed in the following equation:

$$AE = (AHI_1 \text{ x } AR_1) + (AHI_2 \text{ x } AR_2) + ... \text{ \% 8f } (AHI_N \text{ x } AR_N)$$

Where:

i. AE is the actual NO_x emissions during the year from the combustion source, expressed in pounds;

ii. AHI_1 is the heat input that the combustion source actually derived from the combustion of Fuel 1 during the year, expressed in MMBTU;

iii. AR_1 is the average rate at which the combustion source actually emitted NO_x when combusting Fuel 1 during the year, expressed in lb/MMBTU;

iv. AHI_2 is the heat input that the combustion source actually derived from the combustion of Fuel 2 during the year, expressed in MMBTU;

v. AR_2 is the average rate at which the combustion source actually emitted NO_x when combusting Fuel 2 during the year, expressed in lb/MMBTU;

vi. N is number of fuels that the combustion source actually combusted;

vii. AHI_N is the heat input that the combustion source actually derived from the combustion of Fuel N during the year, expressed in MMBTU; and

viii. AR_N is the average rate at which the combustion source actually emitted NO_x when combusting Fuel N during the year, expressed in lb/MMBTU.

(*l*) For each combustion source included in the approved plan, the owner or operator shall comply with the recordkeeping and reporting requirements of N.J.A.C. 7:27-19.19.

7:27-19.21 Phased compliance - repowering

(a) The owner or operator of a combustion source included in a repowering plan is authorized to comply with the plan if the Department approves the plan pursuant to this section and N.J.A.C. 7:27-19.14. The owner or operator's compliance with the plan is in lieu of causing the combustion source to comply with emission limit under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10 that would otherwise apply to the combustion source.

(b) By June 22, 1995 (or by February 7, 2006 for any facility, equipment or source operation that is subject to a NO_x emission limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)) an owner or operator seeking approval of a repowering plan shall submit to the Department an application for approval of the repowering plan pursuant to N.J.A.C. 7:27-19.14, including a repowering plan pursuant to (c) below. If an owner or operator fails to submit the application by the applicable date, the Department may reject the application. The Department may elect to process a late application, based on how late the application is, the nature and extent of the owner or operator's efforts to submit the application on time, whether the owner or operator advised the Department before the application due date that a late application would be submitted, and the extent of the emission reductions promised in the late application. If the Department elects to process a late application, the pendency of the application shall not be a defense to a violation of a NO_x emission limit to which the source is subject in the absence of an approved plan.

(c) The owner or operator shall include the following information in the repowering plan with respect to each combustion source included in the plan:

1. Information sufficient to identify the combustion source, including a brief description (for example, "dry-bottom coal-fired boiler serving an electric generating unit"), its location, its permit number, the company stack designation, and any other identifying numbers, and any other information necessary to distinguish it from other equipment owned or operated by the owner or operator;

2. A proposed schedule setting dates by which the owner or operator will complete the following milestones for the combustion source:

   i. Submitting applications for all necessary permits and certificates if installing a new combustion source;

   ii. Obtaining all necessary permits and certificates if installing a new combustion source;

   iii. Awarding contracts to repower the source including contracts for the purchase of heat or power from a new combustion source or placing orders for the purchase of component parts and/or equipment necessary to repower the source;

iv. Initiating construction and/or installation of the replacement unit if installing a new combustion source; and

v. Completing the repowering.

3. Specific procedures and schedules for implementing interim measures for control of NO_x emissions for the combustion source during the interim period;

4. A list of all NO_x control technologies available for use with the combustion source;

5. An analysis of the technological feasibility of installing and operating each NO_x emission control technology identified in 4 above for the interim period;

6. For each control technology that is technologically feasible to install and operate, an estimate of the cost of installation and operation;

7. An estimate of the reduction in NO_x emissions attainable through the use of each control technology which is technologically feasible to install and operate. If a control technology installed before the combustion source is repowered cannot be used after repowering, the owner or operator may limit the estimate of emission reductions to those that will be attained during the interim period;

8. An analysis of the cost-effectiveness of each control technology, based on the costs of installation and operation under (c)6 above and the estimated emission reductions under (c)7 above;

9. The NO_x control measures that the owner or operator proposes to employ during the interim period;

10. The proposed interim NO_x emission limit with which the source will comply during the interim period;

11. The method to be used to measure the actual NO_x emission rate of the combustion source;

12. The name and business telephone number of the person responsible for recordkeeping and reporting under N.J.A.C. 7:27-19.19 and under (e)8 below;

13. The location of the proposed replacement unit; and

14. Any other information that the Department requests, which is reasonably necessary to enable it to determine whether the operation of combustion sources included in the repowering plan will comply with the requirements of this section.

(d) The Department shall approve a repowering plan only if the following requirements are satisfied:

1. The application satisfies all the requirements of N.J.A.C. 7:27-19.14 and (c) above, including without limitation the requirement that the proposed repowering plan consider all control technologies available for the control of NO_x emissions from each type of combustion source included in the plan during the interim period;

2. For each combustion source included in the plan, the replacement unit will incorporate advances in the art of air pollution control for the kind and amount of air contaminant emitted;

3. The repowering will improve the efficiency with which each combustion source included in the plan combusts fuel and/or generates power;

4. The completion date listed in (c)2v above is no later than May 1, 1999, except that any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e) shall specify a completion date that is no later than November 7, 2009;

5. For any control technologies described in (c)4 above that the owner or operator does not propose to use on the combustion source, the proposed plan demonstrates that the control technology:

   i. Would be ineffective in controlling NO_x emissions from the combustion source;

   ii. Is unsuitable for use with the combustion source, or duplicative of control technology which the plan proposes to use;

   iii. Would carry costs disproportionate to the improvement in the reduction of the NO_x emissions rate that the control technology is likely to achieve, or disproportionately large in comparison to the total reduction in NO_x emissions that the control technology is likely to achieve over its useful life; or

   iv. Would carry costs disproportionate to the costs incurred for the control of NO_x emissions from the same type of combustion sources used by other persons in the owner or operator's industry who are also subject to the NO_x RACT requirements of P.L. 101-549, § 182(f).

6. For each combustion source included in the plan, the interim emission limit proposed under (c)10 above is the lowest rate that can practicably be achieved at a cost within the limits described in (d)5iii and iv above;

7. For each combustion source included in the plan, the cost of achieving an additional emission reduction beyond the interim emission limit proposed under (c)10 above would be disproportionate to the size and environmental impact of that additional emission reduction; and

8. The owner or operator has entered into an agreement with the Department in accordance with the requirements of (h) below.

(e) An owner or operator who has obtained the Department's approval of a repowering plan shall:

1. Beginning on May 31, 1995 (or on March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)), operate all combustion sources included in the approved repowering plan in a manner that complies with the plan and with all conditions of the Department's approval;

2. Meet the compliance milestones in the approved plan;

3. Repower the combustion sources included in the plan by the date specified in the approved plan;

4. Beginning on May 31, 1995 (or on March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)), determine the actual NO_x emissions from each combustion source included in the repowering plan in accordance with N.J.A.C. 7:27-19.15(a);

5. If the approved plan provides for the owner or operator to annually adjust the combustion process for a combustion source included in the plan, do so in accordance with the general procedures set forth at N.J.A.C. 7:27-19.16 before May 1 of each calendar year beginning with 1995, until repowering is completed;

6. Beginning on May 31, 1995 (or on March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)). comply with the recordkeeping and reporting requirements of N.J.A.C. 7:27-19.19;

7. Within 15 days after the date specified in the approved repowering plan for completion of a milestone listed in (c)2 above, notify the Department in writing that the milestone has or has not been completed. If the milestone has not been completed, the owner or operator shall include in the notice the reason for the delay and the expected date on which the milestone will be completed;

8. Incorporate advances in the art of air pollution control into each repowered source, as required in the preconstruction permit for the replacement equipment;

9. If the plan includes a boiler serving an electric generating unit, cause the repowered boiler serving an electric generating unit to emit NO_x at a rate no higher than the applicable maximum allowable NO_x listed in Table 12 below (provided however, that the NO_x emission limits in Table 12 shall not be construed to limit the owner or operator's obligations under (e)8 above); and

10. If repowering of any combustion source included in the plan is not completed by May 1, 1999 (or by November 7, 2009 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)), cease operating the combustion source.

TABLE 12

Maximum Allowable NO_x Emission Rates for Boilers Serving Electric Generating Units Which Have Been Repowered

(pounds per million BTU)

	Firing Method		
Fuel/Boiler Type	**Tangential**	**Face**	**Cyclone**
Coal--Wet Bottom	0.2	0.2	0.2
Coal--Dry Bottom	0.2	0.2	N/A
Oil and/or Gas	0.1	0.1	0.1
Gas Only	0.1	0.1	0.1

(f) Except as provided in (g) below:

1. The Department shall seek comments from the general public before making any final decision to approve or disapprove a proposed repowering plan. The Department shall publish notice of opportunity for public comment in a newspaper of general circulation in the area in which each combustion source included in the plan is located;

2. The Department shall submit any repowering plan (and agreement to repower) approved under this section to EPA, as a proposed revision to New Jersey's State Implementation Plan; and

3. Upon EPA's approval of the revision to New Jersey's State Implementation Plan, it shall be Federally enforceable. Plans listed under (g) below shall be Federally enforceable upon the issuance of the Department's approval.

(g) A repowering plan (and agreement to repower) approved under this section is not required to be submitted to EPA as a proposed revision to New Jersey's State Implementation Plan, if the plan provides that NO_x emissions from each combustion source included in the plan will be controlled during the interim period through one of the following methods:

1. Fuel switching under N.J.A.C. 7:27-19.20, using natural gas as the "cleaner fuel"; or

2. The use of selective non-catalytic reduction from May 1 through September 30 of each year.

(h) Before the Department approves a repowering plan, the owner or operator shall enter into a Federally enforceable agreement containing the following provisions:

1. Information sufficient to identify the owner or operator;

2. Information sufficient to identify the combustion source, including a brief description (for example, "dry-bottom coal-fired boiler serving an electric generating unit"), its location, its permit number, the company stack designation, and any other identifying numbers, and any other information necessary to distinguish it from other equipment owned or operated by the owner or operator;

3. The owner or operator's undertaking of the following duties:

   i. Completing the milestones listed in (c)2 above by specified dates;

   ii. Ceasing to operate a combustion source if repowering is not completed by a date specified for that source;

   iii. Implementing interim measures to control NO_x emissions from each combustion source during the interim period;

   iv. Causing each combustion source to emit NO_x at a rate no greater than a specified interim NO_x emission limit applicable during the interim period;

   v. Using a specified method to measure the actual NO_x emission rate of the combustion source; and

   vi. Maintaining the Department's approval in effect;

4. A provision for delay of compliance caused by a "force majeure" event beyond the control of and without the fault of the owner or operator;

5. A provision under which the Department can terminate the agreement and its approval of the repowering plan if the owner or operator materially fails to

complete the repowering or any other milestone by the date specified in the approved plan. Termination of the agreement and the approval of the plan is in addition to any other remedies the Department has under this chapter and N.J.A.C. 7:27A; and

6. Other provisions necessary to make the agreement Federally enforceable, to accomplish the purposes of this subchapter, or to allow the agreement to be administered effectively.

7:27-19.22 Phased compliance - impracticability of full compliance by May 19, 2009

(a) Any owner or operator listed at N.J.A.C. 7:27-19.29(a) who has submitted a phased compliance plan to the Department is authorized to comply with the plan if the Department approves the plan pursuant to this section and N.J.A.C. 7:27-19.14. The owner or operator's compliance with the plan is in lieu of achieving by May 19, 2009 the NO_x emission reductions required by Equation 1 at N.J.A.C. 7:27-19.29(c).

(b) By June 9, 2009, an owner or operator seeking approval of a phased compliance plan shall submit to the Department an application for approval of the phased compliance plan pursuant to N.J.A.C. 7:27-19.14. If an owner or operator fails to submit the application by June 9, 2009, the Department may reject the application. The Department may elect to process a late application, based on how late the application is, the nature and extent of the owner or operator's efforts to submit the application on time, and whether the owner or operator advised the Department before the application due date that a late application would be submitted. If the Department elects to process a late application, the pendency of the application shall not be a defense to a violation of the requirement at N.J.A.C. 7:27-19.29(b)1 to achieve the NO_x emission reductions calculated pursuant to Equation 1 at N.J.A.C. 7:27-19.29(c) to which the owner or operator is subject in the absence of an approved plan. In the application, the owner or operator shall include the following information in addition to the information required under N.J.A.C. 7:27-19.14:

1. The phased compliance plan described in (c) below;

2. A description of the steps that the owner or operator has taken to obtain compliance with the NO_x emission reduction requirements at N.J.A.C. 7:27-19.29; and

3. For each measure included in the plan, a detailed explanation of the reasons why the owner or operator believes that implementation of the measure by May 19, 2009 is impracticable.

(c) The owner or operator shall include the following information in the phased compliance plan with respect to each measure included in the plan:

1. A description of the measure and how it is expected to reduce NO_x emissions;

2. For each measure that requires modification of a combustion source, such as installation of a control apparatus, a proposed schedule setting dates by which the owner or operator will complete the following milestones for the measure:

   i. Submit applications for all necessary permits and certificates;

   ii. Obtain all necessary permits and certificates;

   iii. Award contracts for the implementation of control measures or place orders for the purchase of component parts, equipment and/or control apparatus necessary to attain compliance with the applicable NO_x emission limit under this subchapter;

   iv. Initiate construction and/or installation of the component parts, equipment and/or control apparatus necessary to attain compliance with the applicable NO_x emission limit under this subchapter; and

   v. Attain full compliance with the NO_x emission reduction determined by Equation 1 at N.J.A.C. 7:27-19.29(c);

3. For each NO_x emission reduction measure that does not require modification of a combustion source, a proposed schedule setting dates by which the owner or operator shall complete all applicable milestones for implementing the measure; and

4. Any other information that the Department requests, which is reasonably necessary to enable it to determine whether each proposed NO_x emission reduction measure will achieve the NO_x emission reduction determined by Equation 1 at N.J.A.C. 7:27-19.29(c).

(d) The Department shall approve a phased compliance plan only if the following requirements are satisfied with respect to each NO_x emission reduction measure included in the plan:

1. The application satisfies all the requirements of N.J.A.C. 7:27-19.14 and (b) above;

2. The information submitted under (b)2 above establishes that the owner or operator has made a good faith effort to obtain compliance with the NO_x emission reduction determined by Equation 1 at N.J.A.C. 7:27-19.29(c) by implementing all available NO_x emission reduction measures that can be reasonably implemented prior to May 19, 2009;

3. The information submitted under (b)3 above, evaluated in light of the criteria set forth in (e) below, establishes that it is impracticable for the NO_x emission reduction measure to be implemented prior to May 19, 2009; and

4. The interim period is less than 12 months.

(e) In determining whether compliance with the emission reduction determined by Equation 1 at N.J.A.C. 7:27-19.29(c) by May 19, 2009 is impracticable, the Department shall apply the following criteria:

1. The amount of time needed to obtain all permits and certificates necessary to attain compliance, following the submission of an administratively complete application;

2. The amount of time needed to obtain all component parts and/or equipment necessary to obtain compliance, following the placement of orders for such parts and/or equipment. The estimate of time may reflect shortages in the supply of such parts and/or equipment;

3. The amount of time needed to complete construction and/or installation of the component parts and/or equipment necessary to attain compliance, following the initiation of construction and/or installation; and

4. The nature, extent and probability of any harm to public safety or welfare that could result from accelerating construction and/or installation in order to attain compliance by May 19, 2009. For example, if it were probable that the owner or operator of the electric generating utility could not attain compliance by that date without subjecting a substantial number of customers to voltage reductions and/or interruptions in electric service, that fact would be relevant in establishing impracticability.

(f) On the date that the approved phased compliance plan provides for the owner or operator to attain full compliance with the emission reduction determined by Equation 1 at N.J.A.C. 7:27-19.29(c), the Department's approval of the phased compliance plan shall expire. Upon expiration of the Department's approval, the owner or operator shall be subject to all applicable requirements of N.J.A.C. 7:27-19.29, including the NO_x emission reduction that would have been required in the absence of an approved plan.

(g) An owner or operator who has obtained the Department's approval of a phased compliance plan shall:

1. Operate all combustion sources affected by the plan in a manner that complies with the plan and with all conditions of the Department's approval;

2. Meet all milestones in the approved phased compliance plan;

3. Within 15 days after the date of each milestone in the approved phased compliance plan, advise the Department in writing whether the owner or operator has met the milestone; and

4. During the interim period, control NO_x emissions from all combustion sources as follows:

   i. By adjusting the combustion process in accordance with N.J.A.C. 7:27-19.16, if the source's air-to-fuel ratio can be adjusted in a manner that reduces NO_x emissions; or

   ii. By seasonally combusting natural gas in accordance with N.J.A.C. 7:27-19.20, or implementing other measures that the Department determines are appropriate in light of the costs involved and the total quantity of NO_x reductions that will be achieved until the full compliance date listed in (c)2v above.

7:27-19.23 Phased compliance - use of innovative control technology

(a) The owner or operator of a combustion source included in a phased compliance plan is authorized to comply with the plan if the Department approves the plan pursuant to this section and N.J.A.C. 7:27-19.14. The owner or operator's compliance with the plan is in lieu of causing the combustion source to comply with the emission limit under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10 that would otherwise apply to the combustion source.

(b) By June 22, 1995 (or by February 7, 2006 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)), an owner or operator seeking approval of an innovative control technology plan shall submit to the Department an application pursuant to N.J.A.C. 7:27-19.14 and the plan itself pursuant to (c) below. If an owner or operator fails to submit the application by the applicable date, the Department may reject the application. The Department may elect to process a late application, based on how late the application is, the nature and extent of the owner or operator's efforts to submit the application on time, whether the owner or operator advised the Department before the application due date that a late application would be submitted, and the extent of the emission reductions promised in the late application. If the Department elects to process a late application, the pendency of the application shall not be a defense to a violation of a NO_x emission limit to which the source would be subject in the absence of an approved plan.

(c) The owner or operator shall include the following information in the innovative control technology plan with respect to each combustion source included in the plan:

   1. Information sufficient to identify the combustion source, including a brief description (for example, "dry-bottom coal-fired boiler serving an electric generating unit"), its location, its permit number, the company stack designation, and any other identifying numbers, and any other information necessary to distinguish it from other equipment owned or operated by the owner or operator;

2. A description of the NO_x control measures that the owner or operator proposes to employ as innovative control technology;

3. The rate of NO_x emissions that the owner or operator expects that the source will attain in employing the proposed innovative control technology, and the basis for that expectation;

4. Information establishing that the proposed innovative control technology is technically sound and sufficiently developed to be implemented by May 1, 1999 (or by November 7, 2009 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e));

5. A proposed schedule setting dates by which the owner or operator will complete the following milestones for the combustion source:

   i. Submitting applications for all necessary permits and certificates;

   ii. Obtaining all necessary permits and certificates;

   iii. Awarding contracts for the implementation of the innovative control technology, or placing orders for the purchase of any component parts, equipment and/or control apparatus associated with the innovative control technology;

   iv. Awarding contracts and initiating implementation of the innovative control technology (including any construction and/or installation, if applicable); and

   v. Completing the implementation of the innovative control technology.

6. Specific procedures and schedules for implementing interim measures for control of NO_x emissions for the combustion source during the interim period;

7. A list of all NO_x control technologies available for interim use with the combustion source during the interim period;

8. An analysis of the technological feasibility of installing and operating each NO_x emission control technology identified in (c)7 above for the interim period;

9. For each control technology that is technologically feasible to install and operate, an estimate of the cost of installation and operation;

10. An estimate of the reduction in NO_x emissions attainable through the use of each control technology which is technologically feasible to install and operate. If a

control technology installed before the innovative control technology is implemented cannot be used after that time, the owner or operator may limit the estimate of emission reductions to those that will be attained during the interim period;

11. An analysis of the cost-effectiveness of each control technology, based on the costs of installation and operation under (c)9 above and the estimated emission reductions under (c)10 above;

12. The NO_x control measures that the owner or operator proposes to employ during the interim period;

13. The proposed interim NO_x emission limit with which the source will comply during the interim period;

14. The method to be used to measure the actual NO_x emission rate of the combustion source;

15. The name and business telephone number of the person responsible for recordkeeping and reporting under N.J.A.C. 7:27-19.19 and under (e)8 below; and

16. Any other information that the Department requests, which is reasonably necessary to enable it to determine whether the operation of combustion sources included in the plan will comply with the requirements of this section.

(d) The Department shall approve an innovative control technology plan only if the following requirements are satisfied:

1. The application satisfies all the requirements of N.J.A.C. 7:27-19.14 and (c) above, including the requirement that the plan consider all control technologies available for the control of NO_x emissions during the interim period from each type of combustion source included in the plan;

2. The innovative control technology proposed for each combustion source in the plan:

i. Has a substantial likelihood of enabling the source to achieve greater continuous NO_x emissions reductions than are required to meet the applicable limit under N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10. If the expected extent of NO_x emission reductions is only marginally greater than are required to meet the applicable limit, the proposed innovative control technology will not be deemed to meet this standard;

ii. Is technically sound;

iii. Is sufficiently developed so that it can be implemented by May 1, 1999 (or by November 7, 2009 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)); and

iv. Cannot practicably be implemented by May 31, 1995 (or by March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)).

3. The completion date listed in (c)5v above is no later than May 1, 1999;

4. For any control technologies described in (c)7 above that the owner or operator does not propose to use with the combustion source during the interim period, the proposed plan demonstrates that the control technology:

i. Would be ineffective in controlling NO_x emissions from the combustion source;

ii. Is unsuitable for use with the combustion source, or duplicative of control technology which the plan proposes to use;

iii. Would carry costs disproportionate to the improvement in the reduction of the NO_x emissions rate that the control technology is likely to achieve, or disproportionately large in comparison to the total reduction in NO_x emissions that the control technology is likely to achieve during the interim period; or

iv. Would carry costs disproportionate to the costs incurred for the control of NO_x emissions from the same type of combustion sources used by other persons in the owner or operator's industry who are also subject to the NO_x RACT requirements of P.L. 101-549, 182(f).

5. For each combustion source included in the plan, the interim emission limit proposed under (c)13 above is the lowest rate that can practicably be achieved at a cost within the limits described in (d)4iii and iv above;

6. For each combustion source included in the plan, the cost of achieving an additional emission reduction beyond the interim emission limit proposed under (c)13 above would be disproportionate to the size and environmental impact of that additional emission reduction; and

7. The owner or operator has entered into an agreement with the Department in accordance with the requirements of (h) below.

(e) An owner or operator who has obtained the Department's approval of an innovative control technology plan shall:

1. Beginning on May 31, 1995 (or on March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)), operate all combustion sources included in the approved plan in a manner that complies with the plan and with all conditions of the Department's approval;

2. Meet the compliance milestones in the approved plan;

3. Implement the innovative control technology for the combustion sources included in the plan by the date specified in the approved plan;

4. Beginning on May 31, 1995 (or on March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)), determine the actual NO_x emissions from each combustion source included in the innovative control technology plan in accordance with N.J.A.C. 7:27-19.15(a);

5. If the approved plan provides for the owner or operator to annually adjust the combustion process for a combustion source included in the plan, do so in accordance with the general procedures set forth at N.J.A.C. 7:27-19.16 before May 1 of each calendar year beginning with 1995, until the innovative control technology is implemented;

6. Beginning on May 31, 1995 (or on March 7, 2007 for any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e)), comply with the recordkeeping and reporting requirements of N.J.A.C. 7:27-19.19;

7. Within 15 days after the date specified in the approved innovative control technology plan for completion of a milestone listed in (c)5 above, notify the Department in writing that the milestone has or has not been completed. If the milestone has not been completed, the owner or operator shall include in the notice the reason for the delay and the expected date on which the milestone will be completed;

8. Incorporate advances in the art of air pollution control into each source included in the plan, as required in the preconstruction permit for the replacement equipment; and

9. If the innovative control technology for any combustion source included in the plan is not implemented by May 1, 1999, cease operating the combustion source by May 1, 1999, except if any owner or operator of a facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set

forth at N.J.A.C. 7:27-19.5(d), 19.7(h), 19.8(e) does not implement by November 7, 2009 the innovative control technology for the combustion source included in its innovative control technology plan, the equipment or source must comply with the applicable NO_x emissions limit set forth in this subchapter by November 7, 2009.

(f) Except as provided in (g) below:

1. The Department shall seek comments from the general public before making any final decision to approve or disapprove a proposed innovative control technology plan. The Department shall publish notice of opportunity for public comment in a newspaper of general circulation in the area in which each combustion source included in the plan is located;

2. The Department shall submit any innovative control technology plan (and agreement under (h) below) approved under this section to EPA, as a proposed revision to New Jersey's State Implementation Plan; and

3. Upon EPA's approval of the revision to New Jersey's State Implementation Plan, the innovative control technology plan and agreement under (h) below shall be federally enforceable. Plans listed under (g) below shall be federally enforceable upon the issuance of the Department's approval.

(g) An innovative control technology plan approved under this section is not required to be submitted to EPA as a proposed revision to New Jersey's State Implementation Plan, if the plan provides that NO_x emissions from each combustion source included in the plan will be controlled during the interim period through one of the following methods:

1. Fuel switching under N.J.A.C. 7:27-19.20;

2. The use of selective non-catalytic reduction.

(h) Before the Department approves an innovative control technology plan, the owner or operator shall enter into a Federally enforceable agreement containing the following provisions:

1. Information sufficient to identify the owner or operator;

2. Information sufficient to identify the combustion source, including a brief description (for example, "dry-bottom coal-fired boiler serving an electric generating unit"), its location, its permit number, the company stack designation, and any other identifying numbers, and any other information necessary to distinguish it from other equipment owned or operated by the owner or operator;

3. The owner or operator's undertaking of the following duties:

i. Completing the milestones listed in (c)5 above by specified dates;

ii. Implementing interim measures to control NO_x emissions from each combustion source during the interim period;

iii. Causing each combustion source to emit NO_x at a rate no greater than a specified interim NO_x emission limit applicable during the interim period;

iv. Using a specified method to measure the actual NO_x emission rate of the combustion source; and

v. Maintaining the Department's approval in effect;

4. A provision for delay of compliance caused by a "force majeure" event beyond the control of and without the fault of the owner or operator;

5. A provision under which the Department can terminate the agreement and its approval of the innovative control technology plan if the owner or operator materially fails to complete implementation of the innovative control technology or any other milestone by the date specified in the approved plan, or if the innovative control technology program fails to achieve the required reduction levels. By the date specified by the Department in the agreement, in its approval of the plan, or in the notice of termination, the owner or operator shall attain compliance with the NO_x emissions limit under this subchapter that would apply to the combustion source in the absence of an approved plan. Termination of the agreement and the approval of the plan is in addition to any other remedies the Department has under this chapter and N.J.A.C. 7:27A; and

6. Other provisions necessary to make the agreement federally enforceable, to accomplish the purposes of this subchapter, or to allow the agreement to be administered effectively.

7:27-19.24 (Reserved)

7:27-19.25 Exemption for emergency use of fuel oil

(a) If a combustion source temporarily combusts fuel oil or other liquid fuel in place of natural gas in accordance with this section, the owner or operator is not required to have the combustion source comply with the applicable NO_x emission limits in N.J.A.C. 7:27-19.4, 19.5, 19.7, 19.8, 19.9 or 19.10, or an applicable NO_x emission limit established under N.J.A.C. 7:27-19.13, 19.20, 19.21, 19.22 or 19.23, while the fuel oil or other liquid fuel is burned. On each day that this exemption applies, for purposes of calculating daily or annual NO_x emissions the combustion source will be deemed to have emitted no NO_x and to have derived a heat input of 0.0 BTU.

(b) The exemption under (a) above is available only for a combustion source that uses natural gas as its primary fuel, or is seasonally combusting natural gas pursuant to a plan approved under N.J.A.C. 7:27-19.14 and 19.20. For a combustion source that uses natural gas as its primary fuel, the exemption under (a) above is available at any time during the year. For a combustion source that is seasonally combusting natural gas, the exemption under (a) above is available only from May 1 through September 30. This exemption is also available for those combustion sources which combust refinery gas as a primary fuel.

(c) The owner or operator of the combustion source is eligible for the exemption under (a) above only if the following requirements are met:

1. The owner or operator is not practicably able to obtain a sufficient supply of natural gas;

2. The owner or operator's inability to obtain natural gas is due to circumstances beyond the control of the owner or operator, such as a natural gas curtailment;

3. The combustion source ceases using fuel oil or other liquid fuel in place of natural gas and resumes using natural gas as soon as a sufficient supply of natural gas becomes practicably available; and

4. The owner or operator satisfies the recordkeeping requirements of N.J.A.C. 7:27-19.19(d) and (e), and the reporting requirements of (d) below.

(d) The owner or operator shall keep records of curtailment periods and incorporate such records into the reports submitted to the Department as required at N.J.A.C. 7:27-19.19(g). Such records shall include the following information:

1. Information sufficient to identify each combustion source for which the owner or operator claims an exemption under this section, including a brief description of the source (for example, "dry-bottom coal-fired boiler serving an electric generating unit"), its location, its permit number, any other identifying numbers, and any other information necessary to distinguish it from other equipment also owned or operated by the owner or operator of the electric generating unit;

2. A statement that the owner or operator is not practicably able to obtain a sufficient supply of natural gas;

3. The date and time at which the owner or operator first became practicably unable to obtain natural gas; and

4. A description of the circumstances causing the owner or operator's inability to obtain natural gas.

7:27-19.26 Penalties

Failure to comply with any provision of this subchapter shall subject the owner or operator to civil penalties in accordance with N.J.A.C. 7:27A-3 and applicable criminal penalties including, but not limited to, those set forth at N.J.S.A. 26:2C-28.3 and N.J.S.A. 26:2C-19(f)1 and 2.

7:27-19.27 (Reserved)

7:27-19.28 Sewage sludge incinerators

(a) The owner or operator of a sewage sludge incinerator shall cause it to emit NO_x at a rate no greater than the applicable maximum allowable NO_x emission rate specified in Table 13 below, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f).

TABLE 13
Maximum Allowable NO_x Emission Rates for
Sewage Sludge Incinerators
(pounds of NO_x per ton of dry sewage sludge)

Multiple Hearth	7.0
Fluidized Bed	2.5

(b) In lieu of complying with the maximum allowable NO_x emissions rate at (a) above, the owner or operator of a sewage sludge incinerator may comply with N.J.A.C. 7:27-19.3(f), or obtain an alternative maximum allowable NO_x emission rate approved by the Department pursuant to N.J.A.C. 7:27-19.13.

(c) The owner or operator shall demonstrate compliance with (a) or (b) above in accordance with N.J.A.C. 7:27-19.15(a)2.

7:27-19.29 2009 HEDD Emission Reduction Compliance Demonstration Protocol

(a) This section shall apply to any owner or operator of a HEDD unit, or their successors or assigns, that operated on July 26, 2005, and that meets the following:

1. If a HEDD unit is a combustion turbine and was not controlled by water injection or SCR, or is a boiler and was not controlled by SCR or SNCR; and

2. The NO_x emission rate of a HEDD unit was 0.15 pounds per MMBTU or greater. To determine the emissions rate of the HEDD unit, the owner or operator shall obtain the emission rate, in lb/MMBtu, for the HEDD unit for July 26, 2005 from the USEPA Clean Air Markets Division (CAMD) NO_x emission data, which as of March 20, 2009 can be found at http://camddataandmaps.epa.gov/gdm/.

(b) Each owner or operator identified in (a) above shall:

1. Prepare a 2009 HEDD Emission Reduction Compliance Demonstration Protocol, hereafter referred to as the 2009 Protocol, in accordance with (d) below. Each emission reduction measure that is used to obtain emission reductions shall be included in the 2009 Protocol;

2. Submit to the Department, at the address at (b)5 below, by May 19, 2009, a 2009 Protocol;

3. Obtain the NO_x emission reductions determined by Equation 1 at (c) below, using one or more measures that meet the requirements at (d) below and that are listed in the 2009 Protocol, on each high electric demand day starting on May 19, 2009 through September 30, 2014, unless the Department has approved, pursuant to N.J.A.C. 7:27-19.22, a phased compliance plan with an initial compliance date that is after May 19, 2009;

4. Demonstrate that all NO_x emission reductions required by (b)3 above were obtained. The owner or operator shall include this demonstration in the annual report at (k) below. Conduct any demonstration using:

   i. Calculations that demonstrate that the owner or operator achieved all emission reductions required at (b)3 above; or

   ii. The Department-approved method of demonstrating in the 2009 Protocol that implementation of the 2009 Protocol on each high electric demand day that occurred starting January 1, 2005 through December 31, 2007 would have resulted in at least as many tons of NO_x emission reductions as would have been required by Equation 1 below. The owner or operator shall demonstrate that the owner or operator implemented the 2009 Protocol, or a modified protocol approved by the Department pursuant to (h) below, on each high electric demand day during the calendar year of the applicable annual report; and

5. Submit to the Department, at the address below, an annual report, pursuant to (k) below.

   Department of Environmental Protection
   Division of Air Quality
   Air Quality Permitting Program
   Bureau of Air Permits
   401 East State Street
   Mail Code 401-02
   PO Box 420
   Trenton, NJ 08625-0420

(c) The owner or operator shall obtain the NO_x emission reductions determined by Equation 1 on each high electric demand day pursuant to (b)3 above. Equation 1 is:

$$ER = (BE \div EF) \times RF$$

Where:

ER, BE, EF and RF are in units of tons of NO_x per high electric demand day (t/HEDD);

ER (Emission Reduction) = The total tons of NO_x reductions that is required from an owner or operator on each high electric demand day;

BE (Baseline Emission) = The total tons of NO_x that would be emitted on each high electric demand day, if the owner or operator did not implement any emission reduction measures. This calculation is based on total actual operation of HEDD units and total actual operation of new electric generating units installed to replace one or more HEDD units for that high electric demand day;

EF (Emission Factor) = The total tons of NO_x that were emitted by all of the owner or operator's HEDD units on July 26, 2005. In order to calculate EF, the owner or operator shall obtain the NO_x emitted, in tons, for each HEDD unit operated on July 26, 2005, from the EPA Clean Air Markets Division (CAMD) NO_x emission data, which as of March 20, 2009 can be found at http://camddataandmaps.epa.gov/gdm/; and

RF (Reduction Factor) = The HEDD NO_x emission reduction factor for each owner or operator shall be the sum of all Unit Reduction Factors (URF). A URF shall be calculated, in tons, for each HEDD unit that operated on July 26, 2005, using the following equation:

$$URF = (UE \times C)$$

Where:

URF (Unit Reduction Factor) = The reduction of NO_x emissions, in tons, emitted by a HEDD unit on July 26, 2005 that would have occurred if the unit had been controlled;

UE (Unit Emissions) = The tons of NO_x emissions emitted by a HEDD unit on July 26, 2005 obtained from the EPA Clean Air Markets Division (CAMD) NO_x emission data, which as of March 20, 2009 can be found at http://camddataandmaps.epa.gov/gdm/; and

C (Control Factor) = If the HEDD unit is a combustion turbine that was not controlled with water injection or Selective Catalytic Reduction (SCR) on July 26, 2005, and the NO_x emission rate of that unit was 0.15 lb/MMBtu or greater on July 26, 2005, then C is equal to 0.4. If the HEDD unit is a boiler that was not controlled with SCR or Selective Non-Catalytic Reduction (SNCR) controls on July 26, 2005, and the NO_x emission rate of that unit was 0.15 lb/MMBtu or greater on July 26, 2005, then C is equal to 0.3. If the HEDD unit is a combustion turbine that was controlled with water injection or SCR on July 26, 2005, or is a boiler that was controlled with SCR or SNCR on July 26, 2005, or had a NO_x emission rate of less than 0.15 lb/MMBtu on July 26, 2005, then C is equal to 0.

(d) The 2009 Protocol shall include the following:

1. The calculations performed in (c) above for EF and RF;

2. A list of measures used to obtain the required emission reductions determined by Equation 1. The measures must result in emission reductions that are real, quantifiable, enforceable, surplus, and are not required to comply with any State or Federal permit, regulation, enforceable agreement, or high electric demand day emission reduction program. Any of the following measures may be considered to achieve the required emission reductions:

   i. Installation of a control apparatus on an existing HEDD unit that is located in New Jersey, Pennsylvania, Delaware, or Maryland;

   ii. Reduction in the usage of any HEDD unit that is located in New Jersey, Pennsylvania, Delaware, or Maryland;

   iii. Installation of a control apparatus on an existing non-HEDD unit that is located in New Jersey, Pennsylvania, Delaware, or Maryland;

   iv. Commitment to combust natural gas in any HEDD unit that is permitted to combust either natural gas or fuel oil during high electric demand days when it would be economically preferred to combust fuel oil;

   v. Implementation of an energy efficiency measure in New Jersey, as long as the energy efficiency measure was not committed to prior to May 19, 2009;

   vi. Implementation of a demand response measure in New Jersey such as:

      (1) A measure that shifts load, as long as the demand response measure was not committed to prior to May 19, 2009; or

      (2) A measure that sheds load to clean distributed generation units, as long as the demand response measure was not committed to prior to May 19, 2009;

   vii. Implementation of a renewable energy measure in New Jersey, as long as the renewable energy measure was not committed to prior to May 19, 2009; and

   viii. Any other measure, approved by the Department, that provides NO_x emission reductions and ozone air quality benefits to New Jersey.

3. The 2009 Protocol shall include, at a minimum, the following for each measure:

i. A complete description of the measure;

ii. A quantification of the emission reductions from the measure and how the quantification was determined;

iii. The reasons why this measure is not necessary under any current State or Federal permit, regulation, enforcement agreement, or high electric demand day emission reduction program;

iv. The methods to be used to calculate and verify emission reductions;

v. Monitoring requirements to ensure that the emission reductions determined by Equation 1 are achieved. This shall include, but not be limited to, the following, as applicable, for each electric generating unit:

(1) Fuel flow/firing rate instrument to monitor fuel consumption;

(2) CEMs monitoring of NO_x emissions or monitoring of any parameter that can be used to calculate the NO_x emissions; and

(3) Stack testing; and

vi. A list of records to be maintained pursuant to the requirements of N.J.A.C. 7:27-19.19. The records maintained should be sufficient to document that the emission reductions determined by Equation 1 are achieved. This shall include, but not be limited to the records, as applicable, listed in (e) below, for each high electric demand day.

(e) The list of records to be maintained pursuant to (d)3vi above are the following:

1. The date of each high electric demand day;

2. The actions taken to reduce emissions;

3. The start and end time for operation of each EGU operated during that high electric demand day;

4. The total hours of operation for each EGU in (e)3 above;

5. The type of fuel combusted by each EGU in (e)3 above;

6. The hourly fuel use for each EGU in (e)3 above;

7. The hourly load in MW for each EGU in (e)3 above;

8. The hourly heat input in MMBtu/hr to each EGU in (e)3 above;

9. The hourly water injection rate for each EGU in (e)3 above;

10. The hourly ammonia injection rate for each EGU in (e)3 above;

11. The catalytic bed temperature for each EGU in (e)3 above;

12. The CEM values or documentation on how the baseline and actual NO_x emission rates were calculated for each EGU in (e)3 above;

13. Any other data needed to calculate baseline and actual NO_x emissions for each EGU in (e)3 above;

14. Calculations and results for the following:

    i. Baseline NO_x emissions (BE in Equation 1, at (c) above);

    ii. Actual NO_x emissions after 2009 Protocol control measures, calculated pursuant to the approved 2009 Protocol;

    iii. Required NO_x emission reduction (ER in Equation 1, at (c) above); and

    iv. Actual NO_x emission reduction (BE - actual emissions resulting from 2009 Protocol measures);

15. The fuel prices for that high electric demand day; and

16. Any other records necessary to document the emission reductions achieved.

(f) Within 30 calendar days after receiving a proposed 2009 Protocol, the Department will notify the owner or operator in writing whether the proposed 2009 Protocol includes all of the information required under (d) above. If the proposed 2009 Protocol is incomplete:

1. The Department will include in the notice a list of the deficiencies, a statement of the additional information required to make the proposed 2009 Protocol complete, and a time by which the owner or operator must submit a complete proposed 2009 Protocol;

2. The owner or operator shall correct the deficiencies listed in the Department's notice within the time stated in the Department's notice; and

3. The Department may disapprove the proposed 2009 Protocol if the owner or operator fails to correct the deficiencies within the time stated in the Department's notice.

(g) The Department may approve, revise and approve, or disapprove the proposed 2009 Protocol based on whether or not the proposed 2009 Protocol contains the contents required by (d) above. Except for (g)3 below, until the Department approves a proposed 2009 Protocol, implementation of the proposed 2009 Protocol constitutes compliance with (b)3 above. The Department will notify the owner or operator of the Department's action in writing as follows:

1. If the Department approves the proposed 2009 Protocol, the Department will notify the owner or operator in writing of the Department's approval;

2. If the Department revises the proposed 2009 Protocol and approves the revised proposed 2009 Protocol, the Department will notify the owner or operator in writing of the Department's revision and approval. In this notification the Department will list all revisions the Department made to the proposed 2009 Protocol, and include a compliance schedule if time is necessary to implement the revisions; or

3. If the Department disapproves the proposed 2009 Protocol, the Department will notify the owner or operator in writing of the Department's disapproval. In this notification the Department will include a list of the reasons for disapproval and a list of changes or additional information needed to make the proposed 2009 Protocol compliant with (d) above and approvable. If the owner or operator does not submit a revised proposed 2009 Protocol, with all information required by the Department's notification, to the Department at the address at (b)5 above within 60 days of receiving the Department's notification, then one of the following shall apply:

   i. If the owner or operator fails to submit a revised proposed 2009 Protocol by the deadline, implementation of the proposed 2009 Protocol shall no longer constitute compliance with (b)3 above after the deadline; or

   ii. If the owner or operator submits a revised proposed 2009 Protocol that does not include all information required by the Department's notification, implementation of the proposed 2009 Protocol shall no longer constitute compliance with (b)3 above after the Department notifies the owner or operator that the revised proposed 2009 Protocol is still not approvable.

(h) The owner or operator may revise the 2009 Protocol at any time as follows:

1. The owner or operator shall submit to the Department, at the address at (b)5 above, a proposed revised 2009 Protocol. The proposed revised 2009 Protocol shall include all the information required by (d) above;

2. The Department will notify the owner or operator of any deficiencies pursuant to (f) above; and

3. The Department will approve, revise and approve, or disapprove the proposed revised 2009 Protocol based on whether or not the proposed 2009 Protocol contains the contents required by (d) above. The Department will notify the owner or operator of the action in writing.

(*i*) If the owner or operator of an electric generating unit that is included in an approved 2009 Protocol changes between May 19, 2009 and September 30, 2014, the old owner or operator shall submit a revised 2009 Protocol to the Department, at the address in (b)5 above, within 30 calendar days of the change taking place, for approval in accordance with (h) above. The revised 2009 Protocol shall demonstrate that all required emission reductions will continue to be obtained, and shall clearly define how the required emission reductions will be obtained henceforth and which owner or operator shall be responsible for achieving the required emission reductions. Any shared responsibility for the emission reductions shall be clearly defined in the revised 2009 Protocol.

(j) An owner or operator may implement any emission reduction measure that meets the requirements at (d) above if the owner or operator has obtained all necessary permit modifications pursuant to N.J.A.C. 7:27-8 and 22, submits a revised 2009 Protocol to the Department at the address at (b)5 above within 30 days of implementing the measure, and maintains compliance with all other applicable provisions of N.J.A.C. 7:27.

(k) Each owner or operator identified in (a) above shall submit an annual report for calendar years 2009 through 2014. Each annual report shall be submitted to the Department to the address at (b)5 above, by January 30th of the following year. (For example, the annual report for 2009 is due on January 30, 2010.) At a minimum, the annual report shall include the following information, as applicable, for each measure and each high electric demand day:

1. The actions taken to reduce emissions;

2. The baseline and actual emissions in total tons;

3. For measures not associated with an EGU unit, the annual report shall include any documentation required by the approved 2009 Protocol; and

4. For measures associated with an EGU unit, the annual report shall include:

i. The total hours of operation for each EGU;

ii. The type of fuel combusted;

iii. The hourly fuel use;

iv. The hourly load in MW;

v. The hourly heat input in MMBtu/hr;

vi. The hourly water injection rate;

vii. The hourly ammonia injection rate;

viii. The catalytic bed temperature;

ix. The CEM values or documentation on how the baseline and actual NO_x emission rates were calculated;

x. Any other data used to calculate baseline and actual NO_x emissions;

xi. The calculations and results for:

(1) Baseline NO_x emissions (BE in Equation 1, at (c) above);

(2) Actual NO_x emissions after emission reduction measures;

(3) Required NO_x emission reduction (ER in Equation 1, at (c) above); and

(4) Actual NO_x emission reduction (BE - actual emissions after emission reduction measures);

xii. Fuel prices; and

xiii. Any other documentation required by the Department in the approved 2009 Protocol.

7:27-19.30 2015 HEDD Emission Limit Achievement Plan

(a) Each owner or operator of an HEDD unit shall submit to the Department at the address below, by May 1, 2010, a 2015 HEDD Emission Limit Achievement Plan, hereafter referred to as the 2015 Plan.

Assistant Director, Air Quality Permitting Element
Division of Air Quality
New Jersey Department of Environmental Protection
401 East State Street
PO Box 027
Trenton, NJ 08625-0027

(b) The 2015 Plan shall describe how the owner or operator intends to comply with the 2015 HEDD maximum allowable NO_x emission rates for each HEDD unit owned or operated. The 2015 Plan shall include the following:

1. A list of HEDD units that are expected to be taken out of service by May 1, 2015, in lieu of complying by May 1, 2015 with the applicable maximum allowable NO_x emission rate(s) in Table 3 at N.J.A.C. 7:27-19.4(a) for boilers or Table 7 at N.J.A.C. 7:27-19.5(g) for turbines. The following information shall be included for each HEDD unit that is expected to be taken out of service:

    i. The name of the facility at which the HEDD unit is located;

    ii. The facility ID number;

    iii. The emission unit ID number;

    iv. The HEDD unit description;

    v. The proposed schedule for taking the unit out of service;

    vi. An explanation of any obstacles that may prevent this unit from being taken out of service according to the schedule at (b)1v above; and

    vii. Any other documentation that would identify the unit or clarify the above information; and

2. A list of HEDD units on which the owner or operator proposes to install a control apparatus, or for which the owner or operator proposes to operate differently, in order to obtain compliance with the applicable maximum allowable NO_x emission rate(s) in Table 3 at N.J.A.C. 7:27-19.4(a) for boilers or Table 7 at N.J.A.C. 7:27-19.5(g) for turbines. The following information shall be included for each such HEDD unit:

    i. The name of the facility at which the HEDD unit is located;

    ii. The facility ID number;

    iii. The emission unit ID number;

    iv. The HEDD unit description;

    v. A description of the proposed control apparatus or change to the current operation;

    vi. An explanation of what the expected emission control efficiency will be and what emission rate will be achievable with the proposed control apparatus or change to the current operation;

vii. The proposed schedule for permitting, installation and operation of the proposed control apparatus or change to the current operation;

viii. An explanation of any obstacles that may prevent the installation of the proposed control apparatus or change to the current operation; and

ix. Any other documentation that would identify the unit or clarify the above information; and

3. A list of HEDD units that have demonstrated compliance, in accordance with N.J.A.C. 7:27-19.15, with the applicable maximum allowable NO_x emission rate(s) in Table 3 at N.J.A.C. 7:27-19.4(a) for boilers or Table 7 at N.J.A.C. 7:27-19.5(g) for turbines, prior to May 1, 2010. The following information shall be included for each such HEDD unit:

i. The name of the facility at which the HEDD unit is located;

ii. The facility ID number;

iii. The emission unit ID number;

iv. The HEDD unit description; and

v. The maximum allowable NO_x emission rate in the preconstruction permit or the operating permit for the HEDD unit, for each fuel combusted by the unit.

(c) The owner or operator of a HEDD unit shall prepare an update on the owner or operator's progress in complying with the 2015 Plan as follows:

1. An owner or operator of a HEDD unit shall prepare an update for each calendar year 2010 through 2014 if, on January 1 of that calendar year, any of the owner or operator's HEDD units:

i. Did not comply with the applicable maximum allowable NO_x emission rate(s) in Table 3 at N.J.A.C. 7:27-19.4(a) for boilers or Table 7 at N.J.A.C. 7:27-19.5(g) for turbines; and

ii. Was not taken out of service;

2. The owner or operator shall submit an update required by (c)1 above by January 30 after the calendar year of the update. For example, an update for calendar year 2010 shall be submitted to the Department by January 30, 2011;

3. The owner or operator shall submit each update to the following address:

Department of Environmental Protection
Division of Air Quality
Air Quality Permitting Program
Bureau of Air Permits
401 East State Street
Mail Code 401-02
PO Box 420
Trenton, NJ 08625-0420; and

4. An update shall include the following information for each HEDD unit meeting the criteria at (c)1i through iii above:

   i. The name of the facility at which the HEDD unit is located;

   ii. The facility ID number;

   iii. The emission unit ID number;

   iv. The HEDD unit description;

   v. The progress made toward achieving the proposed schedule for permitting, installation and operation at (b)2vii above;

   vi. An explanation of any obstacles that have been encountered or are anticipated and how they will be overcome; and

   vii. An explanation of any revisions to the 2015 Plan.

APPENDIX (Reserved)