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## **ENVIRONMENTAL PROTECTION**

### **DIVISION OF AIR QUALITY**

#### **Air Pollution Control**

#### **Control and Prohibition of Air Pollution by Volatile Organic Compounds and Oxides of Nitrogen**

**Adopted Amendments:** N.J.A.C. 7:27-4.1, 4.2, 8.1, 8.3, 8.20, 10.1, 10.2, 16.1 through 16.3, 16.7, 16.11, 16.16, 16.17, 16.22, 16.27, 19.1 through 19.10, 19.13, 19.15, 19.21, 19.22, 21.1, and 21.5, and 7:27A-3.10

**Adopted New Rules:** N.J.A.C. 7:27-10.5, 16 Appendix II, 19.12, 19.28 through 19.30

**Adopted Repeal and New Rule:** N.J.A.C. 7:27-16.19

**Adopted Repeal:** N.J.A.C. 7:27-19.27 and Appendix

**Proposed:** August 4, 2008 at 40 N.J.R. 4390(a).

**Adopted:** March 20, 2009 by Mark N. Mauriello, Acting Commissioner, Department of Environmental Protection.

**Filed:** March 26, 2009, as R.2009 d **with substantive and technical changes** not requiring additional public notice and comment (See N.J.A.C. 1:30-6.3).

**Authority:** N.J.S.A. 13:1B-3(e), 13:1D-9, 13:1D-134 et seq. and 26:2C-1 et seq., in particular 26:2C-9.2.

**DEP Docket Number:** 10-08-07/643

**Effective Date:** April 20, 2009

**Operative Date:** May 19, 2009

**Expiration Date:** Exempt, N.J.A.C. 7:27; April 21, 2010, N.J.A.C. 7:27A

The New Jersey Department of Environmental Protection (Department) is adopting new rules and amendments at N.J.A.C. 7:27-16, Control and Prohibition of Air Pollution by Volatile Organic Compounds, and N.J.A.C. 7:27-19, Control and Prohibition of Air Pollution from Oxides of Nitrogen. The Department is also adopting related amendments at N.J.A.C. 7:27-4, Control and Prohibition of Particles from Combustion of Fuel; N.J.A.C. 7:27-10, Sulfur in Solid Fuels; N.J.A.C. 7:27-21, Emission Statements; and N.J.A.C. 7:27A-3.10, Air Administrative Procedures and Penalties.

The adopted new rules and amendments will help New Jersey meet the Federal 1997 Eight-Hour National Ambient Air Quality Standard (NAAQS) for ozone by reducing volatile organic compound (VOC) emissions and oxides of nitrogen (NO<sub>x</sub>) emissions. The adopted new rules and amendments will also reduce sulfur dioxide (SO<sub>2</sub>) emissions, which will help the State meet the Federal 1997 annual NAAQS for particulate matter of 2.5 microns or less (PM<sub>2.5</sub>). The adopted new rules and amendments will impact the following 14 source categories of emissions: sources subject to alternative or facility-specific VOC control requirements; sources subject to alternative or facility-specific NO<sub>x</sub> emission limits; asphalt used for paving; asphalt pavement production plants; boilers serving electric generating units; sources subject to control technique guidelines (CTGs) for flat wood paneling coatings, flexible packaging printing materials, and

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offset lithographic printing and letterpress printing; glass manufacturing furnaces; boilers and stationary combustion turbines serving electric generating units that operate on high electric demand days (HEDD); industrial/commercial/institutional (ICI) boilers and other indirect heat exchangers; municipal solid waste (MSW) incinerators; sewage sludge incinerators; and VOC stationary storage tanks.

The Department has addressed the issues raised during the public comment period, including modifications to the rules where appropriate. In response to requests for more time to comply with the adopted emission limits, on adoption the Department modified the proposed rules to give owners or operators of sources in several source categories more time to comply. The largest asphalt pavement production plants (those greater than or equal to 120 MMBtu/hr) will have an extra year to comply (until May 1, 2010, or May 1, 2011 if modification to the dryer is required). That makes the compliance dates for the largest plants the same as the compliance dates for the medium sized plants (those plants 100 but less than 120 MMBtu/hr).

Municipal solid waste incinerators that need to install selective non-catalytic reduction (SNCR) systems will have an additional year to comply with the adopted maximum allowable NO<sub>x</sub> emission concentration. This will give Camden Resource Recovery Facility, which does not have SNCR installed on its municipal solid waste incinerators, an additional year to comply (until May 1, 2011).

Coal-fired boilers serving an electric generating unit will be allowed a one year extension, if needed, to comply with the adopted SO<sub>2</sub> and NO<sub>x</sub> emission rates. The adopted rule will allow one year extension to the December 15, 2012 deadline for SO<sub>2</sub> compliance, and to the December 15, 2012 and June 15, 2013 NO<sub>x</sub> compliance deadlines. This may extend by one year Atlantic Electric's compliance deadline for adding controls to its Deepwater Generating Station coal-fired boiler.

The largest ICI boilers and other indirect heat exchangers will have one more year to comply with the adopted emission limits (until May 1, 2010, or May 1, 2011 if modification to the boiler or other indirect heat exchanger is required).

The extensions of time provided in the adopted rules will delay the reduction of ozone in the State. However, the revised compliance deadlines will continue to provide progress toward the 75 ppb Federal ozone requirements, for which EPA has not yet established an attainment date.

In response to objections to the proposed rules' requirement to install domes on VOC stationary storage tanks with an external floating roof, which claimed that the costs do not merit the emission reduction benefits, the Department reviewed the commenters' cost data. On adoption the Department deleted this requirement for tanks that store oily wastewater or slop oil because the cost of compliance for these tanks was approximately 10 times higher than for other regulated tanks.

In response to concerns about the proposed requirement to install mechanical shoe seals in VOC stationary storage tanks, on adoption the Department modified the rules to allow vapor-mounted wiper primary seals to be installed on riveted or lap-welded domed external floating roof tanks and internal floating roof tanks.

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In addition to the above, the Department is modifying the rules on adoption to make technical and administrative corrections, to delete outdated provisions from the repealed Open Market Emissions Trading Program, and to clarify the use of terms at N.J.A.C. 7:27-16.17 and N.J.A.C. 7:27-19.13.

The Department anticipates that when the rules are fully implemented, they will achieve reductions of VOCs of more than 10 tons per day during the ozone season, and more than 2600 tons per year. The adopted rules for VOCs will be fully implemented in 2020. The Department anticipates reductions in SO<sub>2</sub> of more than 2500 tons per year. NO<sub>x</sub> should be reduced by more than 9 tons per day during the ozone season, and more than 3100 tons per year. The Department anticipates additional NO<sub>x</sub> emission reductions of more than 63 tons on each high electric demand day. The NO<sub>x</sub> and SO<sub>2</sub> rules will be fully implemented in 2015 and 2013, respectively.

**Summary of Hearing Officer's Recommendation and Agency Response:**

William O'Sullivan, P.E., Director of the Department's Division of Air Quality, served as the Hearing Officer at the September 26, 2008 public hearing held at the Department Headquarters Building, 401 E. State Street, Trenton, New Jersey. The comment period for the proposal closed on October 3, 2008. Six commenters presented comments at the public hearing. The Hearing Officer recommended that the Department adopt the amendments as proposed, with the changes described in the response to comments and in the Summary of agency-initiated changes below. The Department has accepted the Hearing Officer's recommendations. A record of the public hearing is available for inspection in accordance with applicable law by contacting:

Department of Environmental Protection  
Office of Legal Affairs  
ATTN: Docket No. 10-08-07/643  
401 East State Street  
PO Box 402  
Trenton, New Jersey 08625-0402

This adoption document can also be viewed or downloaded from the Department's website at [www.nj.gov/dep](http://www.nj.gov/dep).

**Summary of Public Comments and Agency Responses:**

The following people submitted comments on the proposal:

1. Kenneth E. Armellino, Covanta Energy Corporation
2. Alan Bahl, BASF
3. Marge Baumhauer, Graphic Arts Association
4. David L. Bier, Motiva Enterprises, LLC
5. David H. Brogan, New Jersey Business & Industry Association
6. James E. Coleman, National Association of Printing Ink Manufacturers
7. James O. Coleman, Independent Liquid Terminal Association

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8. James O. Coleman, IMTT-Bayonne
9. Luis A. Comas, Sunoco, Inc.
10. James H. Connolly, Hoffman-LaRoche
11. Daniel Cunningham, PSEG Services Corporation
12. John F. Donohue, Petroleum Equipment Contractors Association of New Jersey
13. Mark Driscoll, Morris Energy Group, LLC
14. Christopher Dugan, Printing Industries of America/Graphic Arts Technical Foundation (PIA/GATF)
15. Michael A. Egenton, New Jersey State Chamber of Commerce
16. Richard Fisette, IMTT-Bayonne
17. James Fleming, Kinder Morgan Liquids Terminals, LLC
18. Bob Frank, Compliance Monitoring Service
19. Tim Freeman, Printing Industries Alliance
20. James Giordano, Alcatel-Lucent
21. Donald Lee Griffin, Jr., CITGO Petroleum Corporation
22. Richard Harrington, Camden County Energy Recovery Corporation
23. M. Gary Helm, Conectiv Energy
24. Adam Kaufman, Independent Energy Producers of New Jersey
25. Marcia Y. Kinter, Specialty Graphic Imaging Association
26. Douglass LaFayette, ConocoPhillips
27. Gwendolyn M. Lawless, DuPont
28. Kathleen R. Madaras, Fuel Merchants Association of New Jersey
29. John A. Maxwell, New Jersey Petroleum Council
30. Kevin McMahon, Chevron Products Company
31. Jason L. Mengel, Buckeye Pipe Line Company, LP
32. Doreen M. Monteleone, Flexographic Technical Association
33. Hassan Nekoui, Novartis Pharmaceuticals Corporation
34. P. Steven Oliver, Paulus, Sokolowski and Sartor, LLC
35. Mike Pesch, NuStar Energy, LP
36. Michael L. Pisauro, Jr., New Jersey Environmental Lobby
37. Richard Roat, Valero Paulsboro Refinery
38. Anthony Russo, Chemistry Council of New Jersey
39. Richard Ruvo, United States Environmental Protection Agency, Region II
40. Steve M. Sellinger, Envent Corporation
41. Monica Styles, Sunoco Logistics, LP
42. Gindi Eckel Vincent, Pillsbury Winthrop Shaw Pittman, LLP
43. James F. Wadon, ICL Performance Products, LP

The written comments and agency responses are summarized below. The number(s) in parentheses after each comment correspond to the number identifying the commenter(s) above.

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### **General Comments**

1. COMMENT: The public comment period should be extended 60 days to properly review the proposed rule requirements along with the proposal's basis and background information. (16, 38)

RESPONSE: The Department provided a 60-day comment period, posted the proposal on its website on July 31, 2008, four days in advance of publication in the New Jersey Register, and held a public hearing on the proposal on September 26, 2008. In addition, stakeholders in the 11 source categories for which the Department is adopting more stringent emission standards have been aware for years that the Department was preparing to propose more stringent emission standards. For example, many stakeholders affected by the proposed new rules and amendments, including asphalt paving manufacturers, asphalt pavement production plants, electric power companies, and ICI boiler owners, participated in the development of the 2006 Ozone Transport Commission Control Strategies for implementing measures to reduce interstate pollution of ozone. Starting in 2005, stakeholders in the above source categories, as well as refineries and tank terminals, participated in the Department's air quality workgroups to identify additional sources of VOC and NO<sub>x</sub> emissions. Finally, in 2007 and 2008 during the development of these amendments, in an extensive outreach effort, the Department met with stakeholders in nearly all of the affected source categories. Consequently, the Department believes that its efforts to involve stakeholders and to publicize the proposal were sufficient to ensure that interested parties had sufficient opportunity to participate in the rulemaking process. Further, in light of the opportunities provided during the rulemaking process, the Department believes that the issues, information, data and findings provided to the Department during any extension would not differ from those available during the rulemaking process.

2. COMMENT: The proposed rules will achieve real emissions reductions (as well as greenhouse gas benefits) and the commenter supports its finalization and implementation. (1)

RESPONSE: The Department acknowledges the commenter's support.

3. COMMENT: Collaboration between the Department and industry stakeholders is an important part of producing rules. The Department should have shared actual rule language throughout the process. The Department should continue to collaborate with stakeholders now that the rules have been published and address the concerns that remain with the rules. (26)

RESPONSE: The Department agrees that collaboration between the Department and industry stakeholders, as well as other stakeholders, is an important part of developing rules. Response to Comment 1 above summarizes some of the collaboration in this rulemaking. The Department discussed with stakeholders, including emission sources, the Department's intentions in proposing the rules. The Department believed it was more appropriate to discuss topics conceptually, rather than specific rule text, since rule language is modified through the course of

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policy and legal reviews leading up to the publication of the rule proposal in the New Jersey Register. The adopted rules are generally consistent with what was discussed with stakeholders.

4. COMMENT: Continued collaboration between the Department and industry stakeholders is positive, constructive and necessary and should continue throughout the comment and response process to maximize the environmental benefits of the rules, while considering cost impacts as required in a reasonably available control technology (RACT) analysis. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department agrees that collaboration is useful. See Response to Comment 1 regarding the collaboration with stakeholders for this rulemaking.

5. COMMENT: The proposal summary did not address interstate transport and transportation, which are the two most important factors interfering with achieving the Federal 1997 Eight-Hour NAAQS for ozone. (26)

RESPONSE: As stated in the proposal summary (40 N.J.R. at 4391) New Jersey worked with other states including members of the Ozone Transport Commission (OTC) to develop regional strategies to reduce interstate pollution. This rulemaking is consistent with control measures specified in OTC formal actions (see <http://www.otcair.org>) that were developed to reduce downwind transport of VOC and NO<sub>x</sub> emissions from asphalt used for paving, asphalt pavement production plants, glass manufacturing furnaces, industrial/commercial/institutional boilers, electric generating units with boilers, and HEDD units.

6. COMMENT: The Department is applauded for its effort to reduce the emissions of harmful air contaminants. (24)

RESPONSE: The Department acknowledges the commenter's support.

7. COMMENT: New Jersey's air quality is not in accordance with many of the applicable standards. Therefore, the State must take meaningful actions to reduce the level of pollutants in the State's air. The State must strive to recognize that attainment of air quality standards are not the goals but the ceilings that it must not exceed. The overall goal of the State's clean air laws is to protect the State's resources to promote public health and welfare. (36)

RESPONSE: The Department agrees that the State must address pollutants in the State's air that exceed applicable standards. The new rules and amendments are directed primarily at reducing NO<sub>x</sub> and VOC emissions, and secondarily to reducing SO<sub>2</sub> and PM<sub>2.5</sub> emissions. The Department addresses other air pollutant emissions through the rules at N.J.A.C. 7:27. The Department is committed to setting all air pollution emission standards that will enable it to meet the Federal standards, including NAAQS.

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8. COMMENT: New Jersey must take significant steps in reducing VOC emissions. VOCs cause eye, nose and throat irritation, headaches, loss of coordination, nausea; liver, kidney and nervous system damage. It is a possible carcinogen and some studies have suggested a link between VOC emissions and asthma in children. Given the health risks related to VOC emissions, all efforts should be taken to reduce the emissions of and exposure to VOCs. (36)

RESPONSE: The Department agrees and believes that the adopted amendments and new rules are significant steps in reducing VOC emissions. These reductions will help the State achieve attainment with the 8-hour NAAQS for ozone.

9. COMMENT: On July 31, 2007, The United States Environmental Protection Agency (EPA) published its approval of New Jersey's December 2005 State Implementation Plan (SIP) revision for N.J.A.C. 7:27-16 and 19 in the Federal Register (72 Fed.R. 41626). Although EPA approved this SIP revision, the EPA (in both the Federal Register notice and the related technical support document (TSD)) identified certain provisions on which EPA did not take any action (no approval or no disapproval). The EPA instead recommended that the State amend parts of N.J.A.C. 7:27-8, 16, 19 and 22 to remove the provisions of phased compliance, impose limitations on emergency generators and remove the provisions of the former Open Market Emissions Trading (OMET) program. In July 2005 EPA emailed New Jersey a summary of EPA's recommended revisions pertaining to phased compliance (repowering and use of innovative control technology) and emergency generators in N.J.A.C. 7:27-19. EPA also recommended revisions to various provisions in several subchapters affected by the former Open Market Emissions Trading (OMET) program. EPA's recommended revisions are not included in the Department's proposal. (39)

RESPONSE: The Department's responses to Comments 11 and 12 below address EPA's comments on the OMET program and emergency generators respectively. EPA's concern about phased compliance relates to previously adopted rule provisions that allow a facility, equipment or source operation to possibly delay compliance until November 7, 2009. Although the existing rules allow for phased compliance by November 7, 2009, the Department did not receive any applications for phased compliance by the Department's deadline of February 7, 2006. Therefore, there are no sources with phased compliance plans, and EPA's concern about the November 7, 2009 compliance date is moot. The Department may remove the November 7, 2009 compliance date in a future rule revision as a matter of rule cleanup, but changing the date at this time is not necessary.

10. COMMENT: Additional emission reduction benefits beyond the 2009 attainment date cannot be used to demonstrate attainment for the 1997 8-hour ozone standard, but will be useful towards attaining the 2008 8-hour ozone standard. (39)

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RESPONSE: The Department agrees that these longer term control strategies cannot be used to demonstrate attainment of the 1997 8-hour ozone standard, but are important towards making advances in reducing ozone and fine particulate emissions in the State, and improving regional haze, as well as providing the regulated community with time to plan and install necessary controls.

The 1997 8-hour ozone NAAQS provide an attainment date of 2009 for the 85 ppb standard. As the commenter states, the adopted rules will be useful toward attaining that standard. The adopted rules also provide progress towards attaining the 2008 75 ppb NAAQS, for which EPA has not yet set attainment deadlines. The 75 ppb attainment deadline for New Jersey is expected to be in the 2015 to 2018 timeframe, which matches the longer range compliance deadlines in these rules. Including longer term compliance provisions provides industry with sufficient time to make large capital investments and is consistent with the need to attain the 75 ppb NAAQS.

11. COMMENT: New Jersey repealed N.J.A.C. 7:27-30, the OMET program, in February 2004. The provisions relating to the defunct OMET program should be removed from N.J.A.C. 7:27-19 since they are no longer a control option and only confuse N.J.A.C. 7:27-19. In the Department's December 2005 SIP transmittal letter to EPA, the Department committed to delete the OMET provisions in a future rulemaking. The provisions that need to be deleted are N.J.A.C. 7:27-19.3(g) and (h), the definition of "former DER credit user" in N.J.A.C. 7:27-19.1, related provisions at N.J.A.C. 7:27-8.3(o), 8.20(b)3, 16.1A(g), and 16.1A(h), all of 19.27, and the Subchapter 19 Appendix. (39)

RESPONSE: The Department agrees with the commenter. The Department is deleting the vestiges of the OMET program that the Department repealed in 2004 (35 N.J.R. 3486(a), 36 N.J.R. 1791(a)), and which no longer apply to any regulated entity.

Specifically, on adoption the Department is deleting N.J.A.C. 7:27-8.3(o), deleting and reserving 8.20(b)3, 16.1A(g) and (h), and deleting the definition of "former DER credit user" at N.J.A.C. 7:27-8.1, 16.1, and 19.1.

The Department had proposed to modify N.J.A.C. 7:27-19.3(g)3 by deleting a NO<sub>x</sub> control plan submission date of July 25, 2004 (to be submitted in accordance with 19.13(b)) because the July 25, 2004 had passed, and because proposed amendments to N.J.A.C. 7:27-19.13 would have established new deadlines for submitting a NO<sub>x</sub> control plan. (See 40 N.J.R. at 4412.) However, since entire subsection 19.3(g) pertains to the now defunct OMET program, as the commenter pointed out, upon adoption the Department is deleting and reserving subsection 19.3(g).

The Department is further modifying N.J.A.C. 7:27-19 on adoption to delete and reserve subsection 19.3(h) and section 19.27 and to repeal the Appendix to Subchapter 19, which also relate only to the OMET program.



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12. COMMENT: A potential to emit requirement for emergency generators should be included in N.J.A.C. 7:27-19, Control and Prohibition of Air Pollution from Oxides of Nitrogen, as well as in N.J.A.C. 7:27-8, Permits and Certificates for Minor Facilities (and Major Facilities without an Operating Permit), and N.J.A.C. 7:27-22, Operating Permits. EPA's July 31, 2007, approval (72 Fed.R. 41626) of New Jersey's December 2005 SIP revision for N.J.A.C. 7:27-16 and 19, and comments to the Department from EPA in July 2005, recommended adding back a 500 hour annual operational restriction and an exemption for sources with the potential to emit less than 25 tons of NO<sub>x</sub> per year in future amendments to N.J.A.C. 7:27-19. (39)

RESPONSE: The proposed amendments to N.J.A.C. 7:27-8 and 19 did not include revisions that would affect emergency generators. Similarly, there were no proposed amendments to N.J.A.C. 7:27-22 Operating Permits. Accordingly, the comment is beyond the scope of this rulemaking.

It is inappropriate to put operating hour restrictions on the length of time an emergency generator can be used in emergency situations. To do so would, potentially, disallow operation of an emergency generator in the event (however unlikely) that it were required to operate in an emergency that continued for more than 500 hours in a year. The Department does limit the hours of non-emergency use, which is for testing and maintenance, in the operating permit for major facilities. That is the appropriate process for addressing potential to emit.

Also, the Department disagrees that an exemption to its emergency generator requirements is appropriate for facilities which emit less than 25 tons of NO<sub>x</sub> per year. The Department's emergency generator provisions are designed to disallow the use of emergency generators as peaking units, which operate disproportionately on high ozone days. NO<sub>x</sub> emissions of less than 25 tons per year are significant contributors to ozone if the emissions occur on hot summer days. If the Department were to exempt units of less than 25 tons per year from the emergency generator restrictions, their use as peaking units would have a significant negative impact on air quality in the State.

13. COMMENT: The recordkeeping requirement at N.J.A.C. 7:27-19.16(b)7 to record the type and amount of fuel used is redundant and burdensome, and should be deleted. (18)

RESPONSE: The Department did not propose amendments to N.J.A.C. 7:27-19.16(b) which pertains to annual combustion adjustment; nor did it propose to require any additional sources to comply with the section. The Department is unaware, due to the lack of supporting information from the commenter, how this requirement is redundant or burdensome.

#### **Alternative and Facility-Specific NO<sub>x</sub> Emission Limits**

14. COMMENT: With regard to submitting a revised facility-specific NO<sub>x</sub> control plan under N.J.A.C. 7:27-19.13(b)5, 90 days with a 60-day extension upon request is too short a time to prepare a complete plan for a facility that is facing regulation in multiple areas of this rulemaking. A facility should be allowed 180 days to submit a revised facility-specific NO<sub>x</sub>

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control plan that is complete. Alternatively, the Department could combine the 90 days allowed with the 60-day extension and allow 150 days to submit a complete proposed plan. (26)

RESPONSE: The Department is modifying N.J.A.C. 7:27-19.13(b)5, as well as N.J.A.C. 7:27-19.3(e), which refers to the same extension request requirement, upon adoption to allow a 90-day extension upon request, resulting in a total of 180 days if the extension request is approved. An extension will provide a facility additional time to conclude engineering and economic considerations in order to submit a complete proposed NO<sub>x</sub> control plan to the Department. Retaining the 90-day deadline for most facilities and providing an additional 90 days where needed has the added benefit of allowing the Department to phase its review of the plans. Not all plans will arrive at the Department at one time.

### **Alternative and Facility-Specific VOC Control Requirements**

15. COMMENT: The last sentence of proposed N.J.A.C. 7:27-16.17(c)4 should make clear that it is necessary for the owner or operator of a facility with an existing alternative control plan to obtain Department approval of a new alternative VOC control plan if applicable before, not after, the owner or operator resumes operation following modification, alteration or reconstruction of any affected source operation or piece of equipment. (39)

RESPONSE: N.J.A.C. 7:27-16.17(c)4 applies to modified or reconstructed equipment. It should apply to altered equipment as well, as do other provisions of section 16.17. For example, existing N.J.A.C. 7:27-16.17(n) requires an owner or operator to obtain Department approval of an amendment to a VOC control plan before resuming operation of the altered equipment or source operation. Therefore, it is appropriate for N.J.A.C. 7:27-16.17(c)4 to address alterations. The Department is modifying N.J.A.C. 7:27-16.17(c)4 on adoption to require an owner or operator to obtain Department approval of a new alternative VOC control plan prior to operating the modified, altered or reconstructed equipment. The Department is adding definitions of “alter” and “alteration” to N.J.A.C. 7:27-16.1, identical to the definitions of these terms at N.J.A.C. 7:27-19.1. Also, at N.J.A.C. 7:27-19.13(b)6 the Department is replacing “modification or reconstruction” with “modified, altered or reconstructed source operation or item of equipment” for the same reason discussed above with regard to N.J.A.C. 7:27-16.17(c)4.

16. COMMENT: In N.J.A.C. 7:27-16.17(q) there appears to be a contradiction. The proposed language allows only one extension, but the second sentence seems to allow an extension to be renewed. This needs to be resolved. (39)

RESPONSE: The proposal Summary at 40 N.J.R. 4410 states that the Department’s intention is “to clarify that such an extension may not be renewed.” The Department is modifying N.J.A.C. 7:27-16.17(q) on adoption by deleting two sentences and by modifying the first sentence to make

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it clear that the Department is allowing one non-renewable 60-day extension of the N.J.A.C. 7:27-16.17(c)3 deadline.

### **Asphalt Used for Paving**

17. COMMENT: There are emergency applications of cold-mix stockpile material that will be prohibited by N.J.A.C. 7:27-16.19. Such applications may involve, but are not limited to, repairing pavement failures during wet and raining weather, sudden pavement distress or sink holes, and other unsafe road conditions that require immediate corrective action. The Department should provide for the emergency use and manufacture of cold-mix material produced from cutback asphalts during the summer ozone season. Also, please confirm that this section, N.J.A.C. 7:27-16.19, applies to commercial, rather than consumer products. (18)

RESPONSE: N.J.A.C. 7:27-16.19 applies to anyone that uses cutback and/or emulsified asphalt. N.J.A.C. 7:27-16.9 bans the use of noncompliant cutback asphalt from April 16 through October 14, which encompasses the ozone season. Granting the requested exemptions for emergency use of cold-mix material produced from cutback asphalt during the ozone season would negate the seasonal restriction, thereby diminishing the benefits of this control measure which are based on ozone season summer day. During the ozone season, cutback asphalt is used primarily for emergency repairs.

During the rule development process, the Department considered rules in other states and regions throughout the country. Delaware Regulation 24, Section 34, in place since 1993, is more stringent than the Department's adopted rules in regard to using cutback asphalt for pothole and road repair. There are also other regions of the country with rules that are more stringent than the Department's adopted rules, such as the South Coast Air Quality Management District Rule 1108 and some other air districts in California. Alternatives to cutback asphalt that can be used for emergency repairs during the regulated period include:

Hot-mix asphalt: Hot-mix asphalt produces minimal emissions of VOCs because its organic components have high molecular weights and low vapor pressures. Generally, during the warm weather, hot-mix asphalt would be the preferred treatment because cold mix is a temporary patch used during cold weather that needs to be replaced by hot-mix when the weather improves. Also, pothole repairs are generally done well before the ozone season begins. For information regarding equipment for the application of hot mix, contact Ray-Tech Infrared Corporation in Charlestown, NH, at 800-884-2072, or at <http://www.raytechinfrared.com/index2.htm>.

Warm-mix asphalt: Warm-mix asphalt, a more portable option than hot mix, allows the producers of asphalt pavement material to lower the temperatures at which the material is mixed and placed on the road. Reductions of 50 to 100 degrees Fahrenheit have been documented. Such reductions have the benefits of cutting fuel consumption and decreasing the production of greenhouse gases. In addition, potential engineering benefits include better compaction on the

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road, the ability to haul paving mix for longer distances, and the ability to pave at lower temperatures. These benefits can make warm-mix asphalt a better option for road repair than hot-mix, once the product is more available due to increased demand.

Research at the National Center for Asphalt Technology (<http://www.warmmixasphalt.com/AboutWma.aspx>) and elsewhere has shown that lowering the production temperature can reduce the production of emissions. The National Asphalt Pavement Association (NAPA) first brought warm-mix technology to the United States from Europe in 2002, spurring interest among hot-mix asphalt producers, contractors, researchers, and government agencies. Since that time, new technologies have been developed in the United States. Numerous warm-mix asphalt demonstration projects have been constructed around the country, including New Jersey. More information on warm-mix asphalt can be found on the United States Department of Transportation Federal Highway Administration webpage at <http://www.fhwa.dot.gov/pavement/asphalt/wma.cfm>. Some examples of warm-mix products in use include:

Patch Management Inc., Morrisville, PA, (215-949-9400), <http://www.fixroad.com> – This water-based emulsion product can be used all year round. This no VOC product is currently in use by the Department of Transportation in California, Connecticut, District of Columbia, Delaware, North Carolina, New Jersey, New York, and Pennsylvania.

Akzo Nobel Surfactant, Chicago, IL, (312-544-7000), <http://www.surfactants.akzonobel.com/asphalt/newwarmmixsystem.cfm> - This warm-mix asphalt product reduces fuel and operation costs due to ease of mixing and compaction.

PQ Corporation, Malvern, PA, (610-651-4200), <http://www.pqcorp.com/products/AdveraWMA.asp> - This is an additive for warm-mix asphalt technology which, when added to existing hot-mix asphalt, allows asphalt concrete to be produced and placed at temperatures which are 50 to 70 degrees Fahrenheit below conventional hot-mix asphalt temperatures.

McConnaughay Technologies, Cortland, WY, (866-MAC-TECH), <http://www.mcconnaughay.com/> – This company manufactures low emission asphalt materials and equipment.

Pothole Medic, Brockton, MA, (866-4POTHOLE), <http://thepotholemedic.com/> - Warm-mix emulsion can be used at very low temperatures allowing for the immediate use of roads after patching.

Low or no VOC cold patch: Low or no VOC products exist and are in use for pothole repairs, and can be used for other emergency repairs. Some of the existing low or no VOC products include:

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Dirtglue Enterprises Pothole Glue, Amesbury, MA, (888-606-6108), <http://www.dirtglue.com/> - These products are water-based polymer formulations and contain no VOCs. They can be used at or above freezing, and need no special equipment.

Perma-Patch Permanent Pothole Repair, Baltimore, MD, (800-847-5744), <http://www.permapatch.com/> - This cold-mix low VOC high performance product works by dynamic compaction, not evaporation. This product is sold in California and Nebraska and to distributors such as Grainger. This product can be used in any weather condition; winter, snow, summer heat, rain, and can be used on black top or concrete.

Cornerstone Coatings International, Inc., Canada, (306-369-2521), <http://www.cornerstonecoatings.com/> - This is a no VOCs cold patch product for pothole repair.

Industrial Maintenance Products and Solutions "Traffix," Owings Mill, MD, (410-654-6793), <http://www.envirosnowmelt.com/asphalt.htm> - This product is an immediate permanent repair cold-mix that has been in use for 50 years.

18. COMMENT: Proposed N.J.A.C. 7:27-16.9 limits the application and use of cutback and emulsified asphalt from April 16 to October 14. It is recommended that the use of cutback and emulsified asphalt be completely prohibited. A complete prohibition would reduce overall VOC emissions. It also would prevent an incentive for the delay of maintenance or other construction activities until after the April 16 to October 14 ban. A year round ban would, therefore, result in fewer emissions. (36)

RESPONSE: The primary goal of the asphalt paving rules is to reduce ozone, by reducing summertime VOC emissions. The Department agrees that VOC reductions year round would produce additional environmental benefits, including lower VOC emissions. As more low VOC products become available for winter use, the Department will consider further regulation.

### **Asphalt Pavement Production Plants**

19. COMMENT: Some asphalt pavement production plants use liquid propane, but a limit is not provided in Table 11 at N.J.A.C. 7:27-19.9(a). When NO<sub>x</sub> from liquid propane combustion is regulated, it should be treated consistent with No. 2 fuel oil at 100 ppmvd at seven percent oxygen, rather than as a gaseous fuel. (18)

RESPONSE: The Department acknowledges that Table 11 at N.J.A.C. 7:27-19.9(a) does not include a limit specifically for propane. Therefore, burning propane will not be subject to a NO<sub>x</sub> limit in the adopted rules. Liquid propane is currently used by a single asphalt production plant

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in New Jersey. However, the Department has not reviewed test data for firing propane in asphalt dryers in order to substantiate the limit that the commenter has requested. In the event that the use of propane or any other fuel not specified in the rule increases in the future, the Department will consider establishing a new NO<sub>x</sub> rule limit for that fuel.

20. COMMENT: During the rule proposal development, representatives of the New Jersey Asphalt Pavement Association (NJAPA) requested a three-year phased-in compliance schedule for achieving and demonstrating compliance with the proposed limits. The Department concurred and the request was incorporated in the rule proposal. Subsequently, in August 2008, the Department implemented a Statewide policy requiring all permit applicants to characterize Hazardous Air Pollutant (HAP) emissions from the storage and combustion of fuels. Industry is concerned that HAP emissions will increase to the point of unacceptable risk with the implementation of Flue Gas Recirculation (FGR) or other low NO<sub>x</sub> designs.

Time is needed to evaluate the impact that compliance with emission limits proposed at Table 11 at N.J.A.C. 7:27-19.9(a) will have on HAP formation prior to being required to implement control technologies. The three tiers for compliance provided at N.J.A.C. 7:27-19.9(f)1 through 3 should be condensed to two, with the second and third tiers combined so that all burners with a heat input rate greater than 100 MMBtu/hr have until 2010/2011 to achieve compliance.

A 180 day optimization time following each compliance deadline is needed to provide for preliminary testing and process optimization, after which the 180 day stack test deadline applies is requested. Provision for optimization will also provide time for the Department to review and approve requisite stack test protocols. (18)

RESPONSE: The Department agrees with the commenter's concern that selecting a control technology to meet the new NO<sub>x</sub> emission limits may result in increased HAP emissions, but notes that the Department did not implement a policy in August 2008 requiring all permit applicants to characterize Hazardous Air Pollutant (HAP) emissions from the storage and combustion of fuels. The existing requirements at N.J.A.C. 7:27-8.4(k) through (m) and N.J.A.C. 7:27-22.3(c) already require HAPs emitted above reporting thresholds to be reported in the permit application. A 2008 memorandum made available electronically through the Department's Air Quality Planning Program Listserv reminded permit applicants of these requirements.

The Department is modifying N.J.A.C. 7:27-19.9 and N.J.A.C. 7:27-19.15 on adoption to extend the compliance deadline for the larger asphalt dryers and the compliance demonstration deadline for all asphalt dryers. The Department is extending the compliance deadlines in N.J.A.C. 7:27-19.9(f) on adoption for dryers with a maximum gross heat input of at least 120 MMBtu/hr without physical modification, by one year to May 1, 2010, and with physical modification to May 1, 2011. It is accomplishing this by deleting N.J.A.C. 7:27-19.9(f)3 and incorporating asphalt pavement production dryers with a maximum gross heat input of at least 120 MMBtu/hr or greater under the provisions of N.J.A.C. 7:27-19.9(f)2. Also, to provide an

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optimization and adjustment period to ensure all air contaminant emissions are minimized, the Department is modifying the compliance demonstration deadline at N.J.A.C. 7:27-19.15(d) upon adoption of the rule to 365 days from the compliance deadline date. This provides the asphalt industry with an additional 185 days to comply with the new NO<sub>x</sub> limits.

The Department is allowing the additional time because the asphalt industry currently does not have extensive experience with NO<sub>x</sub> emissions control technology, and there is some uncertainty based on currently available information about the relationship between NO<sub>x</sub> and products of incomplete combustion, including HAP emissions. Asphalt dryers are direct fired heaters, where the flame and material being dried are in the same rotating drums. This configuration may present challenges to achieving both lower NO<sub>x</sub> emissions and lower (or no significant increases in) products of incomplete combustion. HAP minimization may require adjustments or physical modifications of the low NO<sub>x</sub> burners. The Department expects that the asphalt industry will utilize this additional time to minimize HAP formation when NO<sub>x</sub> control technology is installed on the asphalt dryers.

21. COMMENT: Confirm that three test runs total will be sufficient, regardless of the number of permitted fuels when demonstrating compliance in accordance with N.J.A.C. 7:27-19.15(a)2. Testing could be either all three runs with the worst case fuel, highest limit, or one run on each permitted fuel with no more than three runs required overall. (18)

RESPONSE: Existing N.J.A.C. 7:27-19.15(a)2, which the Department did not propose to change, requires that the owner or operator subject to an emission limit under N.J.A.C. 7:27-19 demonstrate compliance with the emission limit based on the average of three one-hour tests. The adopted NO<sub>x</sub> emission limits for asphalt dryers at N.J.A.C. 7:27-19.9(a) are based on fuel type, resulting in different limits for different fuels. Therefore, a sufficient compliance demonstration must be made for each permitted fuel. The Department may consider alternative compliance demonstration methods as part of the test protocol review. However, in general multiple fuels must be tested individually to demonstrate compliance with applicable limits.

22. COMMENT: N.J.A.C. 7:27-19.9(f)1ii, 2ii, and 3ii allow for an extension of the compliance date by 12 months if compliance is achieved by physically modifying the dryer. The Department should provide a definition (types or examples) of what constitutes “physically modifying the dryer.” (39)

RESPONSE: The phrase “physically modifying the dryer” means installing an air pollution control device such as a flue gas recirculation (FGR) or low NO<sub>x</sub> burner (LNB) to control NO<sub>x</sub> emissions from burning fuel in the asphalt dryer. These NO<sub>x</sub> control technologies are described in detail in the proposal Summary at 40 N.J.R. 4393. Therefore, there is no need to add a definition of “physically modifying the dryer.”

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23. COMMENT: Given the economic conditions in the foreseeable future, asphalt plants will not be able to meet the existing requirement at N.J.A.C. 7:27-19.15(a)2 to demonstrate compliance based on the average of three one-hour tests, each performed over a consecutive 60-minute period. Most plants operate a few hours per day at rates less than half of permitted capacity. Confirm that the Department will approve all stack test extension requests due to “lack of work.” Also confirm that nothing in the rule requires all three test runs be conducted at maximum throughput, and that facilities may request alternative operating conditions for stack testing. (18)

RESPONSE: The Department proposed no amendments to N.J.A.C. 7:27-19.15(a)2 to which the commenter refers. Accordingly, the comment is outside the scope of this rulemaking. The commenter may contact the Department about stack test extensions and about stack testing under alternative operating conditions.

#### **Boilers Serving Electric Generating Units**

24. COMMENT: The proposed NO<sub>x</sub>, SO<sub>2</sub> and particulate limits in the Administrative Consent Decree (ACD) and the Administrative Consent Order (ACO) referenced in the proposal Summary (40 N.J.R. at 4394) more closely represent Best Available Control Technology (BACT) or Lowest Available Emission Rate (LAER) than Reasonably Available Control Technology (RACT). Note that BACT and LAER only apply to new or modified sources, and that RACT is applied Statewide to all emission units in a particular source category, not just new or significantly modified units. The cost effectiveness threshold for RACT should be much lower in order to be considered economically feasible. (23)

RESPONSE: The Department does not agree that the emission limits in the administrative consent order (ACO) and/or the administrative consent decree (ACD) are LAER or BACT. For new and significantly modified sources being permitted at this time, allowable emissions levels would be lower than those in the ACO and ACD, as evidenced by the most recent emission limits in preconstruction permits for coal-fired power plants.

The within rulemaking is not limited to RACT, but also addresses ozone and fine particulate attainment. New Jersey needs to obtain NO<sub>x</sub>, SO<sub>2</sub>, and particulate matter (PM) emission reductions in order to attain the NAAQS for ozone and fine particulates (PM<sub>2.5</sub>), and reduce regional haze even if the cost of the reduction is higher than average for the United States. New Jersey’s State Implementation Plan in part relies on emission reductions from EGUs to attain the air quality standards.

Based on emission statement data, coal-fired boilers are the highest, or among the highest, emitting sources for NO<sub>x</sub>, SO<sub>2</sub> and PM in New Jersey and the United States. Substantial emission reductions can be achieved by controlling these sources. The adopted performance standards are both reasonable and necessary to achieve air quality requirements. With respect to reasonableness, eight of the 10 coal-fired boilers in New Jersey have installed, or are in the process of installing air pollution controls and complying with the adopted performance



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standards. Furthermore, the State of Delaware recently adopted a RACT regulation (7 DE Admin. Code 1146) that requires all coal-fired boilers with a nameplate capacity of 25 MW or greater, operating in the State of Delaware, to comply with NO<sub>x</sub> and SO<sub>2</sub> emissions limits, which are similar to, or more stringent than, the limits that New Jersey is adopting.

Reasonableness is a function of many factors, including ozone attainment needs, haze reduction goals, acid rain reduction (including reduced nitrification of water bodies), hazardous air pollutant emissions (including hydrochloric acid, and hydrofluoric acid), degree of use of better air pollution control by other units in New Jersey and elsewhere, and the associated cost of adverse health effects from air pollution. In light of New Jersey's non-attainment status, the health impacts of the pollutants, the fact that a nearby state has adopted similar limits for its existing units, and the prevalence of units already controlled or being controlled in New Jersey, it is reasonable for all coal-fired boilers to install controls necessary to achieve the adopted limits.

The commenter's estimated \$4,000 per ton of NO<sub>x</sub> reduction cost effectiveness for an EGU is reasonable in light of all these factors. Cost effectiveness levels much higher than \$4,000 per ton would also be reasonable, when the cost of health effects of air pollution is considered.

An analysis of the EPA's evaluation of the health costs that were avoided as a result of its Clean Air Interstate Rule (CAIR) can provide an example of how higher costs of control are reasonable for RACT, despite the fact that CAIR was based on emission trading and was ultimately determined not to fulfill the mandates of the Clean Air Act. "EPA calculated that health benefits of the CAIR program (almost \$100 billion per year by 2015) greatly exceeded its cost (approximately \$3.6 billion in 2015), citing a number of additional environmental benefits of reduced acid rain, nutrient loadings, regional haze, and mercury." (John Bachman and Susan Weirman, "Urgent CAIR Needed," EM (December 2008), p.7 and <http://www.epa.gov/CAIR/basic.html>.) This over 25 to one benefit to cost ratio for SO<sub>2</sub> and NO<sub>x</sub> controls on EGUs indicates that more reductions at higher cost would also result in benefits exceeding the cost of compliance. EPA recognized this when it characterized CAIR as "highly cost effective." From an economic perspective, it is reasonable to pay higher costs for more benefits until the marginal cost equals the marginal benefit.

Even if the cost of CAIR were 25 times higher, its costs would not exceed its benefits. In other words, it would have been reasonable in a strict economic sense to have paid \$100 billion in air pollution control costs for \$100 billion in estimated health benefits. EPA's estimates do not consider other expected, but unquantified, health and welfare benefits, so even higher costs would have been reasonable if these were quantified.

One hundred billion dollars in CAIR costs would have had a cost benefit ratio of approximately \$13,500 per ton, which would have been reasonable because the benefits would have been equal to or greater than the costs for the CAIR region. Given New Jersey's dense population, and high air pollution levels, an even higher cost benefit ratio would have been reasonable in New Jersey relative to the rest of the CAIR region. This factor is discussed in more detail in the SIP for 8-hour ozone RACT (<http://www.state.nj.us/dep/baqp/sip/8-hrRACT-Final.pdf>) and fine particulates (<http://www.state.nj.us/dep/baqp/pm2.5sip/pm25sip.html>).

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Using the ratio derived on page 20 of the State's final 8-Hour Ozone RACT SIP, a reasonable CAIR cost effectiveness ratio of dollars per ton can be converted into a reasonable New Jersey cost effectiveness ratio of about \$30,000 per ton. This rough calculation indicates that a reasonable cost effectiveness level for control of coal-fired power plants (\$30,000 per ton) is much higher than the estimated actual costs (\$4,000 per ton) of such control as a result of these adopted rules. Also, the cost effectiveness ratio for other smaller source categories has been even higher than \$30,000 per ton. For example, the installation of particulate filters on trucks can cost over \$100,000 per ton. In comparison, the cost effectiveness for control of power plants is very reasonable.

25. COMMENT: Proposed N.J.A.C. 7:27-4.2, 10.2, and 19.4 do not allow enough time for control apparatus installation. The compliance settlement agreements that the Department has modeled the proposed coal-fired boiler emission rates after allow up to 10 years to comply with similar emission rates and the rules should allow a similar compliance period. (23)

RESPONSE: The Department is modifying the rules on adoption to add N.J.A.C. 7:27-10.2(j) and 19.4(f). These new subsections allow the owner or operator of a coal-fired boiler that is subject to the SO<sub>2</sub> emission rates at N.J.A.C. 7:27-10.2(h) or the NO<sub>x</sub> emission rates at N.J.A.C. 7:27-19.4(a) to request up to a one year extension to the compliance period for these emission rates, if compliance is not possible due to reasonably unforeseeable circumstances beyond the control of the owner or operator, including but not limited to unavailability of the necessary control apparatus or installation contractor. The owner or operator must send a written request to the Department that documents why an extension is necessary.

The Department is modifying N.J.A.C. 7:27-19.4(a) and N.J.A.C. 7:27-19.4(d)1 on adoption to reference the one year extension that is available at N.J.A.C. 7:27-19.4(f) for coal-fired boilers. Additional changes to N.J.A.C. 7:27-19.4(d) are discussed in the Response to Comment 34 and in the agency initiated changes summary below.

The Department is renumbering N.J.A.C. 7:27-19.4(e) and (f) as N.J.A.C. 7:27-19.4(g) and (h). Additional changes to N.J.A.C. 7:27-19.4(h) are discussed in the Response to Comment 60.

N.J.A.C. 7:27-10.2(h) and 19.4(a) provide a compliance date of December 15, 2012; accordingly, even in the absence of the adopted extension, owners or operators of coal-fired boilers will have over three and one-half years to comply with the adopted emission rates. Deepwater unit 6/8 is already in compliance with the particulate matter (PM) emission rates. The January 2002 Administrative Consent Decree (ACD) between the Department and PSEG requires Mercer units 1 and 2 and Hudson unit 2 to comply with NO<sub>x</sub>, SO<sub>2</sub> and PM emission rates that are similar to those being adopted at N.J.A.C. 7:27-4.2, 10.2 and 19.4. The 2002 ACD contains compliance dates for each pollutant emitted from each boiler, which range from May 1, 2004 to December 31, 2012. The May 2007 amendment to the ACD changes the compliance dates for some of the required emission controls. The 2007 amended ACD contains compliance dates that range from January 1, 2007 to December 31, 2010, which is three and one-half years

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from the date that the amended ACD was signed, and nine years from the date that the 2002 ACD was signed. The ACD and amended ACD involve three units with nine major control systems that needed to be installed. The January 2006 Administrative Consent Order (ACO) between the Department and Conectiv (BL England Generating Station), requires BL England unit 2 to comply with similar NO<sub>x</sub>, SO<sub>2</sub> and PM emission rates by May 1, 2010, which is approximately four and one-half years from the date of the ACO. These were negotiated agreements and do not represent the minimum time period necessary for equipment installation.

By way of comparison, a recent court decision in North Carolina found that an SCR system can be installed in 21 months and a scrubber can be installed in 27 months (Argus Air Daily, Volume 16, 10 January 15, 2009)

Hence, three and one-half years provided in the rules for installation of NO<sub>x</sub> and SO<sub>2</sub> controls is a reasonable time frame, as well as being similar to the time allowed for other New Jersey facilities with compliance settlement agreements. Furthermore, for unforeseen delays, such as contractor or equipment unavailability, the Department is adding N.J.A.C. 7:27-10.2(j) and 19.4(f) on adoption to allow for an extension of the compliance deadline by up to one full year, for a total of 4.5 years, if necessary.

26. COMMENT: The NO<sub>x</sub> emission standards for coal-fired boilers should not apply during startup and shutdown. This exemption was granted in the ACD and ACO, which were used as guidance in developing the proposed rule requirements. (23)

RESPONSE: The Department agrees and is adding N.J.A.C. 7:27-19.4(e), which is based on the 2002 Administrative Consent Decree (ACD) between the Department and PSEG, to allow for an exemption from the NO<sub>x</sub> emission rate during the periods of startup and shutdown of a unit. During startup and shutdown, a Selective Catalytic Reduction (SCR) system does not effectively control NO<sub>x</sub> emissions because of the low flue gas temperature. Therefore, it is not possible for the units to comply with the limits during start-up and shut down.

27. COMMENT: The rule should allow compliance demonstration with particulate limits to be shown using the EPA Performance Test Method 5 (EPA TM5), and to be based on the average of three tests. (23)

RESPONSE: EPA TM5 uses a high filter temperature, which biases the particle results low. Accordingly, the Department is not modifying the rules to allow the use of EPA TM5.

Particles are defined at N.J.A.C. 7:27-4.1 as any material, except uncombined water, that exists as liquid particles or solid particles at standard conditions (70 degrees Fahrenheit and one atmosphere). In New Jersey Air Test Method 1 (NJATM1) the filter temperature is kept sufficiently high to prevent condensation of moisture, which interferes with test results by biasing high. In practical terms, this means approximately 10 degrees Fahrenheit above stack temperature or  $\leq 225$  degrees Fahrenheit, whichever is lower. EPA TM5 operates such that the filter temperature is at 248 degrees Fahrenheit  $\pm$  25 degrees Fahrenheit. This higher filter

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temperature of EPA TM5 allows more substances to pass through the filter and not be counted, causing the particle results to be biased lower than NJATM1. Therefore, NJATM1 operates more closely to the particle definition temperature than EPA TM5 does. N.J.A.C. 7:27-4.2(b) and (c) are consistent with the rest of the Department's RACT rules for particulate emissions, which require at N.J.A.C. 7:27-4.3(b) that all particle stack emission testing to be done in accordance with NJATM1.

The Department is modifying N.J.A.C. 7:27-4.2(b) and (c) on adoption to allow compliance determination to be based on the average of three stack tests. Each stack test must be approved by the Department. A typical stack test routine to demonstrate compliance with an emission limit consists of three test runs that are observed by personnel from the Department's Bureau of Technical Services and Compliance and Enforcement. These Department representatives verify that the testing is performed correctly and review and validate the data obtained during testing. Compliance can be determined by either comparing the results of each stack test to the allowable emission rate, or averaging the three stack test results and comparing that average value with the allowable emission rate. Using an average of the three stack tests to demonstrate compliance with an emission limit results in a higher allowable emission rate because the highest one or two stack test results could be above the allowable emission rate; however, as long as the remaining stack test results are low enough to reduce the average below the allowable, the unit will be in compliance. Department rules and procedures commonly allow compliance demonstration to be based on an average of the three stack test results in situations where more stringent emission rates apply. In the case of lower allowable emissions, errors inherent in the stack test method itself can have significance in the ultimate value realized by the test. The Department does not allow a compliance demonstration to be based on the average of the three stack test results for less stringent emission limits because the allowable emission rate, which is higher, is not significantly affected by errors in the test method.

Additional modifications to N.J.A.C. 7:27-4.2(b) on adoption are discussed in the Response to Comment 32.

28. COMMENT: The particulate emission standards for coal-fired boilers should not apply during startup and shutdown. This exemption was granted in the ACD and ACO, which were used as guidance in developing the proposed rules. (23)

RESPONSE: The Department is not modifying the rule as requested. There is no exemption in either the ACD or the ACO for particulate emission monitoring. Furthermore, unlike an SCR system, discussed in the Response to Comment 24 above, a baghouse can be operated during startup and shutdown of the boiler, thereby effectively controlling particulate emissions.

29. COMMENT: The 24 hour SO<sub>2</sub> emission rate and the 30-day SO<sub>2</sub> emission rate averages at N.J.A.C. 7:27-10.2(h) should be based on the total (24 hour or 30 calendar day) period, not just the time during which the unit actually operated as required at N.J.A.C. 7:27-10.5. (23)

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RESPONSE: The Department is not modifying the rule as requested. If the method requested were allowed, on days when the unit is not operated the zero heat input would make a 24-hour emission rate in pounds per million British Thermal Units (lb/MMBtu) indeterminable. If, on these days, the 24-hour emission rate was assumed to be zero since no pollutants were emitted, days of non-operation would create lower 30 day emission averages. The method requested would unfairly benefit an owner or operator who did not operate a boiler every day, creating an incentive to shut the boiler down periodically so the owner or operator could bring the emission average down and thereby achieve compliance. In addition, the method requested would negate one of the purposes of the rule, which is to reduce emissions on high electrical demand days.

The goal of the emission rate calculation is to determine the average quantity of emissions that were actually emitted by the boiler. For instance, if a unit is operated for 10 days out of 30, and the 24-hour emission rate for five of those days is 11 lb/MMBtu, and the 24-hour emission rate for the other five days is 9 lb/MMBtu, the rule would calculate an average emission rate of 10 lb/MMBtu  $\left( \frac{[(\text{five days} * 11 \text{ lb/MMBtu}) + (\text{five days} * 9 \text{ lb/MMBtu})]}{10 \text{ days}} \right)$ . However, if the calculation were made using the 24-hour emission rate of zero for the 20 days on which the unit was not operated, as requested, the average emission rate would be three and one-third lb/MMBtu  $\left( \frac{[(\text{five days} * 11 \text{ lb/MMBtu}) + (\text{five days} * 9 \text{ lb/MMBtu}) + (20 \text{ days} * 0 \text{ lb/MMBtu})]}{30 \text{ days}} \right)$ . The 10 lb/MMBtu value represents the emissions from the boiler while operating.

30. COMMENT: The compliance period for SO<sub>2</sub> should be explicitly listed in N.J.A.C. 7:27-10.2(h) as the average of three stack tests. (23)

RESPONSE: The Department is not modifying the rule as requested. N.J.A.C. 7:27-10.5 requires that the SO<sub>2</sub> emission determination be done through the use of a continuous emission monitor, not stack testing. Continuous emission monitors provide a greater ability to assure compliance on a continuous basis than do stack tests.

31. COMMENT: The SO<sub>2</sub> emission standards for coal-fired boilers at N.J.A.C. 7:27-10.2(h) should not apply during startup and shutdown. This exemption was granted in the ACD and ACO, which were used as guidance in developing the proposed rule requirements. (23)

RESPONSE: The Department agrees, in part, and is modifying the rules on adoption to add N.J.A.C. 7:27-10.5(c), which is modeled after the ACD between the Department and PSEG. N.J.A.C. 7:27-10.5(c) allows an exemption from the SO<sub>2</sub> emission rates during the period of startup of the unit because a scrubber does not effectively control SO<sub>2</sub> emissions during this time period. However, the Department does not agree that an exemption from the SO<sub>2</sub> emission rates is justified during the period of shutdown of the unit because a scrubber can effectively control SO<sub>2</sub> emissions during this time period. Also, the ACD and ACO do not allow an exemption from SO<sub>2</sub> emission rates during periods of shutdown.

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The Department is also renumbering N.J.A.C. 7:27-10.5(c) as (d) in order to accommodate this new section. At N.J.A.C. 7:27-10.5(a)1, the Department is updating the related cross reference.

32. COMMENT: Those coal-fired boilers subject to an agreement with the Department should not be subject to N.J.A.C. 7:27-4.2(b), if modifications to a particle control apparatus are made in order to comply with the agreement. (42)

RESPONSE: The Department is modifying N.J.A.C. 7:27-4.2(b) on adoption to remove applicability of this section to coal-fired boilers that are constructed, installed, reconstructed, or modified and coal-fired boiler particle control apparatuses that are modified. Adopted N.J.A.C. 7:27-4.2(b) therefore applies only to coal-fire boilers that have a particulate control apparatus that is constructed, installed or reconstructed, and commences operation on or after the operative date of these amendments. The Department has concluded that some modifications are relatively minor in nature and do not justify the replacement of the entire particle control apparatus. For example, the installation of carbon injection, on a coal-fired boiler, to control mercury emissions might be a modification, pursuant to the definition at N.J.A.C. 7:27-19.1. This would cause the boiler to be subject to the more stringent maximum allowable particulate emission rate of 0.0150 lb/MMBtu at N.J.A.C. 7:27-4.2(b), instead of the 0.0300 lb/MMBtu emission rate at N.J.A.C. 7:27-4.2(c), the maximum allowable particulate emission rate for existing boilers.

This requirement would generally require replacement of the particle control apparatus. The only situations where the Department seeks to apply the more stringent particle emission standard, 0.0150 lb/MMBtu, are when a particle control apparatus is replaced or reconstructed. A reconstruction involves expenditure greater than 50 percent of the cost of a new control apparatus. If a modification is so extensive it constitutes such a reconstruction, it is appropriate that the more stringent 0.0150 lb/MMBtu emission limit apply. A coal-fired boiler that is constructed, installed or reconstructed would be subject to state-of-the-art (SOTA) requirements at N.J.A.C. 7:27-8.12 and 22.35, and possibly lowest achievable emission rate (LAER) requirements at N.J.A.C. 7:27-18, and best available control technology (BACT) requirements at 40 CFR 52.21, all of which would be at least as stringent as the emission rate in N.J.A.C. 7:27-4.2(b).

Additional modifications to N.J.A.C. 7:27-4.2(b) on adoption are discussed in the Response to Comment 27.

33. COMMENT: The proposal Summary indicates that Table 2 in N.J.A.C. 7:27-19.4(a) applies to non-High Electric Demand Day (HEDD) units and Table 3 in N.J.A.C. 7:27-19.4(a) applies to HEDD units. The proposed language at N.J.A.C. 7:27-19.4(a) is ambiguous and the Department should revise N.J.A.C. 7:27-19.4(a) to clarify the applicability of Table 2 and Table 3. (24, 42)

RESPONSE: The Department is not modifying the rule as requested. There is no distinction in emission rates between boilers serving electric generating units that are HEDD units and those

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that are non-HEDD units; however, HEDD units are subject to sections N.J.A.C. 7:27-19.4(e) and (f) and are not allowed to use the alternatives listed at N.J.A.C. 7:27-19.3(f) to comply with the applicable maximum allowable NO<sub>x</sub> emission rate at N.J.A.C. 7:27-19.4 or N.J.A.C. 7:27-19.5 after May 1, 2015. The reason for having two separate tables, Table 2 and 3, is that a more stringent maximum allowable emission rate for coal-fired boilers is introduced in Table 2 and becomes effective on December 15, 2012. All other (oil and gas fired) boilers do not become subject to the more stringent maximum allowable emission rates of Table 3 until May 1, 2015. The only amendment to the maximum allowable emission rates for oil and gas fired boilers in Table 2 is that the applicable emission rate is converted from an input based emission rate (lb/MMBtu) to an output based emission rate pounds per Megawatt-hour (lb/MW<sub>hr</sub>). As stated in N.J.A.C. 7:27-19.4(a), Table 1 applies to all boilers serving an electric generating unit (EGU) through December 14, 2012; Table 2 applies to all boilers serving an EGU from December 15, 2012 through April 30, 2015; and Table 3 applies to all boilers serving an EGU on and after May 1, 2015.

34. COMMENT: Revise N.J.A.C. 7:27-19.4(d) to clarify that it only applies to boilers, not to emission control apparatuses. (24, 42)

RESPONSE: The Department is modifying N.J.A.C. 7:27-19.4(d)1 and 2 on adoption to add the phrase “or control apparatus,” in order to clarify that a modification or installation of a new control apparatus in order to comply with the emission rates in Table 2 or Table 3 requires a compliance demonstration pursuant to the schedule at N.J.A.C. 7:27-19.15(c). The intent of the requirement is for each boiler that is subject to a maximum allowable emission rate in Table 2 or Table 3 to demonstrate compliance with the applicable emission rate within 180 days of becoming subject to that emission rate. An existing coal-fired boiler that is not modified or reconstructed prior to December 15, 2012 is required to comply with the appropriate Table 2 emission rate by December 15, 2012 and demonstrate compliance by June 15, 2013. Any other boiler that is not modified or reconstructed prior to May 1, 2015 is required to comply with the appropriate Table 3 emission rate by May 1, 2015 and demonstrate compliance by November 1, 2015.

However, if a boiler is modified prior to the effective date of the applicable emission rate, the boiler could become subject to a more stringent emission rate. Installation of a new control apparatus or modification of an existing control apparatus constitutes a modification of the boiler. N.J.A.C. 7:27-19.15(c) contains a compliance schedule for such sources, which requires compliance to be demonstrated within 180 days of commencement of operation.

The Department is also modifying N.J.A.C. 7:27-19.4(d)1 and 2 on adoption to clarify that the requirement to demonstrate compliance with the emission rates in Table 2 and Table 3 applies only to boilers that are subject to the emission rates in Table 2 or Table 3. This clarification is made because N.J.A.C. 7:27-19.4(a) requires all boilers to comply with the emission rates in Table 1, Table 2 or Table 3, 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

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with the Department. Therefore, if the boiler is subject to a different emission rate pursuant to N.J.A.C. 7:27-19.3(f) or an enforceable agreement with the Department, it would have to demonstrate compliance with the applicable emission rate, not the one in Table 2 or Table 3.

Additional changes to N.J.A.C. 7:27-19.4(d) are discussed in Response to Comment 25 and in the agency initiated changes summary.

35. COMMENT: All coal-fired boilers should be required to comply with the particulate emission rates required at N.J.A.C. 7:27-4.2(b) by December 15, 2012, not just boilers or associated particle control apparatuses that are constructed, installed, reconstructed or modified after the operative date of the rule. (36)

RESPONSE: The Department is not modifying the rule as requested. The cost associated with replacing an existing control apparatus that is capable of complying with a particulate emission rate of 0.0300 lb/MMBtu with a new control apparatus that is capable of reducing emissions to below 0.0150 lb/MMBtu by December 15, 2012 is not justified. N.J.A.C. 7:27-4.2(c) will allow these units to continue operating at the emission rate of 0.0300 lb/MMBtu or the permitted emission rate, whichever is lower, until such time as the control apparatus is reconstructed or replaced. Then the unit will have to comply with the 0.0150 lb/MMBtu emission rate, as well as with any applicable state-of-the-art requirements at N.J.A.C. 7:27-8.12 and N.J.A.C. 7:27-22.35, lowest achievable emission rate requirements at N.J.A.C. 7:27-18, and best available control technology requirements at 40 C.F.R. 52.21, which will be at least as stringent as 0.0150 lb/MMBtu.

Additional modifications to N.J.A.C. 7:27-4.2(b) are discussed in the Responses to Comment 27 and 32.

36. COMMENT: The definition of “construct” or “construction” at N.J.A.C. 7:27-4.1 is confusing. Note that under Federal guidance (not Federal law), pouring of footings or placement of a foundation of a permanent nature is considered “commencement of construction.” The last sentence should be deleted from this definition. (39)

RESPONSE: The Department is not modifying the rule as requested. The definition for “construct” or “construction” is the same as the definition of the term at N.J.A.C. 7:27-22, Operating Permits. When drafting rules for a Federally-delegated program, such as the New Source Performance Standards (NSPS) or Prevention of Significant Deterioration (PSD), the Department relies upon Federal guidelines and the Code of Federal Regulations for appropriate terminology. N.J.A.C. 7:27-4, Control and Prohibition of Particles from Combustion of Fuel, is not a program based on the Federal rules. Accordingly, it is appropriate for the State to rely on its own definitions. In this instance, it is important that the Department’s rules at Subchapter 4 be consistent with the Operating Permit rules at Subchapter 22. The Department’s permitting approach focuses on the installation of equipment and not the pouring of footings or foundations which, if constructed, are constructed at financial risk by the facility.



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37. COMMENT: Under the definition of “reconstruction” at N.J.A.C. 7:27-4.1, the test requires an expenditure that exceeds the 50 percent fixed capital cost of a brand new unit and a monetary value of more than \$80,000 in 1995 dollars. It is not clear what the purpose of this definition is. This would seem to exempt reconstructed sources from the Federal New Source Performance Standards (NSPS) Subpart Dc requirements, which apply to industrial boilers equal to or greater than 10 MMBtu/hr heat input up to 100 MMBtu/hr heat input. A quick look in the internet for the cost of a brand new 10 MMBtu/hr heat input boiler appears to be about \$45,000 dollars. (39)

RESPONSE: The Department is not modifying the rule as requested. The Department’s establishment of a definition for one of its State rules has no effect on applicability of Federally established rules. In this case the Department has established a definition of “reconstruct” or “reconstruction” with regard to N.J.A.C. 7:27-4.

38. COMMENT: The last sentence of the definition of “modify” or “modification” at N.J.A.C. 7:27-4.1 should be deleted. The last sentence, “a modification may be incorporated into an operating permit through a significant modification, minor modification, or seven-day notice change,” presents three ways to include a change in the permit and does not belong in the definition section. (39)

RESPONSE: The Department agrees that this information is not necessary to the definition of “modify” at N.J.A.C. 7:27-4.1 and is modifying the definition on adoption by removing that sentence from the definition and making one grammatical and one punctuation change. This makes the definition of “modify” at N.J.A.C. 7:27-4.1 identical to the definition at N.J.A.C. 7:27-22.1, with the exception of the last sentence of the Subchapter 22 definition. N.J.A.C. 7:27-4, Standards for the Emission of Particles, regulates the amount of particles that a source is permitted to emit, while N.J.A.C. 7:27-22, Operating Permits, regulates how to obtain and modify an operating permit. The last sentence of the Subchapter 22 definition of “modify” notifies the reader that an operating permit can be modified with a significant modification (pursuant to N.J.A.C. 7:27-22.24), minor modification (pursuant to N.J.A.C. 7:27-22.23), or seven-day notice change (pursuant to N.J.A.C. 7:27-22.22). This information is not pertinent to N.J.A.C. 7:27-4 because permit modifications are not regulated by N.J.A.C. 7:27-4.

39. COMMENT: The proposed maximum allowable NO<sub>x</sub> emission rates in Table 2 at N.J.A.C. 7:27-19.4(a) are in units of pounds per Megawatt-hour (lb/MWhr). The emission rates for “oil and/or gas” and “gas only” were converted from the pounds per million British Thermal Units (lb/MMBtu) emission rates that are required at Table 1 of N.J.A.C. 7:27-19.4(a), using a typical heat rate of 10,000 Btu/kWhr and are, therefore, equivalent to the emission rates in Table 1. Is there an impact on compliance for a boiler that has a heat rate higher than or lower than this generic heat rate? (39)

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RESPONSE: If the current efficiency of the boiler is better than 10,000 BTU per kilowatt-hour (Btu/kWhr), the margin for compliance under Table 2 at N.J.A.C. 7:27-19.4(a) will be greater. If the current efficiency of the boiler is worse than 10,000 Btu/kWhr, the margin for compliance under Table 2 will be less. Basing allowable emissions on useful energy output, rather than heat input, promotes energy efficiency and for any given energy output level results in overall lower emissions in New Jersey.

### **High Electric Demand Day (HEDD) Units**

40. COMMENT: In the proposal Summary (40 N.J.R. 4398), the Department states that combustion turbines can meet the N.J.A.C. 7:27-19.5(g) Table 7 emission limits with Dry Low NO<sub>x</sub> (DLN) combustors while combusting gas, and water injection (WI) while combusting fuel oil. DLN or WI may not be available for all turbines. (23)

RESPONSE: The Department is aware that certain older high electric demand day sources do not have retrofit packages for modern emission control technology. In some cases, it may be more cost effective to replace the existing equipment that has used up much of its useful life with a new piece of equipment. This is why the Department included N.J.A.C. 7:27-19.30(b)1, which requires the owner or operator of a HEDD unit, who intends to take that HEDD unit out of service in lieu of causing it to comply with the emission rates in Table 3 at N.J.A.C. 7:27-19.4(a) or Table 7 at N.J.A.C. 7:27-19.5(g), to list the HEDD units that are intended to be shut down in their 2015 Plan. (See 40 N.J.R. at 4420)

41. COMMENT: There should be an exemption for dual fuel HEDD units that cannot combust natural gas on high electric demand days for reasons out of the owner's or operator's control (for example, natural gas curtailment, fuel system breakdown, or unforeseen interruption in fuel supply). (23)

RESPONSE: The Department is modifying N.J.A.C. 7:27-19.5(g)2 on adoption to allow emission rates consistent with the maximum rates in Table 7 during gas curtailment. The Department agrees that it is reasonable to allow an exemption from the requirement for turbines that are subject to N.J.A.C. 7:27-19.5(g) to comply with the natural gas emission rates on all high electric demand days when gas is not available to fuel the turbine due to gas curtailment. The situation of gas curtailment is predefined, generally occurs in the winter, and is identifiable prior to the event in which it occurs. Further, gas curtailments are effected by the supplier and are out of the control of the owner or operator of the turbines.

The Department does not agree that it is reasonable to allow this exemption for any fuel system break down or interruption in the fuel supply. Gas curtailment levels are identified in advance by contractual agreements between the utility and the owner or operator and generally occur in the winter. They are affected by the supplier and are out of the control of the owner or operator of the turbines. Fuel system breakdowns or interruptions of service can occur anytime

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and can have any number of causes including those that are a result of the actions by the owner or operator of the turbines. Therefore, the Department needs to rely on a method of assessing the true cause of the breakdown or interruption. The affirmative defense at N.J.A.C. 7:27-22.3(nn) is available for such occurrences, if the conditions of the affirmative defense are met.

42. COMMENT: The Department's estimate in the Economic Impact (40 N.J.R. at 4424) of \$44,000 per ton of NO<sub>x</sub> reduction for installing water injection on turbines that are HEDD units is a high estimate, representing only one company's experience with installation of water injection and should not be construed as representative of the cost-effectiveness of installing water injection on all stationary combustion turbines. The Department has not made a compelling case that installing water injection is cost-effective and reasonable for all combustion turbines. (23)

RESPONSE: Due to the fact that HEDD units operate primarily on high ozone days, NO<sub>x</sub> emissions generated have a disproportionate impact on air quality. A cost of \$44,000 per ton of NO<sub>x</sub> reduced is reasonable if the expenditure reduces NO<sub>x</sub> emissions on high ozone days, since high ozone days are the days that it is most important for the State to lower its emissions. If a turbine that is a HEDD unit is operated approximately 365 days per year, the permit-allowed operation for most turbines that are HEDD units, the Department estimates the annualized cost effectiveness of installation of water injection to be about one-tenth of the estimated \$44,000 per ton of NO<sub>x</sub> reduced.

43. COMMENT: The cost of installing SCR and carbon monoxide catalyst on the commenter's turbines is estimated to be \$58,000 per ton of NO<sub>x</sub> reduced. This, in addition to the \$44,000 already spent for water injection, makes the control cost prohibitive and not RACT. (23)

RESPONSE: There are, on average, 36 high electric demand days per year. Most units are permitted for far more hours than 36 days per year. Therefore, it is not unreasonable to expect that a turbine that is a HEDD unit might be operated at least 36 days per year. The Department estimates, for a turbine that is a HEDD unit operated approximately 36 days per year, the annualized cost effectiveness of installing SCR and carbon monoxide catalyst on these turbines to be about one-tenth of the estimated \$58,000 per ton of NO<sub>x</sub> reduced. This would make the total annualized cost effectiveness of installing water injection plus SCR and carbon monoxide catalyst approximately \$10,200 per ton of NO<sub>x</sub> reduced.

The control cost that would be reasonable will vary based on many factors, including how much the source is permitted to operate and under what conditions. Turbines that are HEDD units are typically peaking units that are operated on high ozone days. These are the days when NO<sub>x</sub> emission reductions are most critical. Therefore, a higher control or replacement cost per ton of emission reduction is justified for these units than for units that are operated only on non high ozone days. The cost of high electric demand day NO<sub>x</sub> emission reductions is not cost

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prohibitive in light of the necessity to obtain emission reductions that would lead to attainment of the ozone NAAQS.

The Department has also determined that these performance standards and the installation of the required control apparatuses or replacement of existing equipment is reasonable and appropriate for these sources because many other gas turbines, both within New Jersey and outside of New Jersey, are in compliance with the performance standards.

44. COMMENT: The Department's estimated cost for replacing turbines is outdated and too low and is more likely \$1,000 to \$1,100 per kilowatt (kW), excluding operation and maintenance costs. The Department did not make a case that total replacement of combustion turbine generating capacity is cost-effective and reasonable in the proposed 2015 NO<sub>x</sub> RACT standards for combustion turbines. The commenter states that, using a replacement cost of \$1,050 per kW, the cost of replacing the commenter's 1,060 megawatt (MW) combustion turbine peaking fleet will be \$1.219 billion, excluding operating and maintenance costs. (23)

RESPONSE: See Responses to Comments 42 and 43 regarding the reasonableness of the cost per ton of emissions reduced. The control cost that is reasonable will vary based on many factors, including how much the source is permitted to operate and under what conditions. Turbines that are HEDD units are typically peaking units that are operated on the highest ozone days. These are the days when NO<sub>x</sub> emission reductions are most critical. Therefore, a higher control or replacement cost per ton of emission reduction is justified for these units than for units that would be operated only on a day that is not a high ozone day. The control of these units, or their replacement by units that emit less NO<sub>x</sub>, is essential to the attainment of the NAAQS in a timely manner. Control or replacement of such turbines is the centerpiece of these adopted rules.

According to figures that are contained in the commenter's permits, the commenter's New Jersey turbine fleet consists of 568 MW, not 1060 MW as stated in the comment. Using the commenter's proposed higher replacement cost of \$1,100 per kW would amount to approximately \$625 million, or half of the commenter's stated cost of \$1.219 billion. Based on emission data submitted to the Department, the commenter's Sherman Generating Station is nearly in compliance and compliance could likely be assured by adjusting the water injection system, rather than replacing the unit. Sherman Generating Station represents approximately 17 percent of the commenter's peaking turbine fleet, which would likely not require replacement. Also, some turbines are at or near the end of their useful life, or will be so by 2015, making shutdown or replacement necessary independent of these rules.

Additionally, the Department expects efforts by the New Jersey Board of Public Utilities and the electric power industry to result in a reduced need for simple cycle turbines. Therefore, it may be appropriate for some turbines to be shut down.

45. COMMENT: The use of net, rather than gross, electric output as the basis for the NO<sub>x</sub> emission standards at N.J.A.C. 7:27-19.4(a) and 19.5(g) would impose substantial administrative

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and cost burdens for little or no environmental benefit and unfairly penalizes owners or operators of sources that have emission control apparatuses installed. (11, 23)

RESPONSE: The Department is not modifying the rule to use gross electric output. The Department based the emission standards on net electrical output in part because the Department's NO<sub>x</sub> Budget Program (N.J.A.C. 7:27-31) already collects certified net electrical output data from electric generating unit (EGU) owners and operators. Therefore, there should be little additional administrative cost burden for most EGUs, since most are already NO<sub>x</sub> Budget sources. Basing emission rates on net electrical output will not penalize owners or operators who have sources that have emission control apparatuses because these maximum allowable NO<sub>x</sub> emission rates apply to all EGUs and, therefore, all EGUs will need to have emission control measures in order to obtain the adopted emission rates. The use of a net electrical output basis will encourage all owners and operators to maximize the efficiency of their EGUs or replace inefficient EGUs with more efficient modern EGUs because more efficient EGUs will have higher total allowable emissions and lower actual emissions per unit of fuel combusted.

46. COMMENT: The definition of "HEDD unit" at N.J.A.C. 7:27-19.1 should be modified so that a unit's status is determined by a fixed three year period, instead of "the immediately preceding three ozone seasons." Also, the definition of "HEDD unit" should be modified to address how new units or units with less than three ozone seasons of operating history assess their high electricity demand day (HEDD) status. (11, 23)

47. COMMENT: The "non-HEDD unit" definition at N.J.A.C. 7:27-19.1 should be modified to clarify that EGUs smaller than 15 MW are excluded. (11, 23)

RESPONSE TO COMMENTS 46 AND 47: The Department agrees and is modifying the definition of "high electric demand day unit" or "HEDD unit" and "non-high electric demand day unit" or "non-HEDD unit" at N.J.A.C. 7:27-19.1 on adoption to classify only EGUs that commenced operation prior to May 1, 2005 as HEDD units or non-HEDD units. The Department will base the classification on usage of these units during the 2005 through 2007 ozone seasons. All EGUs that are combustion turbines and commence operation on or after May 1, 2005 and are capable of generating 15 MW or more will be required to comply with N.J.A.C. 7:27-19.5(g), although they will not be classified as a HEDD unit.

In the proposal, the HEDD status of each EGU was based on the operating data from the individual EGU's three most recent ozone seasons, rather than on a fixed period, in order to allow classification of EGUs installed after any such fixed period, as a HEDD unit or a non-HEDD unit. However, the Department overlooked the fact that upon future installation of an EGU the unit would not immediately have three ozone seasons of operating data. Therefore, under the proposed definitions a new EGU is unclassifiable for the first three ozone seasons of operation.

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A new EGU would be subject to state-of-the-art (SOTA) requirements at N.J.A.C. 7:27-8.12 and 22.35, and possibly lowest achievable emission rate (LAER) requirements at N.J.A.C. 7:27-18, and best available control technology (BACT) requirements at 40 CFR 52.21, all of which would be at least as stringent as the applicable emission rates in Table 3 at N.J.A.C 7:27-19.4(a) for boilers, Table 6 at N.J.A.C 7:27-19.5(d) for turbines that are non-HEDD units and Table 7 at N.J.A.C. 7:27-19.5(g) for turbines that are HEDD units. Therefore, classification of a newer EGU as a HEDD unit or non-HEDD unit is not necessary because all of these units will comply with all of the emission rates required by N.J.A.C. 7:27-19. Therefore, it is appropriate to use a fixed three year period for existing EGUs because that will enable each existing EGU to be defined as either a HEDD unit or a non-HEDD unit and that classification will not change in the future.

Basing the definition on the most recent three ozone seasons, as was proposed, would require the owner or operator to determine the classification of each EGU every year and would allow the classification of an EGU to change from year to year, as usage varies. This would cause unnecessary recordkeeping for an owner or operator with little benefit to the environment and could cause the EGU to be subject to different emission rates from year to year.

The 2005 through 2007 ozone seasons are used to determine HEDD unit status because these are the three most recent complete ozone seasons of data available prior to publication of the proposal on August 4, 2008. EGUs that commenced operation on or after May 1, 2005 cannot be classified as HEDD units or non-HEDD units, based on the revised definition, because they were not operational during the 2005 through 2007 ozone seasons and, therefore, will not have data available on which to base the classification.

The Department is modifying N.J.A.C 7:27-19.5(g) on adoption to apply the requirements to turbines that commenced operation on or after May 1, 2005 and are capable of generating 15 MW or more, in addition to the turbines that are HEDD units. As proposed, N.J.A.C 7:27-19.5(g) applied only to all HEDD units which, as defined at N.J.A.C 7:27-19.1, included new units as well as existing units that were operated less than or equal to an average of 50 percent of the time during the immediately preceding three ozone seasons. The inclusion of these newer units is necessary because, as explained above, the definition of HEDD unit has been modified on adoption to include only turbines that commenced operation prior to May 1, 2005. Additional changes to N.J.A.C. 7:27-19.5(g) are discussed in Response to Comment 41.

The Department is modifying footnote 1 to Table 7 at N.J.A.C 7:27-19.5(g) on adoption to include the table's applicability to a stationary combustion turbine that is capable of generating 15 MW or more and that commenced operation on or after May 1, 2005.

N.J.A.C. 7:27-19.5(g) requires a more stringent emission rate than N.J.A.C 7:27-19.5(d) requires for turbines that are non-HEDD units. N.J.A.C 7:27-19.5(g)2 also requires all dual fuel turbines to comply with the applicable gaseous fuel emission rate on all high electric demand days, regardless of which fuel is burned. As discussed above, any turbine that commences operation on or after May 1, 2005 and is capable of generating 15 MW or more will comply with the emission rates in Table 6 at N.J.A.C 7:27-19.5(d) as well as the emission rates in Table 7 at N.J.A.C. 7:27-19.5(g). Most dual fueled combustion turbines that commence operation on or

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after May 1, 2005 that are capable of generating 15 MW or more will comply with the gaseous fuel emission rate in Table 7 at N.J.A.C. 7:27-19.5(g) while combusting fuel oil. If such a turbine is not able to comply with the gaseous fuel limit while combusting fuel oil, gaseous fuel can be burned in order to comply with N.J.A.C 7:27-19.5(g)2, which requires a dual fueled turbine to comply with the gaseous fuel emission rate on all high electric demand days.

The Department is modifying N.J.A.C. 7:27-19.5(i)2 to clarify that compliance must be demonstrated by any turbine that is subject to the emission rates at N.J.A.C. 7:27-19.5(g); therefore, any turbine that commences operation after May 1, 2005 and is capable of generating 15 MW or more must demonstrate compliance with the applicable emission rate pursuant to this section.

The Department is also modifying N.J.A.C. 7:27-19.1 to amend the definition of “non-high electric demand day unit” or “non-HEDD unit” to exclude EGUs smaller than 15 MW. The Department did not intend these small EGUs to be subject to the rules, which is why the proposed definition of “high electric demand day unit” or “HEDD unit” excluded them. However the proposed definition of “non-high electric demand day unit” or “non-HEDD unit” inadvertently included these small EGUs in the “non-HEDD unit” category by including any EGU that is not an HEDD unit. In light of the limited benefit to be achieved, it is not economically feasible to install, on a turbine of this small size, the emission controls that would be necessary to comply with the emission rates at N.J.A.C 7:27-19.5.

As a result of the amendments to the definitions, there are four categories of turbines: HEDD, non-HEDD, those turbines that are not capable of generating 15MW or more, and those that are capable of generating 15MW or more and were constructed on or after May 1, 2005. Turbines that are non-HEDD units will be regulated by N.J.A.C 7:27-19.5(d), turbines that are HEDD units and turbines that are capable of generating 15MW or more and were constructed on or after May 1, 2005 will both be regulated by N.J.A.C 7:27-19.5(g), and turbines that are not capable of generating 15MW or more will continue to be regulated under N.J.A.C. 7:27-19.13, Facility-specific NO<sub>x</sub> emission limits. All boilers serving electric generating units will continue to be regulated by N.J.A.C. 7:27-19.4(a), regardless of size, HEDD status, or date of installation.

The Department is modifying N.J.A.C. 7:27-19.29(i) on adoption because, as explained above, the definition of HEDD unit has been modified on adoption to include only turbines that commenced operation prior to May 1, 2005. Under the modified definitions of HEDD unit and non-HEDD unit, the owner or operator can include a newer EGU (that is neither a HEDD unit nor a non-HEDD unit) in its 2009 Protocol. If an owner or operator includes such a unit in its 2009 Protocol and there is a change of the owner or operator of that unit during the period defined in N.J.A.C. 7:27-19.29(b)3, the original owner or operator would be required to modify its 2009 Protocol pursuant to N.J.A.C. 7:27-19.29(i).

48. COMMENT: Implementation of an owner or operator’s 2009 Protocol on each high electric demand day should be considered sufficient demonstration of compliance with the provisions of N.J.A.C. 7:27-19.29. Also, the provisions of N.J.A.C. 7:27-19.29(c) should allow

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for an alternative method of calculating the emissions reductions by utilizing HEDD NO<sub>x</sub> emissions from a recent period of time preceding the operative date of the rule. (11, 23)

RESPONSE: N.J.A.C. 7:27-19.29(k)4xi requires the owner or operator of a HEDD unit to submit calculations and results which demonstrate that the emission reductions required by N.J.A.C. 7:27-19.29(b) and quantified by Equation 1 at N.J.A.C. 7:27-19.29(c) were obtained. There are certain 2009 Protocol measures that would allow an owner or operator to calculate emission reductions obtained, such as installation of a control apparatus. However, some 2009 Protocol measures, such as changes to unit dispatch (operating low emitting units prior to high emitting units), make it impossible to demonstrate conclusively avoided emissions, since there is no way of identifying which units would have been operated had the owner or operator not consciously operated the cleanest units first. The Department agrees that when demonstrating compliance with emission reduction requirements at N.J.A.C. 7:27-19.29(b), the rules should allow for an alternative to calculating the actual emission reduction on each high electric demand day. However, the owner or operator must demonstrate that the required emission reductions are obtained on each high electric demand day, and not just implement a 2009 Protocol based on an unspecified period of time prior to the operative date of these adopted rules, as one commenter requests.

An alternative method is being included in N.J.A.C. 7:27-19.29(b)4ii on adoption. This method requires the owner or operator to include in the 2009 Protocol a demonstration that implementing the proposed protocol on each high electric demand day that occurred between January 1, 2005 and December 31, 2007 would have resulted in at least as many NO<sub>x</sub> emission reductions as would have been required by N.J.A.C. 7:27-19.29(b) and quantified by Equation 1 at N.J.A.C. 7:27-19.29(c), for that high electric demand day. This demonstration is then considered by the Department to be sufficient demonstration that implementation of the proposed protocol during all future high electric demand days would result in compliance with the emission reduction requirements at N.J.A.C. 7:27-19.29(b), for those days. Therefore, once the owner or operator demonstrates that the 2009 Protocol would have resulted in compliance during all high electric demand days that occurred during calendar years 2005 through 2007, implementation of that same protocol, or a modified protocol approved by the Department pursuant to N.J.A.C. 7:27-19.29(h), on each high electric demand day constitutes compliance with the emission reduction requirements at N.J.A.C. 7:27-19.29(b)3.

The Department is modifying N.J.A.C. 7:27-19.29(b) on adoption to add paragraph 4, which requires the owner or operator to demonstrate that all emission reductions required by N.J.A.C. 7:27-19.29(b)3 and quantified by Equation 1 at N.J.A.C. 7:27-19.29(c) were obtained on each high electric demand day starting on the operative date of these amendments through September 30, 2014, unless a later compliance date is approved pursuant to N.J.A.C. 7:27-19.22. N.J.A.C. 7:27-19.29(b)4 applies to all owners and operators that are subject to N.J.A.C. 7:27-19.29(b)3. The owner or operator must then include this demonstration in the annual report required at N.J.A.C. 7:27-19.29(k). Paragraph 4 also requires this demonstration to be made through calculations that explicitly show that the owner or operator obtained all emission



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reductions required, as calculated by equation 1 at N.J.A.C. 7:27-19.29(c), or through the Department approved method described above. Additional changes to N.J.A.C. 7:27-19.29(b) are discussed in the Response to Comment 49 and in the agency initiated changes summary below.

49. COMMENT: The 2009 Protocol must be submitted to the Department within 30 days of the operative date of the rules. The proposed protocol must then undergo a review process. Therefore, the protocol may not be approved by the Department until several months after the operative date, which is the date when the affected owner or operator is required to start achieving emission reductions. Therefore, owners and operators of HEDD units will find themselves operating without a Department approved 2009 Protocol, beginning on the operative date of the rules, yet still required to achieve NO<sub>x</sub> reductions on high electric demand days, which increases operating uncertainty as well as the risk of non-compliance. (11, 23)

RESPONSE: N.J.A.C. 7:27-19.29(b)2 requires an owner or operator that is subject to N.J.A.C. 7:27-19.29 to submit a proposed 2009 Protocol by 30 days after the operative date of these amendments, after which the Department will review the protocol and approve, revise and approve, or disapprove it pursuant to N.J.A.C. 7:27-19.29(g). The Department is modifying N.J.A.C. 7:27-19.29(g) on adoption to state that until the Department approves the 2009 Protocol, implementation of the protocol as submitted to the Department will constitute compliance with N.J.A.C. 7:27-19.29(b)3, unless the proposed 2009 Protocol is disapproved by the Department and the owner or operator either fails to submit a revised proposed 2009 Protocol within 60 days of receiving the Department's notification or the owner or operator submits a revised proposed 2009 Protocol that does not include all of the information required by the Department's notification.

N.J.A.C. 7:27-19.29(g) requires the Department to notify the owner or operator of its decision to approve, revise and approve or disapprove the proposed protocol. The Department is adding N.J.A.C. 7:27-19.29(g)1 on adoption to state that if the Department approves the proposed protocol, it will notify the owner or operator of the approval in writing. The Department is adding N.J.A.C. 7:27-19.29(g)2 on adoption to state that if the Department revises and approves the proposed protocol, it will notify the owner or operator of the revision and approval in writing. This written notification will include a list of revisions that were made to the protocol prior to approval. Once the owner or operator is notified that the Department has approved a 2009 Protocol, the owner or operator will be responsible for complying with the approved protocol, including any changes that were made by the Department. The revised protocol will include a compliance schedule if time is necessary to implement the necessary changes.

The Department is adding N.J.A.C. 7:27-19.29(g)3 on adoption to state that if the Department disapproves the proposed protocol, it will notify the owner or operator of the disapproval in writing. This written notification will include a list of reasons for the disapproval and a list of changes or additional information needed to make the protocol compliant with

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N.J.A.C. 7:27-19.29(d) and therefore approvable. The owner or operator is required to submit a revised proposed 2009 Protocol, with all of the information required by the Department's notification, to the Department within 60 days of receiving the Department's notification. If the owner or operator fails to submit a revised proposed 2009 Protocol before the deadline, implementation of the proposed 2009 Protocol will no longer constitute compliance with N.J.A.C. 7:27-19.29(b)3 after the deadline. 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 N.J.A.C. 7:27-19.29(b)3 after the Department notifies the owner or operator that the revised proposed 2009 Protocol is still not approvable.

Prior to proposal of the within rules, the Department contacted all owners or operators that would be subject to N.J.A.C. 7:27-19.29 in order to obtain input to make compliance with N.J.A.C. 7:27-19.29 feasible. The Department continues to encourage the affected owners or operators to communicate with the Department regarding their proposed protocol and the emission reduction measures they intend to use, prior to the deadline for submitting the protocol. This will minimize, if not eliminate, the need for Department revisions to the protocol following submission.

N.J.A.C. 7:27-19.29(b)3 (proposed N.J.A.C. 7:27-19.29(b)1) requires an owner or operator that is subject to N.J.A.C. 7:27-19.29 to obtain emission reductions starting on the operative date of these amendments, unless a later compliance date is approved pursuant to N.J.A.C. 7:27-19.22. N.J.A.C. 7:27-19.29(b)2 (proposed as N.J.A.C. 7:27-19.29(b)3) requires an owner or operator that is subject to N.J.A.C. 7:27-19.29 to submit a proposed 2009 Protocol to the Department within 30 days of the operative date of these amendments. The modifications made at N.J.A.C. 7:27-19.29(g) on adoption state that until the Department approves the 2009 Protocol, implementation of the protocol as submitted to the Department will constitute compliance with N.J.A.C. 7:27-19.29(b)3.

Under the proposed rules, the owner or operator is required to start obtaining emission reductions on the operative date and submit a proposed 2009 Protocol no more than 30 days later. This leaves up to 30 days during which the Department will not have a proposed or Department-approved 2009 Protocol against which to evaluate compliance. The owner or operator would have to develop a 2009 Protocol prior to obtaining these emission reductions, because the emission reductions will be obtained pursuant to the 2009 Protocol as required under proposed N.J.A.C. 7:27-19.29(b)2. Therefore, the Department is modifying N.J.A.C. 7:27-19.29(b)2 (proposed N.J.A.C. 7:27-19.29(b)3) to require the owner or operator to submit the 2009 Protocol on the same day that it must begin obtaining emission reductions pursuant to N.J.A.C. 7:27-19.29(b)3 (proposed N.J.A.C. 7:27-19.29(b)1). The owner or operator will therefore have to submit a proposed 2009 Protocol pursuant to N.J.A.C. 7:27-19.29(b)2 and begin getting emission reductions pursuant to N.J.A.C. 7:27-19.29(b)3 on the operative date of these amendments. This will require the owner or operator to submit the 2009 Protocol to the Department 30 days sooner than proposed N.J.A.C. 7:27-19.29(b)3 required. Additional changes to N.J.A.C. 7:27-19.29(b)2 are discussed in the agency initiated changes summary below.

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The Department is renumbering proposed N.J.A.C. 7:27-19.29(b)1 as N.J.A.C. 7:27-19.29(b)3 in order to make the chronological flow of requirements more logical, and is modifying this paragraph (b)3 to clarify that the required emission reductions must be obtained using one or more measures that meet the requirements at N.J.A.C. 7:27-19.29(d) and are included in the 2009 protocol. Proposed N.J.A.C. 7:27-19.29(b)1 did not require the measures to be listed in the 2009 Protocol; however, this requirement was included in proposed N.J.A.C. 7:27-19.29(b)2.

Finally, the Department is renumbering proposed N.J.A.C. 7:27-19.29(b)2 and 3 as N.J.A.C. 7:27-19.29(b)1 and 2, and proposed N.J.A.C. 7:27-19.29(b)4 as (b)5, in order to make the chronological flow of requirements more logical. See Response to Comment 48 for a discussion of adopted N.J.A.C. 7:27-19.29(b)4 .

50. COMMENT: An incorrect reference exists at N.J.A.C. 7:27-19.29(e). The reference to N.J.A.C. 7:27-19.29(d)2vi should be changed to (d)3vi. (11, 23)

RESPONSE: The Department is modifying N.J.A.C. 7:27-19.29(e) on adoption to correct the cross reference.

51. COMMENT: The Department should amend the rules to allow NO<sub>x</sub> averaging as an operationally flexible compliance mechanism until the 2015 time frame. (11)

RESPONSE: Existing N.J.A.C. 7:27-19.6 already allows for NO<sub>x</sub> averaging. Nothing in the adopted rules prevents an owner or operator from using NO<sub>x</sub> averaging to comply with the maximum allowable NO<sub>x</sub> emission rates at N.J.A.C. 7:27-19 until 2015, after which, N.J.A.C. 7:27-19.3(f) excludes HEDD units from using a NO<sub>x</sub> averaging plan to comply with N.J.A.C. 7:27-19 emission rates. However, the owner or operator must apply the NO<sub>x</sub> averaging plan in accordance with N.J.A.C. 7:27-19. If a more stringent emission rate becomes operative, the new rate must be included in the NO<sub>x</sub> averaging plan. For example, after December 15, 2012, a coal-fired boiler will be subject to a maximum allowable NO<sub>x</sub> emission rate of 1.5 lb/MWhr pursuant to Table 2 at N.J.A.C. 7:27-19.4(a), as opposed to the Table 1 emission rate that would apply prior to December 15, 2012. Therefore, on and after December 15, 2012, a NO<sub>x</sub> averaging plan that includes a coal-fired boiler would have to use the 1.5 lb/MWhr emission rate.

52. COMMENT: The Department should amend N.J.A.C. 7:27-19.4(a) by adding the following footnote to Table 2: “Boilers serving electric generating units that are currently required to install SCR prior to the effective date of the rule under an enforceable agreement with the Department shall maintain a maximum allowable NO<sub>x</sub> emission rate as established in Table 1.” (11)

RESPONSE: The requested change could set an artificially high NO<sub>x</sub> allowable emission rate for certain coal-fired boilers, which would inflate emission credits used in the existing averaging provisions of the rule between December 15, 2012 and May 1, 2015. The 1994 NO<sub>x</sub> RACT

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rules, N.J.A.C. 7:27-19, were operative on January 23, 1994. Each turbine that is a HEDD unit that was in operation prior to January 23, 1994 could have demonstrated compliance with the applicable maximum allowable NO<sub>x</sub> emission rates in Table 4 at N.J.A.C. 7:27-19.5(a) or Table 5 at N.J.A.C. 7:27-19.5(b) by May 31, 1996. These emission rates will continue to apply to turbines that are HEDD units until May 1, 2015. Each boiler serving an EGU that was in operation prior to January 23, 1994 could have demonstrated compliance with the applicable maximum allowable NO<sub>x</sub> emission rates in Table 1 at N.J.A.C. 7:27-19.4(a) by May 31, 1996. With the exception of coal-fired boilers, these emission rates will continue to apply to boilers until May 1, 2015. Alternatively, emission averaging is allowed as a more flexible way of achieving compliance for either turbines or boilers, until May 1, 2015 (N.J.A.C. 7:27-19.3(f)).

Coal-fired boilers serving EGUs will be required to comply with the more stringent emission rate in Table 2 at N.J.A.C. 7:27-19.4(a) by December 15, 2012. Pursuant to N.J.A.C. 7:27-19.6, coal-fired boilers that emit NO<sub>x</sub> at a rate below the applicable NO<sub>x</sub> RACT emission rate (over-controlled sources) can use the extra emission reductions as NO<sub>x</sub> credits to offset excess emissions from sources that emit NO<sub>x</sub> at a rate higher than the applicable NO<sub>x</sub> RACT emission rate (under-controlled sources). After December 15, 2012, owners and operators who have an approved NO<sub>x</sub> averaging plan with a coal-fired boiler in it will have to use the NO<sub>x</sub> RACT emission rate in Table 2 at N.J.A.C. 7:27-19.4(a) for coal-fired boilers, which is much more stringent than the existing NO<sub>x</sub> RACT emission rate in Table 1 at N.J.A.C. 7:27-19.4(a), when calculating emission credits available from over-controlled sources or emission credits needed by under-controlled sources. Hence, the number of over-controlled source credits that the owner or operator has available will likely decrease or the number of under-controlled source credits that the owner or operator will need will likely increase, unless additional measures are taken to further reduce emissions.

The December 15, 2012 operative date allows nearly four years for controls to be installed or units to be replaced before the new coal-fired boiler emission rate will affect an existing NO<sub>x</sub> averaging plan. This should be sufficient time for owners and operators with NO<sub>x</sub> averaging plans to take measures to comply with the applicable emission rates, while continuing to use NO<sub>x</sub> averaging. As under-controlled sources are controlled or replaced to phase in compliance with the 2015 NO<sub>x</sub> RACT emission rates prior to 2015, they will become over-controlled sources because the applicable NO<sub>x</sub> RACT emission rate for that source will be higher than the 2015 NO<sub>x</sub> RACT emission rate, until 2015. These sources will provide NO<sub>x</sub> credits to supplement the lower amount of credits available due to the lower emission rates for coal-fired boilers on and after December 15, 2012. It is appropriate for each owner or operator to start installing controls or replacing affected sources as soon as possible, rather than waiting until 2015. Although it is not mandated by the rules, the Department expects each owner or operator to phase in compliance with the 2015 emission rates between 2009 and 2015, with substantial progress being achieved by December 15, 2012.

It is also not appropriate to allow certain boilers to be subject to a higher maximum allowable NO<sub>x</sub> emission rate, when the coal-fired boilers in question will be in compliance with the maximum allowable NO<sub>x</sub> emission rate prior to December 15, 2012.

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53. COMMENT: The Department should revise the forced outage provisions at N.J.A.C. 7:27-19.6(j) to state the following: “An owner or operator of an averaging unit which can not be operated due to reasonably unforeseeable circumstances beyond the control of the owner or operator, including but not limited to, a Generator Forced/Unplanned Outage, or a Generator Maintenance Outage, as defined by PJM Interconnection, may adjust the weighted average allowable emission rate to account for the source as a result of the outage. The adjusted emission rate will be deemed in compliance for the period of the outage.” (11)

RESPONSE: The Department is not modifying the rule as requested, except to clarify at N.J.A.C. 7:27-19.6(j) that a Generator Forced/Unplanned Outage, as defined by PJM Interconnection LLC (PJM), is a reasonably unforeseeable circumstance. PJM is a Regional Transmission Organization that is part of the Eastern Interconnection grid operating an electric transmission system serving all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. The electric generating industry in this region relies on PJM for managing this. PJM defines Generator Forced/Unplanned Outage as an immediate reduction in output or capacity or removal from service of a generating unit by reason of an Emergency or threatened Emergency, unanticipated failure, or other cause beyond the control of the owner or operator of the facility, as specified in the relevant portions of the PJM Manuals. A reduction in output or removal from service of a generating unit in response to changes in market conditions does not constitute a Generator Forced Outage, according to PJM Manual 35: Definitions and Acronyms, Revision 14, page 35. The manual is available on PJM’s website at <http://www.pjm.com/documents/manuals/~media/documents/manuals/m35.ashx>.

The existing rule adequately allows “reasonably unforeseeable circumstances” at N.J.A.C. 7:27-19.6(j). The Department agrees that a Generator Forced/Unplanned Outage, as defined by PJM, would be a reasonably unforeseeable circumstance. The Department is not convinced that a Generator Maintenance Outage will always be a reasonably unforeseeable circumstance. It is essential that the owner or operator submit the information that is required to be submitted to the Department in accordance with N.J.A.C. 7:27-19.6(j), and allow the Department to evaluate the owner’s or operator’s claim to determine whether the Department finds the outage to be a reasonably unforeseeable circumstance. If an outage is found by the Department to be a Generator Forced/Unplanned Outage, as defined by PJM, this event will be considered a reasonably unforeseeable circumstance in accordance with N.J.A.C. 7:27-19.6(j).

54. COMMENT: The Department should reinstate the “MEG alert” provisions at N.J.A.C. 7:27-19.24, which expired on November 15, 2005. (11)

RESPONSE: The Department is not reinstating the “MEG Alert” provisions at N.J.A.C.7:27-19.24. A “MEG Alert” occurs when PJM calls upon an owner or operator of an EGU to operate

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at maximum capacity, in an attempt to provide enough power to prevent a brown out, which is when a voltage reduction is issued by PJM.

Operation under “MEG Alert” can cause an increase in NO<sub>x</sub> emissions. Existing N.J.A.C. 7:27-19.24 provides an exemption from NO<sub>x</sub> emission limits for EGUs that are operating under a “MEG Alert.” This exemption became operative on May 23, 1995, and expired on November 15, 2005, in order to allow owners and operators of EGUs a 10 year period in which to install the appropriate NO<sub>x</sub> emission control devices to allow all EGUs to be able to comply with the applicable maximum allowable NO<sub>x</sub> emission rates. With the exception of coal-fired boilers, turbines that are not NO<sub>x</sub> budget sources, and turbines that are non-HEDD units, the maximum allowable NO<sub>x</sub> emission rate that became operative on May 23, 1995 will continue to apply to any EGU until May 1, 2015. Therefore, the owner or operator of most HEDD units will have had nearly 20 years to comply with these emission rates and will have six years to comply with the emission rates 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 Department intends to propose modifications to N.J.A.C. 7:27-19.5 in the future, to allow electric generating units to be designated for emergency use only. Such units would not be required to comply with the applicable maximum allowable NO<sub>x</sub> emission rate at N.J.A.C. 7:27-19.5, or with the short-term high electric demand day emission reduction requirements at N.J.A.C. 7:27-19.29, or the 2015 Emission Limit Achievement Plan annual update requirements at N.J.A.C. 7:27-19.30(c), once the Department approves the owner’s or operator’s request to designate the turbine for emergency use only. The owner or operator would still be required to adjust the combustion process of the turbine according to the manufacturer’s recommended maintenance schedule, pursuant to N.J.A.C. 7:27-19.5(e), and if the turbine is reconstructed or modified it may be 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 C.F.R. 52.21, as required at N.J.A.C 7:27-19.5(i), or any other applicable State or Federal regulation or law.

The future proposed provisions are expected to be analogous to the existing New Jersey regulations for emergency generators, which allow emergency generators, as defined at N.J.A.C. 7:27-19.1, to operate only during power outages and voltage reductions issued by PJM and for testing and maintenance as specified by the equipment manufacturer, or Federal or State law. Emergency generators are limited by definition at N.J.A.C. 7:27-19.1 to producing electricity exclusively for the facility and, therefore, cannot supply power to the grid. The future provisions would allow electric generating companies to designate certain units that supply energy to the electric grid to be used as “emergency use only” generators.

The Department is not including these modifications upon adoption because they are substantive and should be subject to public comment through rule proposal.

55. COMMENT: A new paragraph should be added at N.J.A.C. 7:27-19.5(g)3 to allow the owner or operator of a turbine that is a HEDD unit to petition the Department for an extension of the May 1, 2015 compliance deadline for units entering into an agreement with the Department to

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shut down on or before December 15, 2016 if the unit NO<sub>x</sub> emissions are controlled by water injection. If the Department grants this extension, the owner or operator would be able to continue to operate under an approved emissions averaging plan for this period of time. (11)

RESPONSE: The Department agrees with this recommendation. However, such an amendment is substantive, and requires appropriate proposal and public comment. In response to this comment, the Department intends to propose modifications to N.J.A.C. 7:27-19.5 in the future to allow a conditional exemption from the May 1, 2015 compliance date at N.J.A.C. 7:27-19.5(g). If adopted, this exemption would be available for any turbine on which a NO<sub>x</sub> control apparatus, with a control efficiency of at least 30 percent, is installed. This would include HEDD units that have had water injection or another NO<sub>x</sub> control installed in response to the requirements of the 1994 NO<sub>x</sub> RACT rule at N.J.A.C. 7:27-19. If adopted, this would allow approximately one and one half more years for the facility to recover the cost invested in the control apparatus, as well as to implement a plan for suitable replacement of the power generated by those units.

56. COMMENT: The Department should approve permitting scenarios that provide maximum operating flexibility for clean units, and commit resources to provide expedited permit reviews for permit modifications. (11)

RESPONSE: The Department strongly supports the construction and operation of clean units that replace dirty units and will continue to allocate available resources in order to ensure the timely review of permit applications including those that will result in an environmental benefit. The length of time that it takes for the Department to review a permit application is contingent on the owner's or operator's submitting applications and responding to Department requests for additional information in a timely manner. Individual operating scenarios are reviewed on a case-by-case basis in order to ensure compliance with all State and Federal regulations.

57. COMMENT: The definition of C (Control Factor) in N.J.A.C. 7:27-19.29(c) should be modified to exclude turbines with dry low-NO<sub>x</sub> combustors (DLN) from being required to obtain a NO<sub>x</sub> emission reduction on HEDDs under the 2009 HEDD emission reduction compliance demonstration protocol. (11)

RESPONSE: The Department is modifying the description of C (Control Factor) at N.J.A.C. 7:27-19.29(c) on adoption to include a 0.15 lb/MMBtu NO<sub>x</sub> emission rate threshold, as well as the applicable emission control apparatuses in determining the Control Factor. Both of these criteria are taken from N.J.A.C. 7:27-19.29(a). N.J.A.C. 7:27-19.29 is not intended to require those HEDD units that were well controlled on July 26, 2005 to obtain NO<sub>x</sub> emission reductions. These well controlled units are typically units that complied with existing NO<sub>x</sub> RACT emission rates on July 26, 2005.

The emission reductions required at N.J.A.C. 7:27-19.29(b)3 are intended to be based on those uncontrolled or under-controlled HEDD units that emitted high rates of NO<sub>x</sub> on July 26,

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2005. (See 40 N.J.R. at 4397.) Applicability of the 2009 emission reduction protocol program is determined at N.J.A.C. 7:27-19.29(a), which includes HEDD units that on July 26, 2005 did not utilize one of the listed controls and had a NO<sub>x</sub> emission rate of 0.15 lb/MMBtu or greater. The NO<sub>x</sub> emission rate is just as important as the type of emission control that was utilized, as is evidenced by the inclusion of both the emission rate and the emission control in N.J.A.C. 7:27-19.29(a).

The Department recognizes that certain units utilize DLN during natural gas combustion and water injection during oil combustion. While combusting natural gas, these units are not using water injection; however, they do not emit more than 0.15 lb/MMBtu. Therefore, they should not be included in the calculation of required emission reductions in N.J.A.C. 7:27-19.29(c). Under the proposed description of C (Control Factor), combustion of natural gas in these turbines would contribute to the required emission reductions calculated at N.J.A.C. 7:27-19.29(c) because the proposed description of C (Control Factor) does not contain the NO<sub>x</sub> emission rate threshold that is included at N.J.A.C. 7:27-19.29(a)2. This omission is corrected in the rule as modified on adoption.

The Department also made a grammar correction to the description of C (Control Factor).

58. COMMENT: N.J.A.C. 7:27-19.29(e) should be amended to include the following: “An owner or operator that is implementing a 2009 Protocol that calculates emission reductions (ER) retrospectively shall not be subject to the recordkeeping requirements of this subsection.” (11)

RESPONSE: It is not appropriate to exempt an owner or operator that is implementing a 2009 Protocol that calculates emission reductions retrospectively from the recordkeeping requirements. The purpose of the recordkeeping requirement at N.J.A.C. 7:27-19.29(e) is for the owner or operator to maintain records of each high electric demand day on which the owner’s or operator’s 2009 Protocol was implemented, how it was implemented, including any information that is necessary to demonstrate the Protocol’s implementation, and the amount of emission reductions achieved.

N.J.A.C. 7:27-19.29(d)3vi states that the owner or operator must maintain the records, listed in subsection (e), as applicable. If some of the recordkeeping items are not applicable to that particular owner or operator on that particular high electric demand day, the record does not need to be maintained in that instance. Likewise, if there are additional records that must be maintained, they must be listed in the 2009 Protocol, and the records must be maintained.

In the case of an owner or operator who is demonstrating compliance retrospectively, some emission calculations are not quantifiable, but other information is available, such as the date of the high electric demand day, how the protocol was implemented, which units were operated and for how long, and the emission reductions from the newly controlled units. The owner or operator must make a best estimate of emission reductions and confirm that the protocol was implemented.

The Department needs to quantify the environmental benefits from N.J.A.C. 7:27-19.29 to determine whether additional emission reduction measures are necessary. The quantification



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is made based on a review of records from the facilities. Therefore, it is not appropriate to exempt certain facilities from the recordkeeping provisions. The owner's or operator's records also demonstrate compliance with the requirement to obtain emission reductions pursuant to N.J.A.C. 7:27-19.29(b)3.

59. COMMENT: N.J.A.C. 7:27-19.29(k) should be amended to include the following: "An owner or operator that is implementing a 2009 Protocol that calculates emission reductions (ER) retrospectively shall not be subject to the submittal requirements of this subsection." (11)

RESPONSE: It is not appropriate to exempt an owner or operator that is implementing a 2009 Protocol that calculates emission reductions retrospectively from the submittal requirements. The purpose of the submittal requirement at N.J.A.C. 7:27-19.29(k) is to require the owner or operator to submit documentation to the Department demonstrating that the owner or operator did implement the 2009 Protocol on each high electric demand day that occurred during that year and that the owner or operator obtained the required emission reductions for that high electric demand day.

As discussed above in the Response to Comment 58 with regard to N.J.A.C. 7:27-19.29(e), the Department needs to quantify the environmental benefits from N.J.A.C. 7:27-19.29 to determine whether additional emission reduction measures are necessary. The quantification is made based on a review of records submitted to the Department from the facilities. Therefore, it is not appropriate to exempt certain facilities from the submittal provisions.

60. COMMENT: Proposed N.J.A.C. 7:27-19.5(k) should be revised to exempt owners or operators of HEDD units that currently comply with the proposed 2015 HEDD maximum allowable NO<sub>x</sub> emission rate from having to submit a 2015 HEDD Emission Limit Achievement Plan and annual progress updates as long as they provide notification to the Department that the HEDD units currently meet the maximum allowable NO<sub>x</sub> emission rates in Table 7 at N.J.A.C. 7:27-19.5(g) and that the unit will not be operated on high electric demand days unless the NO<sub>x</sub> emissions are in compliance with the maximum allowable NO<sub>x</sub> emission rate for gaseous fuels in Table 7, regardless of the fuel combusted. (13)

RESPONSE: The Department is modifying N.J.A.C. 7:27-19.30 on adoption to allow the owner or operator of a HEDD unit (turbine or boiler) that complies with the maximum allowable NO<sub>x</sub> emission rates 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 (2015 emission rate), prior to submittal of the 2015 Plan (May 1, 2010) to list the compliant units in the 2015 Plan pursuant to N.J.A.C. 7:27-19.30(b)3. The modification on adoption also exempts owners or operators of compliant units and units that have been taken out of service from submitting an annual update pursuant to N.J.A.C. 7:27-19.30(c) on the progress of compliance with the applicable 2015 emission rate.

N.J.A.C. 7:27-19.5(k) requires the owner or operator of a turbine that is a HEDD unit to submit a 2015 Plan and annual progress updates to the Department pursuant to N.J.A.C. 7:27-

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19.30. N.J.A.C. 7:27-19.4(h) (proposed N.J.A.C. 7:27-19.4(f)) similarly requires the owner or operator of a boiler serving an EGU that is a HEDD unit to submit a 2015 Plan and annual progress updates to the Department pursuant to N.J.A.C. 7:27-19.30. The intent of N.J.A.C. 7:27-19.30(c) is to require the owner or operator of non-compliant HEDD units to update the Department on the status of the owner's or operator's efforts to bring those HEDD units into compliance with the applicable 2015 emission rate. (See 40 N.J.R. at 4399.) N.J.A.C. 7:27-19.30(c) requires each owner or operator of a HEDD unit to submit an annual update each calendar year from 2010 through 2014 and requires the annual update to include all HEDD units owned or operated. There is no reason for the owner or operator of a HEDD unit (turbine or boiler) to submit the annual update on the progress of a unit's compliance with the applicable 2015 emission rate once the unit has obtained a permit modification and complies with the applicable emission rate because the compliance status would then be monitored through the preconstruction permit or operating permit associated with the addition of controls.

There is also no reason for the owner or operator of a HEDD unit that has been taken out of service to submit the annual update on the progress of a unit's compliance, because these units are no longer subject to the 2015 emission rates. Once a unit is taken out of service, it does not have to comply with any emission rates.

Therefore, N.J.A.C. 7:27-19.30 is being modified on adoption to include N.J.A.C. 7:27-19.30(b)3, which requires the owner or operator of a HEDD unit that complies with the 2015 emission rate prior to May 1, 2010, the date that the 2015 plan must be submitted to the Department, to list each compliant HEDD unit owned or operated. This new paragraph requires the owner or operator to list for each compliant unit the name and ID number for the facility at which the unit is located, the emission unit ID number for the unit, a description of the unit and the maximum NO<sub>x</sub> emission rate that is allowed by the unit's pre-construction permit or operating permit.

N.J.A.C. 7:27-19.30(c) is being modified on adoption to require the owner or operator of an HEDD unit to submit an annual update on the progress of the 2015 Plan only for calendar years during which the owner or operator had at least one HEDD unit that did not comply with the 2015 emission rates and was not taken out of service. Only HEDD units that prior to January first of a calendar year did not comply with the 2015 emission rates and were not taken out of service must be included in that calendar year's annual update. For example if a turbine that is a HEDD unit has controls installed on June 30, 2012 and those controls enable the turbine to comply with the applicable 2015 emission rate, the owner or operator of that turbine would have to submit a 2015 Plan to the Department by May 1, 2010 and submit an annual update to the 2015 Plan for that unit for calendar years 2010, 2011 and 2012. The 2012 annual update would indicate that the unit complied with the applicable 2015 emission rates as of June 30, 2012 and no further annual updates would need to be submitted for that unit. Additional changes to N.J.A.C. 7:27-19.30(c) are discussed in agency-initiated changes summary below.

N.J.A.C. 7:27-19.5(k) and (h) (proposed N.J.A.C. 7:27-19.4(f)) are modified on adoption to include "as applicable," in order to clarify that annual progress updates may not be required by

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N.J.A.C. 7:27-19.30(c). Additional changes at N.J.A.C. 7:27-19.4(h) are discussed in Response to Comment 25.

61. COMMENT: In N.J.A.C. 7:27-19.5(d), proposed Table 6 (compliance date the operative date of these amendments if not a NO<sub>x</sub> budget source, and compliance date starting one day after the operative date of these amendments for a non-HEDD Combustion Turbines) and proposed Table 7 at N.J.A.C. 7:27-19.5(g) (compliance date starting May 1, 2015 for HEDD Combustion Turbines) the emission rates are expressed in lbs/MWh. Are these emission limits equivalent? (39)

RESPONSE: The emission rates in Table 6 at N.J.A.C. 7:27-19.5(d) and Table 7 at N.J.A.C. 7:27-19.5(g) are not equivalent. The three categories of turbines that are regulated by N.J.A.C. 7:27-19.5 are turbines that are HEDD units, as defined at N.J.A.C. 7:27-19.1, turbines that are non-HEDD units, as defined at N.J.A.C. 7:27-19.1, and turbines that are capable of generating 15 MW or more and that commenced operation on or after May 1, 2005. Turbines that are HEDD units are electrical generating units that typically operate infrequently, but primarily on high ozone days, when emission reductions are most critical. Most of the turbines that are HEDD units in New Jersey have no NO<sub>x</sub> emission controls on them and, therefore, emit substantial NO<sub>x</sub> emissions during the time periods when NO<sub>x</sub> emission reductions are most critical. Turbines that are non-HEDD units are electrical generating units that are typically more efficient than HEDD turbines and, therefore, are operated more frequently. The turbines in New Jersey that are non-HEDD units tend to be newer units with NO<sub>x</sub> emission controls. Turbines that commence operation on or after May 1, 2005 are also typically efficient turbines with NO<sub>x</sub> emission controls. Neither turbines that are non-HEDD units nor turbines installed on or after May 1, 2005 emit as much NO<sub>x</sub> as turbines that are HEDD units. It is essential that the turbines that are HEDD units either have NO<sub>x</sub> emission controls installed on them, or be replaced with newer, lower emitting turbines as soon as possible.

The lower emission rates in Table 7 at N.J.A.C. 7:27-19.5(g) apply to turbines that are capable of generating 15 MW or more and commenced operation on or after May 1, 2005 and turbines that are HEDD units. (See Responses to Comments 46 and 47 for a discussion of modifications to Table 7 on adoption to change the applicability of the table.) Turbines that commenced operation on or after May 1, 2005 are subject to state-of-the-art (SOTA) requirements at N.J.A.C. 7:27-8.12 and 22.35, and possibly lowest achievable emission rate (LAER) requirements at N.J.A.C. 7:27-18, and best available control technology (BACT) requirements at 40 CFR 52.21, which are at least as stringent as the emission rates in Table 7 at N.J.A.C. 7:27-19.5(g).

The lower emission rates in Table 7 at N.J.A.C. 7:27-19.5(g) are intended to reduce the emissions from the primarily under-controlled turbines that are HEDD units and achieve NO<sub>x</sub> emission reductions on the days when they are most needed. These emission rates go into effect on May 1, 2015. The emission rates in Table 6 at N.J.A.C. 7:27-19.5(d) apply to all turbines that are non-HEDD units on the operative date of the rules. Table 6 is in the existing rules and

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applies to the non-NO<sub>x</sub> Budget turbines, which include many of the turbines that are non-HEDD units in New Jersey. All turbines in New Jersey that are non-HEDD units comply with the emission rates in proposed Table 6, and many of them also comply with the emission rates in Table 7.

62. COMMENT: The Department's statement that any additional control costs will be passed on to the consumer in the form of higher electricity rates is objectionable. Electric power generation markets in New Jersey have been deregulated since 1999 and, therefore, electric power generating companies must compete on the open market, both with in-State and out-of-State suppliers to sell electricity. Therefore, higher costs are largely absorbed by the electric power generators. (23)

RESPONSE: The Department is aware that electric power generating companies compete with each other on the open market in order to sell electricity. The rules apply universally to all New Jersey electric power generating companies, which all must meet the same standard. The ozone and PM<sub>2.5</sub> NAAQS must be attained by all states, and all of New Jersey's neighboring states are in non-attainment for ozone and PM<sub>2.5</sub> and will likely have to reduce emission rates from EGUs in order to attain the NAAQS. An example of this is the State of Delaware, which recently adopted a RACT regulation (7 DE Admin. Code 1146) for coal-fired boilers, and which has emission rates consistent with the rates that New Jersey is adopting. Such increased emissions control costs may result in increased electric rates, but not always. There are other factors, such as supply and demand, that may have a greater impact on electric rates in a competitive market.

63. COMMENT: There is a possibility that an owner or operator may choose to retire an existing EGU rather than install controls or replace the unit, which would result in a net loss of jobs and tax revenue. This is contrary to the Department's prediction of no job loss expected. (23)

RESPONSE: Overall, the Department expects the amendments at N.J.A.C. 7:27-19.4, 19.5, 19.29 and 19.30 to have no measurable impact on jobs. Where a company decides to retire a plant, there may be a loss of jobs at that plant. Likewise, if an older unit is replaced by a new unit or if air pollution controls are added, there may be an increase in jobs. The Department's recent experience is that many more units are controlled, rather than shut down. There is always a possibility that an owner or operator will retire a piece of equipment without replacing it, regardless of whether or not environmental regulations are tightened. Prior to an electric generating unit's being retired, the electric generating capacity of that unit must be replaced by a new unit, an under-utilized unit, or demand side reductions, all of which will create new jobs. Therefore, no net loss of jobs is expected to result.

64. COMMENT: The commenter is concerned about upwind non-New Jersey sources and the lack of progress to reduce pollution from these sources. (11)

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RESPONSE: The Department is also concerned about upwind non-New Jersey sources and the effect that their emissions have on New Jersey's air quality. That is why the Department continues to work with surrounding states to address concerns about under-controlled sources within their borders. The Department's participation in regional organizations, such as the Ozone Transport Commission (OTC), has led to emission reduction agreements, such as those addressing HEDD units.

### **Control Technique Guidelines**

65. COMMENT: An alternative applicability threshold for offset lithographic printing and letterpress printing to the existing provision at N.J.A.C. 7:27-16.7(e)1 is requested. N.J.A.C. 7:27-16.7(e)1 exempts individual surface coating or graphic art operations from certain provisions of N.J.A.C. 7:27-16.7 if the total surface coating formulations containing VOC are applied at rates not in excess of one half gallon per hour and two and one half gallons per day. The requested alternative applicability threshold is three tons of VOC per year on a 12-month rolling average based on 15 pounds per day (lb/day) actual VOC emissions, as recommended in the EPA's "Control Technique Guidelines for Offset Lithographic Printing and Letterpress Printing," EPA-453/R-06-002, September, 2006 (Lithographic CTG Document). (3, 6, 14, 19, 25, 32)

RESPONSE: The alternative applicability threshold of three tons per year (tpy) on a 12 month rolling average that the commenter suggests applies on a facility-wide basis. The Department's applicability thresholds in N.J.A.C. 7:27-16.7(e) were established on a single source operation basis, and not on a facility-wide basis. The single source operation basis is appropriate because the EPA developed antibacksliding provisions to ensure that all areas designated nonattainment for the 8-hour ozone NAAQS, that were previously designated nonattainment for the one-hour NAAQS, remain subject to RACT requirements that were implemented based on the area's classification for the one-hour NAAQS. The entire State of New Jersey was classified as severe non-attainment for the one-hour ozone standard. Consequently, it is necessary to control short-term VOC emissions. Providing a 3 tpy VOC emission exemption would, in effect, allow a facility to emit up to 3 tpy in a short time period, and adversely effect the State's ability to attain the 1-hour or 8-hour ozone NAAQS. Also, it is impractical to monitor short-term emissions on a facility-wide basis. The Department's applicability thresholds in N.J.A.C. 7:27-16.7(e) are established on a single source operation basis, and not on a facility-wide basis. Therefore, the existing applicability threshold is appropriate and the Department is not incorporating the alternative applicability threshold of 3 tpy of VOC emissions.

66. COMMENT: The hourly and daily records needed to be maintained to verify the applicability of N.J.A.C. 7:27-16.7(e)1 impose a significant administrative and economic burden on small printing operations that is not commensurate with the environmental harm posed by these small businesses. (3, 6, 14, 19, 25, 32)

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RESPONSE: To verify the applicability of N.J.A.C. 7:27-16.7(e)1, the owner or operator of an individual surface coating or graphic arts operation needs only to maintain records of hourly and daily use of surface coatings. This is an existing regulation and the Department does not believe that maintenance of such records is burdensome, since facilities need to track use of coatings for inventory and quality control purposes.

67. COMMENT: If the Department were to modify the applicability threshold for lithographic printing and letterpress printing operations to the three tons per year limit, then an equivalent limit should be expressed on a printing materials use basis. (3, 6, 14, 19, 25, 32)

RESPONSE: Since the Department is not modifying the applicability threshold limit at N.J.A.C. 7:27-16.7(e)1, no such equivalent limit is necessary. In addition, the existing N.J.A.C. 7:27-16.7(e)1 is already expressed on a printing materials use basis.

68. COMMENT: Proposed N.J.A.C 7:27-16.7(r)1, which requires emission controls and performance standards for any lithographic printing operation or letterpress printing operation, should be modified to exempt the following heatset printing operations: heatset web lithographic printing with a before control actual petroleum ink oil emissions of less than 25 tons per year of VOC; heatset web lithographic printing presses used to print books; and heatset web lithographic printing presses with a maximum web width of 22 inches or less. (3, 6, 14, 19, 25, 32)

RESPONSE: Section 182(b)(2) of the Clean Air Act (42 U.S.C. § 7511a(b)(2)) requires states with ozone nonattainment areas classified as moderate or higher to require Reasonably Available Control Technology (RACT) for all Control Technique Guidelines (CTG) source categories including lithographic printing. CTGs are considered to be presumptive RACT.

The EPA additionally developed antibacksliding provisions to ensure that all areas designated nonattainment for the 8-hour ozone NAAQS, that were previously designated nonattainment for the one-hour NAAQS, remain subject to RACT requirements that were implemented based on area's classification for the one-hour NAAQS. The entire State of New Jersey was classified as severe non-attainment for the one-hour ozone standard. Existing N.J.A.C. 7:27-16.17 is applicable to any source operation located at a major VOC facility that has the potential to emit more than three pounds per hour or greater. Such an applicability requirement is necessary to define de minimis short-term VOC emissions and ensure that higher levels of emissions are controlled. Providing an applicability requirement over a longer time period at higher emissions would adversely effect the State's ability to attain the 1-hour and 8-hour ozone NAAQS. A major facility is one that has the potential to emit 25 tons per year of VOC plant-wide.

New Jersey cannot adopt the requested 25 tons per year exemption as this would be considered backsliding. Similarly, the requested exemptions for book printing and printing presses with a maximum web width of 22 inches or less cannot be incorporated since the

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potential emissions from the sources may exceed the three pounds per hour established in the existing N.J.A.C. 7:27-16.7.

Further, all heatset web lithographic printing operations currently permitted in New Jersey are controlled by thermal oxidation. An air pollution control device is necessary for these units to address concerns about odor and opacity which are indications of incomplete combustion. Incomplete combustion results in higher VOC emissions than if complete combustion occurred, since VOCs do not fully react with oxygen to produce water and carbon dioxide.

The suggested exemptions for book printing operations, printing operations with a web width size of 22 inches or less, and printing operations with emissions of VOC of less than 25 tons per year are inconsistent with the Department's VOC SOTA applicability threshold of five tons per year, pursuant to N.J.A.C. 7:27-8 and N.J.A.C. 7:27-22. For potential VOC emission rates of five tons per year or greater, a complete SOTA analysis must be conducted. The Department cannot exempt from the RACT rules source operations whose emissions are indeterminate and may be inconsistent with current guidelines for the installation of VOC air pollution control devices.

69. COMMENT: A requirement should be added to N.J.A.C. 7:27-16.7(r)1 stating that the dryer air pressure shall be maintained at a lower air pressure than the pressroom at all times when the press is operating. (3, 6, 14, 19, 25, 32)

RESPONSE: Although maintaining dryer air at a lower pressure than the pressroom is a method to ensure that all emissions are forwarded to the control device, the Department is not modifying the rule. Rather, the rule will allow facilities flexibility on how the emission and operational standards are achieved.

70. COMMENT: Applicability thresholds at N.J.A.C. 7:27-16.7(e) should be based on actual emissions, which would allow for a much easier and predictable determination of applicability. (3, 6, 14, 19, 25, 32)

RESPONSE: The Department has a Federally enforceable preconstruction permit program and has received delegation from the EPA for the implementation of a Title V Operating Permit Program. Consequently, in accordance with Federal guidance, all Department applicability and compliance thresholds must be based on the potential-to-emit, and not the actual emission rates. This is also evidenced by the EPA's mandate that the Department apply Federal regulations based on a source operation's maximum operating capacity, and not actual usage. For example, a boiler with a gross heat input rating of 60 million British Thermal Units per hour (MMBTU/hr) will be subject to any Federal rules for boilers with a rating over 50 MMBTU/hr, even if the actual heat input is less than 50 MMBTU/hr.

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71. COMMENT: The phrase “or graphic arts operations” should be removed from N.J.A.C. 7:27-16.7(a)3, since this regulation provides an exemption for sources listed at N.J.A.C. 7:27-16.7(l), and there are no graphic arts source operations listed at N.J.A.C. 7:27-16.7(l). (3, 6, 14, 19, 25, 32)

RESPONSE: The Department proposed no amendments to N.J.A.C. 7:27-16.7(a). Accordingly, the comments are outside the scope of this rulemaking. However, the Department concurs that the phrase “or graphic arts operations” is not needed. Since N.J.A.C. 7:27-16.7(l) is not applicable to graphic arts source operations, the Department will consider removing the phrase in a future rulemaking.

72. COMMENT: The Department’s complete reliance on the cost effective analysis contained in the Lithographic CTG Document is not appropriate for the following reasons:

1. The proposed rule and amendments at N.J.A.C. 7:27-16.7 established much lower applicability thresholds than the CTG;
2. The EPA overestimated the amount of isopropyl alcohol that was being used by printers in its 1993 draft CTG for Offset Lithography; and
3. The equipment used by smaller facilities is not readily capable of meeting the proposed VOC levels for fountain solutions. (3, 6, 14, 19, 25, 32)

RESPONSE:

The EPA addressed the concern raised on the cost analyses in Section VII, “Cost Effectiveness of Recommended Control Options,” of the Lithographic CTG Document when it stated:

We believe that the model plant analysis in the 1993 draft CTG is representative of current operations in the offset lithographic printing industry and current control options. The significant control approaches addressed in the 1993 draft CTG are the same approaches that are available today, and those approaches continue to represent the most effective means of controlling VOC emissions from offset lithographic printers. We also believe that the model plant analysis accurately presents the costs associated with the control approaches identified in the 1993 document.

In addition, in Section 2.1.19 of “Response to Public Comments Received in Response to Control Techniques Guidelines for Consumer and Commercial Products Categories: Lithographic Printing Materials and Letterpress Printing Materials; Flexible Packaging Printing Materials; Flat Wood Paneling Coating; and Industrial Cleaning Solvents,” September, 2006 (September 2006 Response Document), the EPA stated that it had received information during the comment period that it used to update the information on which it relied in its model plant analysis.



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In the EPA's September 2006 Response Document in Section 2.1.20, "Reducing Alcohol Content in Fountain Solutions," the EPA stated that it would recommend in the final Lithographic CTG Document that the fountain solution guidelines not apply to sheet-fed presses with a maximum sheet size less than 11 inches by 17 inches, or to any press total fountain solution reservoir of less than one gallon. The EPA drafted these exemptions since it believed that in these situations the cost of control may be too high for the emission reduction that would be achieved. The Department incorporated these exemptions into the rules.

The EPA has addressed the concerns on the final costs contained in Section VII, Table 1 "Cost Effectiveness Values for Recommended Control Approaches for Offset Lithographic Printing," of the Lithographic CTG Document. Consequently, the Department's use of the EPA's data in the development of these regulations is valid.

However, the Department is modifying N.J.A.C. 7:27-16.7(e)1 on adoption to exempt source operations that meet the applicability threshold from the fountain solution requirements at N.J.A.C. 7:27-16.7(s). This exemption should assist smaller facilities that are not readily capable of meeting the VOC levels for fountain solutions.

73. COMMENT: The VOC control criteria for any heatset web lithographic or heatset letterpress printing operations should be consistent with the recommended control options in Section VI, Part A of the Lithographic CTG Document. Section VI, Part A recommended a 90 percent or greater control efficiency for a control device whose first installation date was prior to the effective date of the state RACT rule issued after the date of the CTG, and a greater than 95 percent control efficiency for a control device whose first installation date is on or after the effective date of the state RACT rule issued after the date of the CTG. (3, 6, 14, 19, 25, 32)

RESPONSE: All of the RACT requirements in N.J.A.C. 7:27-16.7 for thermal control devices mandate that at a least 95 percent control efficiency be achieved. This is applicable to thermal control devices installed on flexographic printing, fabric printing, screen printing, and rotogravure printing operations. Consequently, the 95 percent control efficiency for any heatset web lithographic or heatset letterpress printing operations is reasonable. The Department has required for over 10 years that thermal oxidizers be designed to meet a 99 percent control efficiency to address any unanticipated circumstances, and be operated to achieve a minimum 95 percent control efficiency. (See N.J.A.C. 7:27-16.7(h).) Also, since destruction efficiency increases exponentially with the increase in thermal oxidation temperature, an existing thermal oxidizer should be able to meet the 95 percent requirement by increasing its minimum operating temperature.

For thermal oxidizers whose inlet exhaust stream has a low VOC concentration that makes the verification of the 95 percent control efficiency difficult, the Department has included an alternative compliance level of a maximum outlet VOC concentration of 20 parts per million by volume as equivalent hexane. (See N.J.A.C. 7:27-16.7(r).)

However, to allow control devices other than thermal oxidation to be used as controls for heatset web lithographic or heatset letterpress printing operations, the Department is modifying

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N.J.A.C. 7:27-16.7(r) on adoption to allow an additional control option for non-thermal control devices. The non-thermal control devices will have to achieve a minimum VOC collection efficiency of 90 percent by volume. This 90 percent level is consistent with existing RACT requirements for flexographic printing, fabric printing, screen printing, and rotogravure printing source operations.

74. COMMENT: Heatset web lithographic and heatset letterpress printing operations should have a compliance option to reduce the control device outlet concentration to 20 parts per million by volume (ppmv), excluding methane and ethane, as hexane on a dry basis to accommodate situations where the inlet VOC concentration is low or there is no identifiable measurable inlet. (3, 6, 14, 19, 25, 32)

RESPONSE: N.J.A.C. 7:27-16.7(r) allows a maximum VOC level of 20 parts per million by volume as equivalent hexane for situations where the inlet VOC concentration is low. However, the Department is not excluding methane or ethane from the measured 20 ppmv since presence of these substances provides an indication of incomplete combustion. Also, the EPA's recommendation for this compliance option in the Lithographic CTG Document provides no exclusion for methane and ethane.

75. COMMENT: Provide an explanation for why types of printing, other than fabric printing, were deleted from N.J.A.C. 7:27-16.7(p). (3, 6, 14, 19, 25, 32)

RESPONSE: Since the EPA's CTGs for rotogravure, gravure (sheet-fed) and flexographic printing operations did not include an exemption for a control apparatus installed prior to July 26, 1994, that had not been altered or replaced, these printing operations were deleted from the provisions of N.J.A.C. 7:27-16.7(p). Adopted N.J.A.C. 7:27-16.7(p) applies only apply to fabric printing.

76. COMMENT: The Department should not use a rulemaking as a means of reopening or opening an existing permit that was developed using a case-by-case analysis. The rulemaking does not take into account the cost and technical feasibility analysis which was developed during the review of the case-by-case analysis of the existing permit. (3, 6, 14, 19, 25, 32)

RESPONSE: Any owner or operator with a case-by-case emission limit issued as an alternative VOC emission limit (AEL) or a facility-specific VOC emission limit (FSEL) prior to the operative date of these amendments, who intends to continue to operate under this limit, must apply for and obtain the necessary approvals pursuant to N.J.A.C. 7:27-16.17, "Alternative and Facility-Specific VOC Control Requirements." Other case-by-case analyses for VOC emission limits are beyond the scope of this rulemaking.

Title V Operating Permits can be reopened and modified by the Department for cause, including a change to an applicable requirement. For Preconstruction Permits, the permittee,

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pursuant to N.J.A.C. 7:27-8.3(g), is responsible for compliance with any requirement with the force of law issued by the Department. Consequently, if a permittee needs to make a modification to equipment that is covered by any existing permit to comply with a new RACT rule, the permittee must apply for and obtain the necessary approvals for the modification to the Preconstruction Permit.

77. COMMENT: The proposed rules at N.J.A.C. 7:27-16.7(h)3 for flexographic printing presses are more stringent than the “Control Techniques Guidelines for Flexible Package Printing,” EPA 453/R-06-0003, September, 2006 (Flexible Packaging CTG Document). The Flexible Packaging CTG Document allows an overall control of VOC emissions of 80 percent, while proposed N.J.A.C. 7:27-16.7(h) establishes a separate, minimum capture efficiency of 85 percent and separate minimum control efficiency of 95 percent. These minimum capture and control efficiencies result in an absolute requirement that is consistent with the Flexible Packaging CTG Document. (3, 6, 14, 19, 25, 32)

RESPONSE: The standards for flexographic printing presses are not more stringent. The CTG document requires an overall destruction efficiency of 80 percent, while the Department requires an overall destruction efficiency of 80.75 percent. The commenter has stated, and the Department concurs, that these two numerical requirements are consistent. The Department established the minimum capture efficiency and minimum control efficiency to be consistent with existing N.J.A.C. 7:27-16.7(h) for the types of printing operations noted. The capture and control efficiencies are directly related to the VOC emission rate, and having independent standards for each aids in ensuring that all the parameters are operating as designed. The Flexible Packaging CTG Document states in Section VI Recommended Control Options, “The 80 percent overall control efficiency is based on a capture efficiency of 85 percent and a control device efficiency of 95 percent.” The Department incorporated the 85 percent capture efficiency and 95 percent control efficiency into N.J.A.C. 7:27-16.7(h)3 for flexographic printing operations installed or modified after May 1, 2010. It is reasonable to require new or modified source operations to meet both of these standards to ensure compliance.

78. COMMENT: The maximum allowable volume percent VOC listed in N.J.A.C. 7:27-16.7 Table 7D Graphic Arts Operations – Part B provides no differentiation between print processes with widely varying ink system requirements. It is not technically possible or desirable to set a common VOC limit for different print processes. (3, 6, 14, 19, 25, 32)

RESPONSE: The Department disagrees with this comment. Both the Flexible Packaging CTG Document and Table 7D, Part B of N.J.A.C. 7:27-16.7 list allowable VOC content levels in Surface Coating Formulations in pounds VOC per pound solid applied, and pounds VOC per pound material applied. These alternate parameters accommodate various types of coatings. The Department is aware that each rotogravure printing, sheet-fed gravure printing, and flexographic printing source operation will have its own individual system requirements based on the

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substrate being coated and the specifications for the final product. However, the “maximum allowable VOC content of surface coating formulation (minus water)” standard in Table 7D, Part B is meant to apply to all types of surface coating formulations whatever type of ink system is being used. Both the rule and the Flexible Packaging CTG Document focus on the VOC that is emitted from the surface coating operation, and not the type of ink system used. The Department acknowledges that there may be instances where the VOC content levels in Table 7D, Part B cannot be met because of the unique characteristics of a graphic arts operation. In these cases, the owner or operator of the operations can comply with the control criteria requirements listed in N.J.A.C. 7:27-16.7(h) as an alternative to complying with Table 7D, Part B.

79. COMMENT: The use of the term “sealed” containers at N.J.A.C. 7:27-16.7(t)1 through 4 is difficult and impractical condition to meet, as a “sealed” container means an “air tight” container.

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.7(t)1 through 4 on adoption by replacing the word “sealed” with “closed,” and describing “closed” as preventing the materials containing VOC from coming in contact with and being exposed to the atmosphere. This is consistent with Sections VI. B. Recommended Control Options-Cleaning Materials Work Practices at Flexible Package Presses of the Flexible Packaging CTG Document, and Section VI. C. Recommended Control Options-Work Practices of the “Control Techniques Guidelines for Flat Wood Paneling Coatings,” EPA 453/R-06-004, September, 2006 (Flat Wood Paneling CTG Document). Both of these documents refer to keeping containers, mixing vessel, and conveying equipment closed when not in use.

80. COMMENT: Proposed N.J.A.C. 7:27-16.7(t)5 requires on-site logs be maintained to record implementation of the best management practices required pursuant to N.J.A.C. 7:27-16.7(t)1 through 4. This creates an undue administrative burden on the printing industry, and the provision should be deleted. (3, 6, 14, 19, 25, 32)

RESPONSE: Maintenance of on-site logs will not result in an undue administrative burden. Such a log could consist of a daily check list, which provides confirmation that the best management practices are being followed throughout an affected printing facility. The on-site logs will ensure that the facilities are meeting the best management practices on a continuing basis as facility personnel change. Also, the on-site logs will ensure that the best management practices are being integrated when surface coating methodologies are being modified or upgraded. Therefore, the Department is not deleting the recordkeeping provision at proposed N.J.A.C. 7:27-16.7(t)5 (adopted N.J.A.C. 7:27-16.7(t)6).

81. COMMENT: The following four new subsections should be added to N.J.A.C. 7:27-16.7: (u) Emission Standards Testing, (v) Equipment Standards Testing, (w) Monitoring Requirements, and (x) Retention Factors and Capture Efficiencies, which includes recommended

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methodology for estimating actual emissions in the lithography industry. These subsections are meant to clarify the testing and monitoring requirements for the lithographic printing industry.

The proposed language for N.J.A.C. 7:27-16.7(u), Emission Standards Testing, is as follows:

1. For the purpose of demonstrating compliance with the emission control requirements of N.J.A.C. 7:27-16.7(r) of this rule, the affected source shall be run at typical operating conditions and flow rates compatible with scheduled production during any emission testing.
2. The initial emission test will be performed, within 180 days of start-up, when the control device is installed and operating that demonstrates compliance with the applicable emission control requirement of N.J.A.C. 7:27-16.7(r).
3. The negative dryer pressure shall be established during the initial test using an airflow direction indicator, such as a smoke stick or aluminum ribbons, or differential pressure gauge.
4. The following EPA test methods (in 40 CFR 60, Appendix A) shall be used to demonstrate compliance with the applicable emission control requirement in N.J.A.C. 7:27-16.7(r). Alternate methods may be used with the approval of the permitting authority.
  - i. EPA Method 1 or 1A, as appropriate, shall be used to select the sampling sites.
  - ii. EPA Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the velocity and volumetric flow rate of the exhaust stream.
  - iii. EPA Method 3 or 3A, as appropriate, shall be used to determine the concentration of O<sub>2</sub> and CO<sub>2</sub>.
  - iv. EPA Method 4 shall be used to determine moisture content.
  - v. EPA Method 18, 25, or 25A shall be used to determine the VOC concentration of the exhaust stream entering and exiting the control device, unless the alternate limit is being met, in which case only the VOC concentration of the exit exhaust shall be determined. In cases where the anticipated outlet VOC concentration of the control device is less than 50 ppmv as carbon, EPA Method 25A shall be used.
    1. If the average concentrations in the outlet of a thermal or catalytic oxidizer measured by EPA Method 25A are found to be greater than 50 ppmv as carbon, EPA Method 18 or 25 may be used to determine non-VOC

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components (methane and ethane) to correct the outlet VOC readings, unless the permitting authority determines that the uncorrected EPA Method 25A results are acceptable.

2. A compliance test shall consist of up to three separate runs, each lasting a minimum of 60 minutes, unless the permitting authority determines that process variables dictate shorter sampling times.
3. EPA Method 25 specifies a minimum probe temperature of 265 degrees Fahrenheit. To prevent condensation, the probe should be heated to at least the gas stream temperature, typically close to 350 degrees Fahrenheit.
4. EPA Method 25A specifies a minimum temperature of 220 degrees Fahrenheit for the sampling components leading to the analyzer. To prevent condensation when testing heatset web offset presses, the sampling components and flame ionization detector block should be heated to at least the gas stream temperature, typically close to 350 degrees Fahrenheit.
5. Use of an adaptation to any of the analytical methods specified above shall be approved by the permitting authority on a case-by-case basis. The owner/operator shall submit sufficient documentation for the permitting authority to find that the analytical methods specified above will yield inaccurate results and that the proposed adaptation is appropriate.

The proposed language for N.J.A.C. 7:27-16.7(v), Equipment Standards Testing, is as follows:

1. The VOC content of as-applied fountain solution in N.J.A.C. 7:27-16.7(s) shall be determined by the following:
  - i. If diluted prior to use, a calculation that combines EPA Method 24 analytical data for the concentrated materials used to prepare the fountain solution and the proportions in which they are mixed to make the as-applied material. The analysis of the concentrated materials may be performed by the supplier of those materials. Owners or operators may use formulation information provided with the concentrated materials used to prepare the fountain solution, such as the container label, the product data sheet, or the MSDS sheet to document the VOC content of the concentrated material; or
  - ii. If not diluted prior to use, MSDS or formulation information from the supplier may be used; or
  - iii. Analysis by EPA Method 24 of a sample of as-applied fountain

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solution.

## 2. Refrigeration Equipment

- i. To demonstrate compliance with the applicable fountain solution temperature requirements in N.J.A.C. 7:27-16.7(s)1 and 2, a thermometer or other temperature detection device capable of reading to 0.5 degrees Fahrenheit shall be used to ensure that any refrigerated fountain solution reservoirs are maintained at or below 60 degrees Fahrenheit at all times.
3. The VOC content or VOC composite partial vapor pressure of cleaning solutions as specified in N.J.A.C. 7:27-16.7(r)2 shall be determined by the following:
- i. Analysis by EPA Method 24 for VOC content or by an appropriate method for VOC composite partial vapor pressure of a sample of the cleaning solution. The analysis may be performed by the supplier of those materials; or
  - ii. Calculation for VOC content that combines EPA Method 24 analytical data for the concentrated materials used to prepare the cleaning solution and the proportions in which they are mixed to make the as-applied cleaning solution Owners or operators may use formulation information provided with the concentrated materials used to prepare the cleaning solution, such as the container label, the product data sheet, or the MSDS sheet to document the VOC content of the concentrated material.

The proposed language for N.J.A.C. 7:27-16.7(w), Monitoring Requirements, is as follows:

## 1. Fountain Solution

- i. The owner or operator of a subject offset lithographic printing press using alcohol shall monitor the alcohol concentration of the fountain solution with a hydrometer, equipped with temperature correction or with readings adjusted for temperature, at least once per shift or once per batch, whichever is longer. A standard solution shall be used to calibrate the hydrometer for the type of alcohol used in the fountain.
- ii. The owner or operator of a subject offset lithographic printing press using alcohol substitutes shall keep records of the calculation of the as-applied VOC content or the results of EPA Method 24 analysis as described in N.J.A.C. 7:27-16.7(s)1 and 2. Records of dilution or addition of VOC shall be kept and the resultant VOC content shall either be recalculated or measured with EPA Method 24 analysis. For automatic

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mixing systems, verification of the mixer settings shall be performed once each month.

- iii. For fountain solutions containing alcohol substitutes purchased with less than five percent VOC content before dilution, the owner or operator need not keep records of VOC dilution and addition, and only need to maintain a current MSDS with VOC content determined by EPA Method 24.

## 2. Refrigeration Equipment

- i. The temperature of the fountain solution shall be measured at the recirculating tank at least once per operating day and recorded in a log.

## 3. Cleaning Solutions

- i. The owner or operator of a subject offset lithographic printing press shall keep records of the VOC content or VOC composite partial vapor pressure as described in N.J.A.C. 7:27-16.7(r)2.

## 4. Automatic Blanket Wash Systems

- i. The owner or operator of a subject offset lithographic printing press using an automatic blanket wash system that mixes cleaning solution at the point of application shall document that flow meters or fixed volume spray systems result in the VOC content of the mixed solution that complies with N.J.A.C. 7:27-16.7(r)2.

## 5. Add-On Control Device

- i. For catalytic oxidizers, install, calibrate, maintain, and operate temperature monitoring equipment for the gas temperature upstream of the catalyst bed. The temperature shall be monitored and recorded at least once every 15 minutes by an analog or digital recording device.

The catalyst bed material shall be inspected annually for general catalyst condition and any signs of potential catalyst depletion. The permittee shall also collect a representative sample of the catalyst from the oxidizer, per manufacturer's recommendations, and have it tested to evaluate the catalyst's capability to continue to function at or above the required control efficiency. An evaluation of the catalyst bed material shall be conducted whenever the results of the inspection indicate signs of potential catalyst depletion or poor catalyst condition based on manufacturer's recommendations, but not less than once per year.



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- ii. For thermal and regenerative oxidizers, install, calibrate, maintain, and operate temperature monitoring equipment for the oxidizer operating temperature. The temperature shall be monitored and recorded at least once every 15 minutes by an analog or digital recording device.
- iii. The temperature to be monitored shall be established during testing required to demonstrate compliance with the emission standard in N.J.A.C. 7:27-16.7(u). The temperature shall be computed as the time-weighted average of the temperature values recorded during the test. The facility must maintain the oxidizer at a three-hour average temperature no less than 50 degrees Fahrenheit below the average temperature observed during the most recent stack test to demonstrate continuous compliance. Temperature monitoring is required only when a connected printing press is operational.

The proposed language for N.J.A.C. 7:27-16.7(x), Retention Factors and Capture Efficiencies, is as follows:

For purposes of determining VOC emissions from offset lithographic printing operations, the following retention factors and capture efficiencies shall be used:

1. A portion of the VOC contained in inks and cleaning solution is retained in the printed web or in the shop towels used for cleaning. The following retention factors shall be used:
  - i. A 20 percent VOC retention factor shall be used for heatset inks printed on absorptive substrates, meaning 80 percent of the VOC in the ink is emitted during the printing process and is available for capture and control by an add-on pollution control device.
  - ii. A 95 percent VOC retention factor shall be used for sheet-fed and non-heatset web inks printed on absorptive substrates, meaning 5 percent of the VOC in the ink is emitted during the printing process.
  - iii. A 50 percent VOC retention factor shall be used for cleaning solution VOC in shop towels for cleaning solutions with a VOC composite vapor pressure of no more than 10 mm of mercury (Hg) at 20 degrees Celsius (68 degrees Fahrenheit) if the contaminated shop towels are kept in closed containers, meaning 50 percent of the VOC used on the shop towels is emitted during the cleaning process.
2. A portion of the VOC contained in inks, fountain solutions, and automatic blanket washes on heatset presses is captured in the press dryer for control by add-on pollution control devices. The following capture efficiencies are to be used:

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- i. A 100 percent VOC carry over efficiency shall be used for inks. All the VOC in the ink that is not retained is assumed to be volatilized in the press dryer.
- ii. A 70 percent VOC carry over efficiency shall be used for fountain solutions containing alcohol substitutes.
- iii. A 40 percent VOC carry over efficiency shall to be used for automatic blanket wash solutions with a VOC composite vapor pressure of no more than 10 mm of mercury (Hg) at 20 degrees Celsius (68 degrees Fahrenheit).

(3, 6, 14, 19, 25, 32)

RESPONSE: The suggested four subsections are beyond the scope of the rulemaking. Suggested subsection (u), Emission Standards Testing, would require that the following EPA Methods be used, as applicable, to sample and quantify the air contaminant emissions from surface coating operations: EPA Methods 1, 1A, 2, 2A, 2C, 2D, 3, 3A, 4, 18, 25, and 25A. Similarly, suggested subsection (v), Equipment Standards Testing, would require that EPA Method 24 be used to determine the VOC content of as-applied solution.

The adopted rules address only limitations on VOC emissions, and not test methods. Test methods are regulated at N.J.A.C. 7:27B, Sampling and Analytical Procedures. The adopted rules do not list any of the proposed monitoring procedures listed in suggested subsection (w), Monitoring Requirements. Monitoring requirements are incorporated into Preconstruction Permits pursuant to N.J.A.C. 7:27-8.13(d) and are incorporated into Operating Permits pursuant to N.J.A.C. 7:27-22.18.

The adopted rules do not identify procedures and guidelines for determining air contaminant emissions, as is suggested to be added in subsection (x), Retention Factor and Capture Efficiencies. The Department establishes potential air contaminant emissions limitations for Preconstruction Permits pursuant to N.J.A.C. 7:27-8.4(k) and for Operating Permits pursuant to N.J.A.C. 7:27-22.6(f)5. N.J.A.C. 7:27-8.4(k) and 7:27-22.6(f) both require that air contaminant emission rates be proposed by the applicant. The applicant develops the air contaminant emission rates based on the unique characteristics of the source operation. Therefore, the universal retention factors outlined in suggested subsection (x) are inappropriate, since these retention factors can vary.

For example, suggested subsection (x) would require that a 95 percent VOC retention factor be used as a default factor for sheet fed inks. This is inappropriate, since an applicant should have the flexibility to propose a higher retention factor if his equipment and coating are capable of meeting the more restrictive limit or to propose a lower retention factor if adequate add on controls will be installed. Methods used for quantifying actual emissions are evaluated during the review of the Emission Statement submitted in accordance with N.J.A.C. 7:27-21.

82. COMMENT: The following definitions should be added to N.J.A.C. 7:27-16.1:

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- 1) “Alcohol” means any of the following compounds when used as a fountain solution additive for offset lithographic printing: ethanol, n-propanol, and isopropanol;
- 2) “Alcohol substitute” means nonalcohol additives that contain VOC and are used in the fountain solution. Some additives are used to reduce the surface tension of water; others are added to prevent piling (ink buildup);
- 3) “Automatic blanket wash system” means equipment used to clean lithographic blankets which can include but is not limited to those utilizing a cloth and expandable bladder, brush, spray, or impregnated cloth system;
- 4) “Dampening system” means equipment used to deliver the fountain solution to the lithographic plate;
- 5) “Fountain solution batch” means for the purposes of the lithographic (industry), a supply of fountain solution that is prepared and used without alteration until completely used or removed from the printing process. For the purpose of this rule, this term may apply to solutions prepared in either discrete batches or solutions that are continuously blended with automatic mixing units;
- 6) “Inking system” means a series of rollers used to meter ink onto the lithographic plate. The system can include agitators, pumps, totes, and other types of ink container;
- 7) “Press” means a printing production assembly composed of one or more units used to produce a printed substrate including any associated coating, spray powder application, heatset web dryer, ultraviolet or electron beam curing units, or infrared heating units; and
- 8) “Unit” means the smallest complete printing component, composed of inking and dampening systems, of a printing press.

The definitions will clarify the rules as applied to the lithographic printing industry. (3, 6, 14, 19, 25, 32)

RESPONSE: The Department is not adding the suggested definition of “alcohol” since the suggested definition refers to ethanol, n-propanol and isopropanol and these three compounds are already covered under the existing definition of VOC. Also, the Lithographic CTG Document deals with VOCs as a contaminant class, rather than the emissions of individual VOC.

The Department is not adding the suggested definition of “automatic blanket wash system” since the requirements for cleaning materials at N.J.A.C. 7:27-16.7(r)2 are based solely on VOC content and vapor pressure, and are independent of the type of cleaning equipment. The Department is not adding the suggested definitions of “alcohol substitute,” “dampening system” and “fountain solution batch,” since the requirements for fountain solutions at N.J.A.C. 7:27-16.7(s) are based solely on VOC content and temperature, and not the equipment used to deliver the fountain solution or the mechanism used to develop the fountain solution.

The Department is not adding the suggested definition of “inking system” since the compliance requirements are independent of the mechanism used apply the inks. The

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Department is not adding the suggested definitions of “press” and “unit,” since the rules’ requirements apply to the entire printing operation.

83. COMMENT: The Department should replace the proposed definition of “cleaning material” at N.J.A.C. 7:27-16.1 with the following: “With respect to a surface coating operating or graphic arts operation, a liquid solvent or solution used to clean the operating surfaces of a printing press and its parts. For purposes of this standard, cleaning solutions include, but are not limited to blanket wash, roller wash, metering roller cleaner, plate cleaner, impression cylinder washes, rubber rejuvenators, and other cleaners used for cleaning a press, press parts, or to remove dried ink or coating from areas around the press.” (3, 6, 14, 19, 25, 32)

RESPONSE: The Department is not changing the definition of “cleaning material,” since the standards in N.J.A.C. 7:27-16.7(r) are applicable no matter what part or section of the surface coating operation or graphic arts operation is being cleaned.

84. COMMENT: The Department should replace the proposed definition of “coldset web lithographic printing” at N.J.A.C. 7:27-16.1 with a definition that refers to “coldset web lithographic printing” as a non-heatset process. (3, 6, 14, 19, 25, 32)

RESPONSE: The Department is modifying the definition of “coldset web lithographic printing” at N.J.A.C. 7:27-16.1 on adoption to differentiate coldset web lithographic printing from heatset web lithographic printing.

85. COMMENT: The definition of “flexographic printing operation” should be modified as follows: “A printing process that uses a flexible printing plate with a raised image. Flexographic plates are made from molded or engraved rubber or imaged from a light-sensitive synthetic material called photopolymer. Plates are mounted on a rotary cylinder on a press equipped with anywhere from one to twelve stations.” (3, 6, 14, 19, 25, 32)

RESPONSE: The Department did not propose to modify the existing definition of “flexographic printing operations,” since all types of these operations have to comply with the same control criteria.

The Department is not changing the existing definition of flexographic printing operation based on the suggested definition, since the suggested definition could exclude certain source operations. For example, the suggested definition limits the type of polymer to photopolymer, while the existing definition refers to elastomeric material, which can be broadly interpreted as a polymer with the property of elasticity. Also, the suggested definition limits the operation to 12 stations, while the existing definition has no such limitation.

86. COMMENT: The definition of “fountain solution” should be modified at N.J.A.C. 7:27-16.1 as follows: “A mixture of water and other volatile and non-volatile chemicals and additives

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that maintains the quality of the printing plate including preventing debris build up (such as spray power, paper fiber, coating particles, dried ink particles, and other materials), and increases viscosity and reduces the surface tension of the water so that it spreads easily across the printing plate surface. The fountain solution wets the non-image area so that the ink is maintained within the image areas. Non-volatile additives include mineral salts and hydrophilic gums. Alcohol and alcohol substitutes are the most common VOC additives used to reduce the surface tension of the fountain solution.”

(3, 6, 14, 19, 25, 32)

RESPONSE: The Department’s definition encompasses all types of the fountain solutions and focuses on why a fountain solution is used. N.J.A.C. 7:27-16.7(s) regulates the use of fountain solution based on the solution’s VOC content and the temperature. Consequently, the level of detail included in the alternative definition is not necessary to ensure compliance with the rule.

87. COMMENT: The definition of “lithographic printing” or “lithographic printing operation” should be modified at N.J.A.C. 7:27-16.1 as follows: “A planographic printing process where the image and non-image areas are chemically differentiated; the image area is oil receptive and the non-image area is water receptive. This method differs from other printing methods, where the image is typically printed from 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.”(3, 6, 14, 19, 25, 32)

RESPONSE: The Department is modifying the definition of “lithographic printing” or “lithographic printing operation” at N.J.A.C. 7:26-16.1 on adoption to clarify it by making it more technically descriptive and consistent the Offset Lithographic Printing and Letterpress Printing CTG Document.

The proposed definition does not provide sufficient detail of how chemical differentiation works to create the desired image. In the adopted definition, it is clearly stated that the image area is oil receptive and the pigments in the inks absorb on the substrate in this area and the non-image area is water receptive and the pigments in the ink do not absorb on the substrate in this area.

88. COMMENT: “Offset lithography” should be defined at N.J.A.C. 7:27-16.1 as “A printing process that transfers the ink film from the lithographic plate to an intermediary surface (blanket), which, in turn, transfers the ink film to the substrate.” (3, 6, 14, 19, 25, 32)

RESPONSE: The Department sees no need to modify the existing definition of “offset lithography.” The existing definition is more descriptive than the suggested definition.

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89. COMMENT: The Department should replace the proposed definition of “sheet-fed lithographic printing” at N.J.A.C. 7:27-16.1 with the following: “A non-heatset lithographic printing process where individual sheets of substrate are fed into the press sequentially.” This differs from the proposed definition at N.J.A.C 7:27-16.1 in that the term “non-heatset,” is included and indicates that other materials, besides paper, are used in the process. (3, 6, 14, 19, 25, 32)

RESPONSE: The Department is modifying the definition of “sheet-fed offset lithographic printing” at N.J.A.C 7:27-16.1 on adoption to indicate that it is a “non-heatset” process (no dryer is involved in the process), that other types of material besides paper are used in the process, and to make the definition consistent with the definition for sheet-fed lithographic printing in the Lithographic CTG Document. The proposal summary (40 N.J.R. at 4395) indicates that the Department intended to follow the EPA’s CTG documents.

90. COMMENT: Definitions of “heatset,” “heatset dryer,” and “non-heatset lithographic printing” should be added to the rule. (3, 6, 14, 19, 25, 32)

RESPONSE: The Department is modifying N.J.A.C 7:27-16.1 on adoption to add new definitions of “heatset,” “heatset dryer,” and “non-heatset lithographic printing.” These three definitions are consistent with the Lithographic CTG Document, which establishes different applicability thresholds and emission standards for coldset web and heatset web source operations. The proposal summary (40 N.J.R. at 4395) indicates that the Department intended to follow the EPA’s CTG documents.

The term “non-heatset lithographic printing” is being added to the definition of “sheet-fed offset lithographic printing.” The term “heatset dryer” is being included in the definition of “coldset web lithographic printing.” The term “heatset” is being defined to distinguish “heatset” and “non-heatset” lithographic printing.

91. COMMENT: “Fountain solution reservoir” should be defined at N.J.A.C. 7:27-16.1 as “The collection tank that accepts fountain solution recirculated from printing unit(s). In some cases, the tanks are equipped with cooling coils for refrigeration of the fountain solution.” (3, 6, 14, 19, 25, 32)

RESPONSE: The Department is modifying N.J.A.C 7:27-16.1 on adoption to add a definition of “fountain solution reservoir.” The adopted definition is consistent with the Lithographic CTG Document, which establishes an applicability threshold based on the capacity of the fountain solution reservoir. The proposal summary (40 N.J.R. at 4395) indicates that the Department intended to follow the EPA’s CTG documents. Consistent with this modification, the Department is replacing the phrase “fountain reservoir” with “fountain solution reservoir” at N.J.A.C. 7:27-16.7(s)2.

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92. COMMENT: “Web” should be defined at N.J.A.C. 7:27-16.1 as “A lithographic printing process where a continuous roll of substrate is fed into the press.” (3, 6, 14, 19, 25, 32)

RESPONSE: The Department is modifying N.J.A.C 7:27-16.1 on adoption to add the definition of “web.” The adopted definition is consistent with the Lithography CTG Document since the Document uses the term “web” to describe the continuous rolls of substrate material fed to the press and rewind or cut to size after printing. The proposal summary (40 N.J.R. at 4395) indicates that the Department intended to follow the EPA’s CTG documents. The new definition is necessary as a means of describing the “coldset web” and “heatset web” processes. The definition applies to lithographic printing processes, as well as other surface coating operations.

93. COMMENT: “VOC Composite Partial Vapor Pressure” should be defined at N.J.A.C. 7:27-16.1 as “The sum of the partial pressure of the compounds defined as VOCs. VOC composite partial vapor pressure is calculated as follows:

$$PP_c = \sum_{i=1}^n \frac{(W_i)(VP_i) / MW_i}{\frac{W_w}{MW_w} + \frac{W_c}{MW_c} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

Where:

- $W_i$  = Weight of the “i”th VOC compound, in grams
- $W_w$  = Weight of water, in grams
- $W_c$  = Weight of exempt compound, in grams
- $MW_i$  = Molecular weight of the “i”th VOC compound, in g/g-mole
- $MW_w$  = Molecular weight of water, in g/g-mole
- $MW_c$  = Molecular weight of exempt compound, in g/g-mole
- $PP_c$  = VOC composite partial vapor pressure at 20 degrees Celsius (68 degrees Fahrenheit), in mm Hg
- $VP_i$  = Vapor pressure of the “i”th VOC compound at 20 degrees Celsius (68 degrees Fahrenheit), in mm Hg”

(3, 6, 14, 19, 25, 32)

RESPONSE: The existing definitions of “partial pressure” and “vapor pressure” at N.J.A.C. 7:27-16.1 are sufficient to determine compliance with N.J.A.C. 7:27-16.7(r)2i, which states, “On and after (the operative date of these amendments), any cleaning material used on any lithographic or letterpress printing press shall have a composite VOC vapor pressure less than 10 mm Hg at 20 degrees Celsius.” Consequently, the Department is not adding the suggested definition.

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94. COMMENT: An additional housekeeping provision should be included in N.J.A.C. 7:27-16 to address spills as a best management practice. (39)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.7(t) on adoption to add an additional housekeeping requirement at N.J.A.C. 7:27-16.7(t)5, requiring the minimization of spills of coatings and thinners containing VOCs and the immediate clean up of spills. This is consistent with the recommendations in the Section VI Part C of the Flat Wood Paneling CTG Document. The proposal summary (40 N.J.R. at 4395) indicates that the Department intended to follow the EPA's CTG documents.

### **Industrial/Commercial/Institutional (ICI) Boilers and Other Indirect Heat Exchangers**

96. COMMENT: Table 9 in the Department's proposed revision to N.J.A.C. 7:27-19.7 lists maximum allowable NO<sub>x</sub> emission rates for boilers having a heat input rate of at least 25 MMBtu/hr but less than 100 MMBtu/hr. These proposed rates are much too low to allow for consumption of No. 6 fuel oil. Emission stack tests in 1996 and 2006 of combustion of No. 6 fuel oil show an emissions range of 0.27 to 0.34 lbs NO<sub>x</sub> /MMBtu, while the Department's proposed maximum allowable NO<sub>x</sub> emissions rate for "Other liquid fuels" (which would include No. 6 fuel oil) is 0.20 lbs NO<sub>x</sub> /MMBtu. Stack tests in 1996 for combusting natural gas on the same boiler showed emission rates that equal the proposed "Dual fuel using fuel oil and natural gas" maximum allowable NO<sub>x</sub> emission rate of 0.12 lbs NO<sub>x</sub>/MMBtu.

As can be seen from the 1996 and 2006 stack test results, the Department's proposed NO<sub>x</sub> emission rates are much too low to allow for consumption of No. 6 fuel oil in an industrial boiler rated at less than 50 MMBtu/hr, and are just barely adequate for consumption of natural gas in the same (dual-fueled) boiler. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The actual test data that the commenter provided are higher than the allowable limits at N.J.A.C. 7:27-19.7 because the tested boilers do not have air pollution controls. The emission limits for dual-fired boilers at N.J.A.C. 7:27-19.7 are based on the Department's experience with boilers that are controlled. Based on tests of such boilers, the emission limits are achievable.

97. COMMENT: The Department has stated that it does not expect the cost of its proposal to exceed \$18,000 per ton of NO<sub>x</sub> reduced, with typical cost effectiveness being less than \$5,000 per ton. (See 40 N.J.R. at 4424.) These costs are grossly underestimated. The Department's proposed rates will not allow combustion of No. 6 fuel oil in a boiler without placing an unreasonable economic burden on the owner or operator of the boiler. NO<sub>x</sub> emissions from this boiler while temporarily consuming No. 6 fuel oil as a substitute fuel (secondary to natural gas) have not exceeded 14 tons in recent years, and emission rates would have to be reduced by approximately two-thirds (approximately nine tons) to meet the proposed standard. A new boiler



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would cost approximately \$500,000, from which the following cost per ton of NO<sub>x</sub> reduced is calculated: \$500,000/9 tons NO<sub>x</sub> reduced = \$55,000 per ton NO<sub>x</sub> reduced, well above the Department's maximum estimate. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department's NO<sub>x</sub> control cost estimate is not based on the replacement of equipment. The estimate is an annualized cost of installing and operating NO<sub>x</sub> controls on existing boilers. The cost calculations are based on annualized cost over 20 years, rather than one time capital cost of new equipment. The cost calculations include, in part, direct capital cost (instrumentation, sales tax, freight), installation cost, control cost, indirect operating cost (overhead, administrative, property tax, and insurance), equipment service life, capital recovery factor, and interest rate.

98. COMMENT: The Department's existing New Jersey NO<sub>x</sub> emission rates apply only to boilers having a heat input rate of between 50 and 100 MMBtu/hr; the proposed new rates in Table 9 in N.J.A.C. 7:27-19.7 should also be limited to boilers in this heat input range.

If the Department must impose NO<sub>x</sub> emission rates for boilers having a heat input of at least 25 MMBtu/hr but less than 50 MMBtu/hr, then it should be done by creating a specific category for this previously unregulated range. A properly tuned industrial boiler in this range, not equipped with a low-NO<sub>x</sub> burner (but having a dual-fueled burner), will emit up to 0.35 lbs NO<sub>x</sub> /MMBtu when consuming No. 6 fuel oil, and will emit up to 0.15 lbs NO<sub>x</sub> /MMBtu when consuming natural gas. Any rates proposed by the Department should reflect these facts. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: Modifying the emission rates at Table 9 at N.J.A.C. 7:27-19.7 to apply only to those boilers having a heat input rate of between 50 and 100 MMBtu/hr would not achieve the necessary reductions to achieve NAAQS. Boilers having a heat input of at least 25 MMBtu/hr but less than 50 MMBtu/hr emit approximately 560 tons per year NO<sub>x</sub> emissions. This is a significant portion of the approximately 2000 tons per year of NO<sub>x</sub> emissions that are emitted from all industrial/institutional/commercial (ICI) boilers in New Jersey (40 N.J.R. at 4400). Controlling emissions from boilers in the 25 to 50 MMBtu/hr range will reduce NO<sub>x</sub> emissions in New Jersey by more than 250 tons per year.

There is no need to create a separate category for boilers in the 25 to 50 MMBtu/hr range because stack test data and a review of available technology have confirmed that boilers in the 25 to 100 MMBtu/hr range can comply with the same NO<sub>x</sub> emission limits. The Department established these NO<sub>x</sub> emission limits for boilers in the 25 to 100 MMBtu/hr range based on NO<sub>x</sub> emission limits recommended by the Ozone Transport Commission (OTC), actual stack test data from boilers with low NO<sub>x</sub> technology, and the feasibility and reasonable cost of installing low NO<sub>x</sub> technology on uncontrolled boilers.

99. COMMENT: The Department has proposed to impose NO<sub>x</sub> emission limits on boilers in the heat input range of 25 to 50 MMBtu/hr for the first time. It appears that the Department has

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assumed that these boilers are operated similar to larger sources and are operated throughout the year. However, there are instances where these boilers are operated only for comfort heating and therefore do not operate during the Ozone Season (that is, May 1 through September 30). Since the Department stated that the purpose of the proposed amendments was to achieve compliance with the Federal 1997 Eight-Hour National Ambient Air Quality Standard (NAAQS) for ozone, and ozone exceedances occur only during the Ozone Season, the proposed amendments will impose expensive and onerous requirements on seasonal sources and yet make no progress in achieving compliance with the NAAQS. There is precedent for this. For example, the approved Louisiana SIP limits NO<sub>x</sub> emissions only during the ozone season (Title 33, Part III, Chapter 22, Section 1.A.2.). (2)

RESPONSE: The Department expects all ICI boilers to install and operate NO<sub>x</sub> controls to minimize NO<sub>x</sub> emissions year round, since the new rules and amendments are not only part of New Jersey's final SIP revision to reduce ozone, but also part of New Jersey's proposed SIP revision to reduce fine particles to achieve NAAQS for PM<sub>2.5</sub>. (See 40 N.J.R. at 4390.) NO<sub>x</sub> is a precursor to both ozone and PM<sub>2.5</sub>. Also, it is not practicable to require installation of RACT only on boilers that operate during the ozone season. Operating certificates and operating permits issued by the Department do not limit operation of boilers to specific days of the year. A facility may apply for an alternative emission limit under N.J.A.C. 7:27-19.13 for equipment that is operated infrequently and for which installation of controls would not be cost effective.

100. COMMENT: N.J.A.C. 7:27-19.2 should be amended to include an exemption from the maximum allowable NO<sub>x</sub> emissions in N.J.A.C. 7:27-19.7 for small boilers (25 to 50 MMBtu/hr) that are restricted to short-term temporary use for backup operation during maintenance and/or repairs of other boilers at the facility, and which are limited to a max of 250 hours per year. Most facilities need to schedule periodic utility shutdown periods where facility main boiler steam supply systems are shut down for required periodic maintenance. Many business operations must continue to be supplied with the HVAC utility service during these scheduled maintenance shutdown periods. Facilities typically need to use these temporary boilers during periods that typically would not exceed 250 hours per year (that is, except during an unplanned emergency event), which are a necessary part of operating and maintaining a facility in good working order.

Due to the limited hours per year and small boiler size of backup temporary/short-term use boilers, requiring these boilers to meet the NO<sub>x</sub> emission rates in Table 9 in N.J.A.C. 7:27-19.7 would result in an insignificant emission reduction, and result in a significant additional unwarranted cost for the required retrofitting of these boilers with low-NO<sub>x</sub> burners and also the stack testing that would be required by N.J.A.C. 7:27-19.15. Therefore, an exemption to the Table 9 emission rates in N.J.A.C. 7:27-19.7 should be provided for 25 to 50 MMBtu/hr boilers which are restricted to backup, temporary short-term use that does not exceed 250 hours per year. (34)

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101. COMMENT: The new requirement for the NO<sub>x</sub> RACT Emission Rates in Table 9 in N.J.A.C. 7:27-19.7, applicable to boilers with a max heat input rate of between 25 to 50 MMBtu/hr, is too stringent for boilers that are only used for temporary backup during short-term annual maintenance periods and/or repairs.

Typically, facilities need to schedule periodic utility shutdown periods (usually annually or bi-annually) where site power (utility) distribution systems and/or or facility main steam supply systems, are shut down for required periodic maintenance. Certain critical business operations such as long-term research activities must be supplied with the above utilities during these scheduled maintenance shutdown periods. Facilities typically need to use temporary boilers during these periods which typically do not exceed 10 days per year, but are a necessary part of operating and maintaining a facility in good working order.

No notable emission reductions or environmental benefit will be achieved by requiring these smaller boilers permitted for temporary short-term operation to meet the NO<sub>x</sub> emission rates in Table 9. It would only add an additional administrative burden and unwarranted cost to the regulated community. It is therefore recommended that an exemption to the emission rates in Table 9 at N.J.A.C. 7:27-19.7 is provided for boilers that have a max heat input rate of 25 to 50 MMBtu/hr and which have operational limits that do not exceed 10 days per year. (33)

RESPONSE TO COMMENTS 100 AND 101: The Department expects all ICI boilers to install and operate NO<sub>x</sub> controls to minimize NO<sub>x</sub> emissions year round, since the new rules and amendments are not only part of New Jersey's final SIP revision to reduce ozone, but also part of New Jersey's proposed SIP revision to reduce fine particles to achieve NAAQS for PM<sub>2.5</sub>. (See 40 N.J.R. at 4390.) NO<sub>x</sub> is a precursor to both ozone and PM<sub>2.5</sub>. If any of the boilers is operated for a short period of time in any given year and cannot comply with the emission limits, the companies can apply for an alternative emission limit for such equipment pursuant to N.J.A.C. 7:27-19.13. The analysis for an alternative emission limit considers the potential annual emission rate, which is proportional to annual operating hours.

102. COMMENT: Under N.J.A.C. 7:27-19.1, the proposed definition for "dual fuel" should be revised to be consistent with the apparent intent of this definition as described in the proposal summary at 40 N.J.R. 4415. The proposed definition states that "dual fuel means a type of boiler capable of combusting more than one type of commercial fuel." However, the proposal summary indicates that "dual fuel" is intended to be restricted to boilers with a burner that has separate nozzles for each fuel within the same burner, not two separate single nozzle burners.

The proposed definition does not exclude boilers that have a separate single nozzle burner for natural gas, and a separate single nozzle burner for fuel oil. The intention of the rule seems to be to recognize that dual fuel boilers, which are very common, use a compromise burner design that will not achieve low NO<sub>x</sub> emissions as a dedicated burner for either natural gas or fuel oil. A concern is that the proposal, including text in the summary, will be interpreted to mean that a typical dual fuel boiler will have three sets of emission limits: one limit when combusting natural gas, a somewhat higher limit when combusting fuel oil, and a third limit

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described as “dual fuel” in the unlikely event that two fuels were to be combusted simultaneously.

Use of the term “dual fuel using fuel oil and/or natural gas” in conjunction with the definition given by N.J.A.C. 7:27-19.1 in the text and tables will correctly describe the operation of typical dual fuel burners, as well as any that use cofiring. (10, 34)

RESPONSE: The Department is modifying the definition of “dual fuel” at N.J.A.C. 7:27-19.1 on adoption to indicate that the burner is capable of combusting more than one type of commercial fuel. This is consistent with the Department’s intent, as set forth in the proposal summary at 40 N.J.R. 4415. Because of the differences in the configurations of single fuel and dual fuel burners and the resulting emissions, Table 9 at N.J.A.C. 7:27-19.7 lists different emission limits based on burner configuration. The Department is also modifying Table 9 at N.J.A.C. 7:27-19.7 on adoption to include the suggested language, “dual fuel using fuel oil and/or natural gas.”

103. COMMENT: Under existing N.J.A.C. 7:27-19.7, heaters with rated heat input capacities greater than 25 MMBtu/hr but less than 50 MMBtu/hr, designed to fire natural gas or a mixture of natural gas and hydrogen and equipped with flue gas recirculation, are subject to annual combustion adjustments in lieu of NO<sub>x</sub> emission limitations. Under the proposed rules the units would be subject to NO<sub>x</sub> emission limits intended to reflect RACT.

Emission limits governing units with a heat input rate of at least 25 MMBtu/hr and less than 100 MMBtu/hr are set forth in Table 9 of proposed N.J.A.C. 7:27-19.7. The applicability of emission limits is based on type of fuel fired in the unit. With respect to gas-fired units, Table 9 in N.J.A.C. 7:27-19.7 sets forth separate emission standards for “natural gas only” and “refinery fuel gas and other gaseous fuels.” Table 9 in N.J.A.C. 7:27-19.7 requires units that fire natural gas exclusively to meet the “natural gas only” emission limit. Conversely, where a unit can be fired with natural gas or a combination of natural gas and another gaseous fuel, the unit would be subject only to the NO<sub>x</sub> limit for “other gaseous fuels.”

This interpretation is consistent with the proposal summary, 40 N.J.R. at 4416, addressing natural gas and oil dual-fired units, which notes that the dual firing design may render the application of a more stringent standard governing natural gas firing inappropriate. Although neither N.J.A.C. 7:27-19.7 nor the proposal summary directly identifies an emission limit for units that may accommodate an alternative gaseous fuel in addition to natural gas, the language of the rule and the summary would suggest that the “natural gas only” limit would not apply. The Department should clarify within Table 9 of N.J.A.C. 7:27-19.7 that units that are designed to fire an alternative gaseous fuel, such as hydrogen, in combination with or as an alternative to natural gas would be subject only to the 0.20 lb/MMBtu limit governing “other gaseous fuels.” (27)

RESPONSE: Units that are designed to fire an alternative gaseous fuel, such as hydrogen, in combination with or as an alternative to natural gas, would be subject only to the 0.20 lb/MMBtu limit governing “other gaseous fuels.” Therefore, there is no need to modify the rule.

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104. COMMENT: N.J.A.C. 7:27-19.7(i)1ii, 2ii and 3ii allow for an extension of the compliance date by 12 months if compliance is achieved by “physically modifying the boiler or other indirect heat exchanger.” The Department should provide a definition of what constitutes “physically modifying the boiler.” (39)

RESPONSE: It is evident from the text of the rules that achieving compliance by physically modifying the boiler means to do so by installing or physically modifying an air pollution control device on a boiler to control NO<sub>x</sub> emissions. An air pollution control device can be a low NO<sub>x</sub> burner, flue gas recirculation, ultra low-NO<sub>x</sub> burner, selective non catalytic reduction, or selective catalytic reduction. These NO<sub>x</sub> control technologies are described in detail in the proposal summary, 40 N.J.R. at 4399. The proposal summary also explains that the Department anticipates that the limits at N.J.A.C. 7:27-19.7 can be achieved by installing the NO<sub>x</sub> controls on these boilers. Therefore, there is no need to add a definition of “physically modifying the boiler.”

105. COMMENT: The Department reversed itself with regard to regulating refinery heaters under the ICI Heater and Boiler category. The Department stated from the very beginning of the process that refinery heaters would not be regulated under ICI Heater and Boiler RACT. When the Department reluctantly shared the emission limit table from the rule with stakeholders in the spring of 2008 the table did not contain a category for heaters burning refinery fuel gas. However, when the rule was published it is clear that refinery heaters are included. Refinery heaters and boilers are the same as, and serve the same purpose as, other ICI heaters and boilers. As such, they should be regulated in exactly the same way with requirements that are not less stringent or more stringent simply based on ownership of the heater. All of the confusion would have been avoided had the Department shared rule language with stakeholders throughout the process. (26)

RESPONSE: The Department regulates boilers and process heaters located at petroleum refineries under existing N.J.A.C. 7:27-19.7(h). Until the Department adopts new rules (which the Department is developing) for boilers and process heaters located at petroleum refineries, the Department will continue to regulate them under existing N.J.A.C. 7:27-19.7(h). The Department is modifying N.J.A.C. 7:27-19.7(h) and (i) on adoption to continue to regulate boilers and process heaters located at petroleum refineries. Also, the Department is adding a definition of “petroleum refinery” at N.J.A.C. 7:27-19.1, which is the same as the Federal definition at 40 CFR 60.101(a).

106. COMMENT: The commenter’s refinery operates 20 process heaters. More than 10 years ago the commenter recognized the need to reduce NO<sub>x</sub> emission and retrofitted all but one of its heaters with low NO<sub>x</sub> or ultra low NO<sub>x</sub> burners. Those burners exceed the requirements in the proposal. Based on experience, the time to comply with the RACT rule is too short, particularly for a facility that needs to modify several large heaters. The one remaining heater at

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the commenter's facility that does not meet the proposed NO<sub>x</sub> limitation needs to be replaced, in part, because of its NO<sub>x</sub> emissions. That project was initiated in mid-2006 and will utilize SCR as a means of NO<sub>x</sub> control. The anticipated completion of the project is December 31, 2010, beyond the compliance date of the rules. The four and a half year time line to design and construct a new heater is reasonably aggressive, yet the Department's proposed rules allow less than a two-year window to complete such a project. In the commenter's case, a permit application was submitted in December 2007, and the commenter hopes to have construction authorization within the next few months. A similar 12-month permitting window leaves others that would want to replace a unit approximately a year to do the design upfront and the construction after permit approval in order to comply with the rules. A project such as this that will reduce actual NO<sub>x</sub> emissions by over 250 tons should be encouraged and not penalized. (26)

RESPONSE: As discussed in the Response to Comment 105, the Department is in the process of developing specific rules for boilers and process heaters located at petroleum refineries. The Department proposed emission limits for ICI boilers greater than 100 MMBtu/hr to be effective on the operative date of these amendments if no physical modification was made or to be effective on May, 1, 2010 if a physical modification was made to achieve compliance. (See proposed N.J.A.C. 7:27-19.7(i).) There are approximately 65 boilers in this size range in New Jersey. Most of these boilers are located at major facilities that have operating permits issued in accordance with N.J.A.C. 7:27-22, which contains the rules governing New Jersey's administration of the Federal Title V permit program, a delegated program.

The Department recognizes that the time needed to obtain necessary funding, install NO<sub>x</sub> control equipment, and modify Title V permits may take 12 months or more, which is not provided in the proposed rule. Therefore, the Department is modifying N.J.A.C. 7:27-19.7(h) and (i) on adoption to extend the compliance date for boilers greater than 100 MMBtu/hr to May 1, 2010 or May 1, 2011, depending on whether or not the boiler needs to be physically modified. Sources unable to comply with the adopted emission limits at N.J.A.C. 7:27-19.7 may apply for an alternative maximum allowable emission rate pursuant to N.J.A.C. 7:27-19.13.

107. COMMENT: The commenter's company evaluated options for a recent boiler upgrade, which options include selective non-catalytic reduction system (SNCR) and selective catalytic reduction (SCR). Any net benefit of these technologies with NO<sub>x</sub> emissions would be marginalized by increased opacity, leading to excursions; long-term maintenance concerns leading to less efficiency, increased corrosion and operational difficulties, perhaps resulting in violations of operating permit limits over time; increased particulate limits, perhaps above the operating permit limits; and chemical storage or safety concerns. As a result, the commenter's facility will likely be unable to meet the standard at N.J.A.C. 7:27-19.7(i) for No. 6 or No. 2 fuel oil. (20)

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RESPONSE: The Department does not expect an increase in opacity or particulate emissions after operation of a new SNCR system or SCR system to control NO<sub>x</sub> emissions based on current application of these controls on boilers. However, based on evaluation of actual stack testing prior to and after operation of NO<sub>x</sub> controls, air quality impacts, and health risks, the Department may agree to revise particulate emissions for such boilers through permit modification pursuant to N.J.A.C. 7:27-8.18(a), 22.23 or 22.24, if such modifications prove necessary. The Department can revise an allowable particulate emission rate if the rate complies with all applicable Federal and State regulations.

The Department has reviewed actual stack test data from boilers firing No. 6 and No. 2 fuel oils that are controlled. It is also aware of NO<sub>x</sub> controls that are available at reasonable cost. Therefore, the Department believes that NO<sub>x</sub> emission reductions can be achieved from this source category in order for the State to comply with the NAAQS. There are boilers in New Jersey operating with selective non-catalytic reduction systems that have not reported any operational problems or chemical storage and safety concerns.

108. COMMENT: The Department stated at 40 N.J.R. 4390 that the proposed amendments would “also reduce sulfur dioxide (SO<sub>2</sub>) emissions, which will help the State meet the Federal 1997 annual NAAQS for PM<sub>2.5</sub>.” However, uncontrolled SO<sub>2</sub> emissions are directly proportional to the amount of sulfur in the fuel and are not dependent on boiler or burner size or design. Therefore, since the proposed amendments will not impose any control requirements on SO<sub>2</sub> emissions or limits on sulfur in fuel, there will be no benefit from limiting the NO<sub>x</sub> emissions from boilers. (2)

RESPONSE: Although not all provisions of the adopted rules will yield a reduction in SO<sub>2</sub> emissions, certain provisions will. In particular, the Department expects SO<sub>2</sub> reductions from the rule provisions addressing EGUs (N.J.A.C. 7:27-19.4). The Department does agree that reductions in SO<sub>2</sub> are not expected from those amendments to the rules concerning ICI boilers (N.J.A.C. 7:27-19.7). However, the NO<sub>x</sub> emissions reductions from ICI boilers in New Jersey will help achieve NAAQS for ozone and particulates.

### **Municipal Solid Waste (MSW) Incinerators**

109. COMMENT: A mechanism is necessary for facilities that are doing modifications to meet the rules to have an assurance that permits and approvals necessary will be timely and not affect the ability to meet the compliance date. The wording of N.J.A.C. 7:27-19.12(a)2 creates a potential situation where a facility can file a timely application (which likely would be a Title V Modification, as well as a Solid Waste Minor Modification), but not receive an expedited approval and, therefore, be unable to meet the compliance date, which is already extremely difficult to meet. Therefore, the following changes are proposed:

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- Permit applications for new or modified systems be required to be submitted within 60 days of the effective date of the rules,
- Compliance with the rules be met by May 1, 2010, or within 18 months of the approval of necessary modifications, whichever is later. (1)

RESPONSE: The Department is committed to providing an expedited response to all modification applications submitted to the Department for review as a result of the adoption of the rules. The Department is modifying N.J.A.C. 7:27-19.12(a)2 on adoption to require compliance with emission limits by May 1, 2011 (an additional year from the proposed compliance date of May 1, 2010) to allow sufficient time for design, procurement, permitting, installation, optimization and emissions testing.

110. COMMENT: The commenter anticipates meeting the new rule with its recently developed Low NO<sub>x</sub> system. This system involves no new reagents or materials that would pose an adverse impact to the environment or the facility's air emissions. Meeting compliance in this manner will serve to improve the affected facility's emissions performance. Based on the proposed NO<sub>x</sub> limit, it is also expected that a significant reduction in reagent (aqueous ammonia or urea) will be possible, thereby also reducing the current levels of ammonia emissions and fine particulate at the modified facilities. This scope of changes necessarily constitutes a modification as intended under N.J.A.C. 7:27-19.12(a)2. (1)

RESPONSE: The Department acknowledges the commenter's commitment to meet the requirements of N.J.A.C. 7:27-19.12(a) with its recently developed Low NO<sub>x</sub> system. The physical modifications necessary to implement this system at the commenter's facilities would constitute a modification pursuant to N.J.A.C. 7:27-19.12(a)2.

111. COMMENT: It will take a facility between 18 and 24 months to complete design, equipment selection, procurement, modification permitting, installation, start-up, optimization, and emissions testing in order to comply with the new limits at N.J.A.C. 7:27-19.12. Because the design itself could cost hundreds of thousands of dollars, a facility cannot start this process until it knows the limits with certainty, which is no sooner than the adoption of the rules. Therefore, the compliance date at N.J.A.C. 7:27-19.12(a) should be either "the date 18 months after the operative date of these new rules and amendments" or "February 1, 2011" (assuming an adoption in August 2009), not "May 1, 2010." (22)

RESPONSE: In order that facilities have sufficient time to comply with the new limits at N.J.A.C. 7:27-19.12(a), the Department is modifying N.J.A.C. 7:27-19.12(a) on adoption to require compliance with emission limits by May 1, 2011. This will allow facilities more than 18 months from the date the adoption is published to make appropriate modifications.



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112. COMMENT: The amendments to N.J.A.C. 7:27-19.12 may have an unintended negative effect on a facility's ability to meet the relatively new PM<sub>10</sub> (Total) emissions limit of 7.02 lb/hr. Specifically, the use of the necessary reagents in the new SNCR may add constituents (including ammonia) to the condensable particulate emissions measured by current methods, that is EPA Method 202, which studies have shown to include ammonium chloride and/or hydrogen chloride as part of the measured inorganic condensable fraction. If this were to occur, facilities would be forced to incur violations of their PM<sub>10</sub> limits due to circumstances beyond their control. This would be unfair and technically indefensible in that the data that were used to develop the PM<sub>10</sub> (Total) emission limits would no longer be representative of actual operating conditions.

The Department should modify N.J.A.C. 7:27-19.12 to grant facilities protection against enforcement of PM<sub>10</sub> (Total) emissions limits unless and until there is sufficient data to determine whether the PM<sub>10</sub> (Total) emissions limits should be adjusted upwards to account for the use of reagents in the new SNCR. (22)

RESPONSE: The Department is not modifying N.J.A.C. 7:27-19.12 to incorporate the requested allowance for particulate emissions. The Department does not expect an increase in PM<sub>10</sub> emissions after operation of a new selective non-catalytic reduction system to control NO<sub>x</sub> emissions based on the last 20 years of experience of these controls on MSW incinerators. However, based on evaluation of actual stack testing prior to and after operation of NO<sub>x</sub> controls an affected MSW incinerator, air quality impacts, and health risks, the Department may agree to revise PM<sub>10</sub> emissions through permit modification pursuant to N.J.A.C. 7:27-8.18(a), 22.23 or 22.24. The Department may consider increasing PM<sub>10</sub> (Total) emission limits in the unlikely event that evaluation of PM<sub>10</sub> stack testing shows problematic results, as long as all other applicable regulations are met.

113. COMMENT: Requiring a facility to install SNCR and not allowing it to use emissions averaging to meet the Federal limit of 205 ppmvd is unreasonable and unlawful. The commenter's Facility Specific Emission Limit (FSEL) of 612 tons per year is based upon the EPA's Maximum Achievable Control Technology Emissions Guidelines of 205 ppm corrected to seven percent O<sub>2</sub>, as reflected in Table 1 to Subpart Cb of 40 CFR Part 60 (71 F.R. 27324, 27334, May 10, 2006). The average of actual 24-hour emission data from the commenter's facility during the 2004 through 2007 period was approximately 165 ppm, but daily averages varied significantly between 130 ppm and 195 ppm. If the Department had permitted an emissions averaging plan for the facility's three units, it would have been able to comply with Table 2 of Subpart Cb of 40 CFR Part 60 without incurring the expense of a significant technological upgrade to the facility. This would have reduced the 24-hour average limit to 185 ppm, which would have reduced the FSEL to 552 tons per year, resulting in a 60 ton per year reduction in terms of Potential to Emit (PTE). As the facility does not have a significant seasonal variation in NO<sub>x</sub> emissions, no significant reduction would result from a lower seasonal limit. (22)

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RESPONSE: The Department did not propose NO<sub>x</sub> emissions averaging for MSW incinerators pursuant to N.J.A.C. 7:27-19.6 because averaging will allow uncontrolled units to average with emission limits of controlled units. The Department expects all units in New Jersey to install and operate NO<sub>x</sub> controls. The Department has based this expectation on 19 years of operating experience of selective non catalytic reduction for NO<sub>x</sub> control on 10 MSW incinerators at four facilities in Essex, Union, Warren, and Gloucester Counties. In each facility, compliance with the adopted NO<sub>x</sub> emissions limit was readily achieved. If averaging were allowed, the Department would not obtain the maximum possible NO<sub>x</sub> reduction, at a reasonable cost (discussed in Response to Comment 114 below), which is necessary for attainment of the ozone NAAQS.

114. COMMENT: Installation of a SNCR system is estimated at between \$500,000 and \$1,800,000 in capital costs, with an annual operating cost of \$250,000. Given the geometry of the boiler, the temperature band required for an optimum SNCR design, and the concentration of NO<sub>x</sub> in the furnace area at seven percent oxygen, it is estimated that the operation of an SNCR would result in a 25 percent reduction in NO<sub>x</sub> emissions. Assuming a capital charge rate of 0.20, a current NO<sub>x</sub> annual emission rate of 480 tons per year, and that the installation is implemented at the lowest end of the estimate, that is, for \$500,000, the estimated cost per ton of NO<sub>x</sub> removed is \$2,917 per ton. This cost is unreasonable. (22)

RESPONSE: The EPA has defined RACT as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility” (44 Fed. R. 53762, September 17, 1979). The Department considers SNCR control on MSW incinerators to be technically feasible based on 19 years of operational experience in New Jersey. A cost of \$2,917 per ton of NO<sub>x</sub> removed is reasonable since it translates into an annual cost of approximately \$140,000 for the Camden County Resource Recovery Facility (CCRRF). The CCRRF is the only MSW incinerator in the State that does not already comply with the adopted rules. The \$140,000 cost is a small percentage of the CCRRF annual gross revenue of \$31 million (2002 data) from tipping fees, and the increase in revenue and reduction in operating costs derived from the annual generation of over 150 megawatt-hour (2005 data). Considering the relatively low cost with respect to the gross revenue and the need for NO<sub>x</sub> emission reductions to achieve the ozone NAAQS, the requirement is economically reasonable for MSW incinerators.

115. COMMENT: The title and description of the source category in N.J.A.C. 7:27-19.12, Municipal Solid Waste Incinerator, is a misnomer using antiquated nomenclature. The term “incinerator” technically refers to facilities that combust waste without energy recovery or advanced state of the art combustion and pollution controls. The terminology should be updated to reflect accurately that our facility and others in the State operate “energy-from-waste” facilities, which have sophisticated combustion controls, advanced air pollution controls, and generate clean, renewable energy. This term, “energy-from-waste” is also consistent with

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terminology utilized by the European Union and internationally. The terms “energy-from-waste,” “waste-to-energy,” “resource recovery,” or “municipal waste combustor” would be acceptable. (1)

RESPONSE: The existing definition of “incinerator” at N.J.A.C. 7:27-19.1 states, “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.” The use of the term “Municipal Solid Waste Incinerator” in N.J.A.C. 7:27-19.12 is also consistent with N.J.A.C. 7:27-27, Control and Prohibition of Mercury Emissions.

### **VOC Stationary Storage Tanks**

116. COMMENT: This rulemaking should focus on bringing New Jersey into attainment with ozone standards. The purpose of this rulemaking in its entirety is to reduce emissions from stationary sources of VOC and NO<sub>x</sub> to facilitate New Jersey’s compliance with the NAAQS for ozone. The Department’s data suggest that progress over the past several years has been significant, and emissions leading to ozone nonattainment continue to trend downward. The ozone season in New Jersey is from May 1st through September 30th. Many of the Department’s rules have required application of add-on air pollution control technology to a stationary source. No one would suggest that it makes sense to operate such controls during ozone season only, and dismantle the controls during other seasons. However, there are control measures that are operational in nature, meaning that a facility can manipulate its operations to minimize emissions without air pollution controls, which lend themselves to implementation during ozone season only. For example, the Department has proposed that tank cleaning events that contribute to VOC emissions must occur outside of ozone season. If they do not, controls must be employed.

Control of emissions from roof landing emissions are also suitable for minimizing during ozone season. The Department is proposing that facilities “cap” emissions from roof landings, or control them via air pollution controls. The focus should be on minimizing these events during ozone season. Caps on emissions or the number of landings should be specific for ozone season. Implementation of an ozone season control measure is less expensive, and more expeditious; that is, it will get New Jersey closer to its attainment goals faster. Note also that the air pollution controls likely to be employed are combustion devices that introduce NO<sub>x</sub>, which is also an ozone precursor as well as a fine particulate precursor. (2, 4, 5, 7, 8, 9, 15, 29, 30, 31, 38, 43)

RESPONSE: Certain control measures, such as tank modifications to reduce landing heights or improve tank seals, would be in operation year round as they are intrinsic to the tank and its operation. Other control measures could be operated seasonally, such as tank degassing controls.

As noted by the Department in the proposal summary, 40 N.J.R. at 4390, the purpose of the rules is multifold. The primary focus of the rules is to reduce ozone precursor emissions (VOC and NO<sub>x</sub>), but the new rules and amendments were also proposed pursuant to the

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Department's general authority to prevent, prohibit and control air pollution at N.J.S.A. 26:2C-8. For tank degassing, seasonal control strategies would have the same ozone impact as year round strategies. The total cost is reduced if the control measures do not operate year round, while cost effectiveness increases. Given the other year round control measures for storage tanks, and New Jersey's industry lack of experience with control of degassing emissions, the Department limited this measure to the ozone season at this time.

Another benefit from the rules is a reduction of air toxics, which in the case of gasoline storage tanks includes benzene, toluene, ethyl benzene, and xylene. The use of seasonal strategies limit the emission reductions of air toxics from storage tanks to five out of 12 months per year, with no reduction during the period of October 1st to April 30th of each year. Many of the sources regulated by these rules, including storage tanks, are located in close proximity to residential communities. Hence, the Department generally regulates VOC sources year round, with few exceptions. With respect to tank degassing, which was proposed to be a seasonal measure, expansion of the control measures to a year-round strategy will be reconsidered in the future as a potential air toxic reduction measure.

117. COMMENT: An accurate economic impact analysis using New Jersey-specific data is critical to determining if the rule proposal is reasonable. The intent of this rulemaking is to bring New Jersey into attainment with the ozone NAAQS. The rule is for New Jersey, not for areas like the South Coast air district of California, or the Houston-Galveston area of Texas. However, the Department has not only borrowed rule language from regulations intended to minimize VOC emissions in those areas, it has assumed that economic and emission reduction evaluations conducted by regulators in those areas can be applied across-the-board to New Jersey. Industry disagrees by raising the following points:

- The Los Angeles South Coast Air Basin is classified as severe-17 non-attainment with the ozone NAAQS, the San Joaquin Valley is classified as serious nonattainment, while New Jersey is in moderate non-attainment;
- New Jersey's surrounding states, Pennsylvania and New York with areas in the same nonattainment regions as New Jersey, have not proposed requirements of the magnitude and complexity that New Jersey is considering;
- The Texas and California climates are such that the ozone season is practically year round, not confined to the warm summer months;
- New Jersey's place in the petroleum storage and refining marketplace is different than the Texas and California markets;
- The South Coast of California was under a court-ordered mandate to reduce VOC emissions by one ton per day and was not allowed to consider the economic impact – why is New Jersey applying this punitive measure upon itself?;
- When the South Coast does assess economic impacts due to its regulatory actions, its cost estimating methodologies differ from the regulatory standard set forth in the EPA Air Pollution Control Cost Manual. The practical effect of California's different cost methodology is that it understates costs almost by a factor of two as compared to the EPA methodology; and

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- The economic data are dated and do not account for the considerable increases in materials and labor costs over the past several years.

Perhaps the most startling conclusion reached by the Department is that gasoline prices for consumers at the pump will increase by less than one cent. The determination of the effect of regulatory actions on consumer prices is extremely complex, yet the Department has not offered any supporting data. As such, on its face the statement seems arbitrary at best and irresponsible at worst. Given the breadth of variables at play in consumer pricing, it is doubtful that the Department's assertion of a miniscule price increase is supportable. (2, 4, 5, 7, 8, 9, 15, 29, 30, 37, 38, 43)

RESPONSE: Although New Jersey's place in the petroleum market is somewhat different than Los Angeles or Houston, the market effects New Jersey are experiencing is similar—the problem of negative externalities associated with VOC emissions from storage tanks. Negative externalities are social costs or costs imposed on third parties, which are not paid by the producers or consumers of a good. In this case, those external costs are health effects (such as increased asthma and other respiratory problems) and other detrimental environmental effects caused or exacerbated by VOC emissions. Since the market-induced ozone problems are similar to that found in Los Angeles, the San Joaquin Valley and Houston, New Jersey is choosing to look to rules from those jurisdictions for strategies to address VOC.

Although the air quality in Los Angeles, the San Joaquin Valley and Houston is somewhat worse than in New Jersey, all exceed the health standards and are having difficulty achieving these standards. The social costs of ozone as well as hazardous air pollutant (HAP) emissions, both within New Jersey and transported outside our borders, must be considered. The Northern New Jersey-New York-Connecticut nonattainment area is the most populated such area in the country—21.6 million people are projected to reside there by 2010. Most nonattainment areas with air quality equivalent to New Jersey's (moderate nonattainment for the 8-hour ozone standard) have populations between one million people and 10 million people. The marginal external social costs due to health impact for each ton of VOC or HAP emitted increase in direct proportion to the population impacted, if all other factors are held constant. For the Northern New Jersey-New York-Connecticut nonattainment area, the marginal external social costs due to health impact from each ton of VOC or HAP emitted are 21.6 times what they would be if the population were one million, over three and a half times what they would be if the population were six million, and over twice what they would be if the population were 10 million (if all other factors are held constant). On that basis, the adoption of more protective measures than are found in other areas with equivalent air quality is justified.

Even with the adoption of these rules, New Jersey is projected to continue to exceed the new 8-hour 75 ppb ozone NAAQS. In part because of the need for emission reductions beyond what would be achieved with these rules, a cost threshold for RACT when determining reasonableness of an ozone control measure has limited weight as a factor, and must be balanced against the need to attain the ozone NAAQS and protect the public health. When determining

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RACT, the Department gives more weight to the lowest emission limit that a reasonable number of similar industries have already successfully implemented for each source category. Where several facilities in a source category are currently controlled to a lower emission level, that level is presumed to be RACT for the other facilities in that source category, depending on how effective those controls are. For the two most contentious issues with regard to costs to industry, reducing roof landing emissions and doming external floating roofs, there are examples of facilities (including facilities in New Jersey) with these controls in place already.

- At least two pipeline breakout stations in New Jersey already have floating roofs that land less than one foot above the highest point on the tank floor, one of the acceptable RACT measures for controlling roof landing losses.
- The other alternative for controlling roof landing losses, using vapor collection and control when floating roofs are landed, has been used in California for at least fifteen years and such controls are being implemented in the Houston area now. Also, at least one facility in New Jersey has recently begun installing such controls on some of its floating roof tanks.
- Some storage tank owners in New Jersey already operate their tanks so that emissions from floating roof landings are below the five ton threshold (for each tank) or two ton average (for all Range III tanks storing gasoline at the facility) above which controls would be required.
- Retrofitting an external floating roof tank with a dome, or constructing it as an internal floating roof tank with a cone roof, is effective at reducing emissions because it protects the floating roof from wind effects. Over three quarters of the floating roof storage tanks in New Jersey are internal floating roof tanks or domed external floating roof tanks (which are often listed as internal floating roof tanks in our inventories). Domes and cone roofs offer other benefits for New Jersey tank owners, such as protecting the floating roofs from snow and ice.

With regard to regulations in neighboring states, New Jersey is in the center of the ozone non-attainment area and must impose protective measures if New Jersey is to expect neighboring states to also adopt similar measures. New Jersey has presented its proposed rules to the Ozone Transport Commission, and is encouraging other states in the OTC to also update their storage tank rules.

With regard the impact of the regulations on gasoline prices at the pump, the commenter is correct in stating that the determination of the effect of regulatory actions on consumer prices is extremely complex given the breadth of variables at play in consumer pricing. Hence, it is more accurate to say that the Department's data indicate the cost to produce gasoline would increase less than \$0.01 per gallon as a result of the regulations. In the proposal, the Department stated that the maximum estimated annualized compliance cost to industry by 2018 is \$58,000,000 per year, gasoline throughput for the tanks affected by the rule exceeded 10 billion gallons in 2006, and that based on that figure, if owners or operators were to pass on compliance costs to distributors or retailers, the Department would expect gasoline prices at the pump to

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increase less than \$0.01 per gallon. (See 40 N.J.R. at 4425.) The gasoline cost impact is estimated by dividing the maximum estimated annualized compliance cost by the gasoline throughput. The result of this calculation is a cost per gallon less than \$0.01. This small cost might or might not result in a price increase because other factors, such as supply and demand, can have a much greater effect on price.

Furthermore, the cost estimate is conservatively calculated. As set forth in 40 N.J.R. at 4424 through 4425, the Department's estimated cost-effectiveness for the various emission reduction measures ranges from \$2,288 per ton to \$29,000 per ton of VOC reduced. The maximum overall estimated annualized compliance cost of \$58,000,000 per year is the maximum estimated cost-effectiveness of \$29,000 per ton of VOC reduction multiplied by 2,000 tons per year of reduction (40 N.J.R. at 4425) and the 2006 gasoline throughput estimate was obtained from emission statements submitted by petroleum storage terminals. Therefore, because the Department used the maximum value of cost-effectiveness to calculate the maximum estimated annualized compliance cost to industry, the result of less than \$0.01 per gallon is a conservative estimate.

Underlying this conservative calculation of potential price impact at the pump is the assumption that facilities will install the necessary controls within the 10-year timeframe allowed by the rules, which is provided to minimize or eliminate operational disruption. There are many factors that affect prices at the pump, as recent price fluctuations have proven. The potential costs of this rule are minor compared to supply and demand price fluctuations and the market price of crude oil. One cent per gallon is insignificant compared to the greater than \$2.00 per gallon price swings for gasoline, or of the \$100.00 per barrel price swings in crude oil of the past year. Furthermore, the air pollution control expenditures are reasonable in light of their health benefits.

New Jersey does not agree that it should take a less ambitious approach than California because it is not yet subject to a court order enforcing the NAAQS. New Jersey has the responsibility to meet these standards under the Clean Air Act and the Air Pollution Control Act. A response that involves awaiting an enforcement lawsuit and court order is inadequate to discharge these responsibilities.

118. COMMENT: Further detailed economic analysis of the proposed amendments to the Department's VOC stationary storage tanks rules using New Jersey specific data should provide a more reasonable determination of the impact on the VOC stationary storage tank and gasoline distribution industry and New Jersey consumers. Based on this further detailed economic analysis, the Department can reasonably revise the amendments. (4)

RESPONSE: See Response to Comment 117 for a discussion of the appropriateness of the Department's reliance on data from other jurisdictions.

119. COMMENT: By definition, the rules must be reasonable. When a state or region is in nonattainment with an NAAQS, the EPA requires that area to identify "reasonably available"

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control measures to apply to stationary sources with the goal of moving the area toward attainment. By definition, a reasonably available control measure must consider the economic impact on affected sources. The Department did not conduct a rigorous, New Jersey-specific, economic analysis. The Department also did not identify what cost threshold is considered reasonable. The EPA generally considers \$5,000 per ton of emission controlled to be the threshold; costs below that represent reasonable controls, costs above that are generally not reasonable. The Department contends that the State's ozone problem is so significant that cost considerations are of a very low priority. Therefore, the proposed rulemaking incorporates language from rules that include MACT and that would represent LAER technology under a new source review analysis.

How can "reasonable" controls exceed "maximum" controls? While the Department could have reviewed the regulations of various California Air Districts, and Texas to determine the requirements they have in common to develop a RACT proposal, picking and choosing the most stringent requirements each of these regions have in their regulations, as well as using more stringent definitions from one set of regulations along with the requirements from another set of regulations is not a realistic approach to developing a RACT proposal. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: EPA has not specified \$5,000 per ton or any other cost effectiveness threshold to define unreasonable cost. The Department also does not specify a dollar per ton cost effectiveness ratio for sources because other factors justify different costs for different sources. These factors include, but are not limited to, quantity of emissions, quality of emissions (including toxicity as discussed above in Response to Comment 116), seasonal and daily pattern of emissions, impacts on other states, affordability for the average facility in a source category, and the extent of current use of a control measures by other sources in the same category. For example, the cost effectiveness ratio for diesel particulates filters is well over the \$100,000 per ton, which is reasonable for this type of source. The requirements for storage tanks have lower cost effectiveness ratios and are reasonable based on technological feasibility and degree of use elsewhere. Costs are also considered on a unit specific basis if costs are shown in an Alternative VOC control plan submitted pursuant to N.J.A.C. 7:27-16.17 to be economically infeasible because of unusual site specific circumstances which result in extreme costs.

Although the Department has not set a specific cost effectiveness ratio as an independent criterion for determining reasonableness, a cost effectiveness ratio in the neighborhood of \$30,000 per ton of VOC at this time for storage tanks is reasonable, given the benefits of improved public health and welfare. Other factors may justify a higher cost. For instance, the emissions of benzene (a hazardous air pollutant and carcinogen) from storage tanks, justifies a higher cost than for criteria pollutants. See Response to Comment 24 for a further discussion of how costs can be compared to the health effects of pollution when determining reasonableness.

As discussed in the Response to Comment 117, the storage tank control measures are reasonable based on technological feasibility and degree of use. For facilities such as refineries, petroleum storage terminals, and pipeline breakout stations, which are the primary types of



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facilities affected by the amendments to N.J.A.C. 7:27-16.2, the Department estimated the annualized control costs in New Jersey to be 58 million dollars per year. (See 40 N.J.R. at 4424 through 4425.) The control costs are affordable, because 58 million dollars per year is a small fraction of the total value of the raw materials used by, and the final products produced or processed by, the affected facilities. In terms of raw material, refineries in New Jersey can process over 500 thousand barrels per day of crude oil (see <http://www.eia.doe.gov/neic/rankings/refineries.htm>) or 182.5 million barrels per year. If the price of crude oil is \$40.00 per barrel, this equates to over 7.3 billion dollars per year. In terms of final product, the total gasoline throughput for storage tanks in New Jersey was over 10 billion gallons in 2006 (40 N.J.R. at 4425), based on emission statements submitted by petroleum storage terminals. (This includes gasoline produced outside of New Jersey.) If the retail price of gasoline is \$2.00 per gallon, the total retail value of the gasoline throughput is over 20 billion dollars. Therefore, the costs of compliance are less than 0.8 percent of the cost of the raw material, or less than 0.3 percent of the retail value of the final product.

See Response to Comment 117 for a discussion of the appropriateness of the Department's reliance on data and regulations from other jurisdictions. With regard to the issue of definitions from one jurisdiction being matched with requirements from another jurisdiction, see Responses to Comments 129 and 135 below for discussions of modifications on adoption to address the specific instances where this occurred.

120. COMMENT: Rules of this magnitude and scope must include realistic timeframes. Although the Department has recognized that implementation of air pollution controls may take up to 10 years, it is proposing a very rigorous timeframe for VOC control plan submittals. In other aspects of the rules, no compliance timeframe is identified, implying that the regulatory provision must be implemented as of the operative date of the rules.

N.J.A.C. 7:27-16.2(p) requires a facility-wide tank VOC control plan to address controls for all Range III floating roof tanks at a facility. Potential expenditures for any one facility will be in the millions, and could be in the range of tens of millions of dollars. Such decisions cannot be made in 120 days, as required in proposed N.J.A.C. 7:27-16.2(p)1i, but at a minimum, would require at least one year. Given the current economic times, it may become increasingly more difficult for facilities to quickly secure the capital necessary to implement some of the control measures proposed in the rules.

While the preferred option is not to have to submit the plan for approval, if the Department wants to retain the requirement to submit the plan for approval, the review period should be equivalent to the period of time allowed the regulated community to prepare the plans. In addition, given the current status of the worldwide financial markets it may become increasingly more difficult for facilities to quickly secure the capital necessary to implement some of the control measures proposed in these rules. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

121. COMMENT: The Department should consider allowing more time for development of facility-wide VOC control plans for roof landings. The Department should be required to

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respond in a timely manner when reviewing and approving required plans and submissions. Establishing turn-around deadlines for regulatory reviews will help to speed implementation of any final amendment requirements. (4)

RESPONSE TO COMMENTS 120 AND 121: In order that facilities will have sufficient time to make modifications necessary to comply with the rules, the Department is modifying N.J.A.C. 7:27-16.2(p)1i on adoption to extend the deadline for the facility-wide tank VOC control plan submission to December 1, 2009. That gives facilities several additional months to prepare the plan and implement some measures prior to the ozone season of 2010.

While the Department is committed to expediting the review of any permit application necessary to comply with these rules, the Department recognizes that engaging the necessary contractors and approving the permit modifications required to control tank cleaning emissions prior to the 2009 ozone season will be challenging. Accordingly, the Department is modifying N.J.A.C. 7:27-16.2(q) on adoption to require control of tank cleaning emissions starting on May 1, 2010. Facilities are encouraged to control emissions from tank cleaning earlier than that date if they have obtained approval for the necessary permit modifications.

Regarding timeliness for the Department's turnaround of review for facility-wide tank VOC control plans that need to be included in a facility's operating permit, such inclusion would be a significant modification pursuant to N.J.A.C. 7:27-22.24(b)5. The deadline for approving a significant modification is governed by N.J.A.C. 7:27-22.13(a)5, which requires final approval within 12 months of receiving an administratively complete modification application. Therefore, modifying the rule on adoption to add a deadline for the Department's review of the control plan required at N.J.A.C. 7:27-16.2(p) is not necessary.

122. COMMENT: The timeline for compliance with N.J.A.C. 7:27-16.2(q) should be ozone season 2011. The required controls for tank cleaning events will not be available in 2009 to meet the proposed implementation schedule.

Also, the rule does not address the inherent permitting difficulties that facilities will encounter if outside vendors are used. Permitting of temporary sources at Title V facilities must be resolved before the effective date of the tank cleaning provisions. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: See Response to Comments 120 and 121 for a discussion of modification of N.J.A.C. 7:27-16.2(q) on adoption to extend the start date for the control of tank cleaning emissions to May 1, 2010.

The Department has determined the Department's review of permits will not prevent a facility from complying with tank cleaning provisions at N.J.A.C. 7:27-16.2(q) The permitting of temporary sources at Title V facilities falls into two categories: tank cleaning events that can be reasonably anticipated and those that cannot. For tank cleanings that can be anticipated, Title V facilities can modify their Title V operating permits through the normal process well in advance of the scheduled cleaning. For urgent or emergency cleanings Title V facilities can include

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placeholder conditions in their permits that allow contractor equipment, necessary for cleaning and emissions control, to operate on-site.

123. COMMENT: The Department should carefully consider the time required for acquiring both permanent and temporary/mobile air pollution control equipment to meet the requirements at N.J.A.C. 7:27-16.2(q). Time is required to permit new equipment and consideration must also be given to what will be required to permit use of mobile air pollution control equipment contracted on a temporary basis. (4)

RESPONSE: See Response to Comments 120 and 121 for a discussion of modification of N.J.A.C. 7:27-16.2(q) on adoption to extend the start date for the control of tank cleaning emissions to May 1, 2010.

124. COMMENT: Industry supports the Department's goal to have technically qualified inspectors perform tank inspections. However, an inspector certified under American Petroleum Standard 653 (API 653) is typically an expert in tank integrity issues and not best qualified to assess floating roof issues that would impact air emissions. Also note that API 653 inspectors are not readily available. In the SCAQMD Rule 1178, State-certified inspectors are required; however, SCAQMD has developed its own certification program. Should New Jersey impose requirements for authorized inspectors, the State must likewise develop a certification program similar to the opacity training program. (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.1 on adoption to revise the definition of "authorized inspector" at N.J.A.C. 7:27-16.1 to "a person experienced in floating roof inspections authorized by the tank owner or operator to conduct those inspections. This person may be an employee of the tank owner or operator or a contractor." Although the requirement that the certification be in accordance with API 653 is not in the adopted definition, the Department anticipates that floating roof inspections, when the tank is out-of-service, will be done with API 653 certified personnel. Tank shell and bottom inspections will be done during the same out-of-service period and N.J.A.C. 7:1E-2.16(d)1 requires those inspections to be done in accordance with API Standard 653, which requires the inspector to be API 653 certified. Also, the Department is modifying N.J.A.C. 7:27-16.1 on adoption to delete the definitions of "API" and "API 653," because these terms are no longer used in the rule text.

125. COMMENT: The definition of "domed roof" at N.J.A.C. 7:27-16.1 is unnecessary. An external floating roof tank that is retrofitted with a dome should be subject to the requirements for an internal floating roof. There is no need to create a new category of tank known as "domed external floating roof." (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: The requirements at N.J.A.C. 7:27-16.2(l)5 for existing domed-roof tanks generally conform to the requirements for internal floating roof tanks. However, external floating roof

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tanks retrofitted with domes as required by the N.J.A.C. 7:27-16.2(l)6 will still have to comply with the seal and deck-fitting requirements for external floating roofs. Those requirements differ from the seal and deck fitting requirements for internal floating roofs. Therefore, the definition of “domed roof” at N.J.A.C. 7:27-16.1 is necessary and will be retained.

126. COMMENT: The first sentence of the definition of “internal floating roof” at N.J.A.C. 7:27-16.1 states that an internal floating roof “means a pan type, pontoon type, or double-deck type cover located inside a fixed roof tank.” The three specific types listed in the definition do not include all types of internal floating roofs that are used in practice. The definition of “internal floating roof” at N.J.A.C. 7:27-16.1 should not be so prescriptive as to exclude other internal roof construction designs. (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: The Department agrees with the comment that the definition of “internal floating roof” should not be limited to pan-type, pontoon-type, or double deck covers as indicated in the rule proposal when other floating roof types, such as full-contact floating roofs, are available and may be superior in performance. (See 40 N.J.R. at 4442.) Therefore, the Department is modifying the definition of “internal floating roof” at N.J.A.C. 7:27-16.1 on adoption to be consistent with the more inclusive definition of an internal floating roof at MACT Subpart WW (40 CFR Part 63.1061), which is “a floating roof located inside a vessel with a fixed roof.”

127. COMMENT: There is an error in the definition of “ladder and well” at N.J.A.C. 7:27-16.1. The ladder and well are used to access the top of the internal floating roof, not the tank bottom of an internal floating roof tank. The Department should change “tank bottom of an internal floating roof tank” to “top of the internal floating roof.” (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The definition of “ladder and well” at N.J.A.C. 7:27-16.1 is being modified on adoption as suggested, for the reason set forth in the comment.

128. COMMENT: Based on the proposed definition of “modification” at N.J.A.C. 7:27-16.1, changes in permits with respect to air contaminants emitted during landing and cleaning operations, which have been emitted since tank initiation of operation, are not modifications. The emissions are not the result of physical changes in tanks construction or operation nor are they increases in actual emissions. Thus, the Department should identify a permitting option to incorporate these emissions into air permits without penalty to provide the best quantification of potential emissions from all facility operations. (2, 4, 5, 7, 8, 9, 15, 29, 30, 37, 38, 43)

RESPONSE: If air contaminants emitted during tank landing and cleaning operations are not included in the facility’s approved air quality permit, those emissions are not authorized. If emitted, they require permit modification. Adding roof landing or cleaning air contaminant emissions to a permit is a modification pursuant to N.J.A.C. 7:27-22 or N.J.A.C. 7:27-8, since a

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change in the permitted method of operation of the tank (such as an increase in the allowable roof landings) is proposed for the first time. Emissions from landing and cleaning operations, if not authorized in an existing preconstruction permit/operating certificate under N.J.A.C. 7:27-8 or an existing operating permit under N.J.A.C. 7:27-22, must be added through one of the following: for tanks covered by a preconstruction permit, an application for a permit revision pursuant to N.J.A.C. 7:27-8.18(a) must be submitted to and approved by the Department to incorporate the additional air contaminant emissions; for tanks covered by an operating permit, an application for a minor modification pursuant to N.J.A.C. 7:27-22.23, or significant modification, pursuant to N.J.A.C. 7:27-22.24, as applicable, must be submitted to and approved by the Department to incorporate the additional air contaminant emissions.

129. COMMENT: The Department has defined “leak-free” at N.J.A.C. 7:27-16.1 to be less than 500 ppm under EPA Method 21. The Department has indicated in the proposal summary (40 N.J.R. at 4404) that this definition is replacing the definition of “vapor tight” because “leak-free” is a defined term, referring to a known reliable analytical method, and leak-free is a requirement of SJVUAPCD and SCAQMD.

The Department’s statements are not accurate. SCAQMD does not define “leak-free” in Rule 1149 or 1178, although it does define “vapor tight condition” in Rule 1149(b)(11) and Rule 1178(c)(42) to be less than 500 ppm under EPA Method 21. However, “leak-free” does not directly correlate to the SCAQMD definition of “vapor-tight conditions” in the contexts that leak-free has been used in the Department’s proposal. SJVUAPCD does define “leak-free” in Rule 4623 3.17 to be “a condition without a gas leak or liquid leak,” and goes on to define a “gas leak” as a reading in excess of 10,000 ppm. New Jersey has mixed terms with different meanings from various regulations; consequently, what is required by SJVUAPCD to be leak-free is very different from what is required by the proposed New Jersey definition.

The use of the term “leak-free” with regard to fixed-roof tank inspections pursuant to N.J.A.C. 7:27-16.2(r)9 is also questionable.

Align the requirements taken from SJVUAPCD with a definition appropriate to the SJVUAPCD requirements and align the requirements taken from SCAQMD with a definition appropriate to SCAQMD requirements. (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: The Department defined the term “leak-free” to conform to the SCAQMD definition of “vapor-tight,” which is less than 500 ppm. The Department did not propose to modify the existing term “vapor-tight” because “vapor-tight” is used in N.J.A.C. 7:27-16.3 and 16.4 in a different context, where the existing definition of “vapor-tight” (meaning not capable of allowing the passage of gases at the pressure encountered) is appropriate. (See 40 N.J.R. at 4404.)

The Department is modifying N.J.A.C. 7:27-16.2(q)1iii, and 3ii and iii on adoption to refer to “vapor-tight and free of liquid leaks,” rather than “leak-free,” to conform to the definition of leak-free at SJVUAPCD Rule 4623, upon which N.J.A.C. 7:27-16.2(q) is based. This will require the tanks to be not only incapable of allowing the passage of gases at the

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pressure encountered (as in the existing definition of “vapor-tight”), but also incapable of allowing the passage of liquid. The Department is also modifying N.J.A.C. 7:27-16.3(q)2 on adoption to refer to “vapor-tight and free of liquid leaks” to replace the existing term “vapor-tight and leak free,” because the Department does not intend that the 500-ppm standard and EPA test method in the definition of “leak-free” to apply to the gasoline transfer condition at N.J.A.C. 7:27-16.3(q).

The term “leak-free” in N.J.A.C. 27-16.2(l)2 and 11, and (r)9 remains appropriate, because the Department intends that the 500-ppm standard and EPA test method set forth in the definition of “leak-free” at N.J.A.C. 7:27-16.1 shall apply in these instances. (See Response to Comment 133 below for a discussion of the modification of N.J.A.C. 7:17-16.2(d) and (f)8 (adopted (f)9) to replace “leak-free” with “vapor-tight.”)

130. COMMENT: A pole float is not a measuring device. Its purpose is to prevent evaporative losses and not to measure the liquid level. The phrase “and is used to indicate the liquid level inside the tank” should be struck from the definition of “pole float” at N.J.A.C. 7:27-16.1. (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: After examining AP-42 and other rules, such as MACT Subpart WW, the Department agrees that a pole float is not a measuring device. The Department is modifying the definition of “pole float” at N.J.A.C. 7:27-16.1 on adoption to conform to the definition in the Federal MACT rule at Subpart WW (40 CFR Part 63.1061). Though the modified definition indicates that the pole float has a wiper or seal, it does not add a new requirement to the rule. As indicated at N.J.A.C. 7:27-16.2(l)1x, a pole float is required to have a wiper.

131. COMMENT: A pressure-vacuum vent is used for multiple purposes. The proposed definition of “pressure-vacuum vent” at N.J.A.C. 7:27-16.1 is unnecessary as this term is well understood. Delete the proposed definition. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.1 on adoption to delete the definition of “pressure-vacuum vent.” The term “pressure-vacuum vent” does not appear in N.J.A.C. 7:27-16.2, making the definition unnecessary.

132. COMMENT: The definition of “vacuum breaker” at N.J.A.C. 7:27-16.1 is too prescriptive. There are many different varieties of vacuum breakers other than the type described in the definition. The first sentence of the definition is sufficient to define this term. (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: As stated in the proposal summary at 40 N.J.R. 4403, the Department took the proposed definition from SCAQMD Rule 1178. After examining AP-42, the Department concurs that there are types of vacuum breakers other than the type described in the proposed definition, so the Department agrees with the comment that the definition is too prescriptive.

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Therefore, the Department is modifying the definition of “vacuum breaker” at N.J.A.C. 7:27-16.1 on adoption to delete all but the first sentence of the definition, as suggested.

133. COMMENT: The Department proposed at N.J.A.C. 7:27-16.2(d) to replace “vapor-tight except when gauging or sampling is taking place” with “leak-free.” The proposed definition of “leak-free” refers to an EPA test method designed for detecting leaks from valves, pumps, and other fittings subject to leak detection and repair programs. The EPA test method is not appropriate for gauging and sampling systems. The terminology “vapor-tight” is well understood and implemented industry wide, and consistent with other rules for storage tanks.

The Department stated in the proposal summary, 40 N.J.R. at 4404, that it was relying on SCAQMD in proposing the amendment to N.J.A.C. 7:27-16.2(d). SCAQMD has no specified leak rate limits for gauging and sampling systems except for SCAQMD Rule 1178(d)(4)(A), which is specific to fixed roof tanks connected to an emission control system. The SCAQMD requirements are not applicable in the context used in the New Jersey proposal. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.2(d) to replace “leak-free” with “vapor-tight.” The Department indicated in the proposal summary that it was relying on the SCAQMD rule for the amendment; however, as the commenter states, the SCAQMD rule does not require a system to achieve a reading of less than 500 ppm on a portable hydrocarbon analyzer, as would be required if “leak-free” remained in the rule. The Department is similarly modifying N.J.A.C. 7:27-16.2(f)9 (proposed as (f)8) on adoption for the same reason. This exemption from the vapor-tight condition for gauging and sampling that was in existing N.J.A.C. 7:27-16.2(d) was relocated to N.J.A.C. 7:27-16.2(f)9 because the Department intended to locate all the exemptions in one place, at N.J.A.C. 7:27-16.2(f), as indicated in the proposal summary at 40 N.J.R. 4404.

134. COMMENT: The 97 percent by volume threshold at proposed N.J.A.C. 7:27-16.2(f)4 is unnecessary. Tanks may not meet the 97 percent by volume threshold, but this could be a result of storing slop-oil, off-spec products, water, or other materials that should not trigger the need for doming.

The cross-reference in N.J.A.C. 7:27-16.2(f)4 should be corrected to N.J.A.C. 7:27-16.2(l)4, rather than (l)2. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: As set forth in the proposal summary (40 N.J.R. at 4404), the exemption for tanks containing at least 97 percent by volume crude oil is based on the exemption in SCAQMD Rule 1178. Crude oil tanks are exempt in the SCAQMD rule because those tanks tend to be very large, and installing a dome on large tanks is very expensive. Information provided to the Department in support of Comment 189 indicates the cost effectiveness for doming wastewater and slop oil storage tanks was as high as \$125,441 per ton. Also, that commenter’s data indicated the emission reductions expected from doming a wastewater or slop oil tank would be less than 1

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ton per year of VOC, while emission reductions expected from doming tanks that store other types of materials with vapor pressure greater than 3 psia at standard conditions would average 7.35 tons per year.

The cost effectiveness ratio for doming the wastewater and slop oil storage tanks is four times the cost effectiveness ratio for aboveground VOC stationary storage tank control measures cited in the proposal at 40 N.J.R. 4424 (\$29,000 per ton of VOC in 2001 dollars), and the emission reductions from doming wastewater and slop oil tanks would be less than 15 percent of the emission reductions expected from doming external floating roof tanks that store other types of materials with vapor pressure greater than 3 psia at standard conditions. The reason those expected emission reductions are much lower is because wastewater and slop oil vary in composition and vapor pressure. While wastewater and slop oil can occasionally have vapor pressures greater than 3 psia at standard conditions, the vapor pressures for wastewater and slop oil are usually much less than that amount. Other substances that might trigger the doming requirement at N.J.A.C. 7:27-16.2(l)4, such as gasoline or methy tertiary butyl ether (MTBE), consistently have a vapor pressure greater than 3 psia at standard conditions.

Therefore, because of the high expense in light of the small VOC emission reductions expected compared to installing domes on tanks that store other types of materials with vapor pressure greater than 3 psia at standard conditions, the Department is modifying N.J.A.C. 7:27-16.2(f)4 on adoption to exempt any tank that stores more than 97 percent by volume slop oil and/or oily wastewater subject to 40 CFR Part 60, Subpart QQQ. The Department is modifying N.J.A.C. 7:27-16.1 on adoption by adding definitions of “oily wastewater” and “slop oil,” based on the definitions of those terms at 40 CFR 60.691 because those terms are used in the modified rule. The Department is retaining the 97 percent by volume threshold in the exemptions at adopted N.J.A.C. 7:27-16.2(f)4. The 97 percent by volume threshold assures that the doming exemption applies to tanks used primarily to store crude oil, wastewater, and/or slop oil, and small amounts of those materials in tanks would not result in an exemption to the doming requirement at N.J.A.C. 7:27-16.2(l)4.

The Department is also modifying N.J.A.C. 7:27-16.2(f)4 on adoption to correct the cross-reference.

135. COMMENT: The definition of “visible gap” at N.J.A.C. 7:27-16.1 was copied from SJVUAPCD Rule 4623. The requirements utilizing this term were copied from SCAQMD Rule 1178. SCAQMD's definition of this term is different from the one used by SJVUAPCD. NSPS and MACT storage tank requirements use this term but do not define it, and do not assign a specific measurement to it. While the Department’s rule proposal has based most of the roof fitting requirements of the SCAQMD Rule 1178, the SCAQMD definition of a visible gap being a gap of more than one-eighth inch has not been used and the more stringent definition of visible gap was pulled from the SJVUAPCD rule. The rule proposal should at least be consistent in copying both the rules and the associated definitions from the same entity. The Department should justify why it has assigned a specific measurement to this definition when EPA has not, and why it has assigned a measurement limit that is twice as stringent as SCAQMD Rule 1178.



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The Department should leave the term “visible gap” undefined as in the EPA regulations. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: As stated in the proposal summary (40 N.J.R. at 4405), the Department is adopting changes in deck fitting requirements consistent with SCAQMD Rule 1178. SCAQMD Rule 1178 defines “visible gap” as a gap of a deck fitting or roof opening of more than one-eighth inch between any gasket or seal and the opening that it is intended to seal. Therefore, the definition of “visible gap” at N.J.A.C. 7:27-16.1 is being modified on adoption to mean a gap of a deck fitting or roof opening of more than one-eighth inch between any gasket or seal and the opening that it is intended to seal. This change will affect the requirements at N.J.A.C. 7:27-16.2(l)1 through 3, as well as N.J.A.C. 7:27-16.2(r), because the term “visible gap” appears in those conditions. This modified definition conforms to the SCAQMD Rule 1178, which requires inspecting for visible gaps using one-eighth inch probes. The Federal MACT rule Subpart WW (40 CFR 1063(d)(1)(v)) also specifies that gaps for deck fitting gaskets, seals, and wipers will not exceed 0.32 centimeters (one-eighth inch). Thus, the adopted standard of one-eighth inch for a visible gap is consistent with both the SCAQMD rules and the Federal rules.

In addition, The Department is modifying N.J.A.C. 7:27-16.2(l)3x on adoption to reference the gap requirements in N.J.A.C. 7:27-16.2(l)3iii and iv and the to delete the reference to “no visible gaps” in N.J.A.C. 7:27-16.2(l)3x. This is because the definition of “visible gap” as it pertains to rim seals in SCAQMD Rule 1178 are gaps that do not meet identical seal gap requirements to those at N.J.A.C. 7:27-16.2(l)3iii and iv, but to avoid confusion, the Department is modifying N.J.A.C. 7:27-16.2(l)3x on adoption to reference the requirements at N.J.A.C. 7:27-16.2(l)3iii and iv directly, instead of having two different definitions of “visible gap” (one for deck fittings and one for rim seals).

136. COMMENT: The exemption at N.J.A.C. 7:27-16.2(f)6 should clarify that the five ton per year cap is for in-service roof landings as defined in the proposal. This exemption should also exclude emissions that result from landing roofs semi-annually to allow for Reid Vapor Pressure (RVP) changeovers. Likewise, the exemption should be expanded to include a cap on the number of landings per tank. A cap of no more than four landing events per tank per year is suggested. Thus, the cap would apply if roof landings emissions are less than five tons per year per tank, or if roof landing events are fewer than four per tank.

The Department should consider caps for emissions from ozone season landing events only, consistent with the approach taken to control tank cleaning and degassing emissions. This is also consistent with the goal of this rulemaking, which is to reduce emissions such that New Jersey achieves attainment with the Federal ozone standards. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The five-ton threshold at N.J.A.C. 16.2(f)6 is intended to allow roof landings for RVP changes for most tanks. Tanks large enough for seasonal RVP changes to cause the five-ton threshold to be exceeded will need to be controlled, or included in an averaging plan pursuant to N.J.A.C. 7:27-16.7(p)2. Control of degassing emissions, which is similar to control

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of roof landing emissions, is generally considered more cost-effective for larger tanks that emit more VOCs. The exemption at N.J.A.C. 7:27-16.2(f)6 is being modified on adoption to say “in-service roof landings,” which include semi-annual roof landings for RVP changeovers. This is consistent with the proposal summary (40 N.J.R. 4407), which states the exemption applies to in-service roof landings.

The Department has not modified the rule to include the suggested compliance option of four landing events per year instead of limiting roof landing emissions to five tons per year. As set forth in the proposal summary (40 N.J.R. at 4405), tanks that emit less than five tons of VOC per year from roof landings can be exempt from the facility-wide tank VOC control plan requirements at N.J.A.C. 7:27-16.2(p) because the emissions reductions expected from controlling roof landing emissions from those tanks do not justify the cost of controlling those emissions. However, a roof-landing cycle for a large tank can result in VOC emissions in excess of 1.25 tons, so four landings would result in annual VOC emissions from roof landings of over five tons. The roof landing emissions from such large tanks fall above the threshold where the cost of controlling the roof landing emissions is justified, even if they were to be limited to four landings per year. Therefore, the Department has not modified the rule as requested.

In most cases the Department requires RACT control measures for NO<sub>x</sub> and VOC emissions to be applied year round and not just during ozone season. An exception was made for degassing and cleaning emissions because the lack of a sufficient number of control contractors in New Jersey who are needed to control those emissions year-round would make year-round compliance problematic during the first year or two that the rules are operative. Roof-landing controls, such as standing loss and refill control, as well as work practices, are to be implemented over a ten-year timeframe. (See N.J.A.C. 7:27-16.2(p)2ii.) This is intended to give facilities adequate time to perform tank modifications and install controls. As set forth at 40 N.J.R. 4401, it is the intent of the Department to achieve reductions of VOC emissions for aboveground stationary storage tanks of over 2,000 tons per year by 2019. To accomplish this, it is necessary that the roof-landing control measures be applied year round, as is usually the case with RACT measures.

137. COMMENT: The proposal requires that the emissions cap be “Federally enforceable.” The Department must clarify timeframes and mechanisms for securing these caps in permits; the timeframe should be tied to permit submittal not permit approval given the lengthy time typically required for permit review and approval. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: An emission limit is Federally enforceable if it is contained in the Department’s Air Pollution Control rules or the Federal rules, a preconstruction permit issued by the Department pursuant to N.J.A.C. 7:27-8 or an operating permit issued by the Department pursuant to N.J.A.C. 7:27-22, and has a corresponding production or operational limit that makes it enforceable by EPA. Tanks that already have Federally enforceable total emission limits below five tons per year will not require permit modifications if no emission increases are required to account for roof-landing emissions. Otherwise, permit applications for a Federally

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enforceable limit for existing tanks must be submitted to and approved by the Department by December 1, 2009, to be excluded from the facility-wide VOC control plan due on that date. (See adopted N.J.A.C. 7:27-16.2(p)1i.) By extending the submittal due date for the facility-wide VOC control plan the Department has provided additional time to submit and receive Department approval of permit applications to incorporate Federally enforceable limits. (See Response to Comment 121 for a discussion of this extension.)

Adopted N.J.A.C. 7:27-16.2(f)6 and 7 do not preclude a facility from obtaining a Federally enforceable limit on roof landing emissions or content vapor pressure for an individual tank after the facility-wide VOC control plan is submitted and approved in order to exempt a tank from the requirements at N.J.A.C. 7:27-16.2(p). For Title V facilities, such action would require a significant modification to the facility's operating permit pursuant to N.J.A.C. 7:27-22.24(b)7 to obtain the limit and remove the tank from the facility-wide VOC control plan.

138. COMMENT: The proposed rule at N.J.A.C. 7:27-16.2(f)8 refers to an exemption from a leak-free condition when the requirements of N.J.A.C. 7:27-16.2(q)1vi are met. This requirement does not exist and the reference should be changed to N.J.A.C. 7:27-16.2(q)1iv. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.2(f)9 (proposed as N.J.A.C. 7:27-16.2(f)8) on adoption to correct the cross reference. See Response to Comment 166 for a discussion of the Department's modification of N.J.A.C. 7:27-16.2(f)9 (proposed as N.J.A.C. 7:27-16.2(f)8) on adoption to delete the cross reference to N.J.A.C. 7:27-16.2(q)1v and add cross references to N.J.A.C. 7:27-16.2(n)1 and (o)1.

139. COMMENT: The gauge float well cover is required to be gasketed and bolted at N.J.A.C. 7:27-16.2(l)1i. If a gauge tape breaks, a confined space entry must be made into an active tank to unbolt, repair and bolt the gauge float cover. There is no reason this small cover needs to be bolted when a weighted cover will provide the same emission control. Change N.J.A.C. 7:27-16.2(l)1i to "equip each access hatch with a cover that is bolted and gasketed and each gauge hatch with a cover that is gasketed and weighted or bolted." (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department agrees that the gauge float well (referred to in the comment as "gauge hatch") does not need to be bolted. Sufficient emission control will be obtained by a weighted cover. Accordingly, the Department is modifying N.J.A.C. 7:27-16.2(l)1i on adoption to allow gauge float wells to be gasketed and either weighted or bolted.

140. COMMENT: Most gauge hatch/sample wells have a slotted fabric covering 90 percent of the surface area, in accordance with 40 CFR 60.112b(a)(1)vii. Is the gasketed cover required at N.J.A.C. 7:27-16.2(l)1ii in addition to the slotted fabric? Emission controls are already in

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place and a cover would be mostly redundant. Revise the condition at N.J.A.C. 7:27-16.2(l)1ii to reference Subpart Kb, 40 CFR 60.112b(a)(1)vii. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The cover required by N.J.A.C. 7:27-16.2(l)1ii is in addition to the fabric required by 40 CFR Part 60 Subpart Kb. The conditions at N.J.A.C. 7:27-16.2(l)1ii are based on the conditions in SCAQMD Rule 1178. SCAQMD Rule 1178 is more protective than the Federal NSPS Subpart Kb. The SCAQMD rule is also a more recent standard (2002) than the 1994 Federal NSPS Subpart Kb. The Department is adopting the more protective measure because New Jersey is not in attainment with the 8-hour ozone NAAQS.

141. COMMENT: The requirement at N.J.A.C. 7:27-16.2(l)1vi was incorrectly copied from SCAQMD Rule 1178. The words “open floating” are missing prior to “roof drain.” The requirement, “The fabric cover shall be impermeable if the liquid is drained into the contents of the tank,” does not appear in SCAQMD Rule 1178. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: As set forth in the proposal summary (40 N.J.R. 4405), the Department intended to follow the language of SCAQMD rule 1178. Accordingly, the Department is modifying N.J.A.C. 7:27-16.2(l)1vi on adoption to conform to the SCAQMD Rule 1178.

142. COMMENT: It is not clear what the Department intended by “The fabric cover shall be impermeable if the liquid is drained into the contents of the tank” at N.J.A.C. 7:27-16.2(l)1vi. Please provide further clarification. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: See Response to Comment 141 for a discussion of a modification to N.J.A.C. 7:27-16.2(l)1vi to delete that language.

143. COMMENT: N.J.A.C. 7:27-16.2(l)3 must specify that it applies only to external floating roof tanks, not all Range III tanks. The provisions are not appropriate to internal floating roof tanks. Insert the term “external floating roof” before the word “tank” in the first sentence. Correct the paragraph notations as indicated (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: The Department intends to base the deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)3 on SCAQMD Rule 1178(d)(1)(B)(i) through (x), as set forth in the proposal summary (40 N.J.R. at 4405). SCAQMD Rule 1178(d)(1)(B) refers only to external floating roof tanks. Therefore, the Department is modifying N.J.A.C. 7:27-16.2(l)3 on adoption to add “external floating roof.” Except for the exceptions identified at N.J.A.C. 7:27-16.2(l)7, the internal floating roof tank requirements refer back to external floating roof tank requirements, based on SCAQMD Rule 1178. N.J.A.C. 7:27-16.2(l)3x is modified on adoption to change the term “external floating roof” to the more general term “floating roof,” because the seal requirements for domed tanks and internal floating roof tanks at N.J.A.C. 7:27-16.2(l)5ii, 6i, and 7iv refer back to N.J.A.C. 7:27-16.2(l)3x.

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144. COMMENT: The requirement at N.J.A.C. 7:27-16.2(l)4 to dome external floating roof tanks does not provide sufficient environmental benefit to warrant inclusion in this rule. During the rulemaking process, industry provided economic and emissions data that demonstrated that the cost-effectiveness of this option exceeded reasonable thresholds. The emission reductions that will be gained through implementation of N.J.A.C. 7:27-16.2(l)1 through 3 will provide sufficient emission reductions that would make doming even less cost-effective. It should also be noted that throughout the rulemaking process the Department indicated that its interest was in doming external floating roof tanks storing gasoline. This rule proposal should be consistent, therefore, with that intent and not specify a vapor pressure threshold of three pounds per square inch, but instead specify that the provision applies to gasoline storage tanks. Requiring domed roofs on external floating roof tanks is not a regulatory standard in California. While SCAQMD may require them, the Bay Area Air Quality Management District (BAAQMD) made the determination that they were not cost effective. (2, 4, 5, 7, 8, 9, 15, 29, 30, 37, 38, 43)

RESPONSE: As discussed in Response to Comment 134, the Department is modifying N.J.A.C. 7:27-16.2(f)4 on adoption to exempt from N.J.A.C. 7:27-16.2(l)4 any tank that stores slop oil or oily wastewater subject to 40 CFR Part 60, Subpart QQQ. The Department is also modifying N.J.A.C. 7:27-16.1 on adoption to add definitions of “oily wastewater” and “slop oil,” based on the definitions of those terms at 40 CFR 60.691. Those definitions, along with the crude oil exemption at N.J.A.C. 7:27-16.2(l)4, eliminate many of the non-gasoline storing external floating roof tanks from the doming requirement because doming those tanks is expensive relative to the small VOC emission reductions achieved. Otherwise, doming tanks that store liquid with a vapor pressure over 3 psia, including certain other non-gasoline storage tanks such as tanks that store MTBE, is considered reasonable because it is effective in reducing emissions, there is a precedent in requiring domes (SCAQMD Rule 1178), and domed floating roof tanks are now common in New Jersey. The Environmental Impact at 40 N.J.R. 4427 indicates the doming requirements at N.J.A.C. 7:27-16.2(l)4 will result in a reduction of 130 tons per year of VOC emissions by 2020. Because the necessary emission reductions would require measures even beyond what would be achieved with these rules, they outweigh the costs here when determining reasonableness of an ozone control measure. (See the responses to comments 117 and 119 for discussions of the role of costs in the determination of RACT control measures.)

145. COMMENT: The deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)5 are not feasible for domed external floating roofs. Domed external floating roofs should instead be subject to the requirements of N.J.A.C. 7:27-16.2(l)7. References to “gasoline vapor” at N.J.A.C. 7:27-16.2(l)5iii should refer to “organic vapor.” (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The requirements for existing domed external floating roof tanks at N.J.A.C. 7:27-16.2(l)5 are based on the requirements at SCAQMD Rule 1178 (see 40 N.J.R. at 4405), and are generally consistent with N.J.A.C. 7:27-16.2(l)7, except that N.J.A.C. 7:27-16.2(l)7 contains

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requirements for roof columns and ladder wells. The requirements for roof columns and ladder wells are not included in N.J.A.C. 7:27-16.2(l)5 because domed external floating roof tanks are not equipped with those types of deck fittings. The seal requirements for existing domed external floating roof tanks at N.J.A.C. 7:27-16.2(l)5ii are identical to the seal requirements for internal floating roof tanks at N.J.A.C. 7:27-16.2(l)7iv. Also, the requirements at N.J.A.C. 7:27-16.2(l)5 are feasible for existing domed external floating roof tanks because the required technology is already in widespread use on those tanks and that technology is required on domed internal floating roof tanks subject to 40 CFR Part 63 Subpart WW. The reference to gasoline vapor at N.J.A.C. 7:27-16.2(l)5iii is being modified on adoption to refer to the more inclusive term “organic vapor” because, as set forth at 40 N.J.R. 4405, the Department intended to base the requirement at N.J.A.C. 7:27-16.2(l)5iii on SCAQMD Rule 1178, and the term “organic vapor” is used in SCAQMD Rule 1178.

146. COMMENT: Proposed N.J.A.C. 7:27-16.2(l)6 is not feasible for domed external floating roofs. Domed external floating roofs should instead be subject to the requirements of N.J.A.C. 7:27-16.2(l)7. Further, references to “gasoline vapor” in N.J.A.C. 7:27-16.2(l)6ii should refer to “organic vapor.” (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)6 for external floating roof tanks retrofitted with domes are based on the requirements at SCAQMD Rule 1178. (See 40 N.J.R. at 4405.) The requirements at N.J.A.C. 7:27-16.2(l)6 are also consistent with the deck fitting and seal requirements for external floating roof tanks at N.J.A.C. 7:27-16.2(l)1 and 3. External floating roof tanks are required to meet the deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)1 and 3 before the domes are installed. The technology required for deck fittings and seals on external floating roofs at N.J.A.C. 7:27-16.2(l)1 and 3 is already widely used, and is required on tanks subject to 40 CFR Part 63 Subpart WW. After an external floating roof tank meets the deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)1 and 3, it will be necessary neither to modify those deck fittings and seals in order to install the dome on top of the tank shell, nor to modify them after the dome is installed. If a tank is in compliance with N.J.A.C. 7:27-16.2(l)1 and 3 it will be in compliance with N.J.A.C. 7:27-16.2(l)6. Therefore, the deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)6 are feasible for external floating roof tanks retrofitted with domes because the external floating roof tanks will already be in compliance with those requirements when the domes are installed and will remain in compliance with them after dome installation. The reference to gasoline vapor at N.J.A.C. 7:27-16.2(l)6ii is being modified on adoption to the more inclusive term “organic vapor” because, as set forth at 40 N.J.R. 4405, the Department intended to base the requirement at N.J.A.C. 7:27-16.2(l)5iii on SCAQMD Rule 1178, and the term “organic vapor” is used in SCAQMD Rule 1178 requirement.

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147. COMMENT: Proposed N.J.A.C. 7:27-16.2(l)7ii (the requirement to equip each ladder well with a gasketed cover with no visible gaps) is impossible to achieve in practice and should be deleted. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The requirement at N.J.A.C. 7:27-16.2(l)7ii to equip each ladder well with a gasketed cover is from SCAQMD Rule 1178d(3)(B). With the revised definition of “visible gap” at N.J.A.C. 7:27-16.1, N.J.A.C. 7:27-16.2(l)7ii is consistent with SCAQMD Rule 1178d(3)(B) and can be achieved in practice. See Response to Comment 135 for a discussion of the modification of N.J.A.C. 7:27-16.1 on adoption to revise the definition of “visible gap” from gaps greater than one-sixteenth of an inch to gaps greater than one-eighth of an inch. Also, MACT Subpart WW at 40 CFR 63.1063(a)(C)(2)(ii) recognizes the feasibility of this measure in that it does not exclude ladder wells from the requirement to have a gasketed cover. Since Federal and California rules require gasketed covers for ladder wells, and the commenter has not provided any reason why requiring gasketed covers for ladder wells is impossible to achieve in practice, the Department is not deleting the requirement at N.J.A.C. 7:27-16.2(l)7ii.

148. COMMENT: The reference in N.J.A.C. 7:27-16.2(l)7iii to N.J.A.C. 7:27-16.2(l)1 or (l)4 is not appropriate for internal floating roof tanks. Requirements for internal floating roof tanks should be unique and separate from those for external floating roof tanks. N.J.A.C. 7:27-16.2(l)7i through iv should be replaced by incorporating requirements from 40 CFR Part 63 Subpart WW or at least providing this as an option to the proposal language. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The conditions at N.J.A.C. 7:27-16.2(l)7 are based on the conditions at SCAQMD Rule 1178. SCAQMD Rule 1178 is generally more protective than the Federal NSPS Subpart Kb and MACT Subpart WW, and it was the Department’s intent to be more protective because of New Jersey’s ozone non-attainment. (See 40 N.J.R. at 4428.) Also, MACT Subpart WW at 40 CFR 63.1063(d)(1)(v) requires gaps for seals, wipers, and deck-fitting gaskets not to exceed 0.32 centimeters (one-eighth inch) for internal floating roofs; therefore, the deck fitting requirements of N.J.A.C. 7:27-16.2(l)7 are now consistent with that Federal rule, because the definition of “visible gap” was modified on adoption in Response to Comment 135 to be a gap greater than one-eighth inch.

See Response to Comment 149 for a discussion of the correction of cross references at N.J.A.C. 7:27-16.2(l)7iii.

149. COMMENT: Based on review of SCAQMD Rule 1178, N.J.A.C. 7:27-16.2(l)7iii should reference N.J.A.C. 7:27-16.2(l)2, not N.J.A.C. 7:27-16.2(l)4. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.2(l)7iii on adoption to correct the cross-reference.

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150. COMMENT: N.J.A.C. 7:27-16.2(l)7iv was copied from SCAQMD Rule 1178; however, that rule does not specify a “liquid mounted primary seal.” The SCAQMD rule says “primary seal”; therefore, the proposed text should be corrected. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The SCAQMD Rule 1178 does not specify that a “liquid mounted primary seal” be installed for internal floating roof tanks. However, SCAQMD Rule 463 requires that a fixed roof tank that has an internal floating-type cover installed, modified or replaced after June 1, 1984 have a closure device that consists of either a single liquid mounted primary seal or a primary and secondary seal. Since all tanks subject to SCAQMD Rule 1178 are also subject to SCAQMD Rule 463, the effect of the Department’s rule is the same, and Department is maintaining its requirement for the “liquid mounted primary seal” at adopted N.J.A.C. 7:27-16.2(l)7iv(1) (proposed N.J.A.C. 7:27-16.2(l)7iv).

151. COMMENT: At N.J.A.C. 7:27-16.2(l)7v and vi, the maximum lower explosive limit (LEL) in the space between the floating roof and the fixed roof for floating roofs installed before and after June 1, 1984 were both copied from SCAQMD Rule 1178. Although June 1, 1984 may be significant for the SCAQMD regulations, what is the basis for specifying this date in the New Jersey regulations? (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department agrees that the June 1, 1984 was the date of an amendment of SCAQMD Rule 463 to require more stringent deck fitting and seal requirements and the date is not relevant to New Jersey tank regulations. Therefore, the Department is modifying N.J.A.C. 7:27-16.2(l)7v and vi on adoption to refer to July 23, 1984, the date Federal NSPS rule 40 CFR Part 60, Subpart Kb first required more stringent seal and deck fitting requirements (equivalent or exceeding the June 1, 1984 amendment of SCAQMD Rule 463) for new or modified floating roof tanks nationwide.

The LEL requirements at N.J.A.C. 7:27- 16.2(l)7v and vi apply after the tanks are degassed and retrofitted to meet the deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)7. The deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l)7 exceed the requirements at both SCAQMD Rule 463 and NSPS Subpart Kb, so internal floating roofs that meet those requirements should be able to meet the LEL requirements at N.J.A.C. 7:27- 16.2(l)7v and vi.

152. COMMENT: The requirements of N.J.A.C. 7:27-16.2(l)9 are redundant with the requirements of N.J.A.C. 7:27-16.2(l)3 and 7 that specify acceptable seals. If a primary seal is replaced, the tank would be taken out of service, and the requirements of N.J.A.C. 7:27-16.2(l)3 or 7 would become applicable.

Some of the seals identified as “acceptable” do not have corresponding emission factors in the AP-42 emission estimating computer program (TANKS). Therefore, there is no methodology to quantify emissions or to substantiate that these seals reflect a reduction in emissions.



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The requirements at N.J.A.C. 7:27-16.2(l)9 should be deleted. If they are not deleted, any reference to “liquid mounted” prior to the seal description should be stricken. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: N.J.A.C. 7:27-16.2(l) is being modified on adoption to delete N.J.A.C. 7:27-16.2(l)9 and 10 (the lists of “acceptable” primary and secondary seals) because they are redundant with the requirements at N.J.A.C. 7:27-16.2(l)3 and 7.

153. COMMENT: Tanks that would be subject to the requirement at N.J.A.C. 7:27-16.2(l)11 are not significant emitters of VOCs. The undue burden and cost that this requirement imposes does not justify the insignificant emission reduction. At a minimum, the term leak free should be replaced with the term vapor tight. As stated in the proposal summary these requirements are taken from SCAQMD Rule 1178(d)(4)(A). (See 40 N.J.R. at 4406.) The SCAQMD requirements are specific to fixed roof tanks connected to an emission control system. The SCAQMD requirements are not applicable in the context used in the New Jersey proposal. (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: Upon review of SCACMD Rule 1178(d)(4)(A), the Department agrees that the requirements at proposed N.J.A.C. 7:27-16.2(l)11 are specific to fixed-roof tanks connected to a control device. Therefore, the requirement proposed at N.J.A.C. 7:27-16.2(l)11 is being modified upon adoption at N.J.A.C. 7:27-16.2(l)9 so that it applies only to fixed-roof tanks in Range III. This change is consistent with SCAQMD Rule 1178, because if a Range III tank is not equipped with a floating roof, it would need to be connected to a control device pursuant to N.J.A.C. 7:27-16.2(b)2.

See Response to Comment 133 regarding the Department’s modification of N.J.A.C. 7:27-16.2(d) to replace the term “leak free” with “vapor tight.”

154. COMMENT: N.J.A.C. 7:27-16.2(l)12 requires a facility to comply with the rim seal system requirements for Range I and II external floating roof tanks on the operative date of the rule. For existing tanks, a timeline for compliance is needed. Consistent with other provisions, the compliance timeline should be tied to the next scheduled cleaning or degassing event. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The requirement to comply with rim seal requirements for Range I and II external floating roof tanks is set forth in the existing rules at N.J.A.C. 7:27-16.2(h). Proposed N.J.A.C. 7:27-16.2(l)12 (adopted at N.J.A.C. 7:27-16.2(l)10) is not a new requirement, but restates the existing requirements for Range I, II, and III external floating roof tanks.

155. COMMENT: N.J.A.C. 7:27-16.2(m), which requires the roof to be floating at all times except initial filling, emptying, and refilling, should apply only to Range III tanks. (2, 4, 5, 7, 8, 9, 15, 29, 30, 37, 38, 43)

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RESPONSE: N.J.A.C. 7:27-16.2(m) through (p) regulate roof landing cycles. (See 40 N.J.R. at 4406.) N.J.A.C. 7:27-16.2(o) relates specifically to roof landings of an internal floating roof tank. A tank's range depends on its capacity, in thousands of gallons, as set forth in N.J.A.C. 7:27-16.2(b), Table 2A. Range III tanks are the larger tanks that store high vapor pressure VOCs, such as gasoline. Range III tanks are located at refineries, terminals, and pipeline breakout stations. (See 40 N.J.R. at 4400.) As set forth in the rule proposal (40 N.J.R. at 4407), the management practices at N.J.A.C. 7:27-16.2(m) are intended to apply all in-service roof landing cycles to minimize VOC emissions. As discussed in the Response to Comment 117, even with the adoption of these rules, New Jersey is projected to continue to exceed the new 8-hour 75 ppb ozone NAAQS, so keeping VOC emissions to a minimum is important. Because of the importance of minimizing VOC emissions, and because the commenter does not provide a justification for why N.J.A.C. 7:27-16.2(m) should apply only to Range III tanks, the Department has not made the requested modification.

156. COMMENT: Proposed N.J.A.C. 7:27-16.2(n) requires filling, emptying, and refilling to be continuous and done as quickly as possible, and requires roofs on external floating roof tanks to be set at their lowest setting on the operative date of the rule. Although roof leg settings for external floating roof tanks can be changed while the tank is in service, a compliance timeframe of 180 days is reasonable and should be added. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The commenter's statement that N.J.A.C. 7:27-16.2(n) requires roofs on external floating roof tanks to be set at the lowest setting on the operative date of the rule is not entirely correct. The requirement at N.J.A.C. 7:27-16.2(n) requires any in-service roof landing to be made with the landers set at their minimum setting, so they need to be reset prior to the first in-service roof landing on or after the operative date of the rule, which is not necessarily on the operative date of the rule. Also, the requirement was published in the New Jersey Register on August 4, 2008, so owners or operators of external floating roof tanks have had sufficient time to prepare for it. Therefore, the Department has not modified N.J.A.C. 7:27-16.2(n) as requested.

157. COMMENT: N.J.A.C. 7:27-16.2(p) should reference Range III floating roof gasoline storage tanks, not all floating roof tanks. As the Department communicated to industry stakeholders during rule development, and as implied by N.J.A.C. 7:27-16.2(p)2iii, the focus of the VOC control plan for petroleum storage tanks is gasoline storage tanks. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department disagrees with limiting the scope of N.J.A.C. 7:27-16.2(p) to gasoline storage tanks only. Although the majority of tanks to which the rule applies will store gasoline, this regulation must apply to all applicable VOC storage tanks since the emissions from these tanks contribute to the formation of ozone. Unless emissions from all of the VOC storage

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tanks are controlled, the State will have a more difficult time meeting the requirements of the ozone 8-hour NAAQS.

However, the Department is modifying N.J.A.C. 7:27-16.2(f) on adoption to add an exemption at paragraph (f)7 for tanks that have a Federally enforceable vapor pressure limit less than 1.5 psia at standard conditions for all operating scenarios. Also, the Department is modifying N.J.A.C. 7:27-16.2(p) to indicate this new exemption. Such tanks are not likely to exceed the five-ton per year VOC emission threshold (from roof landings) at N.J.A.C. 7:27-16.2(f)6 for being required to be included in a facility-wide tank VOC control plan for roof landings pursuant to N.J.A.C. 7:27-16.2(p). However, adding a separate exemption for these low vapor pressure tanks will simplify demonstrating compliance, because the owner or operator of the tanks would have to maintain records only of tank contents and vapor pressure, and not perform the monthly (or more frequent) emission calculations usually required to demonstrate compliance with a Federally enforceable tons per year emission limit.

New Jersey would not be the only state to exempt such tanks from the roof landing emissions limits. The Texas Council on Environmental Quality (TCEQ) also exempts tanks with vapor pressure under 1.5 psia from its roof landing rules. As set forth in the proposal summary at 40 N.J.R. 4400, the Department modeled N.J.A.C. 7:27-16.2, in part, on the TCEQ rules. As the range a tank falls in at Table 2A of N.J.A.C. 7:27-16.2 is partially determined by vapor pressure, this provision will exempt a significant portion of tanks that are not Range III storage tanks storing gasoline (such as tanks that store ethanol) from having to comply with the provisions of N.J.A.C. 7:27-16.2(p).

158. COMMENT: The timeline for submitting the facility-wide tank VOC control plan in N.J.A.C. 7:27-16.2(p)1i is unreasonable. A facility needs much more than 120 days to evaluate technically feasible control measures, assess the cost of various control options, identify their selected control measures, and secure capital expenditure funding. A one year submittal timeframe is requested. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: See Response to Comments 120 and 121 for a discussion of the modification of N.J.A.C. 7:27-16.2(p)1i on adoption to extend the date for submittal of the facility-wide tank VOC control plan.

159. COMMENT: Submittal of a facility-wide tank VOC control plan to the Department, as required in N.J.A.C. 7:27-16.2(p)1, is not necessary and the removal of this requirement would simplify the rule. There is no value added in having the plan submitted, since a facility can select its control option and have language inserted into its Title V Operating Permit to reflect that choice. The primary responsibility on the facility is sufficient to choose the appropriate controls within the specified timeframes. Given the highly specialized nature of such controls, it is unlikely that the Department has the expertise to state whether a selected control is adequate or not for achieving the required emission reductions. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

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RESPONSE: The Department will continue to require the submission of a facility-wide tank VOC control plan, as required in N.J.A.C. 7:27-16.2(p)1i. Because the plan is submitted to the Department, it becomes a government document for purposes of the Right to Know Law, N.J.S.A. 47:1A-1 et seq. (commonly referred to as the Open Public Records Act). Moreover, the plan will be readily available to Department personnel assigned to the facility. The Department has the expertise to determine whether a selected control is adequate for achieving the required emission reductions. The control mechanisms have been implemented in other states and are discussed in technical literature.

Although N.J.A.C. 7:27-16.2(p)2ii does not prescribe specific compliance benchmarks prior to the date 10 years after the operative date of the rules by which the facility must implement emission controls, N.J.A.C. 7:27-16.2(p)2ii requires that the facility's schedule for implementing the emission controls for roof landings be consistent with the facility's schedule for removing tanks from service for inspection and maintenance. As indicated in the proposal summary (40 N.J.R. at 4407), this is so modifications may be performed at the same time the tank is taken out of service for an inspection. Therefore, the Department does expect to see interim progress in facilities' performing tank modifications, such as installing controls and controlling roof landing emissions. The Department will verify that progress is being made by reviewing the VOC control plan submitted by a facility, which outlines the facility's schedule for removing tanks from service, along with the other information required by N.J.A.C. 7:27-16.2(p)2.

160. COMMENT: The quantity of information requested in N.J.A.C. 7:27-16.2(p)2i is unreasonable. Much of this information is already available at the Department. For example, the Bureau of Release Prevention schedule for tank inspections is available in Department records. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: N.J.A.C. 7:27-16.2(p)2i(1) through (6) requires a facility to provide basic information for each tank. N.J.A.C. 7:27-16.2(p)2i(7) requires the facility to include the Bureau of Release Prevention schedule for tank inspections in the facility-wide tank VOC control plan, since removal of a tank from service for degassing and cleaning operations tend to occur concurrently with Bureau of Release Prevention inspections. N.J.A.C. 7:27-16.2(p)2ii requires that the facility's schedule for implementing the emission controls for roof landings be consistent with the facility's schedule for removing tanks from service for inspection and maintenance. As indicated in the proposal summary at 40 N.J.R. 4407, this is so that modifications may be performed at the same time the tank is taken out of service for an inspection. To develop a schedule for performing tank modifications as required at N.J.A.C. 7:27-16.2(p)2ii, a facility must refer to its Bureau of Release Prevention inspection schedule. For the Division of Air Quality to evaluate if the schedule for performing tank modifications is consistent with a facility's schedule for removing tanks from service, a copy of the Bureau of Release Prevention schedule is required.

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161. COMMENT: The Department should specify in N.J.A.C. 7:27-16.2(p)2ii that the control measures apply only to refilling emissions, and that standing idle losses should be exempt from the control measures unless the standing idle period exceeds 72 hours. For the majority of tanks, standing idle losses less than 72 hours in duration are a small percentage of the total landing loss. Operating a combustion control device prior to refilling will generate ozone depleting substances such as NO<sub>x</sub> emissions that would offset any VOC emission control gains. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department disagrees that N.J.A.C. 7:27-16.2(p)2ii should specify that the control measures only apply to refilling emissions, and that standing idle losses should be exempt from the control measures unless the standing idle period exceeds 72 hours. EPA Document AP-42 shows that standing losses during the initial 24 hours of the standing idle losses, and each subsequent 24 hours up to the 72 hour point, account for 10 percent of the total emissions from a landing loss period. The reduction in VOC emission from the operation of a control device exceeds the increase of NO<sub>x</sub> emissions from any combustion device.

162. COMMENT: The requirements for the emissions averaging plan at N.J.A.C. 7:27-16.2(p)2iii should clearly state that these emissions are related to in-service roof landings. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department agrees with the comment because the proposal summary at 40 N.J.R. 4407 indicates the requirements at N.J.A.C. 7:27-16.2(p) apply to in-service roof landings. N.J.A.C 7:27-16.2(p)2iii is being modified upon adoption to indicate that the tons per tank figure applies to in-service roof landings. The Department is modifying N.J.A.C 7:27-16.1 on adoption to add a definition of “out-of-service,” which is the same as the definition in N.J.A.C. 7:1E-1.6 of the Discharges of Petroleum and Other Hazardous Substances rules.

163. COMMENT: N.J.A.C. 7:27-16.2(p)2iii regarding an emissions averaging plan is not a viable option as proposed. The following changes would make this option more reasonable, which should likewise be of interest to the Department since this option is more likely to employ pollution prevention control methods. The first timeframe for compliance should be moved from 2011 to 2013 to achieve an average of five tons per year VOC emissions per tank for in-service roof landings; it will take at least four years to implement operational controls and/or add-on control technologies to meet the emission requirements; the five tons per year average would hold until 2017. The second timeframe for compliance should be 2017, at which point a three ton per year per tank average would have to be met.

The suggested changes to N.J.A.C. 7:27-16.2(p)2iii simplify compliance and still achieve significant emission reductions prior to the timeline of option N.J.A.C. 7:27-16.2(p)2ii. If timelines and averaging quantities are not more reasonable, it is unlikely that stakeholders will pursue this option. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

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RESPONSE: The schedule at N.J.A.C. 7:27-16.2(p)2ii for implementing the control plan is over 10 years, to correspond to each facility's schedule for removing tanks from service. If a facility commits to controlling all of its non-exempt tanks, then the rule does not restrict the annual roof landing emissions from those tanks or from the facility, though all emissions are still subject to permitting requirements.

If a facility chooses the averaging option in N.J.A.C. 7:27-16.2(p)2iii, certain gasoline storage tanks may emit over five tons per year from roof landings, but those emissions must be offset by reductions in other tanks, so that the required averages are met. Meeting those averages may require the installation of controls on selected tanks, modification of selected tanks, and/or the implementation of management practices to minimize roof-landing emissions. The averaging provisions are meant to give the facility the flexibility to choose which non-exempt tanks to control or modify, and which management practices to employ to achieve the required average, rather than having minimum control requirements for all non-exempt tanks. Presumably, having that flexibility would allow facilities to achieve their averages in the most cost-effective manner. In return for that flexibility, the Department expects facilities choosing this option to achieve greater and faster overall reductions than those committing themselves to controlling all of their non-exempt tanks over the 10-year window. The schedule for implementing the progressively reduced tons per tank averages is intended to achieve this. Therefore, the suggested extension of the deadlines to 2013 and 2017 at N.J.A.C. 7:27-16.2(p)2iii are not necessary.

The averaging scheme allowed under N.J.A.C. 7:27-16.2(p)2iii is appropriate in light of the large number of gasoline storage tanks subject to the rule, and also the nature of the contaminants emitted by these gasoline storage tanks. Ozone formation is caused by the VOC emissions over the entire region and is not a localized problem. Requiring VOC reductions by reducing the emissions from a group of tanks rather than requiring reductions from each tank in the group will still accomplish the goal of reducing ozone formation by reducing VOC emissions for the region. Therefore, the emission averaging plan in N.J.A.C. 7:27-16.2(p)2iii is appropriate as proposed.

The averaging plan requirements at N.J.A.C. 7:27-16.2(p)2iii are intended as an alternative to the control plan requirements at N.J.A.C. 7:27-16.2(p)2ii to provide flexibility to a facility with a large number of applicable gasoline storage tanks. A facility must choose one approach or the other for its gasoline storage tanks. The averaging plan at N.J.A.C. 7:27-16.2(p)2iii is an alternative to the control plan at N.J.A.C. 7:27-16.2(p)2ii. The Department is modifying N.J.A.C. 7:27-16.2(p)2i and ii on adoption to make it clear that the subparagraphs are alternatives, as indicated in the proposal summary (40 NJR at 4408) and N.J.A.C. 7:27-16.2(p)2.

164. COMMENT: The Department should consider applying the averaging plan concept to in-service roof landing emissions that occur during ozone season. As previously stated, this option is consistent with the Department's proposal for cleaning emissions control, and also consistent with goals for New Jersey to achieve ozone attainment statewide. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

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RESPONSE: See Response to Comment 136 for a discussion of why it is appropriate to control roof landing emissions year-round.

165. COMMENT: The industry standard for degassing tanks requires that the tank vapor space exhibit 10 percent or less of the LEL. Therefore, the term “whichever is less” should be struck from N.J.A.C. 7:27-16.2(q)1ii(1), allowing the option for 5,000 ppmv or 10 percent of the LEL. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The 5,000 ppmv as methane or less than 10 percent LEL, whichever is less, concentration limit at N.J.A.C. 7:27-16.2(q)1ii(1) is an enforceable standard and is based on San Juaquin Unified Air Pollution Control District (SJVUAPCD) Rule 4623. (See 40 N.J.R. at 4407.) An instrument that meets EPA Method 21 requirements will measure all VOC containing chemicals, and will not underreport. On the other hand, it is possible that, since petroleum products are blends of chemicals, the LEL meter may underreport the true vapor concentration because the operator sets the LEL meter based on the particular vapor (such as hexane) that the operator believes he or she is measuring. N.J.A.C. 7:27-16.2(q)1ii(1) assures that the concentration does not exceed 5,000 ppmv as methane, and also assures that the concentration does not exceed the industry standard 10 percent LEL, if that number corresponds to a concentration less than 5,000 ppmv as methane. Accordingly, the rule is appropriate as proposed.

166. COMMENT: The requirement at N.J.A.C. 7:27-16.2(q)1v is not appropriate for emptying a tank prior to degassing. The process of draining and refilling is unrelated to these operations. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.2(q)1 on adoption to delete the draining and refilling requirement at N.J.A.C. 7:27-16.2(q)1v. The requirement at N.J.A.C. 7:27-16.2(q)1v is duplicative of N.J.A.C. 7:27-16.2(n)1 and (o)1, which refer to roof landings of external and internal floating roof tanks. The Department is modifying adopted N.J.A.C. 7:27-16.2(f)9 (proposed as (f)8) on adoption to cross-reference N.J.A.C. 7:27-16.2(n)1 and (o)1, rather than (q)1v.

167. COMMENT: Sludge is atypical for gasoline tanks. While there may be some scale on tank sides and bottoms, it would not be considered sludge as that term is generally understood. There is no reason to regulate sludge removal from gasoline storage tanks; therefore, gasoline storage tanks should be exempt from N.J.A.C. 7:27-16.2(q)3i. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: Under N.J.A.C. 7:27-16.2(q)3, the owner or operator must control emissions from the sludge removed from a tank by, as one alternative, controlling emissions from the receiving vessel by operating a vapor control system that reduces VOC emissions by at least 95 percent. (See N.J.A.C. 7:27-16.2(q)3i.) It is necessary for the VOC emissions from the receiving vessel

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be controlled. If a gasoline tank contains sludge, then the provisions of N.J.A.C. 7:27-16.2(q)3 do apply. If a tank does not contain sludge, then the provisions of N.J.A.C. 7:27-16.2(q)3 do not apply.

168. COMMENT: The commenter is not aware of any proven methods for providing emission control during sludge removal as required by N.J.A.C. 7:27-16.2(q)3i. In lieu, the commenters recommend the use of best management practices to minimize emissions during sludge removal until proven technology is available. This requirement should be deleted until proven methods of compliance are readily available. Best management practices should be employed to minimize emissions during sludge removal. (2, 4, 5, 7, 8, 9, 15, 17, 29, 30, 38, 43)

RESPONSE: The requirement at N.J.A.C. 7:27-16.2(q)3i to control emissions from the vessel receiving sludge is the same substantive requirement as found at SJVUAPCD Rule 4623. (See 40 N.J.R. at 4407.) Also, the May 2, 2008 amendment of SCAQMD Rule 1149 requires vacuum trucks that receive liquid, sludge, or vapors not to exhaust vapors with a VOC concentration greater than 500 ppm, measured as methane, to the atmosphere. The April 2008 staff report for SCAQMD Rule 1149 indicates that a 500 ppm as methane exhaust concentration from a control device corresponds to a control efficiency greater than 99 percent. This report also states that controlling the exhaust from a receiving vessel such as a vacuum truck can be accomplished by routing the exhaust from the truck back into the tank being degassed (so the exhaust is then controlled by the degassing control device) or by using a carbon adsorber. That report, coupled with the fact that controlling sludge receiving vessels is required by at least two rules from other jurisdictions demonstrates that control methods are available and proven. While the Department encourages the use of best management practices in all instances, in this case it is requiring an action that ensures minimal emissions occur. Therefore, the Department has not modified N.J.A.C. 7:27-16.2(q)3i as requested.

169. COMMENT: The term “leak-free” in N.J.A.C. 7:27-16.2(q)3ii and 16.2(q)3iii (storing and transporting sludge in leak-free containers) is not appropriate. Best management practices should be employed. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: See Response to Comment 129 for a discussion of the Department’s modification of N.J.A.C. 7:27-16.2(q)3ii and iii to replace “leak-free” with “vapor-tight and free of liquid leaks.” While the Department encourages the use of best management practices in all instances, in this case it is requiring an action that ensures minimal emissions occur. This is important because, as discussed in the Response to Comment 117, even with the adoption of these rules, New Jersey is projected to continue to exceed the new 8-hour 75 ppb ozone NAAQS.

170. COMMENT: The requirements at N.J.A.C. 7:27-16.2(r)2 are onerous and unreasonable. It is unlikely that a tank inspector would be qualified to assess differences between Federal Title V permit requirements and actual tank conditions. The breadth and complexity of Title V permits



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make it unlikely that they are qualified to certify compliance with the Title V permit conditions as required by Appendix II. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department acknowledges that an authorized inspector may not be an expert in the air pollution control permits. However, it is reasonable to expect an authorized inspector, who is entrusted with the task of inspecting a tank, to compare the operating conditions in a permit for a tank with the observations he or she makes during the tank inspection. The sections of the air quality permit relevant to the tank being inspected would contain information such as the tank roof type and seal types that the inspector should be able to compare to actual conditions for the tank being inspected. With regard to certification of Title V requirements, Appendix II to Subchapter 16 does not require the inspector to certify compliance with Title V conditions. The compliance status can be determined by someone else.

The Department is modifying N.J.A.C. 7:27-16.2(r)2 on adoption to require the authorized inspector to have a copy of the relevant parts of the Preconstruction Permit or the Operating Permit pertinent to the tank that he or she is inspecting. This will allow the authorized inspector to focus only on those sections of the air quality permit applicable to the tank being inspected, and not on sections unrelated to the tank, such as the requirements for a facility's boilers.

171. COMMENT: Conducting the gap measurements required in N.J.A.C. 7:27-16.2(r)6, r(7) and (r)5iii and iv represent a safety hazard and should be deleted from the rule. The domed external floating roofs and internal floating roofs should comply with the inspection requirements for internal floating roofs included in the Federal NSPS, 40 CFR Part 60 Subpart Kb or the Federal MACT rules, 40 CFR Part 63 Subpart WW. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The deck fitting and seal gap inspection requirements for domed external and internal floating roof tanks at N.J.A.C. 7:27-16.2(r)6 and (r)7 are the same substantive requirements as found at SCAQMD Rule 1178. While the commenter did not explain what is meant by "safety hazard," the Department assumes in this context that the commenter is referring to the risks associated with confined space entry. These measurements are required each time the tank is emptied and degassed (no less than once every 10 years), at which time the internal atmosphere will be habitable, so they do not present a safety hazard by requiring a confined space entry when the tank is in service and storing organic liquid.

The Federal MACT rules, 40 CFR Part 63, Subpart WW, also have gap requirements for internal floating roof (including domed external floating roof) deck fittings and seals. The Federal rule at 40 CFR 63.1063(c) requires inspection every time an internal floating roof tank is emptied and degassed (and no less than every 10 years). Pursuant to 40 CFR 63.1063(d)(1)(v), gaps of more than 0.32 centimeters (one-eighth inch) between any seal, wiper, or deck fitting gasket and the surface it is intended to seal constitutes a failure. Therefore, N.J.A.C. 7:27-16.2(r)6 and 7 are consistent with the 40 CFR Part 63 Subpart WW requirement for an inspection every time an internal floating roof tank is emptied and degassed, and the requirement for

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inspecting deck fittings for visible gaps, which are defined as gap widths over one-eighth inch (0.32 centimeters).

172. COMMENT: The inspection requirements for fixed-roof tanks at N.J.A.C. 7:27-16.2(r)9 should be based on the inspection requirements in 40 CFR Part 63 Subpart OO. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The inspection requirements for fixed-roof tanks are based on the requirements at SCAQMD Rule 1178, which are more protective than those at 40 CFR Part 63 Subpart OO. 40 CFR Part 63, Subpart OO is a standard that applies nationwide, and is intended to reduce hazardous air pollutants. Like California, New Jersey has a significant ozone non-attainment problem. The more protective requirements were proposed because New Jersey is not in attainment with the 8-hour ozone NAAQS, as discussed in the proposal summary at 40 N.J.R. 4428. Existing Federal regulations are insufficient to resolve that problem. In order to attain the ozone standard in New Jersey, the Department is utilizing standards developed from areas experiencing similar ozone non-attainment. (See the Response to Comment 117 regarding modeling the Department's rules on rules from other jurisdictions.)

173. COMMENT: Conducting required repairs or taking a tank out of service within 45 days as required at N.J.A.C. 7:27-16.2(r)11 is not always feasible because of the shortage of storage capacity in New Jersey. The rule should allow for another 30 days to comply with this paragraph ,as permitted in the Federal NSPS, 40 CFR Part 60, Subpart Kb. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department agrees with the commenter that because of a shortage of spare tank capacity in New Jersey it may not be possible to remove tanks from service within the proposed 45 days. Therefore, N.J.A.C. 7:27-16.2(r)11ii is being modified on adoption to allow two extensions of 30 days each, consistent with the Federal MACT rules, 40 CFR Part 63 Subpart WW. Consistent with both 40 CFR Part 60, Subpart Kb and 40 CFR Part 63, Subpart WW, documentation of a decision to use an extension shall include a description of the failure, shall document that alternate 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. Because of this documentation requirement, the Department is modifying N.J.A.C. 7:27-16.2(s) on adoption to add N.J.A.C. 7:27-16.2(s)8, requiring the tank owner or operator to maintain records of repair and replacement documentation at N.J.A.C. 7:27-16.2(r)11ii. Allowing two 30-day extensions goes beyond NSPS 40 CFR Part 60, Subpart Kb, and the commenter's requested single 30-day extension. The Department is allowing an additional 30-day extension, upon justification, because the Federal MACT considered more recent data on operational practice and needs in industry.

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174. COMMENT: The existing discharge prevention requirements at N.J.A.C. 7:1E-2.10 already require facilities to conduct periodic (daily, weekly, monthly) inspections of storage tanks. These inspections are recorded and maintained onsite. Industry therefore is requesting that the Department remove this proposed requirement at N.J.A.C. 7:27-16.2(r)3. Alternatively, industry suggests that this requirement only apply to those facilities not required to perform inspections in accordance with N.J.A.C. 7:1E-2.10. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: N.J.A.C. 7:27-16.2(r)3 is intended to ensure compliance with permitted air emission limits. Inspection of shell integrity required by N.J.A.C. 7:27-16.2(r)3 is relevant to air pollution as well, since shell leaks will result in VOC emissions. The annual inspection could be done concurrently with a discharge prevention inspection; however, it is appropriate that the requirement remain in the rules. Not only do the purposes of the Air Pollution Control rules (N.J.A.C. 7:27) and the rules governing Discharges of Petroleum and Other Hazardous Substances (N.J.A.C. 7:1E) differ, but the enforcement provisions in the Air Pollution Control Rules, and Air Administrative Procedures and Penalties (N.J.A.C. 7:27A), differ from those in Discharges of Petroleum and Other Hazardous Substances.

175. COMMENT: N.J.A.C. 7:27-16.2(r)4 requires facilities to complete calculations on the Form provided at N.J.A.C. 7:27-16 Appendix II. There is no guidance in the proposed rule supporting the method for calculating fugitive emission rates when methods other than EPA Method 21 measurements are conducted. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: No fugitive emission rate calculations are required in the form provided at N.J.A.C. 7:27-16 Appendix II. N.J.A.C. 7:27-16.2(r)4 and Appendix II require calculations of other parameters not related to the direct measurements necessary to record fugitive emissions. To clarify that no fugitive emission rate calculations are required, the Department is modifying N.J.A.C. 7:27-16 Appendix II, Fugitive Emissions Form, on adoption to change the term “Leak Rate” and “Post Repair Leak Rate” to “Leak Concentration” and “Post-Repair Leak Concentration,” respectively, to be consistent with the requirements at N.J.A.C. 7:27-16.2(l)2 and 11 (adopted at (l)9) for tank roof openings to be leak-free, which is a concentration-based requirement and not a rate. Also, EPA Method 21 is optional for floating roof tank deck fittings.

176. COMMENT: The annual inspection required by N.J.A.C. 7:27-16(r) is used to determine if the tank is operating in compliance with the proposed rule and does not provide a timeframe for correcting problems found during the inspection. As written, N.J.A.C. 7:27-16.2(r)5 infers that all inspection failures constitute permit violations, which is not consistent with Federal regulations. The Department should indicate a timeframe for repair.

Additionally, a visual inspection from the platform cannot indicate the presence of tears in the primary seal fabric because the secondary seal completely envelopes the primary seal making it not visible. The second sentence of the rule should be revised as follows, similar to the

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language in the proposed N.J.A.C. 7:27-16.2(r)6ii: “Indicate presence of any tears in the fabric of visible seal(s).” (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.2(r)5i on adoption as requested to reference the visible seal. A timeframe for repair is provided at N.J.A.C. 7:27-16.2(r)11ii (which is being modified on adoption to extend that timeframe in response to Comment 173). Pursuant to N.J.A.C. 7:27-16.2(r)5, inspection failures are not violations of permit conditions unless they are not corrected within the timeframe provided for at modified N.J.A.C. 7:27-16.2(r)11. This is consistent with Federal regulations at 40 CFR Part 60, Subpart Kb and 40 CFR Part 60, Subpart WW.

177. COMMENT: Inspecting for visible gaps (as defined less than 0.06 inch) with an one-eighth inch (0.125 inch) probe as required at N.J.A.C. 7:27-16.2(r)5ii is counterintuitive and the probe is unable to quantify such gaps. Visible gaps should be determined with a visual inspection. Furthermore, if the probe option is used there is no direction as to what information needs to be recorded. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: As stated in the Response to Comment 135, the definition of “visible gap” at N.J.A.C. 7:27-16.1 is being modified on adoption to mean a gap of a deck fitting or roof opening of more than 1/8 inch between any gasket or seal and the opening that it is intended to seal. As modified, the definition will allow the use of a 1/8 inch probe to measure the gap. As set forth in the proposal summary (40 N.J.R. at 4408), the requirement to use probes to measure visible gaps is the same substantive requirement as found at SCAQMD Rule 1178. The probes provide a reliable, replicable quantitative method of determining gap widths, while visual inspection does not. The required data from the probe inspection is to be recorded in Section F 6 (Deck Fitting Inspection) of the form in Appendix II as required at N.J.A.C. 7:27-16.2(r)4.

178. COMMENT: The text of the first sentence of N.J.A.C. 7:27-16.2(r)5iii should be revised to include 1.5 inch probes. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: N.J.A.C. 7:27-16.2(l)3iv limits the allowable gap between the tank shell and the secondary seal of a tank in Range III. As proposed, N.J.A.C. 7:27-16.2(r)5iii allows the use of only 1/8 inch and 1/2 inch probes for measuring such gaps. Because some gaps may exceed 1.5 inches, it is appropriate for the Department to allow the use of the larger probes. Accordingly, the Department is modifying N.J.A.C. 7:27-16.2(r)5iii on adoption to allow the use of 1.5 inch probes.

179. COMMENT: For an internal floating roof tank demonstrating compliance with deck fitting and seal requirements at N.J.A.C. 7:27-16.2(l), the requirements of N.J.A.C. 7:27-16.2(r)6i should not be imposed because it is redundant with the deck fitting and seal requirements. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

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RESPONSE: The requirement at N.J.A.C. 7:27-16.2(r)6i to annually check the volume above the roof with an explosivity (LEL) meter is the same substantive requirement as that in SCAQMD Rule 1178 and is a surrogate for a full inspection of the deck fitting gaskets and seals of an internal floating roof. A full inspection in accordance with N.J.A.C.7:27-16.2(r)6iii is performed when the tank is emptied and degassed, and no less frequently than once every 10 years. Therefore, for those years in which the tank is not emptied and degassed it is necessary for the tank to be inspected using the LEL meter in accordance with N.J.A.C. 7:27-16.2(r)6i.

180. COMMENT: The failure of an inspection pursuant to N.J.A.C. 7:27-16.2(r)10 and 11 should not be solely due to the discovery of a visible gap or leak for internal floating roof tanks or domed external floating roof tanks. A single (or multiple) visible gap or leak will not have a significant impact on the overall VOC emission rate of a storage tank and the emission calculation procedures in Chapter 7 of AP-42 already take into account imperfect floating roof fittings, gaskets, and covers, and seals. Thus, there is no deviation to the actual permit limitation on VOC emission rates.

Further, the requirement at N.J.A.C. 7:27-16.2(r)11 to repair or replace those appurtenances with visible gaps or leaks within 45 days after discovery while the tank is in service has the potential to significantly impact not only individual facilities, but the overall storage of gasoline and other petroleum products in the State. The requirement would inevitably cause the number of tanks taken out of service on an annual basis to increase dramatically because these minor defects cannot be safely repaired while the tank is in service. In addition, the secondary emissions resulting from having to take a tank out of service (degassing and cleaning) to repair or replace the fitting would be significantly higher than the emissions generated from a visible gap or leak over many years of service, even if the degassing and cleaning event is controlled, as required by proposed N.J.A.C. 7:27-16.2(q). While it is acceptable to require that a tank be repaired to this specification while it is out of service and prior to refilling, imposing the standard on in service tanks is excessive. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: As set forth in the proposal summary (40 N.J.R. at 4408), the deck fittings and visible seal of an internal floating roof are visually inspected annually without requiring the inspector to enter the tank and a more rigorous inspection for visible gaps (gaps greater than one-eighth inch) and leaks is performed each time the tank is degassed (no less than every 10 years). Therefore, an internal floating roof tank would not be removed from service for failing an inspection for visible gaps or leaks because the tank is already out of service when inspected for visible gaps or leaks.

To clarify that the annual in-service inspection does not require entering the tank to perform the inspection for visible gaps or leaks, the Department is modifying N.J.A.C. 7:27-16.2(r)6ii on adoption to indicate that the annual visual inspection will not require the inspector to enter the tank, and will consist of visually inspecting the internal floating roof to check for

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permit and rule violations, and visually checking the roof for unsealed roof legs, open hatches, open emergency roof drains, or open vacuum breakers or any tears in the fabric of the visible seal.

The annual in-service inspection done from outside the tank will result in fewer observed failures than would the internal inspection done when the tank is out of service. Any failures of seal integrity observed from outside the tank shell at applicable facilities are already required by Federal MACT Standards at 40 CFR Part 63 Subpart WW or NSPS Standards at 40 CFR Part 60 Subpart Kb to be repaired within the same timeframe as N.J.A.C. 7:27-16.2(r)11. As a result, a significantly lower number of tanks will be forced out of service by the requirements at N.J.A.C. 7:27-16.2(r)11 than anticipated by the commenter.

181. COMMENT: The Department requires the facility Responsible Official to sign all tank seal inspection reports. This requirement is completely out of line with the responsibilities of a Responsible Official. The Department needs to justify the need for this burdensome requirement. While complying with environmental rules and regulations is a very important responsibility for every facility, it does not warrant five to 10 visits to the responsible official each month to obtain his signature on individual seal inspection reports. Many subject facilities have responsible officials in locations elsewhere around the country and obtaining a certification for each inspection is a logistically very difficult. Delegation has not proven successful in the New Jersey because most facilities do not have an employee on-site that meets the requirements for delegation. In addition, the rules require the Department approve any such delegation and we are not aware that this has occurred.

This requirement probably was copied from the form of another jurisdiction. However, as stated above, other jurisdictions often have much broader definitions of Responsible Official and much broader delegation possibilities.

The Department has offered no basis for adding this burdensome requirement to the rules. We believe a justification should be provided for this part of the rule. Does the Department believe that the Responsible Official's signature will reduce VOC emissions in a measurable way? If so, can it provide a cost effectiveness calculation? Is there another reason the Department believes it is necessary for the Responsible Official to certify individual seal inspection reports? The certification requirement should be dropped in its entirety.

Also, the results of the inspection(s) and any failures therein, will be certified by the responsible official while compiling the periodic reports required at N.J.A.C. 7:27-22.19(d) and (f). Other reports are also subject to responsible official certification as well. (2, 4, 5, 7, 8, 9, 15, 26, 29, 30, 38, 43)

RESPONSE: The Department agrees that it is not necessary for a Responsible Official to certify each individual tank inspection form if those forms are not submitted to the Department, because it is a redundant requirement. The results of the inspection(s) and any failures will be certified by the Responsible Official while compiling the periodic reports required at N.J.A.C. 7:27-22.19(d) and (f). Therefore, the Department is modifying the certifications on the Inspection

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Form at N.J.A.C. 7:27-16 Appendix II on adoption to delete the certification by the Responsible Official. Instead, a person with direct knowledge of and responsibility for the information contained in the inspection form will provide the same certification that the authorized inspector provides.

182. COMMENT: Observation of an imperfect fitting, gasket, seal, or the like is not necessarily an indication of non-compliance with an air permit provision. If the air permit limits emissions of VOC there is only a violation of the air permit if the compromised fitting, gasket, seal or similar results in excess emissions. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: Air Pollution Control regulations such as N.J.A.C. 7:27-16.2(l)1 and 3, that regulate the operation and design of equipment are meant to minimize and limit the VOC emissions from that equipment. As a result, if a fitting, gasket, seal, or other section of the tank that is regulated is not operating as required by regulation, the VOC emission rate would be higher and not minimized. A permit violation of VOC emission allowables is immaterial in that case, as the regulation is designed to have controls operate to their maximum potential.

183. COMMENT: The proposed amendments to the emission statement in N.J.A.C. 7:27-21.5(j)1 are inconsistent with the current structure of major source operating permits for storage tanks in which landing losses are included in the emission unit VOC emission limit. The disconnect between major source operating permit structure and reporting of roof landing losses in a separate operating scenario needs to be resolved prior to this requirement's coming into effect. As an alternative, the Emission Report required by N.J.A.C. 7:27-21.5(j)2 could be used to identify roof landing losses. (2, 4, 5, 7, 8, 9, 15, 29, 30, 31, 38, 43)

RESPONSE: The Department agrees with the commenter that reporting roof landing emissions as a separate operating scenario in an emission statement as required at N.J.A.C. 7:27-21.5(j)1 is inconsistent with the current structure of major source operating permits. This was recognized in the proposal summary (40 N.J.R. at 4420), which indicates that the operating scenarios for roof landings will eventually be included in operating permits on modification or renewal. In the interim, operating scenarios for roof landings can be added to the emission statement even if they are not contained in the operating permit, as the emission statement and operating permit are two separate documents. To clarify this, the Department is modifying N.J.A.C.7:27-21.5(j)1 on adoption to indicate that if a tank's preconstruction permit or operating permit has a separate operating scenario for roof landings, the owner or operator shall submit the roof landing emissions as a separate operating scenario, or if a tank's preconstruction permit or operating permit does not have a separate operating scenario for roof landings, the owner or operator shall add a separate operating scenario for roof landings to the emission statement and submit the tank's annual roof landing emissions as a separate operating scenario. Also, because of the additional language, the Department is dividing modified N.J.A.C.7:27-21.5 (j)1 into 1i and 1ii. As set forth at 40 N.J.R. 4420, the reason why the Department is requiring the roof landing

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operating scenarios to be listed separately in the emissions statements is to enable the Department to electronically search the New Jersey Environmental Management System database for the roof landing emissions for each tank. This is important because roof landings may account for most of a tank's VOC emissions, and having the electronic search capability will help the Department in evaluating its progress towards emission reduction goals. Therefore, the Department is not modifying N.J.A.C. 7:27-21.5(j)1 as requested.

184. COMMENT: The information required by N.J.A.C. 7:27-21.5(j)2 is extremely onerous and its additional value to the Department over the Emission Statement data is questionable. Were the reporting costs associated with annual preparation of this document incorporated into the cost-effectiveness evaluation done by the Department? (2, 4, 5, 7, 8, 9, 15, 29, 30,38, 43)

RESPONSE: The Department estimates that floating roof landing emissions may have accounted for over 50 percent of the total annual floating roof tank emissions in past years. The emission data are incomplete because not all facilities reported their emissions from roof landings prior to the inclusion of the roof landing methodology into AP-42 in 2006. The New Jersey specific data collected will help the Department in evaluating its progress towards emission reduction goals, and serve as a source of information for technical analyses in future rulemaking.

The collection and public availability of environmental information has been an effective incentive for sources to reduce their emissions. When companies collect emissions information, they learn about the nature and magnitude of their emissions. Therefore, the relatively low costs incurred by compiling this information yields substantial environmental benefits, and the costs are minimal in the context of the overall cost of implementing the amendments of N.J.A.C. 7:27-16.2.

185. COMMENT: The requirements at N.J.A.C. 7:27-16.2(o) should only apply to Range III tanks. (2, 4, 5, 7, 8, 9, 15, 29, 30, 38, 43)

RESPONSE: N.J.A.C. 7:27-16.2(m) through (p) regulate roof landing cycles. (See 40 N.J.R. at 4406.) N.J.A.C. 7:27-16.2(o) relates specifically to roof landings of an internal floating roof tank. A tank's range depends on its capacity, in thousands of gallons, as set forth in N.J.A.C. 7:27-16.2(b), Table 2A. Range III tanks are the larger tanks that store high vapor pressure VOCs, such as gasoline. Range III tanks are located at refineries, terminals, and pipeline breakout stations. (See 40 N.J.R. at 4400.) As set forth in the proposal summary (see 40 N.J.R. at 4407), the management practices at N.J.A.C. 7:27-16.2(o) are intended to apply to all in-service roof landing cycles to minimize VOC emissions. As discussed in the Response to Comment 117, even with the adoption of these rules, New Jersey is projected to continue to exceed the new 8-hour 75 ppb ozone NAAQS, so keeping VOC emissions to a minimum is important. Because of the importance of minimizing VOC emissions, and because the commenter does not provide any justification for why N.J.A.C. 7:27-16.2(o) should apply only to Range III tanks, the Department has not made the requested modification.



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186. COMMENT: There should also be an exemption included in the rule from the requirement to operate air pollution controls during degassing operations should an emergency situation arise that needs immediate attention. (37, 38)

RESPONSE: Emergency situations are provided for under existing provisions for Affirmative Defense at N.J.S.A. 26:2C-19.1. Therefore, the Department has not adopted the requested exemption.

187. COMMENT: the Department should adopt the provisions of the degassing rule SCACMD Rule 1149 provided by the New Jersey Storage Tank Coalition. (37, 38)

RESPONSE: The version of SCAQMD 1149 provided by the New Jersey Storage Tank Coalition dates back to 1995. As set forth in the proposal summary (40 N.J.R. at 4407), the Department based the provisions of the N.J.A.C. 7:27-16.2(q) on the more recent SJUAPCD Rule 4623, last amended in 2005, which is a more current regulation.

188. COMMENT: The Department's basis for requiring domes on external floating roof tanks at N.J.A.C. 7:27-16.2(l)4 is more akin to the stringent analysis applied to major new sources or sources undergoing major modifications, rather than a proper RACT analysis requiring retrofit technology for an existing source.

A determination of what control technologies constitute RACT in a given instance is required to consider both technological and economic feasibility. This expansive standard stands in contrast to more stringent standards associated with selecting technology for new major sources that preclude consideration of factors that must be considered under a RACT analysis, in particular economic feasibility. For example, major new sources or existing sources undergoing major modifications are required to employ technology that achieves the "lowest achievable emission rate" or "LAER" in non-attainment areas. LAER is defined as, "the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source...or the most stringent emission limitation which is achieved in practice by such class or category of source."

Similarly, in attainment areas, these sources are required to employ "best available control technology" or "BACT." BACT is defined in pertinent part as "an emission limitation...based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case by case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification...."

In addition, New Jersey imposes its own requirement upon new or modified significant sources by requiring such sources to perform a top-down "State of the Art" or "SOTA" analysis. Under this analysis, the most effective control technology for a source is deemed appropriate

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unless the applicant can demonstrate that such technology should be eliminated based on technological feasibility, environmental impacts, economic feasibility, or energy impacts.

Of the four control technology selection standards described above, it is clear that a RACT analysis is the most expansive in scope, requiring a broad review of control technology employed across a wide number sources nationwide. Rather than describe and review the reasonableness of requiring the installation of domes on external floating roof tanks as compared to VOC retrofit control technology employed in other states as part of an ozone attainment strategy, the Department appears to have zeroed in on the requirements applicable to stationary storage tanks in California's South Coast Air Quality Management District (SCAQMD), specifically SCAQMD Rule 1178(d)(2)(A). Other than SCAQMD Rule 1178, however, there do not appear to be any RACT rules at the state or regional levels that require stationary storage tanks with external floating roofs to be retrofitted with domes. The Department's rule proposal indicates that several states, including California and New York, require that existing petroleum storage tanks with external floating roofs be retrofitted with domes. The current requirements at 6 NYCRR § 229.3(b) do not list domes as a required control for external floating roof petroleum storage tanks, and New York's SIP for the 1997 Ozone NAAQS states that NYSDEC determined that the RACT rules currently in place satisfy the 8-hour ozone criteria. More details about the New York and other state rules that require external floating roof tanks to be retrofitted with domes are requested.

For example, VOC RACT rules for the 1997 Ozone NAAQS promulgated by California's Bay Area Air Quality Management District, California's San Joaquin Valley Unified Air Pollution Control District, and the Texas Council on Environmental Quality (for the Houston-Galveston-Brazoria area) do not require stationary storage tanks with external floating roofs to be retrofitted with domes. In addition, as noted previously, retrofitting external floating roof tanks with domes was not one of the strategies developed by the OTC to reduce interstate pollution.

The Department's decision essentially to adopt SCAQMD Rule 1178 as a RACT rule for New Jersey is particularly inappropriate due to the unique non-attainment issues facing the Southern California area. Rule 1178 was adopted as part of the settlement of litigation initiated by three environmental organizations. That settlement required SCAQMD to develop rules that achieved one ton per day VOC reductions starting in 2006 and three tons per day by 2008. As EPA has noted, RACT determinations are supposed to be performed on a case-by-case basis, and thus control technology that is considered "reasonably available" in light of the strict and severe mandatory reductions applicable in Southern California will necessarily differ from what is "reasonably available" to address ozone attainment issues across New Jersey. The singular nature of the SCAQMD tank regulations is reinforced by a search of the RACT/BACT/LAER Clearinghouse, which does not indicate any instances where a dome retrofit program has been adopted for external floating roof tanks as part of an attainment strategy for the 1997 Ozone NAAQS. In sum, the Department's reliance upon rules adopted by the SCAQMD to the apparent exclusion of RACT strategies in other areas calls into question the sufficiency of the Department's RACT determination with respect to dome retrofits.

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The Department has previously responded to concerns that its RACT evaluation was more akin to a BACT, LAER or SOTA evaluation by referencing a 1995 EPA memo stating that “RACT requirements can, in some instances, be more stringent than . . . LAER or BACT.” This quote, however, was in response to the question as to whether a source that had already installed BACT or LAER in accordance with a previous technology review was required to meet revised RACT rules. In these instances, EPA asserted that control technology may have advanced such that new RACT was more stringent than what was previously considered BACT or LAER, and thus a current RACT study was necessary. This position, however, does not address our concern about the Department’s RACT study with respect to domes, namely that the Department’s process by which it determined that domes constituted RACT was essentially a LAER, BACT or SOTA evaluation. In other words, while in some instances it may be possible for a RACT study to result in RACT that is more stringent than what was previously considered BACT or LAER, is not proper for a RACT study to impose more stringent control measures by conducting what amounts to a BACT or LAER review. (37)

RESPONSE: With regard to the commenter’s concerns about the RACT review process being similar to a LAER, BACT, or SOTA analysis, a RACT analysis is separate and distinct from, and serves a different purpose than, a LAER, BACT, or SOTA analysis. The purpose of a LAER, BACT, or SOTA analysis is to minimize the degradation of air quality by a new or modified source. RACT, on the other hand, is intended to improve air quality and bring New Jersey into attainment with the NAAQS by reducing emissions from existing sources. While economic feasibility has to be considered, a RACT analysis does not have to result in less expensive measures than a LAER, BACT, or SOTA analysis if the emission reductions from the RACT measures are necessary to achieve attainment with the NAAQS. See Responses to Comments 117 and 119 for further discussion of costs and the determination of reasonableness.

With regard to the question raised about the statement in the rule proposal that New York requires domes (See 40 N.J.R. at 4405) the Department concurs that New York has no regulations that mandate the installation of domes on external floating roof tanks, and the Department’s statement was an error. However, the Department reviewed the New York Title V permits for petroleum facilities and found no external floating roof tanks, so New York would not achieve any emission reductions by requiring external floating roof tanks to be retrofitted with domes.

With regard to commenter’s statement that adopting SCAQMD Rule 1178 as a RACT rule for New Jersey is inappropriate due to the unique non-attainment issues facing southern California, see Response to Comment 117 with regard to the appropriateness of modeling New Jersey’s rules on from other jurisdictions with similar air quality problems.

With regard to the commenter’s statement that the RACT/BACT/LAER Clearinghouse does not indicate any instances where a dome retrofit program has been adopted for external floating roof tanks as part of an attainment strategy for the 1997 Ozone NAAQS, the RACT/BACT/LAER clearinghouse contains information exclusively on case-by-case RACT/BACT/LAER determinations at individual facilities, and therefore should not be expected

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to contain any information on dome retrofits required by a RACT rule as part of an attainment strategy for a nonattainment area.

With regard to the commenter's statement that "the Department's reliance upon rules adopted by the SCAQMD to the apparent exclusion of RACT strategies in other areas calls into question the sufficiency of the Department's RACT determination with respect to dome retrofits," the commenter is incorrect in asserting that the Department excluded RACT Strategies from other areas. As set forth in the proposal summary (40 N.J.R. at 4407), certain parts of the roof landing provisions at N.J.A.C. 7:27-16.2(m) through (p) were based on Texas Commission on Environmental Quality (TCEQ) regulations, and the tank cleaning and degassing provisions at N.J.A.C. 7:27-16.2(q) were based on SJVUAPCD Rule 4623. Also, as discussed in Response to Comment 117, in addition to the fact that domes are required by SCAQMD Rule 1178, the Department considers doming external floating roofs to be RACT because domes are already widely used in New Jersey.

189. COMMENT: The Department's cost effectiveness analysis relies too heavily upon an outdated California analysis and does not accord proper weight to emissions and cost information provided by us.

In the proposal (40 N.J.R. at 4425) the Department takes the position that installing domes upon VOC stationary storage tanks with external floating roofs is a cost effective control based upon conclusions from a 2001 study conducted by the SCAQMD. The Department argues that it is appropriate to use the 2001 California cost data for purposes of evaluating 2008 through 2010 New Jersey cost data because vendor charges and labor costs are similar between the two locations. Using this study, the Department concludes that the cost-effectiveness of installing domes on external floating roof tanks is \$12,036 per ton VOC in 2001 dollars (which is approximately \$14,100 per ton in 2008 dollars.)

It is not apparent, however, that costs of 2001 dome retrofits in California accurately reflect the cost of dome retrofits performed in New Jersey between now and 2010 (the current compliance date). There is no discussion as to whether the costs of materials may have increased greater than the rate of inflation between 2001 and today. Further, there is no explicit basis for the Department's assertion that the costs of materials and labor in California are similar to those same costs in the Northeast and New Jersey specifically. In addition, the SCAQMD study acknowledges that it did not take into account the costs of emptying, purging and refloating the tank. Moreover, it is unclear whether the SCAQMD provided an incremental cost effectiveness for dome retrofits, taking into account the other control technology improvements required by Rule 1178, many of which are already employed at our refinery.

Perhaps more importantly, however, there is no discussion about the cost effectiveness data that we supplied to the Department during this rule development process. The data provided to the Department highlights two key points. First, the potential reductions for any given external floating roof tank at our refinery as a result of dome installation is, at most, approximately three tons per year. This is particularly important in light of the fact, as noted above, the SCAQMD analysis does not appear to perform an incremental cost-effectiveness

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analysis of dome retrofits. Second, the incremental cost effectiveness at most of our tanks exceeds RACT thresholds announced by the Department in other contexts. Specifically, in the context of the refinery's wastewater treatment plant (WWTP) permit application from 2002, the Department asserted that its guidance for cost effectiveness factor for VOC control was \$10,000 per ton. In the context of the refinery's subsequent VOC RACT plan for the WWTP in 2006, the Department upped its threshold to \$20,000 per ton (a figure that arguably exceeds more stringent BACT cost-effectiveness thresholds used by EPA). In almost every instance, the cost-effectiveness data recently supplied exceeds both of these Department guidance thresholds.

In light of the disparity between the SCAQMD study and the figures provided, it is incumbent upon the Department, at a minimum, to analyze and make conclusions about the relative strength of the data provided. Instead, however, the Department has chosen to adopt the conclusions of the SCAQMD 2001 cost-effectiveness data and dismiss, without explanation, the current cost-effectiveness data supplied. Moreover, the Department has failed to acknowledge its previously announced VOC RACT cost-effectiveness thresholds, nor has it provided a basis for potentially abandoning those thresholds with respect to retrofitting external floating roof tanks with domes. (37)

RESPONSE: The New Jersey Storage Tank Coalition letter to which the commenter refers did not provide any cost information to refute the information in the 2001 SCAQMD Staff Report for Rule 1178. The figure quoted from the California Staff Report, \$12,036 per ton reduced, was calculated after the reductions from deck fittings and seals were accounted for, so the cost effectiveness was based on the incremental reduction. The average incremental reduction per tank California used in those calculations was 1.66 tons per year per tank (324.21 tons per year for 195 tanks) was less than average incremental reduction from doming presented by the New Jersey Storage Tank Coalition letter of September 24, 2007 for twelve selected external floating roof storage tanks (21.57 tons per year for 12 tanks or 1.8 tons per year per tank).

A cost effectiveness calculation that the commenter provided to the Department contained an error that substantially increased in the cost per ton of reductions the commenter reported. The error consisted of double counting the cost of dome purchase. When the Department corrected the error and recalculated the costs, assuming a 20-year life for the domes and a four percent real (adjusted for inflation) interest rate, as the SCAQMD Staff report used, the overall cost effectiveness for doming the external floating roof storage tanks was \$19,600 per ton. The cost effectiveness for doming wastewater storage tanks was as high as \$125,441 per ton. If the wastewater tanks are excluded from the doming requirement, the overall cost effectiveness becomes \$17,500 per ton. The cost effectiveness of \$17,500 per ton is within the cost effectiveness range reported for other measures the Department is adopting, which are up to \$29,000 per ton (in 2001 dollars), as set forth in the Economic Impact (40 N.J.R. at 4424).

The Department's cost figures are valid even when factoring in the variations in the cost of labor and materials between California in 2001 and New Jersey in 2008. The costs of raw materials have varied widely in recent years. For example the price per pound of aluminum, which is used to manufacture domes, decreased over 40 percent in the last six months of 2008

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(<http://futures.tradingcharts.com/printchart/AL/M>). Also, the increase in unemployment during 2008 should maintain labor costs at steady levels. As a result, the “dollars per ton of VOC controlled” provides a representation of the costs given the fluctuations in the economy.

The primary factor in determining RACT is technical feasibility. The widespread use of existing domes in New Jersey demonstrates that they are used in practice and are effective in controlling VOC, and suggests that it is economically feasible to do so. See the Responses to Comments 117 and 119 for discussions of how technical feasibility, cost thresholds and other factors are used to determine RACT.

See Response to Comment 134 with regard to the Department modifying N.J.A.C. 7:27-16.2(f)4 on adoption to exempt from N.J.A.C. 7:27-16.2(l)4 any tank that stores slop oil or oily wastewater subject to 40 CFR Part 60, Subpart QQQ.

190. COMMENT: The provision of N.J.A.C. 7:27-16.2(l)4 requiring domes on external floating roof tanks to be installed by May 1, 2020 significantly shortens the 20 year internal inspection schedule prescribed by existing Department regulations, which will necessarily result in unanticipated unavailability of certain tanks.

The proposed rule requires owners and operators to retrofit their external floating roof tanks no later than May 1, 2020. In order to retrofit an external floating roof tank with a dome, it must be emptied, taken out of service, cleaned, verified to be in a safe condition to allow worker entry, and then undergo an interior inspection. Under New Jersey’s discharge prevention regulations at N.J.A.C. 7:1E-2.16, petroleum storage tanks are required to perform internal inspections in accordance with American Petroleum Standard 653 (API 653), Section 6.4.2, which, among other things, allows for an internal inspection at least every 20 years. In an effort to have as few tanks as possible off-line at any given time due to internal inspections, thereby causing the minimum amount of disruption to fuel supplies in the region, we perform internal inspections of its tanks according to a predetermined schedule, consistent with the permitted timetable set by API 653.

By requiring dome retrofits to be in place by 2020, the Department is in effect mandating that a certain number of tanks be taken offline to undergo an internal inspection before they would be required to under API 653. More specifically, any tank that was shut down to undergo an internal inspection after May 1, 2000 and before the effective date of the proposed VOC RACT rule would be required to be emptied and be subject to an internal inspection before its regularly scheduled API 653 inspection. Thus, as part of complying with the May 1, 2020 compliance date, more tanks than usual may be off-line at any given time. Any limits upon the ability of the refinery to store gasoline necessarily reduces the ability of the refinery to produce gasoline, which in turn could affect fuel supplies in the region. (37)

RESPONSE: N.J.A.C. 7:27-16.2(l)4 is generally based on the provisions of SCAQMD Rule 1178. SCAQMD Rule 1178 allows facilities a six-year window (2002 through 2008) for doming the applicable external floating roof tanks, and all applicable tanks are also subject to API 653. The SCAQMD cost-effectiveness calculations referred to in the Department’s Economic Impact

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(40 N.J.R. at 4425) included a component for loss of use. As set forth in the proposal summary (40 N.J.R. at 4405), the Department is allowing New Jersey facilities up to 11 years (until May 1, 2020) to install domes on applicable tanks. Therefore, New Jersey facilities will have more flexibility in scheduling the installation of the domes than was given to SCAQMD facilities. Also, in some cases domes may be installed while a tank is in service. As discussed in the Response to Comment 117, even with the adoption of these rules, New Jersey is projected to continue to exceed the new 8-hour 75 ppb ozone NAAQS, so it is important to obtain VOC emission reductions expected by installing domes over the 10 year schedule.

See Response to Comment 134 for a discussion of the Department's modification of N.J.A.C. 7:27-16.2(f)4 to exempt any tank that stores slop oil or oily wastewater subject to 40 CFR Part 60, Subpart QQQ.

191. COMMENT: Retrofitting external floating roof tanks with domes in accordance with the N.J.A.C. 7:27-16.2(l)4 unnecessarily increases the risks to persons working at or around the VOC stationary storage tanks.

Any rule requiring the installation of domes on top of existing external floating roof storage tanks results in increased worker safety concerns as a result of, among other things, the need for inspections and repairs to the dome or external floating roof to be performed in a confined space. For example, any inspection or repair of an external floating roof tank with a dome will require fresh air to be pumped into the confined space so as to provide workers with sufficient oxygen.

In addition, state of the art fire fighting foam systems on external floating roof tanks are designed to fight fires that range from small hatch and seal fires, to fully engulfed tank fires. Stationary monitors are located around the perimeter of the tank, as well as near the gauge pole, and the gauge pole monitor can rotate to allow foam application around the interior of the tank for small hatch or seal fires. The installation of a dome would prevent the application of foam from the gauge pole monitor to extinguish small hatch or seal fires, thereby potentially increasing the risk of a significant tank fire event.

While reducing these risks will necessarily increase a facility's costs associated with rule, the main point of this comment is to highlight the potentially significant increased risk to workers as a result of a pollution control technology that even the Department estimates will only reduce pollution by 130 tons per year, or approximately 10 pounds of VOCs per day, per tank. (37)

RESPONSE: The Department considers an emission reduction of 130 tons per year significant enough to justify the rule amendment. As internal floating roof tanks and domed tanks already outnumber external floating roof tanks in New Jersey, the Department is confident that issues with worker safety are not insurmountable. As set forth in the proposal summary at 40 N.J.R. 4408, entry into the tank for inspection is only required when the tank is emptied and degassed (no less than every 10 years). N.J.A.C. 7:27-16.2(r)6 does not require confined-space inspections when the tank contains organic liquid. (See Responses to Comments 171 and 180 for

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a more detailed discussion of this issue.) Also, it is generally accepted that domes reduce the risk of seal fires and provide other benefits such as protecting the floating roof and seals from rain, snow and ice, thus reducing the need for repair and reducing the risk of product contamination.

192. COMMENT: The requirement at N.J.A.C. 7:27-16.2(l)2 to make tank fittings “leak-free,” as opposed to “vapor tight,” is a significant difference between the New Jersey rule and Federal NSPS standards. The Department makes clear in the proposal that it understands the difference between the two terms (40 N.J.R. at 4404). The NSPS term vapor tight means a fitting is designed to be just that, vapor tight. One would not expect a fitting that was designed to be vapor tight (generally bolted and gasketed) to leak. Gasoline and other light liquid tanks do not experience the type of service conditions with respect to temperature, corrosivity or other conditions that would cause a gasket to deteriorate. Yet, the Department is insisting on verifying the leak free status of every fitting on many of these tanks. This is, by definition, a highly labor intensive practice as each component must either be monitored with a total vapor analyzer using EPA Method 21 or physically proved to have no gaps greater than 0.06 inches. The Department has not presented the cost effectiveness of this practice. The Department adopted the practice from the SCAQMD. The emission reductions from the extensive monitoring is likely to be insignificant thus making the cost effectiveness nearly infinite.

Throughout the rulemaking process the Department assured stakeholders that the final rule would generally mirror the NSPS. While the final rule “generally” follows the NSPS regulations, this deviation is a huge departure and one which should not have waited until the rule was published to have been presented to industry. No cost effectiveness data was provided to demonstrate that it is necessary and reasonable. Sharing rule language throughout the process would have prevented this huge surprise to stakeholders. The Department should present a cost effectiveness demonstration as was done with most other portions of the rule. (26)

RESPONSE: With regard to the commenter’s concern about the requirement to make tank fittings “leak-free,” at N.J.A.C.7:27-16.2(r) use of EPA Method 21 to monitor for a leak-free condition is presented as an alternative to checking the gap widths. (See Response to Comment 135 regarding the Department’s modification of the definition of “visible gap” from 1/16-inch to 1/8-inch at N.J.A.C. 7:27-16.1) If a gasket is shown to have no visible gaps, it does not have to be inspected with EPA Method 21.

The Department disagrees with the commenter’s statement that gaskets are not expected to deteriorate. Gaskets may be exposed to rain, snow, ice, freeze-thaw cycles and sunlight, as well as the product contained in the tank. All of these factors can cause a gasket to deteriorate over time. Therefore, the inspection requirements (either checking for visible gaps or verifying the gasket is leak-free) at N.J.A.C. 7:27-16.2(r)5 through 9 are not being modified in response to this comment.

With regard to the commenter’s question about the cost effectiveness calculations, the dollars per ton for upgraded (that is covered and gasketed with no visible gaps) deck fittings set



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forth in the Economic Impact at 40 N.J.R. 4424 (\$29,000 per ton for external floating roof tanks and \$6,000 per ton for internal floating roof tanks) were based on the SCAQMD Staff Report for Rule 1178. The cost effectiveness calculations in that staff report included annual operating and labor costs associated with those fittings. Because gaskets can deteriorate over time, as indicated above, the labor costs associated with periodic inspections are necessary to assure that the emission reductions from the enhanced deck fitting requirements are maintained.

With regard to the commenter's concern about information provided to stakeholders prior to rule proposal, in September 2007 the Department provided the New Jersey Storage Tank Coalition an outline of the proposed rules, which clearly stated the inspection requirements would be based on those at SCAQMD Rule 1178. The response to that outline (letter dated September 24, 2007 from State Street Associates on behalf of the Storage Tank Coalition to the Department) raised no issues with basing the inspection requirements on SCAQMD Rule 1178.

193. COMMENT: The Department has determined that all external floating roof tanks storing material with a vapor pressure greater than three psia should have domes installed on them using cost effectiveness data from SCAQMD in lieu of data provided to the Department from New Jersey facilities (40 N.J.R. at 4425). Stakeholders provided the Department with both cost and emission reduction data specific to the tanks they own and operate within the state. This data spanned a wide range of tanks. In general, the cost effectiveness factors developed using stakeholder data was five to 10 times higher than the data cited in the proposal summary. The Department did not reference the stakeholder data, did not mention whether it was considered and if not, why it was rejected. These data were actually requested by the Department and took a great deal of effort on behalf of stakeholders to compile it.

The Department should use the data that it requested. At the very least, the Department should determine and report why such a large inconsistency exists. Stakeholder data is more current and was modeled to reflect actual New Jersey emissions. When the Department continues to request information representing that the data will be used to assist in developing rules and standards and that data thus collected and submitted is not even addressed in the summary of the rule it makes it more difficult to justify collecting data in the future.

The Department projects in the Economic Impact that only about 70 tanks in the State will require domes to be installed. (See 40 N.J.R. at 4427.) This number should be very easy to determine from permit information. About 30 of the tanks at the commenter's facility will require domes. Less than half of these tanks are gasoline tanks. It would be surprising if the commenter's facility accounted for nearly half of the tanks in New Jersey that are affected by the rules. (26)

RESPONSE: The data presented to the Department (letter dated September 24, 2007 from State Street Associates on behalf of the Storage Tank Coalition to the New Jersey Department of Environmental Protection) were emission reductions expected from doming a selected group of 12 external floating roof tanks. The average reductions from doming those 12 tanks (21.57 tons per year for 12 tanks, or 1.8 tons per year per tank) actually exceeded the average emission

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reductions per tank from doming presented in the 2001 SCAQMD Staff Report for Rule 1178 (324.21 tons per year for 195 tanks, or 1.66 tons per year per tank). Also, the New Jersey Storage Tank Coalition presented no cost data for domes or cost-effectiveness calculations to refute those presented in the SCAQMD report.

With regard to the commenter's statement about the Department's underestimating the number of tanks expected to be affected by the doming provisions at N.J.A.C. 7:27-16.2(l)4, in light of the 30 tanks at the commenter's facility, the Department's estimate of "at least 70" tanks was a conservative estimate used in the Environmental Impact. (See 40 N.J.R. at 4427.) The air quality permits for some facilities' external floating roof tanks allow them to contain any material with a vapor pressure less than 11 psia, regardless of what they actually store, and some of those facilities do not report the specific contents of individual tanks on their emission statements. This creates difficulty in determining the exact number of tanks that would be affected by the doming provisions at N.J.A.C. 7:27-16.2(l)4. Also, the Department is modifying N.J.A.C. 7:27-16.2(f)4 on adoption to exempt certain tanks that store slop oil or oily wastewater, as discussed in the Response to Comment 134. This will reduce the number of tanks subject to doming.

194. COMMENT: The Department is proposing at N.J.A.C. 7:27-16.2(l)4 to allow approximately 10 years to install domes on all the tanks in New Jersey. Refiners typically follow a 20 year tank turn around cycle for tanks corresponding to the inspection schedule allowed by API 653. If domes are required on tanks and the present schedule becomes the rule then several tanks will need to have domes installed outside of their normal turnaround window (less than 20 years). This means they will be taken out of service sooner than otherwise required and the degassing emissions will be greater in the short-term than under the current schedules. This will also put those tanks out of cycle with respect to other tanks at a facility. For a refinery, with nearly 200 tanks that must be managed, this is significant. While in some cases domes can be installed while a tank is in service, this presents safety issues. In addition, this can only be done if sufficient open area exists in the vicinity of the tank to construct a large dome on the ground. Not all facilities have this luxury. (26)

RESPONSE: See Response to Comment 190 for a discussion of why the timeframe for installing domes at N.J.A.C. 7:27-16.2(l)4 is reasonable.

195. COMMENT: Proposed N.J.A.C. 7:27-16.2 includes all or parts of rules from several jurisdictions including SCAQMD, SJVUAPCD, TCEQ and Bay Area Air Quality Management District (BAAQMD). Although the Department is applauded for seeking information from other areas that have faced similar issues, the Department did not investigate requirements that were rejected by certain jurisdiction in lieu of others. For example, BAAQMD rejected domes on tanks because it found the domes were not cost effective after all other controls were implemented.

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The array of choices available to reduce emissions from tanks contains some amount of overlap. For example, if one looks at the effect of domes on a tank without other controls installed it will appear to be a very cost effective solution. However, if the Department requires controls on tank fittings (for example slotted guidepole controls), improved seals, and other measures, the cost effectiveness of the domes is greatly diminished because emissions that would be reduced by the domes are now being reduced by other, cheaper means. In effect, the emissions reductions are double counted. This can occur when various provisions, all of which reduce VOC emissions to some degree, are being proposed for incorporation into the rule. Different jurisdictions have chosen to require some of these provisions, and have concluded that not all were necessary. The information from Texas and California is valuable and can be tailored to meet the needs of New Jersey tank owners. However, all of the rules must be viewed in combination rather than being considered additive in nature. (26)

RESPONSE: The model for all of the seal, deck fitting, and doming requirements at N.J.A.C. 7:27-16.2 was SCAQMD Rule 1178. Certain parts of the roof landing provisions were taken from TCEQ regulations, and the tank cleaning and degassing provisions were based on SJVUAPCD Rule 4623. The Department did not base its rules on the BAAQMD rules.

The environmental benefits from seals, deck fittings, and domes are generally not affected by cleaning and degassing or roof landings (though domes are effective in reducing roof landing emissions). The SCAQMD Final Staff Report for Rule 1178 was very thorough, and counted only the emissions reductions from domes that would occur in addition to the emission reductions from the deck fitting and seal requirements when determining the expected emission reductions and cost effectiveness. The anticipated environmental impact of domes, as set forth in the Department's proposal (130 tons per year reduced, after 10 years), was estimated after the deck fitting and seal reductions were accounted for (the domes reduced 63 percent of the remaining emissions). (See 40 N.J.R. at 4427.) This estimate matches well with the average tons per year per tank reduction (1.8 tons per year per tank) given by the New Jersey Storage Tank Coalition, multiplied by an estimated 70 tanks (70 tanks times 1.8 tons per year per tank equals 126 tons per year). If the 70 tanks affected by doming is a low estimate, as indicated in Comment 193, then the expected reductions from that measure should be greater.

196. COMMENT: The purpose of N.J.A.C. 7:27-16.2(l) is to apply additional controls to floating roof deck fittings, other floating roof appurtenances, and rim spaces. The EPA has already provided NSPS Subpart Kb and MACT Subpart WW for storage tanks. It would be reasonable for the Department to simply adopt these EPA regulations to all applicable storage tanks in New Jersey instead of adopting N.J.A.C. 7:27-16.2(l), which is full of redundancies, confusing terms, requirements found no where else in the U.S., and contains certain requirements that are technically impossible to comply with. (31)

RESPONSE: The conditions at N.J.A.C. 7:27-16.2(l) are based on the SCAQMD Rule 1178, which is more stringent than NSPS Subpart Kb (40 CFR 60.110b through 60.117b) and MACT

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Subpart WW (40 CFR 63.1060 through 63.1067). It is the Department's intent to be more stringent than Federal rules because New Jersey requires additional measures to achieve attainment with the Federal ozone NAAQS. The commenter fails to provide specifics on the claim that N.J.A.C. 7:27-16.2(l) has "redundancies, confusing terms, requirements found nowhere else in the U.S, and contains certain requirements that are technically impossible to comply with" for N.J.A.C. 7:27-16.2(l). Without specific citations, the Department has nothing on which it can focus a response.

197. COMMENT: The Department should adopt the Federal NSPS rules, 40 CFR Part 60 Subpart Kb or the MACT rules, 40 CFR Part 63 Subpart WW that specifically include double wiper seals as an acceptable alternative to liquid mounted or mechanical shoe seals, rather than maintain the language proposed in N.J.A.C 7:27-16.2(l)3, 9 and 10. The proposed regulation adopts SCAQMD 1178 language regarding rim seal options in N.J.A.C. 7:27-16.2(l)3, 9 and 10 without offering the full range of alternatives identified under 40 CFR Part 60 Subpart Kb or 40 CFR Part 63 Subpart WW. The specified Federal rules should be adopted completely with regard to rim seals, or at a minimum the New Jersey rules should specifically allow for double wiper seals as an acceptable alternative.

This position is supported with reports written by three independent industry experts, provided to the Department. These reports indicate that liquid-mounted or mechanical shoe seals are problematic on tanks with lab-welded or riveted horizontal seams. Liquid mounted seals tend to be damaged easily, and mechanical shoe seals may get caught on a seam and damage or sink the roof. A report also suggested that the "liquid-mounted" wiper seal types indicated at N.J.A.C. 7:27-16.2(l)9 and 10 were inappropriate, that any wiper seals are vapor-mounted. (7, 8, 37)

RESPONSE: The Department agrees with the commenter that it is appropriate to use vapor-mounted wiper seals on internal floating roof tanks with riveted or lap-welded shell seams because the rivets or lap-welds can damage a liquid-mounted seal, rendering it ineffective, and can cause a mechanical shoe seal to get stuck, causing a floating roof to sink. Therefore, the requirements at N.J.A.C. 7:27-16.2(l)5ii and 7iv are being modified on adoption to allow vapor mounted wiper primary seals for existing domed or internal floating roof tanks with horizontal lap-welded or riveted seams. Because of the modification of N.J.A.C. 7:27-16.2(l)5ii and 7iv, the Department is also modifying N.J.A.C. 7:27-16.2(l)5ii on adoption to separate it into two conditions at N.J.A.C. 7:27-16.2(l)5ii(1) and (2). Adopted N.J.A.C. 7:27-7:27-16.2(l)5ii(1) contains requirements for liquid-mounted primary seals, and adopted N.J.A.C. 7:27-16.2(l)5ii(2) contains requirements for mechanical-shoe or vapor-mounted primary seals. Similarly, the Department is modifying N.J.A.C. 7:27-16.2(l)7iv on adoption to divide it into two conditions, N.J.A.C. 7:27-16.2(l)7iv(1) and (2). Adopted N.J.A.C. 7:27-7:27-16.2(l)7iv(1) contains requirements for liquid-mounted primary seals, and adopted N.J.A.C. 7:27-16.2(l)7iv(2) contains requirements for mechanical-shoe or vapor-mounted primary seals. The requirements at N.J.A.C

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7:27-16.2(l)9 and 10 are being deleted on adoption in Response to Comment 152, because they are redundant with N.J.A.C. 7:27-16.2(l)3 and 7.

198. COMMENT: The floating roof seal designs proposed by the Department in N.J.A.C. 7:27-16.2(l)9i and iii should not be listed as “liquid-mounted.” These single and multiple wiper designs are currently utilized by storage tank operators but they are a “vapor-mounted” design. National floating roof designers claim that this “liquid-mounted wiper seal” design is only a conceptual design. Furthermore, there is no mention of a “liquid mounted wiper” in the USEPA TANKS 4.09d emissions software. The liquid-mounted seal in TANKS refers to the foam log primary seal. The Department should provide the emission reduction benefits of a conceptual liquid-mounted wiper seal compared to a vapor-mounted seal.

Because the liquid-mounted wiper seal described in N.J.A.C. 7:27-16.2(l)9i and iii is a conceptual design, it may not be a realistic option when replacing a floating roof seal.

If they do not have the option of using a vapor-mounted wiper seal, those tanks constructed with a riveted shell will have to chose from either the mechanical shoe seal or the foam log (wiper) seal and each of these designs is incompatible with the riveted tank shell design. The mechanical shoe seal will not maintain a seal when the shoe rides on the rivets allowing vapors to pass between the shoe seal and tank shell. The mechanical shoe seal is also not recommended because the shoe can get hung up on the riveted courses of the tank shell and damage the seal or sink the floating roof. The foam log seal is not recommended because the riveted courses of the tank shell have been shown to tear the foam log seal resulting in premature degradation of the foam log seal. The replacement of a riveted shell tank with a welded shell tank would cost approximately \$2,000,000. The entire reconstruction of a storage tank is not justified for even a modest air emission reduction.

N.J.A.C. 7:27-16.2(l)9i and iii should be modified to allow for either liquid or vapor-mounted wiper seals or allow for vapor-mounted wiper seals to be utilized in riveted shell tanks. (21)

RESPONSE: See Response to Comment 197 for a discussion of the Department’s modification of N.J.A.C. 7:27-16.2(l)5ii and 7iv on adoption to allow vapor mounted wiper primary seals for domed or internal floating roof tanks with lap-welded or riveted seams. The requirements at N.J.A.C 7:27-16.2(l)9 and 10 are being deleted on adoption in response to Comment 152, because they are redundant with N.J.A.C. 7:27-16.2(l)3 and 7.

199. COMMENT: Will vacuum trucks and pipeline purges be required to be degassed and vapor controlled? The Department’s proposal summary references the SCAQMD rules, which contain such requirements. (40)

RESPONSE: Vacuum trucks used for tank degassing and cleaning are receiving vessels, and pursuant to N.J.A.C. 7:27-16.2(q)3i would be required to have 95 percent control during the ozone season if the sludge is removed from a tank that stores a VOC with a vapor pressure equal

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to or greater than 1.5 psia. As indicated in the proposal summary (40 N.J.R. at 4407), this provision is based on the SJVUAPCD Rule 4623 (Storage of Organic Liquids), not on the provisions of the May 2, 2008 Amendment of SCAQMD Rule 1149. The Department has not proposed new requirements for controlling purging or degassing of pipelines.

200. COMMENT: Will sludge processing and handling operations require permits? Do they already require permits? Sludge handling and processing will be centrifuge processing units, frac tanks (that is, temporary tanks used for storing and mixing) and the tank itself when the roof lands. (40)

RESPONSE: Sludge handling and processing units (for example, centrifuges and mixing tanks) require permits if they can process more than 50 pounds of sludge in any one hour pursuant to existing N.J.A.C. 7:27-8 and N.J.A.C. 7:27-22. Also, the VOC emissions from such equipment are subject to N.J.A.C. 7:27-16.16 (Other Source Operations). As for a temporary storage tank or a floating roof tank, any VOC storage tank needs a permit if its capacity is over 2,000 gallons and it stores material with a vapor pressure greater than 0.02 psia at 70 degrees Fahrenheit, pursuant to N.J.A.C. 7:27-8 and N.J.A.C. 7:27-22.

201. COMMENT: All storage tanks that contain any amount of VOC would be affected by the inspection requirements at N.J.A.C. 7:27-16.2(r), and that this would be excessively expensive for small storage tanks that contain VOC mixed with water. There should be a de minimis threshold for requiring storage tank inspections, such as having a minimum volume and vapor pressure similar to that found at NSPS Subpart Kb (40 CFR Part 60, Subpart Kb) that would trigger the requirement for tank inspections. The suggested triggers are: 75 m<sup>3</sup> if VOC vapor pressure or sum of VOC partial pressures  $\geq$  15.0 kPa (2.18 psia); 75 m<sup>3</sup> - 151 m<sup>3</sup> if VOC vapor pressure or sum of VOC partial pressures  $\geq$  3.5 kPa (0.51 psia) and  $<$  15.0 kPa; and 151 m<sup>3</sup> if VOC vapor pressure or sum of VOC partial pressures  $<$  3.5 kPa (0.51 psia). (2)

RESPONSE: The Economic Impact Section (40 N.J.R. at 4425) states that the Department expects costs for inspections to be minimal because owners or operators are already required to perform inspections under the Department's DPCC program rules and Federal NSPS and/or MACT. The tanks described in the comment (small tanks containing water mixed with small amounts of VOC) most likely would not be required to be inspected under DPCC rules, NSPS, or MACT.

The specific inspection procedures at N.J.A.C. 7:27-16.2(r)5 through 9 refer to Range III floating roof tanks or fixed roof tanks subject to N.J.A.C. 7:27-16.2(l)9 (proposed N.J.A.C. 7:27-16.2(l)11). Further, in Response to Comment 153, N.J.A.C. 7:27-16.2(l)9 (proposed N.J.A.C. 7:27-16.2(l)11) is modified on adoption to apply only to Range III fixed roof tanks. Range III tanks are large tanks containing VOC with high vapor pressure, and are usually found at refineries, petroleum storage terminals, and pipeline breakout stations. All Range III tanks are

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subject to the Department's Discharge Prevention rules (N.J.A.C. 7:1E), and most are now subject to NSPS and/or MACT as well.

Therefore, in order to limit the scope of N.J.A.C. 7:27-16.2(r) to tanks that would also be subject to the Discharge Prevention rules, NSPS, and/or MACT, and not to impose significant additional expenses on owners of tanks not subject to inspection requirements of those rules, the Department is modifying N.J.A.C. 7:27-16.2(r) on adoption to indicate it only applies to Range III tanks. All Range III tanks have a minimum capacity of 40,000 gallons, in accordance with Table 2A, N.J.A.C. 7:27-16.2, and 151 m<sup>3</sup> is equivalent to 40,000 gallons, assuming a conversion factor of 264.17 gallons per cubic meter. In addition, in order for a tank with a 40,000 gallon capacity to be classified in Range III, its contents must have a vapor pressure of at least 11.5 psia (79.2 kPa). Consequently, the tanks affected by adopted N.J.A.C. 7:27-16.2(r) are within the capacity and vapor pressure thresholds that the commenter suggests.

202. COMMENT: The Department proposes to require that only an "authorized inspector" at N.J.A.C. 7:27-16.1 can perform the annual inspection. "Authorized inspector" is defined as "someone who is certified as an Aboveground Storage Tank Inspector in accordance with Appendix D of API 653." The basis for this requirement is not clear. To begin, not all storage tanks that will be subject to proposed N.J.A.C. 7:27-16.2(r) are also subject to API-653. Some are, for example, subject to API-510 or SP001. If the Department does not reduce the applicability of N.J.A.C. 7:27-16.2(r), there will be thousands of storage tanks throughout the State that are not subject to any integrity standard.

In addition, the Department requires that EPA Reference Method 21 be used to measure the emissions from the fittings and valves on the tank. Tank integrity inspectors are certified to conduct API inspections and are not the professionals that are most familiar with EPA reference test methods.

It appears that the Department felt that it needed to require some form of certification because the SCAQMD does so in Rule 1178. However, EPA does not require certified individuals for any of the air emission test programs. In addition, the Department does not require certified inspectors for any of its air emission programs. For other N.J.A.C. 7:27-16 programs (such as N.J.A.C. 7:27-16.18), the Department stipulates only that the testing be conducted in accordance with the reference methods. In the proposed rule, the Department lists no reasons for abandoning this long held practice. The Department should delete the requirement to have an "authorized inspector" perform the N.J.A.C. 7:27-16.2(r) inspections. (2)

RESPONSE: See Response to Comment 124 regarding the modified definition of "authorized inspector" at N.J.A.C. 7:27-16.1. As modified, the definition of "authorized inspector" does not require the inspector to be someone who is certified as an Aboveground Storage Tank Inspector in accordance with Appendix D of API 653. Also, N.J.A.C. 7:27-16.2(r) is modified on adoption to apply only to Range III tanks in response to Comment 201 above, so inspections pursuant to N.J.A.C. 7:27-16.2(r) are not required for tanks outside of Range III.

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203. COMMENT: The Department has proposed to make N.J.A.C. 7:27-16.2(s) applicable to every “stationary storage tank that stores VOC, or that stores VOC and non-VOC, except as set forth in (e) and (f) below.” This will impose these requirements onto tanks for which this rule does not make environmental or economic sense. For example, there is no reason that a drinking water storage tank operator should have records of the VOC that are stored therein. The applicability criteria for N.J.A.C. 7:27-16.2(s) should be analogous to 40 CFR Part 60 Subpart Kb (40 CFR 60.115b). (2)

RESPONSE: N.J.A.C. 7:27-16.2(s)2 through 4 refer to floating roof tanks storing VOC. N.J.A.C. 7:27-16.2(s)6 applies to tanks that meet the applicability criteria at N.J.A.C. 7:27-16.2(q). The Department is modifying N.J.A.C. 7:27-16.2(s)5 on adoption in Response to Comment 204 below to indicate that it applies only to tanks subject to the inspection requirements at N.J.A.C. 7:27-16.2(r), which are Range III Tanks. (See Response to Comment 201 regarding the modification of N.J.A.C. 7:27-16.2(r) on adoption to apply only to Range III tanks.) The Department is also modifying N.J.A.C. 7:27-16.2(s)7 on adoption in the Response to Comment 204 to indicate it applies only to Range III tanks.

Therefore, the only requirement at N.J.A.C. 7:27-16.2(s) to apply to all VOC storage tanks is N.J.A.C. 7:27-16.2(s)1, the requirement to maintain records of tank contents and vapor pressure. N.J.A.C. 7:27-16.2(s)1 is not a new requirement. As set forth in the proposal summary (40 N.J.R. at 4408), it is an existing requirement that is being relocated from N.J.A.C. 7:27-16.2(k). Other than its relocation, the Department proposed no change to that requirement and is not modifying it on adoption.

204. COMMENT: In N.J.A.C. 7:27-16.2(s)5, the Department has proposed to require that “all inspection reports” be maintained on site. This requirement is too ambiguous to allow compliance. The Department should clarify this provision to require only that the inspections that are required under N.J.A.C. 7:27-16.2 be included in the records under this part.

In N.J.A.C. 7:27-16.2(s)7, the Department proposes to create a duplicative requirement to maintain the inspection records that are generated under the Discharge Prevention rules at N.J.A.C. 7:1E. There is no benefit to duplicate the recordkeeping requirements of N.J.A.C. 7:1E. In fact, the recordkeeping requirements of N.J.A.C. 7:1E are more stringent than those that are created in N.J.A.C. 7:27-16.2, inasmuch as N.J.A.C. 7:1E-2.15(d) requires that the integrity inspections be maintained for the life of the tank. N.J.A.C. 7:27-16.2(s)7 therefore has no environmental benefit, yet creates another confusing provision for which the Department can impose penalties. The proposed rules at N.J.A.C. 7:27-16.2(s)7 should be deleted. (2)

RESPONSE: The Department agrees with the commenter that requiring all inspection reports to be maintained on site pursuant to N.J.A.C. 7:27-16.2(s)5 is redundant with the requirements of N.J.A.C. 7:1E-2.15(d) with regard to tank integrity inspection reports. The Department is therefore modifying N.J.A.C. 7:27-16.2(s)5 on adoption to require all inspection reports required pursuant to N.J.A.C. 7:27-16.2(r) be maintained on site. This limits the scope of the inspection



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reports required to be maintained pursuant to N.J.A.C. 7:27-16.2(s)5 to reports related to air pollution, the emissions of concern at N.J.A.C. 7:27.

N.J.A.C. 7:27-16.2(s)7 requires facilities to keep records of the tank integrity test schedules, but does not require new tests. Records of the test schedules are an important component of all the records required under N.J.A.C. 7:27-16.2(s). The rule does not impose any additional recordkeeping burden upon the facility because N.J.A.C. 7:1E-4.2(c)1v already requires the tank integrity schedules to be kept. These schedules are relevant to air pollution control because requiring the tank integrity testing schedules to be kept assists in the confirmation that the tank inspections pursuant to N.J.A.C. 7:27-16.2(r) will be implemented in the required timeframes. This is because a tank has to be emptied and degassed before tank integrity tests and the tank inspections required by N.J.A.C. 7:1E-4.2(c)1v and N.J.A.C. 7:27-16.2(r) can be performed, so the integrity tests and tank inspections pursuant to N.J.A.C. 7:27-16.2(r) will usually occur in the same time frame.

In Response to Comment 201, the Department is modifying N.J.A.C. 7:27-16.2(r) on adoption to state that it applies only to Range III tanks. Therefore, the Department is modifying N.J.A.C. 7:27-16.2(s)7 on adoption to indicate it only applies to Range III tanks as well, because of the relationship between the tank integrity schedules and N.J.A.C. 7:27-16.2(r) described above.

205. COMMENT: The definition of “capacity” at N.J.A.C. 7:27-16.1 is ambiguous. To clarify, the definition should be based on the working volume of the tank. The applicable permit and or manufacturers specifications could specify working volume and or shell volume, which are not equivalent. For the purpose of determining compliance requirements, the capacity must be based on working volume. Capacity means the working volume of a tank based on equipment specifications and or calculations maintained by the permittee and made readily available to any authorized representative of the Department upon request. Change the definition to “‘Capacity’ means the working volume of a tank based on equipment specifications and or calculations maintained by the permittee and made readily available to any authorized representative of the Department upon request.” (17)

RESPONSE: The Department agrees with the commenter that the definition of “capacity” at N.J.A.C. 7:27-16.1 is ambiguous because the applicable permit or manufacturer’s specifications could specify shell volume or working volume. The Department does not agree that working volume is the appropriate definition because, in the case of a floating roof tank, the working volume excludes the minimum volume required to keep a floating roof in float, while the shell volume includes that minimum volume. That minimum volume, which is the volume below a landed floating roof, is an important factor for determining roof landing emissions, and should be included in the tank capacity. Therefore, to eliminate the ambiguity, the Department is modifying the definition of “capacity” at N.J.A.C. 7:27-16.1 on adoption to conform to the definition at MACT Subpart WW (40 CFR 63.1061), which is the internal cross sectional area multiplied by the internal height of the shell (which is the shell volume).

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206. COMMENT: N.J.A.C. 7:27-16.2(f)6 exempts floating roofs from landing loss emission control requirements of N.J.A.C. 7:27-16.2(p) if Federally enforceable potential to emit is less than five tons per year. This exemption is arbitrary and subsequently, provides a competitive advantage to gasoline blending facilities with floating roof tanks of smaller capacities. Specifically, a smaller diameter tank will be afforded additional roof leg landing events as compared to a larger diameter tank, based on the proposed flat exemption rate of five tons per year per tank. In some cases, this competitive advantage will be significant.

A gasoline blending facility requires the ability to generate different gasoline blends, as dictated by market demand. To do this, the liquid level in the tank must be lowered and most times the roof is taken off-float. As proposed, a 200 foot diameter tank could be limited to two to three roof leg landing events per year, which significantly restricts blending capability resulting in losses of revenue. In addition, in many cases such tanks may not be easily equipped with roof leg landing control devices, if possible at all, due to the physical limitations of that property. Therefore, the proposed five tons per year per tank exemption is not fair and equitable because all floating roof tanks are not the same capacity. As a means to establish a fair and equitable exemption, the exemption must be derived and specified in units of mass per volume (that is, pounds per barrel of tank capacity). (17)

RESPONSE: If a facility commits itself to implementing the control requirements at N.J.A.C. 7:27-16.2(q)1ii for a non-exempt tank, the rule places no restriction on roof landing emissions, though that tank is still subject to its permit limits. Historically, the Department decides to require controls for a piece of equipment based in part on the potential emissions of that piece of equipment. The five-ton per year threshold for roof landings is the same as the five-ton per year threshold that triggers state-of-the-art (SOTA) control requirements for new or modified equipment at N.J.A.C. 7:27-22.35 and N.J.A.C. 7:27-8.12. Economies of scale usually apply to controlling emissions. It is typically more cost effective to control emissions from a piece of equipment if the uncontrolled emissions from that piece of equipment are high, because the resulting benefits in emissions reductions are also high. For example, the 1987 SCAQMD staff report for its degassing rule (Rule 1149) indicates that the dollars per ton (reduced) for controlling degassing emissions (which is similar to controlling roof landing emissions) decreases with increasing size of the tank and increasing vapor pressure of the contents. Therefore, the Department expects that controlling roof landing emissions for large tanks containing material with high vapor pressure will be cost effective, and the facility could conduct blending operations as needed if it equipped its tank with the necessary controls. However, if site-specific circumstances make installing those controls technically infeasible, the facility can apply for an alternative VOC control plan pursuant to N.J.A.C. 7:27-16.17.

207. COMMENT: The requirement at N.J.A.C. 7:27-16.2(o)2 is unnecessary. The rule already establishes an applicability threshold of five tons per year per tank. It may be necessary for some facilities to lower their leg heights as a means to emit less than five tons. However,

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some facilities may rarely, if ever, land their roof legs and would never approach a landing loss total of five tons per tank, regardless of leg height. Such facilities will incur an unwarranted financial burden associated with raising and re-lowering the roof legs each time tank cleaning and or maintenance is required. This requirement should be deleted. (17)

RESPONSE: The five-ton threshold at N.J.A.C. 7:27-16.2(f)6 exempts the facility from controlling roof landing emissions or physically modifying the tank. The requirement to use the lowest height setting for in-service landings does not require any physical tank modifications and minimizes emissions from those landings. As set forth at 40 N.J.R. 4407, the Department intends that, at a minimum, all floating roof tanks that perform in-service landings will minimize their emissions by using the lowest height setting. As discussed in the Response to Comment 117, even with the adoption of these rules, New Jersey is projected to continue to exceed the new 8-hour 75 ppb ozone NAAQS, so keeping VOC emissions to a minimum is important. Therefore, the Department is not modifying N.J.A.C. 7:27-16.2(o)2 as requested.

208. COMMENT: There is a negligible emission reduction to be realized from controlling degassing and cleaning emissions for any tank with a vapor pressure less than two psia. The cost to clean and degas a tank ranges between \$30,000 and \$100,000. The requirements at N.J.A.C. 7:27-16.2(q) should be restricted to Range III tanks, as a means to ensure that the emission reduction justifies the significant cost of controlling degassing and cleaning emissions. (17, 37, 38)

RESPONSE: Data provided by the commenters indicate that for a Range I fixed-roof tank containing contents with a vapor pressure less than 2 psia, the emission reductions from controlling a degassing and cleaning event is less than 200 pounds, and that for a Range I or Range II floating roof tank containing gasoline, the maximum emission reduction would be less than 60 pounds. The Final Staff Report for the May 2008 Amendments of SCAQMD Rule 1149 indicated a minimum cost of \$10,000 to control degassing and cleaning emissions. This would result in an abatement cost greater than \$100,000 per ton for a fixed-roof Range I tank containing material with vapor pressure less than 2 psia, and for a Range II (or Range I) floating roof tank. The cost effectiveness ratio for controlling degassing and cleaning emissions for these tanks is three times the cost effectiveness ratio underlying the inclusion of these control measures for aboveground VOC stationary storage tanks. See Economic Impact Statement at 40 N.J.R. 4424 (\$29,000 per ton of VOC in 2001 dollars).

As set forth in the rule proposal summary (see 40 N.J.R. at 4427), it is expected that the uncontrolled emissions from degassing and cleaning a typical tank are approximately 6.7 tons of VOC. An emission reduction of 6.37 tons would result from 95 percent control of the cleaning and degassing emissions from that typical tank. As indicated above, the emission reductions expected from controlling cleaning and degassing emissions from Range I fixed-roof tanks containing VOC with a vapor pressure less than 2 psia at standard conditions and Range I or Range II floating roof tanks are less than 200 pounds, or less than 2 percent of 6.37 tons. Given

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the cost effectiveness ratio and the limited emissions reductions achieved compared to controlling emissions from tanks with higher uncontrolled cleaning and degassing emissions, it is not considered cost effective to require facilities to control cleaning and degassing emissions from Range I fixed-roof tanks containing VOC with a vapor pressure less than 2 psia at standard conditions and Range I or Range II floating roof tanks. Therefore, the Department is modifying N.J.A.C. 7:27-16.2(f)2 on adoption to extend the exemption from the cleaning and degassing requirements at N.J.A.C. 7:27-16.2(q) to any Range I fixed-roof tank containing VOC with a vapor pressure less than 2 psia at standard conditions and any Range I or Range II floating roof tank.

209. COMMENT: The proposed emissions averaging plan at N.J.A.C. 7:27-16.2(p)2iii as it is currently written will cause certain facilities within the State to have a competitive advantage over others, especially for-hire gasoline blending terminals of similar capacity with a large number of small tanks rather than a small number of large tanks.

For example, there are two independent terminals with a total Range III storage capacity of 2,000,000 barrels (42 gallons per barrel) each. The first facility has 27 tanks that average approximately 75,000 barrels per tank. In the first year of the emission averaging, the facility would be allowed to emit 135 tons of VOC during roof landing events. A second facility has 13 tanks that average approximately 150,000 barrels per tank. In the first year of emission averaging, the facility would be limited to 65 tons of VOC during roof landing events. Both terminals are equivalent in terms of capacity but are simply constructed differently for any number of different reasons. The second terminal has now been put at a competitive disadvantage because it will not be able deliver the same service as the first because its ability to blend and transfer different grades and varieties of gasoline will be limited to half the number of the first.

The averaging plan should be revised to include emissions averaging based on capacity, not on the number of storage tanks. A very simple transition can be made to relate tons per tank to tons per barrel of shell capacity. For example, assuming that the average Range III tank in the State is 100,000 barrels and the limit in the first year of averaging is five tons, a simple conversion can be made to arrive at an allowable emission factor of 0.05 tons/1,000 barrels. Using this method will allow those facilities with a small number of large tanks remain competitive with terminals that have a large number of small tanks. Over the course of time this emission factor can be reduced, similar to the current proposal. (35)

RESPONSE: If a facility commits to controlling roof-landing emissions for all of its non-exempt tanks, pursuant to N.J.A.C. 7:27-16.2(q)2ii, then the rule does not restrict the annual roof landing emissions from those tanks or from the facility, though all emissions still must be permitted. The averaging plan requirements at N.J.A.C. 7:27-16.2(q)2iii are intended as an alternative to the control plan requirements at N.J.A.C. 7:27-16.2(q)2ii, and requires a facility choosing that option to meet an average tons per tank on a fixed schedule. Facilities are free to choose the approach that works best for them.

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The first terminal in the commenter's example may find it advantageous to submit a control plan pursuant to N.J.A.C. 7:27-16.2(q)2ii for all of its non-exempt tanks, as economies of scale usually apply to controlling emissions. It is generally more cost effective to control emissions from a piece of equipment if the uncontrolled emissions from that piece of equipment are high. For example, the 1987 SCAQMD staff report for its degassing rule (Rule 1149) indicates that the dollars per ton (reduced) for controlling degassing emissions (which is similar to controlling roof landing emissions) decreases with increasing size of the tank and increasing vapor pressure of the contents.

210. COMMENT: N.J.A.C. 7:27-16.2(q), which requires control of degassing emissions only during the period May 1 through September 30, will create a perverse incentive that in the end will do nothing to reduce the annual pollutant emissions. The change from abatement of any VOC vapors to abatement only between May 1 and September 30 will result in the unnecessary release of tons of VOCs. The fact that winter conditions reduce New Jersey's pollution levels is not a reason to allow emissions that harm the public. "Attainment" during certain months of the year should not be a justification for allowing the unnecessary release of VOCs, which contain the carcinogen benzene, into the air that New Jersey residents breathe. This health menace is also an environmental justice issue because of the general location of storage tanks in areas of low income and minority demographics. In addition to the respiratory risks to humans and those medical issues noted above, emissions of VOCs pollute New Jersey's surface waters.

The Department's assumption that tanks are generally cleaned only annually is incorrect. Degassing may take place for numerous reasons, including changes in the stored product and changes in ownership or control. Consequently, the Department's estimate of VOCs resulting from degassing is grossly underestimated. In addition, the "law of unintended consequences" is certain to prevail. To avoid the cost of abatement, whenever possible, companies will schedule degassing outside of the May to September time frame, resulting in even more VOC releases.

Other states recognize these points and have adopted rules to require year-round abatement of VOCs. The revisions that are now proposed for New Jersey will allow industrial entities to shift economic externalities to the public, and particularly the immediate neighbors who are least able to bear them. These externalized costs will continue to be reflected in health care costs and lost productivity. The requirements at N.J.A.C. 7:27-16.2(q) should be met year round. (36)

RESPONSE: Although the Department agrees that VOC emissions outside of ozone season create health risks, it is not modifying N.J.A.C. 7:27-16.2(q) to be applicable year round. This rule is a major milestone towards the Department's overall emission reduction and attainment goals. Its primary focus is ozone reductions. Controlling tank degassing and cleaning emissions during the ozone season is a good start to reducing emissions from this type of operation. The Department usually requires RACT control measures for NO<sub>x</sub> and VOC emissions to be applied year-round and not just during ozone season. An exception was made for degassing and cleaning emissions because bringing in enough control contractors in New Jersey to control those

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emissions year-round would be problematic during the first year or two of the rule. After it gains experience with the controlling of degassing during the ozone season, the Department will consider controlling degassing and cleaning emissions year round. One of the primary considerations of future rulemaking will be benzene and other air toxic emissions that are emitted during the non-ozone season, as pointed out in this comment.

211. COMMENT: N.J.A.C. 7:27-16.2(f)6 exempts tanks that emit less than five tons per year from N.J.A.C. 7:27-16.2(p). Given the levels of non-attainment in this State and the hazardous nature of VOCs, all tanks should be required to comply with VOC control plan. The rule could cause a perverse incentive for facility to install tanks that emit less than five tons, but install more of them so as to avoid this compliance requirement. (36)

RESPONSE: Historically, the Department decides to require controls for a piece of equipment based on the potential emissions of that piece of equipment. The five-ton per year threshold for roof landings is similar to the five-ton per year threshold that triggers SOTA control requirements for new or modified equipment at N.J.A.C. 7:27-22.35. (Any new tank that would emit over five tons per year of VOC must include SOTA control measures and will not be able to avoid control.) Economies of scale usually apply to controlling emissions. It is generally more cost effective to control emissions from a piece of equipment if the uncontrolled emissions from that piece of equipment are high. For example, the 1987 SCAQMD staff report for its degassing rule (Rule 1149) indicates that the dollars per ton (reduced) for controlling degassing emissions (which is similar to controlling roof landing emissions) decreases with increasing size of the tank and increasing vapor pressure of the contents.

With regard to the perverse incentive to install greater numbers of small-emitting tanks (presumably because they have smaller capacities), emission increases resulting from any new or modified tanks are subject to permit requirements. Part of the permit review process is to determine if the potential emissions from the proposed new or modified equipment triggers N.J.A.C. 7:27-18, Control and Prohibition of Air Pollution from New or Altered Sources Affecting Ambient Air Quality (Emission Offset Rules). A net facility-wide increase of 25 tons per year of VOC would trigger the requirements of those rules, and the facility would have to obtain emission offsets and document that the new or modified tanks have the lowest achievable emission rate (LAER). LAER would require the most stringent controls achieved in practice, without regard to cost. The Department believes that the LAER requirements of N.J.A.C. 7:27-18 have given facilities a disincentive to build multiple new tanks that would not be subject to N.J.A.C. 7:27-16.2(p), as these new tanks would be subject to more rigorous control requirements.

212. COMMENT: The intention of the RACT amendments is to reduce VOC and NO<sub>x</sub> emissions from stationary sources to facilitate New Jersey's compliance with the national ambient air quality standard (NAAQS) for ozone. With like intentions, 40 CFR Part 63 Subpart BBBBBB, 40 CFR Part 63 Subpart CCCCCC, and 40 CFR Part 63 Subpart R already cover

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every gasoline terminal and pipeline tank requiring them to demonstrate compliance with emission limitations and management practices. Generally Available Control Technology (GACT) and MACT regulations specifically reference 40 CFR Part 60 Subpart Kb, or 40 CFR Part 63 Subpart WW, regulating every gasoline tank and therefore the State's rule at N.J.A.C. 7:27-16.2 is redundant in nature.

Should gasoline terminals and pipeline facilities remain in the rule, then it is suggested that the option of either complying with 40 CFR Part 60 Subpart Kb or 40 CFR Part 63 Subpart WW be made available as alternative options to the wording put forth in the draft regulation. It appears to have been the intent of the Department to mirror much of NSPS Subpart Kb, however, by not taking the wording of NSPS in its context and inserting new terminology (such as "leak free") the rule is substantially different than NSPS Subpart Kb in its proposed form and beyond what appears to be reasonable.

In summary, gasoline terminals already subject to GACT and MACT regulations should be excluded from the proposed RACT applicability in light of the Gasoline Distribution GACT and Gasoline Distribution MACT regulations already in place, or add an option to comply with NSPS Subpart Kb or MACT Subpart WW as another alternative. (41)

RESPONSE: See Response to Comment 119 for a discussion of how reasonableness is determined. The conditions at N.J.A.C. 7:27-16.2(l)7 are based on the conditions at SCAQMD Rule 1178. SCAQMD Rule 1178 is more protective than the Federal rules at 40 CFR Part 60, Subpart Kb and 40 CFR Part 60, Subpart WW, and it was the Department's intent to be more protective because of New Jersey's ozone non-attainment. (See 40 N.J.R. at 4428.)

213. COMMENT: N.J.A.C. 7:27-16.3 should include a specific designation for the individual who performs the testing of Stage I and Stage II vapor recovery systems. This designation should be consistent with the certification outlined in N.J.A.C. 7:14B-13 Certification of Individuals and Business Firms. Such a designation is necessary since individuals who perform the testing of Stage I and Stage II vapor recovery systems would not meet the proposed definition of "authorized inspector" at N.J.A.C. 7:27-16.1. (12)

RESPONSE: The definition of "authorized inspector" in N.J.A.C. 7:27-16.1 pertains to tanks subject to the inspection requirements at N.J.A.C. 7:27-16.2(r), and not tanks with Stage I and Stage II vapor recovery systems subject to N.J.A.C. 7:27-16.3. No changes to the vapor recovery equipment testing requirements at N.J.A.C. 7:27-16.3 were proposed and, therefore, were not open for comment. Accordingly, the comment is outside the scope of this rulemaking.

214. COMMENT: A statement should be added to the rule language that tanks operating under the provisions of Gasoline Dispensing Facilities at N.J.A.C. 7:27-16.3 are not subject to the proposed rule making provisions. It must be made clear that these facilities are not subject to an additional inspection and testing regiment under N.J.A.C. 7:27-16.2. (28)

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RESPONSE: The addition of a statement that tanks operating under the provisions of Gasoline Dispensing Facilities at N.J.A.C. 7:27-16.3 are not subject to the rules is not necessary. Adopted N.J.A.C. 7:27-16.2(f)1ii exempts from N.J.A.C. 7:27-16.2(b) stationary storage tanks that are equipped with a vapor control system reducing by at least 98 percent the weight of VOC emissions to the outdoor atmosphere. Gasoline stationary storage tanks that are used to accept gasoline from delivery vessels and then dispense it to vehicular fuel tanks are regulated by N.J.A.C. 7:27-16.3, Gasoline transfer operations, and any applicable regulations of N.J.A.C. 7:27-16.2. Since gasoline stationary storage tanks must meet the “98 percent vapor control system” requirement, pursuant to N.J.A.C. 7:27-16.3(d)1i(1), they will be exempt from N.J.A.C. 7:27-16.2(b). Stationary storage tanks exempt from N.J.A.C. 7:27-16.2(b) cannot be classified as Range III tanks.

Since the regulations at N.J.A.C. 7:27-16.2(l)1 through 8 apply only to floating roof tanks, the Department is modifying N.J.A.C. 7:27-16.2(l)11 (adopted N.J.A.C. 7:27-16.2(l)9) on adoption in Response to Comment 153 to apply only to Range III fixed-roof tanks. The Department is modifying N.J.A.C. 7:27-16.2(r) in response to Comment 201, and N.J.A.C. 7:27-16.2(s)5 and 7 in Response to Comment 204 on adoption to state that these provisions are applicable to tanks in Range III only. Consequently, the Gasoline Dispensing Facilities regulated under N.J.A.C. 7:27-16.3 will not be subject to the adopted rules.

215. COMMENT: Proposed N.J.A.C. 7:27-16.1 includes the definition of “authorized inspector” to mean someone who is certified as an Aboveground Storage Tank (AST) Inspector in accordance with Appendix D of API 653, and who is an employee of an authorized inspection agency. At the same time, the rulemaking at N.J.A.C. 7:27-16.2 provides some exemptions for fixed roof tanks of 40,000 gallons and less which are appropriate. The Department is certainly aware that operators of aboveground storage tanks are subject to numerous regulations in addition to those proposed here. Specifically Federal spill prevention, containment and countermeasure (SPCC) rules and the State’s Discharge Prevention rules (N.J.A.C. 7:1E) have inspection requirements for the inspection of aboveground storage tanks containing petroleum products and other hazardous substances. The Federal SPCC rules recognize inspectors certified by the Steel Tank Institute for the inspection of 'shop fabricated tanks' 30,000 gallons or less in capacity. The requirements of the SP001 AST inspection standard developed jointly by EPA and the Steel Tank Institute specifies monthly, quarterly, annual and five year inspection schedules for shop fabricated ASTs.

The Department in this rulemaking should be consistent with other regulations mandating inspection of ASTs by including the provision that Steel Tank certified inspectors be authorized to perform the inspection requirements for shop fabricated ASTs of 30,000 gallon or less capacity which are set for in the N.J.A.C. 7:27-16.2(r). Operators of these tanks, which are not utilized or regulated as Gasoline Dispensing Facilities, should not have a redundant annual inspection requirement when the inspections required at N.J.A.C. 7:27-16.2(r) could be performed in conjunction with the annual inspections which are currently being performed. (28)



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RESPONSE: In Response to Comment 201, the Department is modifying N.J.A.C. 7:27-16.2(r) on adoption to indicate it applies only to Range III tanks. This exempts the shop fabricated aboveground storage tanks with a capacity of 30,000 gallons or less from N.J.A.C. 7:27-16.2(r), since a tank has to have a capacity of at least 40,000 gallons to be in Range III. See Response to Comment 124 for a discussion of the modification of the definition of “authorized inspector” at N.J.A.C. 7:27-16.1.

216. COMMENT: Proposed amended N.J.A.C. 7:27-16.2(h) contains a typographical error in language proposed to be added in the second line. The reference should be to “Table 2A,” not to “Table 2.” (39)

RESPONSE: The Department is modifying N.J.A.C. 7:27-16.2(h) on adoption to correct the cross-reference.

217. COMMENT: To comply with the emissions averaging plan in N.J.A.C. 7:27-16.2(p)2iii, an average of eight percent of the gasoline stored will have to remain in the applicable tanks at all times. This would impact a facility’s ability to respond to price fluctuations and also result in supply disruptions. (7, 8)

RESPONSE: If no controls are applied to the facility’s floating roof tanks, then an average of approximately eight percent of all gasoline stored on site would have to be retained in the tank to maintain the float. N.J.A.C. 7:27-16.2(p)2ii, which requires a facility-wide tank VOC control plan to be implemented, and N.J.A.C. 7:27-16.2(p)2iii, which requires an emission averaging plan to be implemented for gasoline tanks, do not restrict the allowable number of landings. For both rules, vapor control measures can be used to increase the allowable number of landings. This would effectively reduce the volumes that would have to be maintained to keep the roofs floating.

### **Phased Compliance**

218. COMMENT: Proposed N.J.A.C. 7:27-19.22 would allow utilities to obtain credit for reductions through energy efficiency, demand response and renewable energy measures. These measures may be currently required by law. The Department should be sure that these proposed measures result in additional reductions beyond what is already required. (36)

RESPONSE: N.J.A.C. 7:27-9.22(b)2 provides that the phased in compliance plan must comply with N.J.A.C. 7:27-19.29, 2009 HEDD Emission Reduction Compliance Demonstration Protocol. N.J.A.C. 7:27-19.29(d)2 requires that these measures must result in real, quantifiable, enforceable, and surplus reductions, and are not required by any other “State or Federal permit, regulation, enforceable agreement, or high electric demand day emission reduction program.” Also, N.J.A.C. 7:27-19.29(d)2 provides a list of allowable measures including energy efficiency, demand response and renewable energy measures that may be considered to obtain the required

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emission reductions “as long as the measure was not committed to prior to the operative date of these amendments.” Therefore, these adopted rules ensure reductions beyond what may be already required by law.

**Summary of Agency-Initiated Changes:**

In addition to the changes in response to comments explained above, the Department is modifying the following provisions on adoption:

At N.J.A.C. 7:27-16.1, the Department is adding a definition of “hot-work” because this term is used in an agency-initiated change to N.J.A.C. 7:27-16.2(f)3 described below. The definition is the same as that found in Occupational Health and Safety Administration (OSHA) regulations at 29 CFR 1917.152(a).

At N.J.A.C. 7:27-16.1, the Department is adding the definition of “reconstruction” because this term is used in adopted N.J.A.C. 7:27-16.17. The adopted definition of “reconstruction” is identical to the definition of this term in N.J.A.C. 7:27-8 and 22.

The Department is deleting the acronym “psi” from N.J.A.C. 7:27-16.1 because that acronym is not used in Subchapter 16.

The Department is adding a definition of “psia” at N.J.A.C. 7:27-16.1 to make the words of this commonly used acronym clear.

At N.J.A.C. 7:27-16.2(f)3, the Department is adding the phrase “or other hot-work must be performed” after the phrase “must be welded to the fitting.” This is because, as set forth in the rule proposal (40 N.J.R. at 4404), the purpose of N.J.A.C. 7:27-16.2 f(3) is to prevent explosions by exempting external floating roof tanks from the requirements at N.J.A.C. 7:27-16.2(l) until the next time a tank is degassed if welding is necessary to comply with those requirements. Because there are other activities that may present an explosion risk, such as riveting or flame cutting, the Department is extending the exemption to include any necessary “hot-work” activities on an external floating roof tank until that tank’s next degassing event. Hot-work is an inclusive term that includes activities such as riveting or flame cutting.

At N.J.A.C. 7:27-16.2(l)3x the Department is replacing the phrase “no visible gaps” with “as required at N.J.A.C. 7:27-16.2(l)3iii and iv above.” The Department is basing the adopted definition of “visible gap” on SCAQMD Rule 1178. The SCAQMD Rule 1178 definition of “visible gap” incorporated the seal gap criteria adopted at N.J.A.C. 7:27-16.2(l)3iii and iv. However, it is clearer to refer to these two conditions directly in N.J.A.C. 7:27-16.2(l)3x, rather than incorporate those conditions in the definition of “visible gap.”

The Department is adding the phrase “meeting the requirements for primary seals at N.J.A.C. 7:27-16.2(l)3iii, vii, and x above and having no tears or openings” to modified N.J.A.C. 7:27-16.2(l)5ii(1) and to N.J.A.C. 7:27-16.2(l)7iv(1) to clarify which conditions applied specifically to liquid-mounted primary seals. The Department is replacing the term “specifications” with the term “requirements” at N.J.A.C. 7:27-16.2(l)7iv(2) to be consistent with the use of the term elsewhere in the rules. Also, the phrase “required at N.J.A.C. 7:27-16.2(l)3v above” appearing after “mechanical shoe seal” is deleted, because N.J.A.C. 7:27-16.2(l)3v is a specification for mechanical shoe seals, but does not require tanks to have

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mechanical shoe seals. The Department is modifying N.J.A.C. 7:27-16.2(l)7iv(2) to indicate specifications for mechanical shoe seals “instead of meeting the requirement at (l)3v above.”

The Department is modifying N.J.A.C. 7:27-16.2(l)9 by adding the phrase “without an internal floating roof” to specify that N.J.A.C. 7:27-16.2(l)9 does not apply to the fixed roof of an internal floating roof tank.

The Department is modifying N.J.A.C. 7:27-16.2(r)6i to clarify that it would be the organic vapor that would be measured. This clarification is consistent with the proposal summary at 40 N.J.R. 4408, which explains that the explosimeter is measuring volatile organic compound leaks. These leaks consist of organic vapors.

The Department is modifying N.J.A.C. 7:27-16.2(r)6i and iii by deleting the unnecessary term “by” because it is repetitive.

The Department is modifying N.J.A.C. 7:27-16.2(t)1 to correct a spelling error.

In this rulemaking the Department proposed rules to regulate VOC stationary storage tanks at N.J.A.C. 7:27-16.2, but the Department did not propose new rules or amendments (except for an address change) to N.J.A.C. 7:27-16.3, Gasoline transfer operations. One proposed amendment to N.J.A.C. 7:27-16.1 was a definition of “leak free,” a phrase used in N.J.A.C. 7:27-16.3 but with a slightly different meaning than the definition. As used in N.J.A.C. 7:27-16.3(q)2, “vapor tight and leak free” means that gasoline transfer operations must be free of gaseous and liquid leaks of applicable VOC. The adopted definition of “leak free” means a reading on a portable hydrocarbon analyzer of less than 500 ppm as methane and will be used in the adopted N.J.A.C. 7:27-16.2 rules to regulate VOC stationary storage tanks. In this rulemaking the Department did not intend this 500 ppm criteria to regulate gasoline transfer operations at N.J.A.C. 7:27-16.3(q)2. To retain the intended meaning of “leak free” at N.J.A.C. 7:27-16.3(q)2, the Department is modifying the gasoline transfer operations rules at N.J.A.C. 7:27-16.3(q)2 by replacing the phrase “leak free” with the phrase “free of liquid leaks.” Also at N.J.A.C. 7:27-16.3(q)2, the Department is adding a hyphen to “vapor-tight” so this term is consistent with the definition at N.J.A.C. 7:27-16.1.

The Department is adding a recordkeeping requirement at N.J.A.C. 7:27-16.7(r)5 so that the provisions at adopted N.J.A.C. 7:27-16.7(r)2 through 4 will be enforceable. Similarly, the Department is adding a recordkeeping requirement at N.J.A.C. 7:27-16.7(s)3 so that the provisions at adopted N.J.A.C. 7:27-16.7(s)1 and 2 will be enforceable. As proposed, the rule did not provide any mechanism to verify compliance. The Department intended that all recommendations incorporated in the rule taken from the “Control Techniques Guidelines for Offset Lithographic Printing and Letter Press Printing” (EPA 453/R-06-002) (CTG) be subject to recordkeeping requirements, as evidenced by the remaining provisions of section 16.7, and the proposal Summary, 40 N.J.R. at 4395. For example, N.J.A.C. 7:27-16.7(t)5 requires the recording and maintenance of on-site logs to verify the implementation of best management practices. The proposal Summary (40 N.J.R. at 4409) states that the cleaning solution requirements at N.J.A.C. 7:27-16.7(r)2 through 4 and the fountain solution requirements at N.J.A.C. 7:27-16.7(s) were derived from the CTG document. Without such recordkeeping requirements, N.J.A.C. 7:27-16.7(r)2 through 4 and N.J.A.C. 7:27-16.7(s) would not be

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Federally enforceable. According to the proposal Summary (40 N.J.R. at 4395) “The Clean Air Act, Section 182(b)(2) (42 U.S.C. §7511(b)(2)), requires states, such as New Jersey, that have nonattainment areas to revise their SIPs to include reasonably available control technology for sources of VOC emissions covered by a Control Techniques Guidelines (CTG) document issued after November 15, 1990, and prior to the area’s date of attainment.” Consequently, the recordkeeping requirements must be contained in the rules.

At N.J.A.C. 7:27-16.17, the Department is adding “and facility-specific” to the heading. The additional words make it clear that any owner or operator with a site-specific approval is still subject to this section. For the same reason, the Department is adding “or facility-specific” throughout N.J.A.C. 7:27-16.17.

At N.J.A.C. 7:27-16.17(a)1, the Department is adding “whose owner or operator seeks approval of a facility-specific VOC control plan that would apply to any source operation or equipment” to clarify the applicability requirement. This is consistent with language regarding similar requirements for NO<sub>x</sub> at N.J.A.C. 7:27-19.13.

At N.J.A.C. 7:27-16.17(b)2ii, the Department is clarifying that this provision applies to a facility-specific VOC control plan for a major facility not regulated elsewhere in Subchapter 16. When this rule was adopted in 1994, the proposal (25 N.J.R. at 3354) stated that section 16.17 applied to both facility-specific cases (where a facility is not regulated elsewhere in Subchapter 16), as well as alternative cases (where a facility is seeking alternative requirements to Subchapter 16 existing requirements for that source operation). The proposal (25 N.J.R. at 3354, Alternative means of compliance), as well as the adopted rule text (see 25 N.J.R. at 6009), confusingly used the term “alternative” to mean using the facility-specific requirement at N.J.A.C. 7:27-16.17(b)2ii as an alternative to the facility-specific requirement at N.J.A.C. 7:27-16.17(b)2i, instead of as an alternative to an existing Subchapter 16 requirement for that source operation. The existing rule at N.J.A.C. 7:27-16.17(b)2ii referred to this facility-specific meaning in the phrase “alternative VOC control plan” when it should have used the phrase “facility-specific VOC control plan.” On adoption, the Department is replacing the word “alternative” with the word “facility-specific” to end this confusion. As modified, N.J.A.C. 7:27-16.17(b) applies only to facility-specific VOC control plans. The Department is modifying subsection (b) to include only requirements for facility-specific emission limits.

At N.J.A.C. 7:27-16.17(c), the Department is adding the words “pursuant to (a)2 and 3 above” to clarify the applicability requirement due to the addition on adoption of paragraph (a)3.

At the end of N.J.A.C. 7:27-16.17(c)3, the Department is correcting punctuation.

At N.J.A.C. 7:27-16.17(c)3i, the Department is correcting grammar.

At N.J.A.C. 7:27-16.17(c)4, the Department is adding “and,” which was inadvertently omitted from the proposal.

At N.J.A.C. 7:27-16.17(d) and N.J.A.C. 7:27-16.17(d)1i, the Department is modifying cross-references to be consistent with the adopted rules.

At N.J.A.C. 7:27-16.17(q), the Department is correcting a cross reference.

At N.J.A.C. 7:27-16.17(s), the Department is modifying the Department’s contact information.

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At N.J.A.C. 7:27-16, Appendix II, the Department is adding an explosivity meter to the list of equipment needed to conduct a tank inspection. This is consistent with N.J.A.C. 7:27-16, Appendix II, Inspection Form, Section E.

At N.J.A.C. 7:27-16, Appendix II, Inspection Form, Section F the Department is correcting the numbering of a provision.

At N.J.A.C. 7:27-19.4(d)1 and 2, the Department is adding language to clarify that the requirement to demonstrate compliance with the emission rates in Table 2 and Table 3 applies only to boilers that are subject to the emission rates in Table 2 or Table 3. This clarification is made because N.J.A.C. 7:27-19.4(a) requires all boilers to comply with the emission rates in Table 1, Table 2 or Table 3, 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. Therefore, if the boiler is subject to a different emission rate pursuant to N.J.A.C. 7:27-19.3(f) or an enforceable agreement with the Department, it would have to demonstrate compliance with the applicable emission rate, not the rate in Table 2 or Table 3.

At N.J.A.C. 7:27-19.8(e)5, the Department is correcting the Department's website address at which Technical Manual 1004 is located.

At N.J.A.C. 7:27-19.13, in the heading the Department is replacing "rates" with "limits." A limit can be a limit of the rate or concentration of air pollutant emissions, as well as some other prescribed parameter for a source operation. A limit can be a maximum allowable rate, a maximum allowable concentration, or some other parameter. Therefore, "limit" is the appropriate term to use in the heading, and was the term used in the heading prior to this adoption. For the same reason, throughout adopted N.J.A.C. 7:27-19.13, the Department is replacing "rate" with "limit" and deleting the words "maximum allowable" to state the more appropriate terms "limit," "emission limit," "alternative emission limit" and "facility-specific emission limit."

At N.J.A.C. 7:27-19.13(a), as well as throughout N.J.A.C. 7:27-19.13, the Department is adding the various parameters than can be an emissions limit. As the previous paragraph explained, an emissions limit can be a maximum allowable rate, a maximum allowable concentration, or some other parameter.

At N.J.A.C. 7:27-19.13(a)1, the Department is adding the acronym FSEL, which is commonly used to describe this type of emission limit. Also the Department is replacing "rate" with "FSEL" to clarify that, in this instance, this type of limit may not necessarily be an emission rate but some other type of limit.

At N.J.A.C. 7:27-19.13(a)2, in the last sentence of the paragraph the Department is adding "alternative" because the Department is referencing an alternative limit, and not a source category limit specified in Subchapter 19. Also, the Department is adding the acronym AEL, which is commonly used to describe this type of emission limit.

At N.J.A.C. 7:27-19.13(b)1, the Department is adding a cross-reference to subsection (j).

At N.J.A.C. 7:27-19.13(b)2, the Department is adding a cross-reference to subsection (k), adding "as applicable" because either paragraph (b)6 or subsection (k) may apply, and deleting the duplicative reference to paragraph (b)6.

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At N.J.A.C. 7:27-19.13(b)4, the Department is adding that the information at subsection (c) must be included in the request for an alternative emission limit, and deleting the cross-reference to subsection (d), which subsection (c) already requires be included in the request.

At N.J.A.C. 7:27-19.13(b)5i, the Department is adding that the information at subsection (c) must be included in the proposed facility-specific NO<sub>x</sub> control plan, and deleting the cross-reference to subsection (d), which subsection (c) already requires be included in the plan.

At N.J.A.C. 7:27-19.13(b)6, the Department is replacing the word “start” with “start-up” to accurately describe when the termination of any existing alternative or facility-specific emission limit takes effect.

At N.J.A.C. 7:27-19.13(b)7, the Department is clarifying that this requirement applies to an alternative emission limit.

At N.J.A.C. 7:27-19.13(d), the Department is adding “facility-specific” to clarify that this NO<sub>x</sub> control plan is a facility-specific NO<sub>x</sub> control plan.

At N.J.A.C. 7:27-19.13(h), the Department is correcting a capitalization error.

At N.J.A.C. 7:27-19.13(i), the Department is correcting a cross-reference.

At N.J.A.C. 7:27-19.13(m)3, the Department is correcting a cross-reference.

At N.J.A.C. 7:27-19.13(o), the Department is modifying the Department’s contact information.

The Department inadvertently proposed to delete the word “for” from N.J.A.C. 7:27-19.15(b), making the first sentence grammatically incorrect. The Department is correcting this by re-inserting the word “for.”

At renumbered N.J.A.C. 7:27-19.29(b)2, the Department is adding “at (b)6” to clarify the submittal address location.

At N.J.A.C. 7:27-19.29(b)5, the Department is correcting the submittal address.

At N.J.A.C. 7:27-19.29(c), the Department is replacing “achieve” with “obtain” to make subsection (c) consistent with N.J.A.C. 7:27-19.29(b)3, which requires the owner or operator to “obtain” emission reductions.

At N.J.A.C. 7:27-19.29(c), the Department is adding “pursuant to (b)3 above” to clarify the rule provision that requires the owner or operator to obtain the emission reductions.

At N.J.A.C. 7:27-19.29(c), the Department is replacing “USEPA” with “EPA” in two locations to be consistent with references elsewhere in Subchapter 19.

At N.J.A.C. 7:27-19.29(c), the Department is modifying one of the factors used in Equation 1. Equation 1, used to calculate the emission reductions that an owner or operator subject to N.J.A.C. 7:27-19.29 needs to achieve on any given high electric demand day, may require an owner or operator to achieve more reductions if the owner or operator installs a new HEDD unit without removing an existing HEDD unit from service. In the equation  $[ER = (BE / EF) * RF]$ , the required emission reductions (ER) is dependant on three factors. The emission factor (EF) is a fixed number that represents the total tons of NO<sub>x</sub> emitted by that owner or operator’s HEDD units on July 26, 2005. The reduction factor (RF) is also a fixed number that is based on the level of NO<sub>x</sub> control that was being utilized on each of the owner or operator’s HEDD units that were operated on July 26, 2005. The baseline emission factor (BE) is a value

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that will vary from one high electric demand day to another. The BE is the total tons of NO<sub>x</sub> that would have been emitted on a given high electric demand day, if the owner or operator did not implement their 2009 Protocol and is based on the HEDD units that are actually operated on a given high electric demand day. As proposed, the description of BE would require an owner or operator to include all HEDD units operated on a given high electric demand day. The proposed definition of HEDD unit at N.J.A.C. 7:27-19.1 included new units as well as existing units that were operated less than or equal to an average of 50 percent of the time during the immediately preceding three ozone seasons. See the Response to Comment 46 for changes to the definition of HEDD unit). Equation 1 was designed to require certain owners and operators to achieve emission reductions, based on the operation of their uncontrolled or under-controlled HEDD units. If an owner or operator installs a new electric generating unit without removing an existing HEDD unit from service, the owner or operator could operate its entire existing high electric demand day fleet plus the new unit which would increase the BE factor and therefore increase the required ER. This is not the intended result because a new electric generating unit would have to comply with 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 C.F.R. 52.21, if applicable. Therefore, the installation of this new, additional unit would increase the number of emission reductions that the owner or operator was required to obtain while not leaving the owner or operator any options for obtaining those reductions on the new electric generating unit, because the new unit is already well controlled. In order to correct this condition, the Department is modifying the description of the BE factor to include only HEDD units (upon adoption the definition of HEDD unit is modified to include only those electric generating units that commenced operation prior to May 1, 2005) and any electric generating unit installed to replace a HEDD unit. New EGUs that are installed as replacement units for existing HEDD units remain in the determination of BE because Equation 1 divides BE by EF, which is the total NO<sub>x</sub> emitted by the owner's or operator's HEDD units on July 26, 2005. This means that the BE factor will be reduced by the emissions from all HEDD units operated on July 26, 2005, including the ones that have been replaced. The required reductions would be biased low if the replaced HEDD units simply dropped out of the determination of BE. By including the replacement units in the determination of BE, the emissions from the power that would have been generated by these replaced HEDD units are still being considered. However, since a new unit will emit less NO<sub>x</sub> than an HEDD unit, the required emission reductions will be lower. Also, the difference in NO<sub>x</sub> emitted between the replaced HEDD unit and the new EGU can be considered as part of the required emission reduction, for replacement units. However, for additional generating units, the owner or operator does not get any credit for the low emission rate of the unit because the emissions are in addition to the owner or operator's HEDD unit fleet, and therefore are not reducing emissions from HEDD units.

At N.J.A.C. 7:27-19.29(g), the Department is adding "Department's" to clarify that it is an action by the Department of which the Department will notify the owner or operator.

At N.J.A.C. 7:27-19.29(h)1, (i), (j) and (k) the Department is clarifying cross-references to N.J.A.C. 7:27-19.29(b)5.

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At N.J.A.C. 7:27-19.30(a), the Department is correcting an address.

At several locations at N.J.A.C. 7:27-19.30(b), the Department is replacing “shut down” with the Department’s intended meaning to permanently take a HEDD unit out of service. The phrase “shut down” could erroneously be interpreted at N.J.A.C. 7:27-19.30(b) as temporarily not operating a HEDD unit.

At N.J.A.C. 7:27-19.30(c), the Department is changing the date by which the owner or operator must submit each annual 2015 Plan update to January 30 after the calendar year of the update. Proposed N.J.A.C. 7:27-19.30(c) required this report to be submitted with the annual compliance certification. This change is being made in order to clarify when the report must be submitted by including a date in the rule. January 30 of the next calendar year was chosen in order to make this requirement consistent with the submittal of the 2009 Protocol annual report, which also must be submitted by January 30 of the next calendar year. This date allows the owner or operator 30 days to prepare each report.

At N.J.A.C. 7:27-19.30(c)4v, the Department is correcting a cross-reference.

The Department proposed to amend N.J.A.C. 7:27-16.2(h), but inadvertently proposed to delete the corresponding penalty from N.J.A.C. 7:27A-3.10(m)16. In the proposal summary (40 N.J.R. at 4420), the Department stated that it proposed to delete penalty provisions for violations of those portions of N.J.A.C. 7:27 that were proposed to be deleted. The Department did not propose to delete N.J.A.C. 7:27-16.2(h); accordingly, the penalty provision should not have been shown as deleted in the rule text. The Department is, therefore, not adopting the proposed amendment to N.J.A.C. 7:27A-3.10(m)16.

The Department proposed to delete the provisions at N.J.A.C. 7:27-16.2(k) and reserve this subsection, but inadvertently did not propose to delete the corresponding penalty from N.J.A.C. 7:27A-3.10(m)16. On adoption the Department is deleting this penalty, for the same reason discussed above, and set forth at 40 N.J.R. 4420.

### **Federal Standards Analysis**

Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 65) require State agencies that adopt, readopt, or amend State regulations that exceed any Federal standards or requirements to include in the rulemaking document a Federal standards analysis.

The adopted new rules and amendments are needed to fulfill a Federal Clean Air Act requirement that New Jersey adopt control measures to reduce NO<sub>x</sub>, VOC, SO<sub>2</sub> and particulate emissions to attain the ozone and fine particulate national ambient air quality standards. Therefore, adoption of the new rule and amendments are consistent with Federal requirements.

Based on its review of Federal regulations, the Department has determined that the adopted new rules and amendments for the following source categories do not contain any standards or requirements that are comparable to Federal law: alternative and facility-specific VOC control requirements, alternative and facility-specific NO<sub>x</sub> emission limits, asphalt pavement production plants, the source categories affected by the adopted control techniques guidelines, and glass manufacturing furnaces. Accordingly, Executive Order No. 27 (1994) and



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N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 65), do not require any further analysis for these source categories.

The Clean Air Act, Section 182(b)(2) (42 U.S.C. §7511(b)(2)), requires states, such as New Jersey, that have nonattainment areas to revise their SIPs to include reasonably available control technology for sources of VOC emissions covered by a Control Techniques Guidelines (CTG) document issued after November 15, 1990, and prior to the area's date of attainment. In September 2006, the EPA issued CTG documents for offset lithographic printing and letterpress printing (EPA 453/R-06-002), flexible package printing (EPA 453/R-06-003), and flat wood paneling coatings (EPA 453/R-06-004). (See [http://www.epa.gov/ttn/naaqs/ozone/ctg\\_act/](http://www.epa.gov/ttn/naaqs/ozone/ctg_act/).) The adopted amendments are equivalent to and are not more stringent than these CTGs. Accordingly, Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c.65), do not require any further analysis for these source categories.

Based on its review of comparable Federal regulations, the Department has determined that the adopted new rules and amendments for the following source categories contain standards or requirements that exceed the standards or requirements imposed by Federal law: asphalt used for paving, boilers that serve electric generating units, high electric demand day units, ICI boilers and other indirect heat exchangers, municipal solid waste incinerators, and VOC stationary storage tanks. However, as stated above, all of these adopted new rules and amendments are needed to fulfill a requirement, imposed by EPA pursuant to the Federal Clean Air Act, Section 182 (b)(2) 42 U.S.C. §§7401 et seq., that New Jersey adopt sufficient control measures to meet the NAAQS for ozone and fine particulates. Therefore, the adopted new and amended rules are necessary for the State to comply with Federal requirements. Failure to achieve these reductions could subject the State to Federal sanctions.

Despite the fact that the adopted new rules and amendments are necessary if the State is to meet Federal Requirements, a Federal Standards Analysis follows below by source category.

#### Asphalt Used for Paving

In 1979 EPA recommended a seven percent VOC content limit for emulsified asphalt used during the ozone season. The Department is adopting a more stringent VOC content limit (0.1 percent VOC by weight; or 6.0 milliliter of oil distillate in accordance with the ASTM Method D244 or AASHTO T 59) for emulsified asphalt used during the period April 16 through October 14. The entire state of New Jersey is not in attainment with the Federal 1997 eight-hour NAAQS for ozone. The purpose of the adopted more stringent VOC content limit is to help bring the State into attainment.

The Department has investigated various emission sources to determine where further VOC emission reductions can be achieved. The storage, use or application of emulsified asphalt is one of these emission sources. Emulsified asphalts with a lower VOC content than is in EPA's Asphalt CTG exist and are currently being used by the New Jersey Department of Transportation. EPA's Asphalt CTG has not been revised since 1979 (almost 30 years ago) and is outdated. In 1993, the state of Delaware prohibited VOC in emulsified asphalt manufactured, mixed, used or applied during the ozone season. The OTC has recommended that each state in

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the OTC region adopt a rule for emulsified asphalt and issued white papers to help states develop rules. On December 12, 2007 the state of Connecticut re-proposed a rule. The Department's adopted VOC content limit for emulsified asphalt is the same as Connecticut's re-proposed limit.

The adopted rules could affect manufacturers of emulsified asphalt. The adopted rules may also affect some asphalt paving contractors and some municipalities in New Jersey, as users of emulsified asphalt. The Department has analyzed the potential costs and benefits, based on compliance in 2009. As discussed in the Economic Impact above, the Department anticipates that the cost to manufacturers of producing emulsified asphalt with the more stringent VOC content limit will be relatively low and that compliant emulsified asphalt is available at prices comparable to high VOC content asphalt mixtures.

The Department anticipates that the adopted new rules and amendments will result in a direct benefit to public health of 3.6 tpd of VOC reduced during the ozone season, and 420 tpy during the regulated period (April 16 through October 14) as well as other benefits described in the Environmental Impacts section.

The 1979 EPA-recommended VOC content limit for emulsified asphalt is outdated. Emulsified asphalts that would comply with the adopted VOC content limit exist and are in use at prices comparable to asphalts with a high VOC content. The adoption's requirement to manufacture and use compliant asphalt is not anticipated to pose a financial burden to emulsified asphalt manufacturers or users.

The benefits to public health and the environmental outweigh any cost to manufacturers and users in order to help bring the State into attainment with the Federal 1997 eight-hour NAAQS for ozone.

#### Boilers Serving Electric Generating Units

The Department has compared adopted N.J.A.C. 7:27-4.2, 10.2(c), and 19.4(a) with analogous Federal regulations, namely New Source Performance Standards (NSPS), 40 CFR Part 60.

Based on its review of these Federal regulations (40 CFR 60.40 and 60.40Da), the Department has determined that the adopted new rules and amendments are more stringent than some of the standards or requirements imposed by the Federal regulations. Standards of Performance for Fossil Fuel Fired Steam Generators for which construction is commenced after August 17, 1971 (40 CFR 60.40 – Subpart D) do not apply to boilers that were constructed prior to August 17, 1971, and not modified or reconstructed since; therefore Subpart D does not impose any emission limit for particulates, SO<sub>2</sub> or NO<sub>x</sub> on these sources. Similarly, Standards of Performance for Electric Utility Steam Generating Units for which construction is commenced after September 18, 1978 (40 CFR 60.40Da – Subpart Da) do not apply to boilers that were constructed prior to September 18, 1978, and not modified or reconstructed since; therefore Subpart Da does not impose any emission limit for particles, SO<sub>2</sub> or NO<sub>x</sub> on these sources.

The amendments being adopted by the Department will require all coal-fired boilers in the State to comply with the adopted particle and SO<sub>2</sub> emission limits and all boilers serving

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electric generating units to comply with the adopted NO<sub>x</sub> emission limits, regardless of installation date and whether or not the source has been modified or reconstructed.

Particles

The adopted rules would set a maximum particle emission rate of 0.0300 pounds/MMBtu for all existing coal-fired boilers in the State and a maximum particulate emission rate of 0.0150 pounds/MMBtu for any coal-fired boiler that is constructed, installed, reconstructed or modified on or after the operative date of the rule. These maximum emission rates are more stringent than NSPS for sources that were installed prior to August 18, 1971 because neither 40 CFR 60.40 nor 40 CFR 60.40Da apply to these boilers. The adopted 0.0300 pounds/MMBtu emission rate is also more stringent than the NSPS for sources that were constructed, reconstructed or modified starting August 18, 1971 through September 18, 1978, and not subsequently reconstructed or modified. The Federal rule at 40 CFR 60.40 requires an emission limit of 0.10 pounds/MMBtu for these sources. Also, for sources constructed, reconstructed or modified after February 28, 2005, 40 CFR 60.42Da allows a less stringent alternative to the 0.0150 pounds/MMBtu emissions limit of 0.030 pounds/MMBtu, as long as the emission reduction is at least 99.8 percent for sources modified after February 28, 2005, or 99.9 percent for sources constructed or reconstructed after February 28, 2005. However, if the construction, reconstruction or modification of the source triggers the Federal Prevention of Significant Deterioration (PSD) rule at 40 CFR 52.21, PSD regulations will require the installation of BACT on the source, which would be capable of achieving the adopted maximum emission rate. Therefore, the adopted maximum emission rate is not more stringent than Federal rules for a new or modified coal-fired boiler that is subject to PSD.

Table 6 below compares the maximum particulate emission rates imposed by Federal NSPS regulations with the adopted maximum particle emission rates as applicable to boilers that were constructed, reconstructed or modified at various times.

TABLE 6  
Comparison of Federal Particulate Emission Limits and Adopted Particle Emission Limits for Boilers

Date Source Was Constructed Reconstructed or Modified	Prior to <u>8/18/71</u>	Starting 8/18/71 through <u>9/18/78</u>	Starting 9/19/78 through <u>2/28/05</u>	On or after <u>2/28/05</u>
	No Applicable Federal Rules	40 CFR 60.40 NSPS Subpart D	40 CFR 60.40Da NSPS Subpart Da	40 CFR 60.40Da NSPS Subpart Da

**Federal**

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**Regulations**  
(for coal-fired  
only)

			0.14 pounds/MWh <b>or</b> 0.015 pounds/MMBtu <b>or</b>
None	0.10 pounds/ MMBtu	<b>Coal:</b> 0.03 pounds/ MMBtu and 99 percent reduction	<b>Modification:</b> 0.03 pounds/MMBtu and 99.8 percent reduction <b>or</b> <b>Construction or Reconstruction:</b> 0.03 pounds/MMBtu and 99.9 percent reduction

**Adopted  
Emission Rates**  
(for coal-fired  
only)

**Boiler existing as of the Operative Date:**  
0.0300 pounds/MMBtu<sup>1</sup>

**If Constructed, Reconstructed or Modified after Operative Date:**  
0.0150 pounds/MMBtu<sup>1</sup>

<sup>1</sup> Or as specified in a permit if a more stringent limit is imposed due to SOTA or PSD applicability

SO<sub>2</sub>

The adopted rules would require a maximum SO<sub>2</sub> emission rate of 0.150 pounds/MMBtu (based on a 30-calendar-day rolling average) and 0.250 pounds/MMBtu (based on a 24-hour emission rate) for all sources in the State that combust solid fuel. These limits are more stringent than the NSPS for sources that were installed prior to August 18, 1971, because neither 40 CFR 60.40 nor 40 CFR 60.40Da apply to these sources. The adopted emission limits are also more stringent than the NSPS for sources that were constructed, reconstructed or modified starting

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August 18, 1971 through September 18, 1978, and not subsequently reconstructed or modified. The Federal regulation at 40 CFR 60.40 requires an emission limit of 1.2 pounds/MMBtu for these sources. These limits are also more stringent than NSPS for sources that were constructed, reconstructed or modified starting September 19, 1978 through February 28, 2005, and not subsequently reconstructed or modified (40 CFR 60.40Da requires an emission limit of 1.20 pounds/MMBtu along with an SO<sub>2</sub> reduction of 90 percent or an emission limit of 0.60 pounds/MMBtu along with an SO<sub>2</sub> reduction of 70 percent for these sources).

For sources that are reconstructed or modified after February 28, 2005, 40 CFR 60.42Da requires an emission limit of 0.150 pounds/MMBtu based on a 30-calendar-day rolling average, which the adopted rule also requires. However, the adopted rule also requires an emission limit of 0.250 pounds/MMBtu based on a 24-hour emission rate, which could be more stringent than the Federal 0.150 pounds/MMBtu emission limit based on a 30-calendar-day rolling average. Therefore, the adopted rule could be more stringent than the Federal regulation. Also, NSPS allows an alternative emission limit of 1.4 pounds/MWh or an SO<sub>2</sub> reduction ranging from 90 percent to 95 percent for a source depending on whether the source is constructed, reconstructed or modified after February 28, 2005. If the construction, reconstruction or modification of the source triggers the Federal PSD regulations at 40 CFR 52.21, these Federal PSD regulations will require the installation of BACT on the source, which would be capable of achieving the adopted maximum emission rates. Therefore, the adopted maximum emission rates are not more stringent than Federal regulations for a new, reconstructed or modified coal-fired boiler that is subject to PSD. If the Federal PSD regulations are not triggered the adopted emission rates may or may not be more stringent than the Federal regulations, depending on the characteristics of the combustion unit.

Table 7 below compares the maximum SO<sub>2</sub> emission rates imposed by Federal NSPS regulations with the adopted maximum SO<sub>2</sub> emission rates as applicable to boilers that were constructed, reconstructed or modified at various times.

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TABLE 7  
Comparison of Federal SO<sub>2</sub> Emission Limits and Adopted SO<sub>2</sub> Emission Limits for Boilers

Date Source was Constructed Reconstructed or <u>Modified</u>	<u>Prior to 8/18/71</u>	<u>Starting 8/18/71 through 9/18/78</u>	<u>Starting 9/19/78 Through 2/28/05</u>	<u>After 2/28/05</u>
	No Applicable Federal Rules	40 CFR 60.40 NSPS Subpart D	40 CFR 60.40Da NSPS Subpart Da	40 CFR 60.40Da NSPS Subpart Da
				<b>Construction:</b> 1.4 pounds/MWh <sup>1</sup> <b>or</b> 95 percent reduction <sup>1</sup>
			1.20 pounds/MMBtu and 90 percent reduction	<b>Reconstruction:</b> 1.4 pounds/MWh <sup>1</sup> <b>or</b> 0.15 pounds/MMBtu <sup>1</sup> <b>or</b> 95 percent reduction <sup>1</sup>
<b>Federal Regulations</b> (for coal-fired only)	None	1.2 pounds/MMBtu	<b>or</b> 0.60 pounds/MMBtu and 70 percent reduction	<b>Modification:</b> 1.4 pounds/MWh <sup>1</sup> <b>or</b> 0.15 pounds/MMBtu <sup>1</sup> <b>or</b> 90 percent reduction <sup>1</sup>

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<b>Adopted Emission Rates</b> (for coal-fired only)	0.150 pounds/MMBtu <sup>1,2</sup> 0.250 pounds/MMBtu <sup>2,3</sup>
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<sup>1</sup> 30-calendar-day rolling average basis

<sup>2</sup> Or as specified in a permit if a more stringent limit is imposed due to SOTA or PSD applicability

<sup>3</sup> 24-hour emission rate

### NO<sub>x</sub>

The Department's adopted new rules and amendments would require a maximum allowable NO<sub>x</sub> emissions rate of 1.50 pounds/MWh operative on December 15, 2012 for coal-fired boilers, 2.00 pounds/MWh operative on May 1, 2015 for heavier than No. 2 fuel oil-fired boilers, 1.00 pound/MWh operative on May 1, 2015 for No. 2 and lighter fuel oil-fired boilers, and 1.00 pounds/MWh operative on May 1, 2015 for gas-fired boilers. These maximum emission rates are more stringent than NSPS for sources that were installed prior to August 18, 1971, because neither 40 CFR 60.40 nor 40 CFR 60.40Da applies to these sources.

The adopted maximum allowable emission rates are also more stringent than NSPS for sources that were constructed, reconstructed or modified starting August 18, 1971 through September 18, 1978, and not subsequently reconstructed or modified. The Federal regulation at 40 CFR 60.40 requires an emission limit of 0.70 pounds/MMBtu for coal-fired boilers, 0.30 pounds/MMBtu for oil-fired boilers and 0.20 pounds/MMBtu for gas-fired boilers. As explained earlier in this adoption, to convert pounds/MMBtu to pounds/MWh, the Department uses a generic heat rate of 10,000 British thermal units per kilowatt hour (Btu/KWh).

The adopted maximum allowable emission rates are also more stringent than NSPS for sources that were constructed, reconstructed or modified starting September 19, 1978 through July 9, 1997. The Federal rule at 40 CFR 60.40Da requires an emission limit of 0.50 to 0.60 pounds/MMBtu, based on a 30-calendar-day rolling average, along with a 65 percent NO<sub>x</sub> reduction for coal-fired boilers; 0.30 pounds/MMBtu, based on a 30-calendar-day rolling average, along with a 30 percent NO<sub>x</sub> reduction for oil-fired boilers; and 0.20 pounds/MMBtu, based on a 30-calendar-day rolling average, along with a 25 percent NO<sub>x</sub> reduction for gas-fired boilers.

The adopted maximum emission rates are also more stringent than NSPS for coal-fired, No. 2 fuel oil-fired, lighter than No. 2 fuel oil-fired, or gas-fired boilers that were constructed starting July 10, 1997 through February 28, 2005. The Federal rule at 40 CFR 60.40Da requires an emission limit of 1.6 pounds/MWh, based on a 30-calendar-day rolling average, for these sources. The adopted maximum emission rates are also more stringent than NSPS for boilers that combust No. 2 fuel oil, lighter than No. 2 fuel oil, or gas that were reconstructed starting July 10, 1997 through February 28, 2005. The adopted maximum emission rates are also more stringent than NSPS for boilers that combust coal, No. 2 fuel oil, lighter than No. 2 fuel oil, or

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gas that were modified starting July 10, 1997 through February 28, 2005. The adopted maximum emission rates are also more stringent than NSPS (40 CFR 60.42Da) for boilers that combust No. 2 and lighter fuel oil or that combust gas that are modified after February 28, 2005.

However, if the construction, reconstruction or modification of the boiler triggers the Federal PSD rule at 40 CFR 52.21, PSD regulations will require the installation of BACT on the boiler, which would be capable of achieving the adopted maximum emission rates. Therefore, the adopted maximum emission rates are not more stringent than Federal regulations for a new, reconstructed or modified coal-fired boiler that is subject to PSD.

Table 8 below compares the NO<sub>x</sub> emission rates imposed by Federal NSPS regulations with the adopted NO<sub>x</sub> emission rates as applicable to boilers that were constructed, reconstructed or modified at various times.

Table 8  
Comparison of Federal Maximum Allowable NO<sub>x</sub> Emission Rates and Adopted Maximum Allowable NO<sub>x</sub> Emission Rates for Boilers

Date Source Was Constructed, Reconstructed or Modified	Starting	Starting	Starting	Starting	Starting
Prior to 8/18/71	through 9/18/78	through 7/9/97	Through 2/28/05	Through 2/28/05	After 2/28/05
No Applicable Federal Rules	40 CFR 60.40 NSPS Subpart D	40 CFR 60.40Da NSPS Subpart Da	40 CFR 60.40Da NSPS Subpart Da	40 CFR 60.40Da NSPS Subpart Da	40 CFR 60.40Da NSPS Subpart Da



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	<b>Coal:</b> 0.70 pounds/ MMBtu	<b>Coal:</b> 0.50 – 0.60 pounds/ MMBtu <sup>1</sup> and 65 percent reduction	<b>Construction:</b> 1.6 pounds/MWh <sup>1</sup>	<b>Construction:</b> 1.0 pound/MWh <sup>1</sup>
None	<b>Oil:</b> 0.30 pounds/ MMBtu	<b>Oil:</b> 0.30 pounds/ MMBtu <sup>1</sup> and 30 percent reduction	<b>Reconstruction:</b> 0.15 pounds/MMBtu <sup>1</sup>	<b>Reconstruction:</b> 1.0 pound/MWh <sup>1</sup> <b>or</b> 0.11 pounds/MMBtu <sup>1</sup>
	<b>Gas:</b> 0.20 pounds/ MMBtu	<b>Gas:</b> 0.20 pounds/ MMBtu <sup>1</sup> and 25 percent reduction		<b>Modification:</b> 1.4 pounds/MWh <sup>1</sup> <b>or</b> 0.15 pounds/MMBtu <sup>1</sup>

**Adopted  
Emission  
Rates**

**Coal:** 1.50 pounds/MWh<sup>2,5</sup>  
**Heavier than No. 2 Oil:** 2.00 pounds/MWh<sup>3,5</sup>  
**No. 2 and lighter Oil:** 1.00 pound/MWh<sup>3,5</sup>  
**Gas:** 1.00 pound /MWh<sup>4,5</sup>

<sup>1</sup> 30-day rolling average basis

<sup>2</sup> 1.50 pounds/MWh is based on 0.15 pounds/MMBtu

<sup>3</sup> 2.00 pounds/MWh is based on 0.20 pounds/MMBtu

<sup>4</sup> 1.00 pound/MWh is based on 0.10 pounds/MMBtu

<sup>5</sup> Or as specified in a permit if a more stringent limit is imposed due to SOTA or PSD applicability

The adopted new rules and amendments are needed to fulfill a requirement, imposed by EPA pursuant to the Federal Clean Air Act, 42 U.S.C. §§7401 et seq., that New Jersey adopt

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sufficient control measures to attain the Federal 1997 eight-hour NAAQS for ozone and the Federal 1997 annual NAAQS for PM<sub>2.5</sub>. Therefore, adoption of these new rules and amendments is necessary for the State to comply with Federal air quality requirements.

The Department's estimated emission reductions are based on particulate, SO<sub>2</sub> and NO<sub>x</sub> inventory emissions and the control efficiencies of the reasonably available control technologies. The Department has determined that the control technologies are technologically feasible, based on several sources that have already installed, or are in the process of installing control apparatus that will bring the units into compliance with the adopted maximum emission rates. The emission reductions from these adopted rules and amendments are expected to be approximately 2,571 tpy (7.04 tpd) of SO<sub>2</sub> emission reductions and 788 tpy (2.16 tpd) of NO<sub>x</sub> emission reductions by 2013.

The adopted maximum allowable emission rates are already being complied with by some of the affected boilers in New Jersey and are required to be complied with by other boilers by the ACD and ACO. The adopted rules would ensure that all coal-fired power plants in New Jersey install up-to-date air pollution controls.

The adopted new rules and amendments will primarily affect unit 6/8 at the Conectiv Deepwater Generating Station, which will have to install an SO<sub>2</sub> control apparatus, such as a scrubber, and install a NO<sub>x</sub> control apparatus, such as a Selective Catalytic Reduction (SCR) system. There is only one boiler serving an EGU in the State that is not an HEDD unit and that does not combust coal. Instead, it combusts kerosene and natural gas. This boiler currently complies with the adopted maximum allowable NO<sub>x</sub> emission rate, and therefore would not be impacted by the adopted amendments.

As discussed in more detail in the Economic Impact (40 N.J.R. at 4423) the adopted amendment to the maximum allowable emission rate for particles is not expected to have an economic impact, the estimated cost-effectiveness of SO<sub>2</sub> emission reductions is expected to be less than \$4,800 per ton of SO<sub>2</sub> reductions in 2007 dollars, and the estimated cost-effectiveness of NO<sub>x</sub> emission reductions is expected to be less than \$1,250 per ton of NO<sub>x</sub> reductions in 2007 dollars. Control costs are likely to be passed on to the consumer in the form of somewhat higher electricity generating rates.

Companies that design, build and install these emission control systems could benefit from the adopted amendments as they will experience an increase in demand for their products and services.

The Department anticipates the benefits of the adopted new rules and amendments to be an increase in the quality of life and protection of human health, the environment and agriculture. The Department expects the adopted new rules and amendments to have a significant positive environmental impact. The primary environmental benefit will be a reduction in the emission of NO<sub>x</sub> emissions, which are precursor emissions that lead to the formation of ground level ozone. See the Social, Environmental and Agriculture Industry Impact statements for an explanation of the health, environmental and agriculture impacts, respectively, of ground level ozone. The Department also expects the adopted rules to significantly reduce emissions of SO<sub>2</sub>. The Department is adopting these new rules and amendments to meet EPA air quality standards.

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Failure to achieve these air quality standards could subject New Jersey to economic sanctions, which would adversely affect all businesses and taxpayers in the State.

In adopting these amendments and new rules the Department has balanced the need to protect the environment and public health and to comply with the EPA requirements against any economic impacts of the rule. Based on similar sources that currently meet these requirements and similar sources that have committed to meet these requirements, the Department has determined that these amendments are achievable with currently available technology and are cost-effective. By setting maximum emission standards for all New Jersey electrical generating units, the Department will set a precedent for other states to do the same. The Department has determined that establishing these adopted emission standards, even though more stringent than the Federal rules, is necessary in order to attain air quality standards and to protect the environment and public health.

#### High Electric Demand Day (HEDD) Units

The Department has performed a comparison of adopted N.J.A.C. 7:27-19 with analogous Federal regulations, namely NSPS.

#### HEDD Boilers

Based on its review of these Federal regulations for boilers (40 CFR 60.40 and 60.40Da), the Department has determined that the adopted new rules and amendments exceed many of the standards or requirements imposed by the Federal regulations. Standards of Performance for Fossil Fuel Fired Steam Generators for which construction is commenced after August 17, 1971 (40 CFR 60.40 – Subpart D) do not apply to boilers that were constructed on or before August 17, 1971 and not modified or reconstructed since that time, and, therefore, Subpart D does not impose any maximum allowable NO<sub>x</sub> emission rate on these sources.

Similarly, Standards of Performance for Electric Utility Steam Generating Units for which construction is commenced after September 18, 1978 (40 CFR 60.40Da – Subpart Da) do not apply to boilers that were constructed on or before September 18, 1978 and not modified or reconstructed since. Therefore, Subpart Da does not impose any maximum allowable NO<sub>x</sub> emission rate on these sources.

However, the adopted new rules and amendments will require all HEDD units which are boilers serving electric generating units to comply with the adopted maximum allowable NO<sub>x</sub> emission rates, regardless of installation date and whether or not the source has been modified or reconstructed.

The Department's adopted new rules and amendments require a maximum allowable NO<sub>x</sub> emission rate of 2.00 pounds/MWh for heavier than No. 2 fuel oil-fired boilers, 1.00 pound/MWh for No. 2 and lighter fuel oil-fired boilers and 1.00 pound/MWh for gas-fired boilers. These maximum allowable emission rates are more stringent than NSPS for boilers that were installed prior to August 17, 1971 because neither 40 CFR 60.40 nor 40 CFR 60.40Da apply to these boilers.

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The adopted maximum allowable emission rates are also more stringent than NSPS for boilers that were constructed, reconstructed or modified starting August 18, 1971 through September 18, 1978 and not reconstructed or modified thereafter. The Federal rule at 40 CFR 60.40 requires an emission limit of 0.30 pounds/MMBtu for oil-fired boilers and 0.20 pounds/MMBtu for gas-fired boilers. The adopted maximum allowable NO<sub>x</sub> emission rates are also more stringent than NSPS for boilers that were constructed or reconstructed starting September 19, 1978 through July 9, 1997; and for boilers that were modified starting September 19, 1978 through February 28, 2005 and not reconstructed or modified thereafter. The Federal rule at 40 CFR 60.40Da requires an emission limit of 0.30 pounds/MMBtu, based on a 30-calendar-day rolling average, along with a 30 percent NO<sub>x</sub> reduction for oil-fired boilers; and 0.20 pounds/MMBtu, based on a 30-calendar-day rolling average, along with a 25 percent NO<sub>x</sub> reduction for gas-fired boilers.

The adopted maximum allowable NO<sub>x</sub> emission rates are also more stringent than NSPS for No. 2 fuel oil-fired or gas-fired boilers that were installed starting July 10, 1997 through February 28, 2005 and not reconstructed or modified thereafter. The Federal rule at 40 CFR 60.40Da requires an emission limit of 1.6 pounds/MWh, based on 30-calendar-day rolling average, for these boilers. The adopted NO<sub>x</sub> emission rates are more stringent than the Federal rule emission rates for No. 2 fuel oil-fired or gas-fired boilers that were reconstructed starting July 10, 1997 through February 28, 2005 and not reconstructed or modified thereafter. The Federal rule at 40 CFR 60.40Da requires an emission limit of 0.15 pounds/MMBtu, based on a 30-calendar-day rolling average, for these boilers.

For sources that are modified after February 28, 2005, 40 CFR 60.42Da requires 1.4 pounds/MWhr or 0.15 pounds/MMBtu, based on a 30-calendar-day rolling average, which is less stringent than the adopted maximum allowable NO<sub>x</sub> emission rate for No.2 and lighter fuel oil or for gas. However, if the construction, reconstruction or modification of the source triggers the Federal Prevention of Significant Deterioration (PSD) rule at 40 CFR 52.21, PSD regulations will require the installation of best available control technology (BACT) on the source, which would be capable of achieving the adopted maximum allowable NO<sub>x</sub> emission rates.

Table 9 below compares the NO<sub>x</sub> emission limits imposed by Federal NSPS regulations with the Department's adopted maximum allowable NO<sub>x</sub> emission rates as applicable to boilers that were constructed, reconstructed or modified at various times.

TABLE 9  
Comparison of Federal NO<sub>x</sub> Emission Limits and  
Adopted Maximum Allowable NO<sub>x</sub> Emission Rates for Boilers

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Date Source Was Constructed or Modified	Prior to 8/18/71	Starting 8/18/71 through 9/18/78	Starting 9/19/78 through 7/9/97	Starting 7/10/97 Through 2/28/05	After 2/28/05
	No Applicable Federal Rules	40 CFR 60.40 NSPS Subpart D	40 CFR 60.40Da NSPS Subpart Da	40 CFR 60.40Da NSPS Subpart Da	40 CFR 60.40Da NSPS Subpart Da
<b>Federal Regulations</b>	None	<b>Oil:</b> 0.30 pounds/MMBtu	<b>Oil:</b> 0.30 pounds/MMBtu <sup>1</sup> and 30 percent reduction	<b>Construction:</b> 1.6 pounds/MWh <sup>1</sup> <b>Reconstruction:</b> 0.15 pounds/MMBtu <sup>1</sup>	<b>Construction:</b> 1.0 pound/MWh <sup>1</sup> <b>Reconstruction:</b> 1.0 pound/MWh <sup>1</sup> or 0.11 pounds/MMBtu <sup>1</sup> <b>Modification:</b> 1.4 pounds/MWh <sup>1</sup> or 0.15 pounds/MMBtu <sup>1</sup>

**Adopted Emission Rates**

Effective on and after the Operative Date of Adopted Amendments

Heavier than No. 2 Oil: 2.00 pounds/MWh<sup>2</sup>  
 No. 2 and lighter Oil: 1.00 pound/MWh<sup>3</sup>  
 Gas: 1.00 pound/MWh<sup>3</sup>

<sup>1</sup> 30-day rolling average basis

<sup>2</sup> 2.00 pounds/MWh is based on 0.20 pounds/MMBtu

<sup>3</sup> 1.00 pound/MWh is based on 0.10 pounds/MMBtu

HEDD Turbines

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Based on its review of the Federal regulations for turbines (40 CFR 60.330 and 60.4300), the Department has determined that the adopted new rules and amendments exceed many of the standards or requirements imposed by the Federal regulations. Standards of Performance for stationary gas turbines (40 CFR 60.330 – Subpart GG) do not apply to turbines that were constructed on or before October 3, 1977 and not modified or reconstructed since and therefore do not impose any emission limit for NO<sub>x</sub> on these sources. Similarly, Standards of Performance for stationary combustion turbines (40 CFR 60.4300 – Subpart KKKK) do not apply to turbines that were constructed on or before February 18, 2005 and not modified or reconstructed since. The Federal rules do not impose any emission limit for NO<sub>x</sub> on these sources. Also, Subparts GG and KKKK do not regulate turbines that have a heat input of less than 10 MMBtu/hr. However, the adopted new rules and amendments require all turbines to comply with the adopted maximum allowable NO<sub>x</sub> emission rates, regardless of installation date and whether or not the source has been modified or reconstructed.

The Department's adopted new rules and amendments require that on and after May 1, 2015, all HEDD turbines comply with the following maximum allowable NO<sub>x</sub> emission rates: 0.75 pounds/MWh for gas-fired combined cycle turbines; 1.20 pounds/MWh for oil-fired combined cycle turbines; 1.00 pound/MWh for gas-fired simple cycle turbines; and 1.60 pounds/MWh for oil-fired simple cycle turbines. The adopted maximum allowable NO<sub>x</sub> emission rates are more stringent than NSPS for turbines that were installed prior to October 3, 1977, because neither 40 CFR 60.330 nor 40 CFR 60.4300 applies to these turbines. It is difficult to determine whether the adopted maximum allowable NO<sub>x</sub> emission rates are more stringent than NSPS emission limits for turbines that were constructed, reconstructed or modified after October 3, 1977, but on or before February 18, 2005 and not reconstructed or modified since. The Federal rule at 40 CFR part 60, subpart KKKK does not apply to these turbines, and the 40 CFR part 60, subpart GG applicable NO<sub>x</sub> emission limit is dependent on the manufacturer's rated heat input for the specific turbine. Therefore, there is no general emission limit that can be used for comparison with the adopted maximum allowable NO<sub>x</sub> emission rates. All turbines with a heat input greater than 10 MMBtu/hr that are constructed, reconstructed or modified after February 18, 2005 are subject to subpart KKKK.

The adopted standards for simple cycle and combined cycle gas-fired turbines with a heat input equal to or greater than 10 MMBtu/hr and less than or equal to 50 MMBtu/hr that are constructed after February 18, 2005 are more stringent than the Federal rule at 40 CFR 60.4300, which establishes an emission limit of 2.3 pounds/MWh for these turbines. The adopted standards for both simple cycle and combined cycle gas-fired turbines with a heat input greater than 50 MMBtu/hr and less than or equal to 850 MMBtu/hr that are constructed, reconstructed or modified are more stringent than the Federal standards at 40 CFR 60.4300, which established an emission limit of 1.2 pounds/MWh for such turbines that are constructed, and an emission limit of 2.0 pounds/MWh for such turbines that are reconstructed or modified. The adopted standards for both simple cycle and combined cycle oil-fired turbines with a heat input equal to or greater than 10 MMBtu/hr and less than or equal to 50 MMBtu/hr that are constructed, reconstructed or modified are, likewise, more stringent than the Federal standards at 40 CFR 60.4300, which

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establish an emission limit of 5.5 pounds/MWh for constructed turbines, and an emission limit of 8.7 pounds/MWh for reconstructed or modified turbines.

The adopted rules for both simple cycle and combined cycle oil-fired turbines with a heat input greater than 50 MMBtu/hr and less than or equal to 850 MMBtu/hr that are constructed, reconstructed or modified are more stringent than the Federal standards at 40 CFR 60.4300, which require an emission limit of 3.6 pounds/MWh for constructed turbines, and an emission limit of 4.7 pounds/MWh for reconstructed or modified turbines. The adopted rules for simple cycle and combined cycle oil-fired turbines with a heat input greater than 850 MMBtu/hr that are constructed, reconstructed or modified are more stringent than the Federal rules at 40 CFR 60.4300, which require an emission limit of 1.3 pounds/MWh for these turbines.

Additionally, if the construction, reconstruction or modification of the source triggers Federal PSD review under 40 CFR 52.21, the source will be required to install the best available control technology (BACT) capable of achieving the adopted maximum allowable NO<sub>x</sub> emission rate. Table 10 below shows the NO<sub>x</sub> emission limits that are imposed by Federal NSPS regulations and the Department's adopted maximum allowable NO<sub>x</sub> emission rates as applicable to sources that were constructed, reconstructed or modified at various times.

TABLE 10  
Comparison of Federal NO<sub>x</sub> Emission Limits and  
Adopted Maximum Allowable NO<sub>x</sub> Emission Rates for Turbines

	<u>On or before 10/3/77</u>	<u>Starting 10/4/77 through 2/18/05</u>	<u>After 2/18/05</u>
	No applicable Federal rules	NSPS Subpart GG Dependant on manufacturer's rated heat input	NSPS Subpart KKKK  Gas:
Federal Regulations for All Simple and Combined Cycle Turbines with Heat Input  > 10 MMBtu			<p style="text-align: center;"><b>Construction:</b></p> <=50 MMBtu/hr: 2.3 pounds/MWh or 42 ppm >50 and <=850 MMBtu/hr: 1.2 pounds/MWh or 25 ppm >850 MMBtu/hr: 0.43 pounds/MWh or 15 ppm

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**Reconstruction:**

>50 and <=850 MMBtu/hr: 2.0  
pounds/MWh or 42 ppm  
>850 MMBtu/hr: 0.43 pounds/MWh or  
15 ppm

**Modification:**

>50 and <=850 MMBtu/hr: 2.0  
pounds/MWh or 42 ppm  
>850 MMBtu/hr: 0.43 pounds/MWh or  
15 ppm

Oil:

**Construction:**

<=50 MMBtu/hr: 5.5 pounds/MWh or 96  
ppm  
>50 and <=850 MMBtu/hr: 3.6  
pounds/MWh or 74 ppm  
>850 MMBtu/hr: 1.3 pounds/MWh or 42  
ppm

**Reconstruction:**

<=50 MMBtu/hr: 8.7 pounds/MWh or  
150 ppm  
>50 and <=850 MMBtu/hr: 4.7  
pounds/MWh or 96 ppm  
>850 MMBtu/hr: 1.3 pounds/MWh or 42  
ppm

**Modification:**

<=50 MMBtu/hr: 8.7 pounds/MWh or  
150 ppm  
>50 and <=850 MMBtu/hr: 4.7  
pound/MWh or 96 ppm  
>850 MMBtu/hr: 1.3 pound/MWh or 42  
ppm



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**Adopted Emission**

<b>Rates</b> (non-HEDD Turbines of any Heat Input)	<b>Effective on and after one day after the operative date of these amendments</b>
	Combined Cycle (Gas): 1.3 pounds/MWh Combined Cycle (Oil): 2.0 pounds/MWh Simple Cycle (Gas): 2.2 pounds/MWh Simple Cycle (Oil): 3.0 pounds/MWh

**Adopted Emission**

<b>Rates</b> (HEDD Turbines of any Heat Input)	<b>Effective on and after May 1, 2015</b>
	Combined Cycle (Gas): 0.75 pounds/MWh <sup>1</sup> Combined Cycle (Oil): 1.20 pounds/MWh <sup>1</sup> Simple Cycle (Gas): 1.00 pound/MWh <sup>1</sup> Simple Cycle (Oil): 1.60 pounds/MWh <sup>1</sup>

<sup>1</sup> Gas rates based on 25 ppm; Oil rates based on 42 ppm; Simple cycle rates based on 35 percent efficiency; Combined cycle rates based on 46 percent efficiency.

The adopted new rules and amendments require each owner or operator of a HEDD unit (turbine or boiler) to submit a 2015 HEDD Emission Limit Achievement Plan (2015 Plan) to the Department by May 1, 2010, and an annual update on the progress in achieving the 2015 Plan. The purpose of the 2015 Plan is to ensure that the owner or operator has a preliminary plan for achieving compliance for each HEDD unit by 2015. The purpose of the annual update is to allow the Department to monitor the progress of the owner or operator in implementing the 2015 Plan and to provide an opportunity for the owner or operator to revise the 2015 Plan. There is no Federal regulation with a similar requirement; therefore, this part of the adopted rules is more stringent than the Federal requirements.

Due to the large number of HEDD units that will be affected by the adopted amendments, the Department has allowed a substantial period of time for these HEDD units to comply with the adopted limits. The Department expects that each owner or operator will be planning for compliance with the 2015 maximum allowable NO<sub>x</sub> emission rates. The Department, through the adopted rules, is requiring the owner or operator to share the plan and the status of implementing it with the Department periodically, in order to keep the lines of communications open between the owner or operator and the Department. In this way, the parties can address potential issues early in the process and not delay compliance.

Finally, the adopted new rules and amendments require each of the three major owners or operators of HEDD units to reduce NO<sub>x</sub> emissions on high electric demand days during the interim period. The owners or operators may obtain these NO<sub>x</sub> emission reductions from any source that is approved by the Department. The adopted new rules and amendments suggest some emission reduction strategies (N.J.A.C. 7:27-19.29(d)2). The adopted new rules and

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amendments do not require the reductions to come from any specific source, nor do they require any specific source to meet a given emission limit. There is no similar Federal regulation.

The adopted new rules and amendments are needed to fulfill a requirement, imposed by EPA pursuant to the Federal Clean Air Act, 42 U.S.C. §§7401 et seq., that New Jersey adopt sufficient control measures to attain the Federal 1997 eight-hour NAAQS for ozone. Therefore, the adopted new rules and amendments are necessary for the State to comply with Federal requirements.

Technological feasibility of the adopted maximum allowable NO<sub>x</sub> emission rates is based on several sources that have already installed a control apparatus to bring the EGUs into compliance with the adopted NO<sub>x</sub> emission rates, or installed new sources that will comply with the adopted maximum allowable NO<sub>x</sub> emission rates. The NO<sub>x</sub> emission reductions from these adopted new rules and amendments are expected to be approximately 19.8 tons per high electric demand day by 2009, and 63.7 tons per high electric demand day by 2015.

The adopted new rules and amendments would primarily affect electric generating companies that have boilers serving electric generating units or turbines that commenced operating prior to May 1, 2005, are capable of generating 15 MW or more of electrical power, and operated less than or equal to an average of 50 percent of the time during the 2005 through 2007 ozone seasons. Also potentially affected would be the companies that design, build and install these control apparatus systems and turbines, consumers of the power generated, and all people who live, work or travel in New Jersey.

As discussed in more detail in the Economic Impact (40 N.J.R. at 4423) the estimated cost-effectiveness of emission reduction for the boilers is expected to be approximately \$600.00 to \$18,000 per ton of NO<sub>x</sub> emission reductions. The cost-effectiveness of installation of water injection on turbines is expected to be approximately \$44,000 per ton of mostly ozone day NO<sub>x</sub> emission reductions, which is equivalent to approximately \$4,400 per ton for calendar year NO<sub>x</sub> emission reductions. The estimated cost of replacing existing turbines is expected to be approximately \$0.5 to \$0.8 million per MW. The Department anticipates the adopted new rules and amendments will result in an increase in the quality of life and protection of human health, the environment and agriculture. The Department expects the adopted new rules and amendments to have a significant positive environmental impact. The primary environmental benefit will be a reduction in NO<sub>x</sub> emissions, which are precursor emissions that lead to the formation of ground level ozone. As discussed earlier, ground level ozone is breathed by people and animals and comes into contact with crops and other vegetation, as well as man made structures and surfaces. This exposure can cause a variety of adverse effects. It is estimated that these adopted new rules and amendments will result in an emission reduction of 19.8 tons per high electric demand day by 2009 and an emission reduction of 63.7 tons per high electric demand day by 2015.

In addition to the environmental and health benefits, economic benefits, which are difficult to quantify, may also be realized. Owners and employees of businesses will enjoy the environmental, health and other social benefits of the new amendments. A reduction in air pollution will lead to healthier and more productive workers.

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Finally, the Department is adopting these new rules and amendments to meet EPA requirements. Failure to achieve these reductions could subject New Jersey to economic sanctions, which would adversely affect all businesses and taxpayers in the State.

In adopting these new rules and amendments the Department has balanced the need to protect the environment and public health and to comply with EPA requirements against any economic impacts of the adopted new rules and amendments. Based on similar sources that currently meet the adopted requirements, the Department has determined that these adopted new rules and amendments are achievable under current technology and are cost effective. The Department has determined that adopting the adopted new rules and amendments, even though more stringent than the Federal rules, is necessary in order to attain the Federal 1997 eight-hour NAAQS for ozone and to protect the environment and public health.

#### Industrial/Commercial/Institutional (ICI) Boilers or other Indirect Heat Exchangers

The Department compared the adopted new rules and amendments at N.J.A.C. 7:27-19.7 to the NSPS at 40 CFR Part 60, and the Acid Rain NO<sub>x</sub> Emission Reduction Program, 40 CFR Part 76. The Department determined that the adopted new rules and amendments are more stringent than the Federal regulations for boilers greater than 100 MMBtu/hr firing liquid fuels.

The purpose of the adopted new rules and amendments for the ICI boilers and other indirect heat exchangers source category is to help bring the State into attainment with the Federal 1997 eight-hour NAAQS for ozone. The Department investigated various source categories to determine where further NO<sub>x</sub> emission reductions can be achieved. The Department identified ICI boilers and other indirect heat exchangers as having a Statewide potential of reducing NO<sub>x</sub> emissions by nearly 1,000 tpy by 2011, assuming compliance is achieved by optimizing each boiler's combustion processes. This 2011 estimate would be lower if some small ICI boilers and other indirect heat exchangers comply by installing control devices because the adopted new rules and amendments would allow an extra year to comply.

The adopted new rules and amendments will affect industry, commercial operations, and institutions that own or operate boilers or other indirect heat exchangers that are equal to or greater than 25 MMBtu/hr rated heat input. Beginning on May 1, 2010 and phased-in over the next two years, allowing smaller units more time to comply, this source category must meet the adopted maximum allowable emission rates at adopted new N.J.A.C. 7:27-19.7(i) Table 9. Adopted new Table 9 establishes emission rates for 10 categories based on heat input rate and fuel type. The Federal NSPS have not established emission rates for seven of these categories. The Department's adopted emission rates for the other three categories are more stringent than the Federal NSPS emission rates. These three categories are for fuel types natural gas only, No. 2 fuel oil, and other liquid fuels for ICI boilers or other indirect heat exchangers with a heat input rate of 100 MMBtu/hr or greater.

Table 11 below compares by heat input and fuel type, the maximum allowable NO<sub>x</sub> emission rates adopted by New Jersey, existing in New Jersey prior to the adopted rates, recommended by the Ozone Transport Commission, and existing in the Federal NSPS regulations.

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TABLE 11  
 Maximum Allowable NO<sub>x</sub> Emission Rates (in pounds per million BTU)  
 for Industrial/Commercial/Institutional Boilers or other Indirect Heat Exchangers  
 Fired by Gas or Liquid Fuels

Heat Input Rate (MMBtu/hr)	<u>Fuel Type</u>	Adopted NJ Rates	<u>NJ Rates Before Adopted NJ Rates</u>	OTC Recommended Rates	Federal NSPS Rates
<u>At least 25 but &lt; 100</u>	Natural gas only	0.05	0.10 <sup>1</sup>	0.05	None
	No. 2 Fuel oil only	0.08	0.12 <sup>1</sup>	0.08	None
	Other gaseous fuels (except refinery fuel gas)	0.20	0.20 <sup>1</sup>	NA	None
	Other liquid fuels	0.20	0.30 <sup>1</sup>	0.20	None
	Dual fuel using fuel oil and natural gas	0.12	0.12	NA	None
<u>100 or greater</u>	Natural gas only	0.10	0.10	0.10	0.10 –0.20
	No. 2 Fuel oil only	0.10	0.20	0.20	0.30 –0.40
	Other gaseous fuels (except refinery fuel gas)	0.20	0.20	NA	None
	Other liquid fuels	0.20	0.20	0.20	0.30 –0.40
	Dual fuel using fuel oil and natural gas	0.20	0.20 to 0.43	0.20	No limits

<sup>1</sup> Existing rates apply to units between 50 and 100 MMBtu/hr. There are no existing rates for units between 25 to less than 50 MMBtu/hr.

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As explained in the Economic Impact (40 N.J.R. at 4424), the cost-effectiveness is expected to range from \$600.00 to \$18,000 per ton of NO<sub>x</sub> reduced with the typical cost effectiveness being less than \$5,000 per ton.

The Department examined the stack test results for 46 boilers in the three categories in which the Department proposes a more stringent standard than the Federal regulations. All the results were below the adopted more stringent emission rates. Therefore, the adopted more stringent rates are technologically feasible.

The Department has determined that measures to reduce NO<sub>x</sub> emissions from ICI boilers and other indirect heat exchangers beyond those that are required by existing Federal regulations are necessary to achieve the Federal 1997 eight-hour NAAQS for ozone. The adopted new rules and amendments are more stringent than the EPA's requirements because the State's ozone air quality exceedance is higher than in most areas in the United States and in the Ozone Transport Region. Therefore, given the demonstrated success of achieving these rates, as explained in the Background (40 N.J.R. at 4399), and New Jersey's need to reduce NO<sub>x</sub> emissions to protect public health, it is reasonable to require that all sources in these three categories meet the Department's adopted maximum allowable emission rates.

#### Municipal Solid Waste (MSW) Incinerators

The Department compared the adopted N.J.A.C. 7:27-19.12 new rules with the Federal NSPS at 40 CFR Part 60 Subpart Cb and finds that the adopted new rules are more stringent than the Federal regulations.

The purpose of the adopted new rules for MSW incinerators is to help bring the State into attainment with the Federal 8-hour NAAQS for ozone. The Department investigated various emission sources to determine where further NO<sub>x</sub> emission reductions can be achieved and concluded that MSW incinerators is one of these source categories. The Department estimated that further control of NO<sub>x</sub> emissions from MSW incinerators would yield a Statewide NO<sub>x</sub> reduction of greater than 100 tpy by 2011.

These adopted rules would affect 13 MSW incinerators located at five facilities. Currently these facilities all comply with the Federal NSPS NO<sub>x</sub> emission standard of 205 ppm (at seven percent oxygen) on a daily average. Ten of the 13 units, located at four of the five facilities, have already installed selective non-catalytic reduction to control NO<sub>x</sub> emissions. The technology exists for optimizing the performance of these existing systems and achieving further NO<sub>x</sub> reductions. The Department expects that a maximum allowable NO<sub>x</sub> emission concentration of 150 ppmvd (at seven percent oxygen) is readily achievable, and expects that actual NO<sub>x</sub> emission concentrations will average 130 ppmvd.

Achieving the adopted maximum allowable emission concentration of 150 ppmvd (at seven percent oxygen) will require the use and optimization of SNCR on each MSW incinerator. Only three of the existing 13 units in the State do not have a SNCR system installed. These three units are located at the Camden County Resource Recovery Facility. As explained in the Economic Impact (40 N.J.R. at 4424), the estimated capital cost to install an SNCR system on an

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MSW incinerator is approximately \$1,500 per MMBtu/hr, and the estimated cost to operate an SNCR system on an MSW incinerator is between \$950.00 and \$1,675 in 2006 dollars.

The primary health benefit will be through a reduction in the emission of NO<sub>x</sub>. The health and environmental benefits are explained in the Social Impact (40 N.J.R. at 4420) and Environmental Impact (40 N.J.R. at 4427). The Department has determined that these adopted measures to reduce NO<sub>x</sub> from MSW incinerators beyond that which is required by existing Federal rules and regulations are necessary to achieve the Federal 1997 eight-hour NAAQS for ozone needed to protect the health and quality of life of New Jersey's citizens.

#### VOC Stationary Storage Tanks

The Department performed a comparison of the adopted rules and amendments to N.J.A.C. 7:27-16.2 to analogous Federal regulations, namely, 40 CFR 60.110b to 60.117b, New Source Performance Standards (NSPS) for VOC Storage Tanks for which construction, reconstruction or modification commenced after July 23, 1984. These Federal regulations were promulgated pursuant to the Federal Clean Air Act and set forth the substantive Federal standards. Based on its review of Federal regulations, the Department has determined that the adopted rules and amendments are more stringent than the Federal regulations.

Based on the research and surveys done by BAAQMD, SCAQMD, SJVUAPCD and TCEQ, the Department has determined that the adopted new rules and amendments are achievable using current technology and are cost effective.

The Department identified control measures based on the Department's VOC emissions inventory, disclosures of previously unreported roof landing emissions, potential emission reductions achievable, and technological feasibility of the adopted measures based on research and surveys conducted by TCEQ, BAAQMD, SCAQMD, and SJVUAPCD. The adopted new rules and amendments for storage tanks would primarily affect refineries, terminals, and pipeline companies that produce, store, and transport gasoline. In order to comply with the rules, as explained in the proposal Summary (40 N.J.R. at 4404-4408), those facilities will have to retrofit their tanks with upgraded deck fittings and seals, change work practices, and/or install controls for floating roof landings. Potentially affected are businesses that supply equipment to these facilities, market and distribute the products of these facilities, and consumers.

As explained in the Social Impact (40 N.J.R. at 4420-4421) and Environmental Impact (40 N.J.R. at 4427), the Department anticipates the benefits of the adopted rules and amendments to be an increase in the quality of life and protection of human health, the environment and agriculture. The primary environmental benefit will be a reduction in the emission of VOCs, which are precursor emissions that lead to the formation of ground-level ozone, exposure to which can cause a variety of adverse effects. The adopted new rules and amendments are also expected to reduce emissions of hazardous air pollutants and toxic substances. The Department estimates that the adopted new rules and amendments will achieve a 2,000-ton VOC emissions reduction by 2019, beyond the current Federal rules. This equates to a VOC emission reduction of approximately 6.5 tpd by 2019.

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As discussed in more detail in the Economic Impact (40 N.J.R. at 4424-4425), the Department's estimated cost-effectiveness of emission reduction ranges from \$3,000 to \$29,000 per ton of VOC reduced, there may be less than a one-cent per gallon increase in gasoline prices at the pump, distributors and retailers may be impacted, and the industry's annualized compliance cost-effectiveness would be a maximum of \$58,000,000 for 2,000 tons per year of VOC reductions in 2019. Economic benefits may also be realized. Owners and employees of businesses will enjoy the environmental, health, and other social benefits of the adopted new rules and amendments. A reduction in air pollution will lead to healthier and more productive workers.

The adopted new rules and amendments are needed to fulfill a requirement, imposed by EPA pursuant to the Federal Clean Air Act, 42 U.S.C. §§7401 et seq., that New Jersey adopt sufficient control measures to address additional VOC (ozone precursor) emission reductions identified by EPA as being needed for New Jersey to attain the eight-hour ozone standard. Therefore, adoption of these new rules and amendments are necessary for the State to comply with Federal requirements. Failure to achieve these reductions could subject New Jersey to economic sanctions, which would adversely affect all businesses and taxpayers in the State.

In adopting these new rules and amendments, the Department has balanced the need to protect the environment and the public health and to comply with EPA requirements against any economic impacts. The Department has determined that the human health, environmental and economic benefits of the adopted new rules and amendments outweigh the costs to implement them.

**Full text** of the adoption follows (additions to proposal indicated in boldface with asterisks **\*thus\***; deletions from proposal indicated in brackets with asterisks \*[thus]\*):

#### SUBCHAPTER 4. CONTROL AND PROHIBITION OF PARTICLES FROM COMBUSTION OF FUEL

##### 7:27-4.1 Definitions

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

...

“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. **\*[A modification may be incorporated into an operating permit through a significant modification, a minor modification, or a seven-day-notice change.]\***

...

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7:27-4.2 Standards for the emission of particles

- (a) (No change from proposal.)
- (b) The owner or operator of any coal-fired boiler \*[or any]\* \* **, with a** \*[coal-fired boiler]\* particle control apparatus that is constructed, installed \*[,]\* \***or**\* reconstructed \*[or modified]\* and commences operation on or after (the operative date of this amendment), unless otherwise specified in an enforceable agreement with the Department, shall cause it to emit particles at a rate no greater than 0.0150 pounds per MMBTU and shall demonstrate compliance in accordance with the source's approved permit. \***The owner or operator shall demonstrate compliance based on the average of three stack tests that have been approved by the Department.**\* Such a coal-fired boiler or particle control apparatus 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.
- (c) The owner or operator of a coal-fired boiler, other than those listed in (b) above, that is in operation prior to (the operative date of this amendment):
1. (No change from proposal.)
  2. Shall demonstrate compliance by June 15, 2013, in accordance with the owner or operator's approved permit for the coal-fired boiler. \***The owner or operator shall demonstrate compliance based on the average of three stack tests that have been approved by the Department.**\*

SUBCHAPTER 8. PERMITS AND CERTIFICATES FOR MINOR FACILITIES (AND MAJOR FACILITIES WITHOUT AN OPERATING PERMIT)

7:27-8.1 Definitions

...

\*["Former DER credit user" means one who used Discrete Emission Reduction (DER) credits in the three years immediately preceding August 4, 2003 in compliance with the Open Market Emissions Trading Program rules then promulgated at N.J.A.C. 7:27-30 to satisfy the requirements of N.J.A.C. 7:27-16 or 19.]\*

...

7:27-8.3 General provisions

- (a)-(n) (No change.)



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(o) \*[On and after April 25, 2004, no permittee may use DER credits to comply with a VOC or NO<sub>x</sub> permit limit established pursuant to this subchapter. Notwithstanding (c) above, a former DER credit user who used DER credits to comply with a NO<sub>x</sub> RACT limit established pursuant to N.J.A.C. 7:27-19 and who would continue to require the use of DER credits to comply with that limit, may, on and after April 25, 2004, use NO<sub>x</sub> budget allowances, as defined by the provisions of N.J.A.C. 7:27-31, to comply with that NO<sub>x</sub> RACT limit provided that:

1. The use of such NO<sub>x</sub> budget allowances conforms with the requirements a N.J.A.C. 7:27-19.27; and
2. The permittee files a seven-day-notice as provided at N.J.A.C. 7:27-8.20.]\*

7:27-8.20 Seven-day-notice changes

(a) (No change.)

(b) A seven-day-notice may be used for the following:

1. A change made to a permitted source which meets all three of the following requirements:
  - i.-ii. (No change.)
  - iii. The action will not alter stack parameters or characteristics so as to cause the ground level concentration of an air contaminant to increase in that portion of the atmosphere, external to buildings, to which the general public has access; **\*or\***
2. Notice indicating that an applicant plans to act at risk under the authority of N.J.A.C. 7:27-8.24 or 8.25\*[]; or
3. Notice of intent to use NO<sub>x</sub> budget allowances, as defined by the provisions of N.J.A.C. 7:27-31, by a former DER credit user to comply with a NO<sub>x</sub> RACT limit in accordance with N.J.A.C. 7:27-19.27. A notice of intent to use NO<sub>x</sub> budget allowances shall be filed at least seven days before the start of the calendar quarter for which the NO<sub>x</sub> budget allowances are to be used]\*.

(c)-(h) (No change.)

SUBCHAPTER 10. SULFUR IN SOLID FUELS

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7:27-10.1 Definitions

(No change from proposal.)

7:27-10.2 Sulfur contents standards

(a)-(i) (No change from proposal.)

**\*(j) The owner or operator of a boiler that is subject to (h) above may request up to a one year extension to the December 15, 2012 compliance deadline required by (h) by sending a written request to the address at N.J.A.C. 7:27-10.5(d). 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.\***

7:27-10.5 SO<sub>2</sub> emission rate determinations

(a) For purposes of N.J.A.C. 7:27-10.2(h), a 24-hour emission rate shall be calculated as follows:

1. Measure the emissions for each one-hour block using a certified Continuous SO<sub>2</sub> Emissions Monitoring System, a certified continuous oxygen emissions monitoring system, and EPA Method 19, "Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates," as identified at 40 CFR Part 60, Appendix A, incorporated herein by reference. An owner or operator may seek approval of an alternative Department approved method to use instead of EPA Method 19, only if the owner or operator is combusting clean, unprocessed wood, in which case the owner or operator shall submit a written application to the Department at the address at \*[(c)]\* **(d)**\*below; and

2. (No change from proposal.)

(b) (No change from proposal.)

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**\*(c) For purposes of N.J.A.C. 7:27-10.2(h), when calculating a SO<sub>2</sub> emission rate for an affected coal-fired unit, the owner or operator may exclude SO<sub>2</sub> emissions as follows:**

- 1. In calculating a 30-calendar-day rolling average SO<sub>2</sub> emission rate for a unit that has ceased firing fossil fuel, for a period of time not to exceed two hours, from the restart of the unit to the time that the unit is fired with coal; and**
- 2. In calculating a 24-hour SO<sub>2</sub> emission rate for a unit, the period of time in which the unit is not fired with coal.**

**\*(c)\* \*(d)\*** The owner or operator submitting a written application to the Department pursuant to (a)1 above shall submit the application to the following address:

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

## SUBCHAPTER 16. CONTROL AND PROHIBITION OF AIR POLLUTION BY VOLATILE ORGANIC COMPOUNDS

### 7:27-16.1 Definitions

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

...

**\*“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.\***

...

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\*[“API” means the American Petroleum Institute, 1220 L Street, NW, Washington, DC 20005-4070, <http://www.api.org/>.]\*

\*[“API 653” means the API’s Standard 653, entitled “Tank Inspection, Repair, Alteration and Reconstruction,” as supplemented or amended and incorporated herein by reference, available from the API, at the address in the definition of “API” above.]\*

...

“Authorized inspector” means \*[someone who is certified as an Aboveground Storage Tank Inspector in accordance with Appendix D of API 653, and who is an employee of an authorized inspection agency]\* **\*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\***.

...

“Capacity” means the volume of \*[a tank, as shown in the permit, or the tank manufacturer’s specifications if a tank does not have a permit, or as determined by Department’s measurements]\* **\*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\***.

...

“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\***.

...

\*[“Former DER credit user” means one who used Discrete Emission Reduction (DER) credits in the three years immediately preceding August 4, 2003 in compliance with the Open Market Emissions Trading Program rules then promulgated at N.J.A.C. 7:27-30 to satisfy the requirements of N.J.A.C. 7:27-16 or 19.]\*

...

**\*“Fountain solution reservoir” means the collection tank that accepts recirculated fountain solutions.\***

...

**\*“Heatset” means a lithographic printing process in which the printing inks are set by the 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.\***

...

**\*“Hot work” means riveting, welding, flame cutting or other fire or spark-producing operation.\***

...

“Internal floating roof” means a \*[pan type, pontoon type, or double-deck type cover located inside a fixed roof tank that rests upon and is supported by the organic liquid being

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contained. An internal floating roof is equipped with closure seals to close the space between the roof edge and tank shell]\* **\*floating roof located inside a vessel with a fixed roof\***.

...  
“Ladder and well” means a ladder that passes through a well, and is used to access the \*[tank bottom of an internal floating roof tank]\* **\*top of the internal floating roof\***.

...  
“Lithographic printing” or “lithographic printing operation” means printing by a planographic method in which the image and nonimage areas are are \*[on the same geometric plane.]\* **\*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.

...  
**\*“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.\***

...  
**\*“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.\***

...  
**\*“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.\***

...  
“Pole float” means a \*[device located inside a guidepole that floats on the surface of the stored liquid, and is used to indicate the liquid level inside the tank]\* **\*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\***.

...  
\*[“Pressure-vacuum vent” means a vent that is used to minimize tank emissions due to breathing effects.]\*

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\*[“Psi” means pounds per square inch.]\*

**\*“Psia” means pounds per square inch absolute.\***

...

**\*“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).\***

...

“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.

...

**\*“Slop Oil” means the floating oil and solids that accumulate on the surface of an oil-water separator.\***

...

“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. \*[A vacuum breaker consists of a well with a cover. Attached to the underside of the cover is a guided leg long enough to contact the tank bottom as the floating roof is being landed. When in contact with the tank bottom, the guide leg mechanically lifts the cover off the well.]\*

...

“Visible gap” means \*[an opening that exceeds 0.060 inch]\* **\*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\***.

...

**\*“Web” means a surface coating operation where a continuous roll of substrate is fed.\***

...

7:27-16.1A Purpose, scope, applicability, and severability{ TC \11 "7:27-16.1A Purpose, scope, applicability, and severability}

(a)-(f) (No change.)

(g) \*[Any former DER credit user who used DER credits to comply with a VOC emissions limit established in this subchapter, and who would continue to require the use of DER

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credits to comply with that limit, shall achieve compliance with that limit by April 25, 2005 and maintain compliance with that limit thereafter. In the case of these former DER credit users, only, deadlines related to the VOC emissions limit compliance deadline that are set forth elsewhere in this subchapter are modified as follows:

1. The permit application submission deadline established at N.J.A.C. 7:27-16.7 (k)1 is July 25, 2004;
2. The compliance deadline established at N.J.A.C. 7:27-16.7(k)2 is April 25, 2005;
3. The compliance deadline established at N.J.A.C. 7:27-16.8(d) is April 25, 2005;
4. The compliance demonstration deadline established at N.J.A.C. 7:27-16.8(e) is October 25, 2005;
5. The compliance deadline established at N.J.A.C. 7:27-16.9(d) is April 25, 2005;
6. The compliance demonstration deadline established at N.J.A.C. 7:27-16.9(e) is October 25, 2005;
7. The compliance deadline established at N.J.A.C. 7:27-16.10(c) is April 25, 2005;
8. The compliance demonstration deadline established at N.J.A.C. 7:27-16.10(d) is October 25, 2005;
9. The compliance deadline established at N.J.A.C. 7:27-16.11(c) is April 25, 2005;
10. The compliance demonstration deadline established at N.J.A.C. 7:27-16.11(d) is October 25, 2005;
11. The compliance deadline established at N.J.A.C. 7:27-16.13(a) is April 25, 2005;
12. The source operation demonstration submission deadline established at N.J.A.C. 7:27-16.17(b)1 is (July 25, 2004);
13. The compliance deadline established at N.J.A.C. 7:27-16.17(b) is April 25, 2005;
14. The emission reduction deadline established at N.J.A.C. 7:27-16.17(f)2 is April 25, 2005;

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15. The Control Measure Plan preparation deadline established at N.J.A.C. 7:27-16.2(a) is (July 25, 2004;
  16. The emission reduction deadline established at N.J.A.C. 7:27-16.21(b) is April 25, 2005; and
  17. The compliance demonstration deadline established at N.J.A.C. 7:27-16.23(b) and (c) is October 25, 2005.]\* **Reserved**)\*
- (h) \*[The provisions of (g) above do not apply to a former DER credit user:
1. Whose only use of DER credits was in satisfaction of either the settlement of a penalty imposed pursuant to N.J.A.C. 7:27A-3.10 or an Administrative Consent Order entered into with the Department; or
  2. To extend a deadline contained in an Administrative Consent Order (ACO) entered into with the Department prior to January 1, 2003, unless compliance with the ACO requires the use of VOC DER credits.]\* **Reserved**)\*
- (i) (No change from proposal.)
- 7:27-16.2 VOC stationary storage tanks
- (a)-(c) (No change from proposal.)
- (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 \*[leak-free]\* **vapor-tight**.\*
- (e) (No change from proposal.)
- (f) The following exemptions apply:
1. (No change from proposal.)
  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 \*[shall be exempt from N.J.A.C. 7:27-16.2(q).]\* **;**



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- ii. Any Range I fixed roof storage tank whose contents has a vapor pressure of less than or equal to 2 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 (the day before the operative date of these amendments), and that is not degassed and emptied within 120 days after (the operative date of these amendments) 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 120 days after (the operative date of these amendments).
  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 C.F.R. Part 60, Subpart QQQ, incorporated herein by reference,\*** shall be exempt from **\*[(l)2]\* \*(D4)\*** below, but shall comply with all other applicable requirements of this subchapter.
  5. (No change from proposal.)
  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)13]\* \*(D11)\*** below.

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\*[8.]\* **\*9.\*** Any tank at (b) above is exempt from the \*[leak-free]\* **\*vapor-tight\*** condition at (d) above when gauging or sampling is taking place. In addition, a floating roof tank, is exempt from the \*[leak-free]\* **\*vapor-tight\*** condition at (d) above when the condition at \*[(q)1vi below]\* **\*(n)1 or (o)1 below, as applicable,\*** is met during refilling.

(g) (No change from proposal.)

(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 2\***A**\* 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)-(k) (No change from proposal.)

(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 (120 days after the operative date of these amendments) or the first time the tank is emptied and degassed, whichever occurs first, if the tank was in existence on (the day before the operative date of these amendments), or on initial fill if the tank is constructed on or after (the operative date of these amendments):

i Equip each access hatch \*[and gauge float well]\* 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.-v. (No change from proposal.)

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- 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 \*[\*]. The fabric cover shall be impermeable if the liquid is drained into the contents of the tank]\*;
- vii.-xiv. (No change from proposal.)
- 2. (No change from proposal.)
- 3. The owner or operator of \*[a]\* **\*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 (the operative date of these amendments), or prior to the date the tank is refilled after being degassed for the first time after (the operative date of these amendments), but no later than May 1, 2020 if the tank was in existence on (the day before the operative date of these amendments):
  - i.-ix. (No change from proposal.)
  - 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 \*[external]\* floating roof and the wall of the storage tank in a continuous fashion, **\*as required at (I)3iii and iv above\*** \*[with no visible gaps]\*.
- 4. (No change from proposal.)
- 5. The owner or operator of a domed external floating roof tank in Range III that is already in operation as of (the operative date of these amendments) shall, prior to the date the tank is refilled after being degassed the first time after (the operative date of these amendments), but no later than May 1, 2020:
  - i. (No change from proposal.)
  - ii. Equip the tank with a rim seal system consisting of either
    - \*(1)\*** \*[a]\* **\*A\*** liquid-mounted primary seal **\*meeting the requirements for primary seals at (I)3iii, vii, and x above and having no tears or openings\***, or

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**(2)** **[a]** **A** primary and a secondary seal<sup>[,]</sup> meeting the requirements at (l)3**i through x** above, including compliance dates, except **that:**

**(A)** **[a]** **A** mechanical shoe primary seal <sup>[required at (l)3v above]</sup> 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 <sup>[gasoline]</sup> **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 (the operative date of these amendments), 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. (No change from proposal.)

ii. Ensure that the concentration of <sup>[gasoline]</sup> **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 (the operative date of these amendments), but no later than May 1, 2020, if the tank was in existence on (the day before the operative date of these amendments), or on initial fill if the tank is constructed on or after (the operative date of these amendments) the owner or operator of the tank shall:

i.-ii. (No change from proposal.)

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- iii. Equip and maintain other roof openings according to the specifications at (I)1 or \*[4]\* \*2\* above;
  - iv. Equip the tank with a rim seal system consisting of either
    - \*(1)\* \*[a]\* \*A\* liquid-mounted primary seal **\*meeting the requirements for primary seals at (I)3iii, vii, and x above and having no tears or openings\***, or
    - \*(2)\* \*[a]\* \*A\* primary and a secondary seal meeting the \*[specifications]\* **\*requirements\*** at (I)3i through x above, except **\*that**
      - (A)**\* \*[a]\* \*A\* mechanical shoe primary seal \*[required at (I)3v above]\* 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 (I)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 (I)3i above\***;
  - v. For an internal floating roof installed prior to \*[June 1]\* \*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 \*[June 1]\* \*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. (No change from proposal.)
- \*[9. An owner or operator of a floating roof tank in Range III may replace a primary seal on the floating roof tank only if the replacement primary seal is one of the following:

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- i. Liquid mounted multiple wipers with drip curtain and weight;
  - ii. Liquid mounted mechanical shoe;
  - iii. Liquid mounted single wiper with drip curtain and weight;
  - iv. Liquid mounted double foam wipers with vapor curtain; or
  - v. An alternative rim seal system, if it is demonstrated to the Department that the alternative rim seal system is better in performance than the rim seal systems at (l)9i through iv above and has a rim seal emission factor that is less than the rim seal systems at (l)9i through iv above.
10. An owner or operator of a floating roof tank in Range III may replace a secondary seal on the floating roof tank only if the replacement secondary seal is one of the following:
- i. Multiple wipers;
  - ii. Single wiper; or
  - iii. An alternative rim seal system, if it is demonstrated to the Department that the alternative rim seal system is better in performance than the rim seal systems at (l)10i and ii above, and has a rim seal emission factor that is less than the rim seal systems at (l)10i and ii above.]\*

\*[11]\* **\*9.\*** By (120 days after the operative date of these amendments) if a **\*Range III\*** fixed-roof tank **\*without an internal floating roof\*** was in existence on (the day before the operative date of these amendments), or by the initial fill if a tank is constructed on or after (the operative date of these amendments), \*[and if the fixed roof tank has a capacity of 40,000 gallons or greater storing any VOC with a vapor pressure of 0.5 pounds per square inch absolute or greater at standard conditions]\*, the owner or operator shall:

i.-iii. (No change from proposal.)

\*[12.]\* **\*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

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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.

\*[13.]\* **\*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)-(o)(No change from proposal.)

(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 (the operative date of these amendments), submit to the Department in writing the complete facility-wide tank VOC control plan by \*[(120 days after the operative date of these amendments)]\* **\*December 1, 2009\***; or

ii. (No change from proposal.)

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)-(6) (No change from proposal.)

(7) The Bureau of Release Prevention schedule for tank inspection\*[:]\* \*:\*

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- ii. A schedule to implement one or more of the following emission controls, which must be implemented by (10 years after the operative date of these amendments). 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)-(2) (No change from proposal.)

- (3) Other measures approved by the Department as being equally or more effective in preventing VOC emissions to the outdoor atmosphere\*[, and]\* \*.\*

- 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)-(4) (No change from proposal.)

- (q) **On and after May 1, 2010,** \*[A]\* **a**\*ny 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.-ii. (No change from proposal.)

- iii. Discharge or displace the VOC vapors contained in the tank vapor space to a vapor control system that is \*[leak-free;]\* **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\*[, and



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- v. Drain and refill a floating roof tank as a continuous process as rapidly as practicable while the roof is not floating on the surface of the stored liquid]\*.
  2. (No change from proposal.)
  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. (No change from proposal.)
    - ii. Transporting removed sludge in \*[leak-free]\* containers **\*that are vapor-tight and free of liquid leaks\***; and
    - iii. Storing removed sludge, until final disposal, in \*[leak-free]\* 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. (No change from proposal.)
  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.-4. (No change from proposal.)
  5. For an external floating roof tank in Range III, demonstrate compliance with (I)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

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- legs, open hatches, open emergency roof drains, or **\*open\*** vacuum breakers. Indicate presence of any tears in the fabric of **\*[both]\* \*the visible\* seal [s]\***. Record the findings under section F of the Inspection Form;
- ii. (No change from proposal.)
- iii. Annually, inspecting the entire secondary seal for the gap requirements at (l)3iv above using the 1/8 inch\*,\* **\*[and]\* 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. (No change from proposal.)
6. For a domed external floating roof tank in Range III existing as of the operative date of these new rules, demonstrate compliance with (l)5 above, by:
- i. Annually, using an explosimeter, **\*[by]\* measuring the \*organic vapor\* concentration [of]\* \*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, **\*[by visually inspecting the deck fittings and visible seal of the rim seal system;]\* \*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, **\*[by]\* performing the requirements at (r)5ii (excluding EPA Method 21), iii and iv above;**
- 7.-8. (No change from proposal.)

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9. For a fixed roof tank **\*in Range III\*** that is subject to **\*[(l)11]\* (D)9\*** above, annually demonstrate compliance with **\*[(l)11]\* (D)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.-iii. (No change from proposal.)
  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. (No change from proposal.)
    - ii. If the tank is not degassed, within 45 days after discovery of the needed repair or replacement. **\*If a 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.-4. (No change from proposal.)
  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; **\*[and]\***

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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 (the operative date of these amendments), 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]\* **\*oxidizer\***, the owner or operator shall record the following on a continuous basis or at a frequency approved by the Department:

- i.-iii. (No change from proposal.)

- 2.-3. (No change from proposal.)

(u)-(v) (No change from proposal.)

7:27-16.3 Gasoline transfer operations

(a)-(p) (No change from proposal.)

- (q) 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, which is required to have a vapor control system pursuant to (d)1i, (e)1i, (m), or (n) above unless:

1. (No change from proposal.)

2. All hoses, piping, connections, fittings and manholes serving the vapor control system are vapor\*\_\*tight and \*[leak]\* free **\*of liquid leaks\***, except when gauging or sampling is being performed;

- 3.-5. (No change from proposal.)

(r)-(s) (No change from proposal.)

7:27-16.7 Surface coating and graphic arts operations

(a)-(d) (No change from proposal.)

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(e) The provisions of (c) and (d) above and (h), (i), (j)\* \* [and] (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.-2. (No change from proposal.)

(f)-(q) (No change from proposal.)

(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; \* [or] \*

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.-4. (No change from proposal.)

**\*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 (the operative date of these amendments), the owner or operator of a lithographic printing operation shall comply with the following:

1. (No change from proposal.)

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

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a sheet size of 187 square inches or less or a total fountain **\*solution\*** reservoir of less than one gallon.

i.-ii. (No change from proposal.)

**\*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 (the operative date of these amendments), 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 **\*[sealed]\* \*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 **\*[sealed]\* \*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 **\*[sealed]\* \*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 **\*[sealed]\* \*closed\*** containers **\*, which shall prevent the contents from coming in contact with and being exposed to the atmosphere\***; **\*[and]\***
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 **\*[4]\* \*5\*** above, pursuant to N.J.A.C. 7:27-16.22.

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:

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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.-ii. (No change from proposal.)
  2. (No change from proposal.)
  3. Was issued an alternative **\*or facility-specific\*** VOC control plan prior to (the operative date of these amendments).
- (b) Except as provided at (t) below, the owner or operator of any facility that contains a source operation subject to (a)1 above shall:
1. (No change from proposal.)
  2. Beginning on May 31, 1995, comply with either (b)2i or ii below:
    - i. (No change from proposal.)
    - ii. Operate the facility in accordance with **\*[an alternative]\* \*a facility-specific\*** VOC control plan approved by the Department pursuant to (j) below.
- (c) The following requirements shall apply to an owner or operator seeking approval of an alternative VOC control plan **\*pursuant to (a)2 or 3 above\***:
- 1.-2. (No change from proposal.)
  3. Any owner or operator that has an alternative VOC control plan approved prior to (the operative date of these amendments) by the Department and who plans to continue operating with an alternative VOC control plan, shall submit a proposed plan by (90 days after the operative date of these amendments). The owner or operator may request a 60-day extension pursuant to N.J.A.C. 7:27-16.17(q) to submit the proposed plan **\*[:]\* \*;\***
    - i. If the owner or operator submits a proposed plan by (90 days after the operative date of these amendments) or by the date of any extension

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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. (No change from proposal.)
  4. If the owner or operator of a facility has an approved alternative VOC control plan for a source operation that was issued after (the operative date of these amendments), **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 **[modification or reconstruction]** **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. (No change from proposal.)
- (d) An owner or operator submitting a proposed alternative **or facility-specific** VOC control plan pursuant to **[(b)1iii]** **(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)1iii]** **(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. (No change from proposal.)
  - 2.-4. (No change from proposal.)
- (e)-(f) (No change from proposal.)
- (g) Within 30 days after receiving a demonstration submitted pursuant to (b)1 above, a proposed **[alternative]** **facility-specific** VOC control plan submitted pursuant to (b)2 above, or a proposed compliance plan submitted pursuant to (f) above, the Department shall notify the owner or operator in writing whether the submission includes sufficient



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information to commence review. If the submission does not contain sufficient information to complete the review, the Department shall 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.

- (h) (No change from proposal.)
- (i) 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.
- (j) 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.-6. (No change from proposal.)
- (k)-(m)(No change from proposal.)
- (n) 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.-2. (No change from proposal.)
- (o) 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.-3. (No change from proposal.)

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4. For an alternative **\*or facility-specific\*** VOC control plan, EPA denies approval of the plan as a revision to the State Implementation Plan.
- (p) (No change from proposal.)
- (q) After receipt of a written request from an owner or operator, the Department may authorize **\*[a]\* \*one non-renewable\*** 60-day extension of the deadline set forth in **\*[(b)1]\* \*[c]3\*** above. **\*[Such extension may be renewed by the Department upon the written request of the owner or operator. After receipt of a written request from an owner or operator, the Department may authorize one 60 day non-renewable extension of the deadline set forth at (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

- (r) (No change from proposal.)
- (s) 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:

Chief, Bureau of **\*[New Source Review]\* \*Operating Permits\***  
Division of **\*[Environmental Regulation]\* \*Air Quality\***  
Department of Environmental Protection  
**\*401 East State Street\***  
PO Box 027  
Trenton, New Jersey 08625-0027

- (t) (No change from proposal.)

APPENDIX II  
STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
N.J.A.C. 7:27-16.2 VOC STATIONARY STORAGE TANKS

INSPECTIONS

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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

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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.

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## 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:

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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.

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\*[4.]\* 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  Yes  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" \_\_\_\_\_

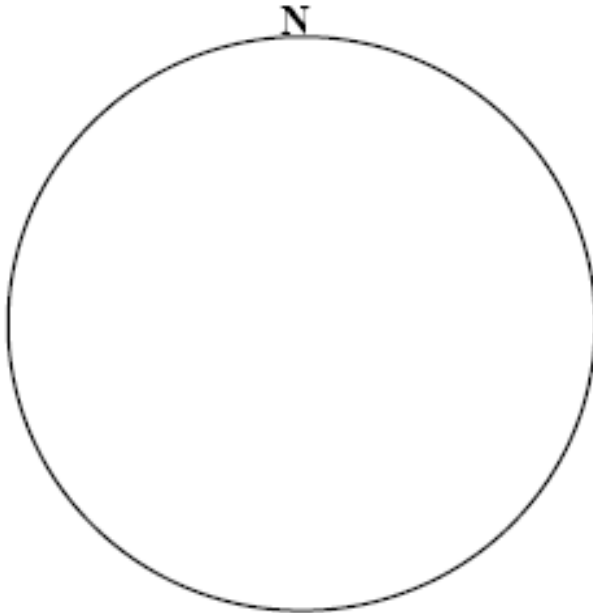
*NOTE: Record the actual width and cumulative length of gaps in feet and inches. (Do not include gaps > 1/2" in 1/8" measurements, or gaps > 1-1/2" in 1/2" measurements)*

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.

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NOTE: Show defects using symbols. Show seal gaps and lengths.



Legend	
<b>Equipment</b>	
AD	Antirotational device
GW	Gauge well
T	Leg stand
RD	Roof drain
*	Emergency roof drain
∞	Vacuum breaker
▲	Vent
PL	Platform & ladder
<b>Defects</b>	
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 = \_\_\_\_\_



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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 95percent 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:



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“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.”

Responsible Official]\* **\*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.

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## 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 *[Rate]* <b><u>*Concentration*</u></b>	Type of Repair	Date	Post- Repair Leak *[Rate]* <b><u>*Concentration*</u></b>

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.

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## SUBCHAPTER 19. CONTROL AND PROHIBITION OF AIR POLLUTION FROM OXIDES OF NITROGEN

### 7:27-19.1 Definitions

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

...

“Dual fuel” means a type of \*[boiler]\* **\*burner\*** capable of combusting more than one type of commercial fuel.

...

\*[“Former DER credit user” means one who used Discrete Emission Reduction (DER) credits in the three years immediately preceding August 4, 2003 in compliance with the Open Market Emissions Trading Program rules then promulgated at N.J.A.C. 7:27-30 to satisfy the requirements of N.J.A.C. 7:27-16 or 19.]\*

...

“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 **\*[immediately preceding three]\* ozone seasons \*of 2005 through 2007\***.

...

“Non-high electric demand day unit” or “non-HEDD unit” means an electrical generating unit **\*[that is not an HEDD 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\***.

...

**\*“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.\***

...

### 7:27-19.3 General provisions

(a)-(d) (No change from proposal.){tc "7:27-19.4 [Utility boilers] Boilers"}

(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 **\*[60-day]\* \*90-day\*** non-renewable deadline extension.

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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) (No change from proposal.)
- (g) \*[On and after April 25, 2004, no owner or operator of a source operation subject to a NO<sub>x</sub> emissions limit under this subchapter may comply with the limit through the use of discrete emission reduction (DER) credits. Any former DER credit user who used DER credits to comply with a NO<sub>x</sub> emissions limit under this subchapter, and who would continue to require the use of DER credits to comply with that limit, shall achieve compliance with that limit by April 25, 2005 and maintain compliance with that limit thereafter. In the case of a former DER credit user, only, deadlines related to the NO<sub>x</sub> emissions limit compliance deadline that are set forth elsewhere in this subchapter are modified as follows:
1. The emission limitations operative date established at (b) above is April 25, 2005;
  2. The permit application submission deadline established at (d)1 above is July 25, 2004;
  3. The proposed NO<sub>x</sub> control plan submission deadline established at (d)2 above is July 25, 2004;
  4. The NO<sub>x</sub> control plan implementation deadline established at N.J.A.C. 7:27-19.13(n) is April 25, 2005;
  5. The compliance demonstration deadline established at N.J.A.C. 7:27-19.15(b) is October 25, 2005;
  6. The application for approval of a repowering plan deadline established at N.J.A.C. 7:27-19.21(b) is July 25, 2004;
  7. The completion of repowering date referenced at N.J.A.C. 7:27-19.21(c)2v and (d)4 is no later than April 25, 2008;

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8. The May 31, 1995, deadlines established at N.J.A.C. 7:27-19.21(e)1, 4, and 6, are April 25, 2005;
  9. The operation cessation deadline established at N.J.A.C. 7:27-19.21(e)10 is April 25, 2008;
  10. The innovative control technology application deadline established at N.J.A.C. 7:27-19.23(b) is July 25, 2004;
  11. The implementation of the innovative control technology date referenced at N.J.A.C. 7:27-19.23(c)4, (d)2iii and 3 is no later than April 25, 2008;
  12. The May 31, 1995, deadlines established at N.J.A.C. 7:27-19.23(d)2iv, (e)1, 4, and 6, are April 25, 2005; and
  13. The May 1, 1999, operation cessation deadline established at N.J.A.C. 7:27-19.23(e)9 does not apply to a former DER credit user. Instead, by April 25, 2008, the former DER credit user shall either implement the innovative control technology for the combustion source included in its innovative control technology plan or that source must comply with the NO<sub>x</sub> emissions limit under this subchapter.]\* **Reserved**]\*
- (h) \*[The extension of the NO<sub>x</sub> RACT compliance deadline to April 25, 2005 at (g) above and the provisions of (g)1 through 13 above do not apply to a former DER credit user:
1. Whose only use of DER credits was in satisfaction of either the settlement of a penalty imposed pursuant to N.J.A.C. 7:27A-3.10 or an Administrative Consent Order entered into with the Department prior to January 1, 2003;
  2. To extend a deadline contained in an Administrative Consent Order (ACO) entered into with the Department prior to January 1, 2003, unless compliance with the ACO requires the use of NO<sub>x</sub> DER credits.]\* **Reserved**]\*
- (i)-(j) (No change from proposal.){tc "7:27-19.4 [Utility boilers] Boilers"}
- 7:27-19.4 Boilers{tc "7:27-19.4 [Utility boilers] Boilers"} serving electric generating units

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- (a) The owner or operator of any boiler serving an electric generating unit shall cause it to emit NO<sub>x</sub> at a rate no greater than the applicable maximum allowable NO<sub>x</sub> 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  
(No change from proposal.)

TABLE 2  
(No change from proposal.)

TABLE 3  
(No change from proposal.)

(b)-(c) (No change from proposal.)

- (d) The owner or operator of a boiler serving an electric generating unit shall demonstrate compliance with its applicable maximum allowable NO<sub>x</sub> 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<sub>x</sub> 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



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demonstrate compliance with the applicable maximum allowable NO<sub>x</sub> 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<sub>x</sub> 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 no 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(a). 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.\***

**\*(e)\*\*(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.

**\*(f)\*\*(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)-(f) (No change from proposal.)

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- (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. (No change from proposal.)
  2. If the preconstruction permit or operating permit for \*[the HEDD]\* **\*such a\*** combustion turbine allows it to combust either liquid fuel oil or gaseous fuel, cause it to emit NO<sub>x</sub> at a rate no greater than the applicable maximum allowable NO<sub>x</sub> 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<sup>1</sup>

Maximum Allowable NO<sub>x</sub> Emission Rate for any  
Stationary Combustion Turbine that is a HEDD Unit  
(Pounds per megawatt hour)

...

<sup>1</sup> 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) (No change from proposal.)
- (i) The owner or operator of a stationary combustion turbine shall demonstrate compliance with the applicable maximum allowable NO<sub>x</sub> emission rate pursuant to N.J.A.C. 7:27-19.15 in accordance with the following schedule:
1. (No change from proposal.)
  2. For a \*[HEDD turbine,]\* **\*stationary combustion turbine that is subject to the emission rate(s) at (g) above\*** compliance with the applicable maximum allowable NO<sub>x</sub> 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.

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- (j) (No change from proposal.)
- (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.

7:27-19.6 Emissions averaging

- (a)-(i) (No change from proposal.)
- (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<sub>x</sub> emission rate specified under (b)4 above is less than the applicable maximum allowable NO<sub>x</sub> 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.-3. (No change from proposal.)

- (k) (No change from proposal.)

7:27-19.7 Industrial/commercial/institutional boilers and other indirect heat exchangers

- (a)-(g) (No change from proposal.)
- (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<sub>x</sub> facility, shall cause the boiler or other indirect heat exchanger to emit NO<sub>x</sub> at a rate no greater than the applicable maximum allowable NO<sub>x</sub> emission rate specified in Table 8 below, **\*[through the following dates,]\* \*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,\*** **\*[with a maximum gross heat**

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input rate of at least 50 million BTU per hour, but less than 100 million BTU per hour]\*:

- i. **\*The owner or operator shall cause the industrial/commercial/institutional boiler or other indirect heat exchanger to emit NO<sub>x</sub> at a rate no greater than the applicable maximum allowable NO<sub>x</sub> emission rate specified in Table 8 below\*** \*[Through]\* **\*through\*** April 30, 2010, if \*[the owner or operator is complying with (i)2i below]\* **\*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 or other indirect heat exchanger to emit NO<sub>x</sub> at a rate no greater than the applicable maximum allowable NO<sub>x</sub> emission rate specified in Table 8 below\*** \*[Through]\* **\*through\*** April 30, 2011, if \*[the owner or operator is complying with (i)2ii below]\* **\*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<sub>x</sub> at a rate no greater than the applicable maximum allowable NO<sub>x</sub> emission rate specified in Table 8 below.\*** \*[with a maximum gross heat input rate of at least 100 million BTU per hour or greater:
- i. Through (the day before the operative date of these amendments), if the owner or operator is complying with (i)3i below; or
  - ii. Through April 30, 2010, if the owner or operator is complying with (i)3ii below.]\*

#### **TABLE 8**

(No change from proposal.)

- (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 NO<sub>x</sub> facility, **\*but which is not located at a petroleum refinery,\*** shall cause the boiler or other indirect heat exchanger to emit NO<sub>x</sub>

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at a rate no greater than the applicable maximum allowable NO<sub>x</sub> 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. (No change from proposal.)
  - 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 **\*[, but less than 100 million BTU per hour]\***:
  - i. (No change from proposal.)
  - ii. On and after May 1, 2011 if compliance is achieved by physically modifying the boiler or other indirect heat exchanger **\*[, and**
3. For an industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate of at least 100 million BTU per hour or greater:
  - i. On and after (the operative date of these amendments), if compliance is achieved without physically modifying the boiler or other indirect heat exchanger; or
  - ii. On and after May 1, 2010, if compliance is achieved by physically modifying the boiler or other indirect heat exchanger**]\***.

**TABLE 9**  
Maximum Allowable NO<sub>x</sub> Emission Rates for  
Industrial/Commercial/Institutional Boilers or Other Indirect Heat Exchangers  
Fired by Gas or Liquid Fuels  
(pounds per million BTU)

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<u>Heat Input Rate</u> (million BTU per hr)	<u>Fuel Type</u>	<u>Rate</u> (pounds per million BTU)
at least 25 but < 100	...	
	*[Refinery fuel gas and o]* * <b><u>Q</u></b> *ther gaseous fuels * <b><u>(This does not include refinery fuel gas)</u></b> *	0.20
at least 100 or greater	...	
	Dual fuel using fuel oil *[and]* * <b><u>and/or</u></b> * natural gas	0.12
at least 100 or greater	...	
	*[Refinery fuel gas and o]* * <b><u>Q</u></b> *ther gaseous fuels * <b><u>(This does not include refinery fuel gas)</u></b> *	0.20
at least 100 or greater	...	
	Dual fuel using fuel oil *[and]* * <b><u>and/or</u></b> * natural gas	0.20

7:27-19.8 Stationary reciprocating engines

(a)-(d) (No change from proposal.)

(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<sub>x</sub> facility, shall meet the following requirements, unless the owner or operator is complying with N.J.A.C. 7:27-19.3(f):

1.-4. (No change from proposal.)

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

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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 [\\*\[www.state.nj.us/aqpp/techman.html\]\\*](http://www.state.nj.us/aqpp/techman.html) [\\*www.state.nj.us/dep/aqpp/techman.html\\*](http://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) (No change from proposal.)

7:27-19.9 Asphalt pavement production plants

(a)-(e) (No change from proposal.)

(f) The owner or operator of an asphalt pavement production plant shall comply with the NO<sub>x</sub> emission concentrations at (a) above in accordance with the following schedule:

1. (No change from proposal.)

2. An asphalt pavement production dryer with a maximum gross heat input of at least 100 MMBTU/hr, [\\*\[but less than 120 MMBTU/hr,\]\\*](#) shall comply:

i.-ii. (No change from proposal.)

[\\*\[3.](#) An asphalt pavement production dryer with a maximum gross heat input of at least 120 MMBTU/hr or greater shall comply:

i. On and after (the operative date of these amendments), if compliance is achieved without physically modifying the dryer; or

ii. On and after May 1, 2010, if compliance is achieved by physically modifying the dryer.]\*

7:27-19.10 Glass manufacturing furnaces

(a) (No change from proposal.)

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(b) The owner or operator of any flat glass manufacturing furnace listed in N.J.A.C. 7:27-19.2(b)\*[7]\* **\*9\*** shall cause the furnace to emit no more than 9.2 pounds of NO<sub>x</sub> per ton of glass removed from the furnace.

(c)-(f) (No change from proposal.)

#### 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<sub>x</sub> at a maximum allowable emission concentration of 150 ppmvd at seven percent oxygen based on a calendar day average:

1. (No change from proposal.)
2. On and after May 1, \*[2010]\* **\*2011\***, if compliance is achieved by installing a new NO<sub>x</sub> air pollution control system on an existing MSW incinerator or by physically modifying an existing MSW incinerator.

(b)-(c) (No change from proposal.)

#### 7:27-19.13 Alternative and facility-specific \*[maximum allowable]\* NO<sub>x</sub> emission \*[rates]\* **\*limits\***

(a) This section establishes procedures and standards for the establishment of alternative maximum allowable NO<sub>x</sub> emission rates **\*, maximum allowable NO<sub>x</sub> emission concentrations, or other NO<sub>x</sub> regulatory parameters,\*** and facility-specific maximum allowable NO<sub>x</sub> emission rates **\*, maximum allowable NO<sub>x</sub> emission concentrations, or other NO<sub>x</sub> regulatory parameters\*** in the following circumstances:

1. If the owner or operator of a major NO<sub>x</sub> 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 NO<sub>x</sub> 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 \*[maximum allowable]\* NO<sub>x</sub> emission \*[rates]\* **\*limit (FSEL)\***. The owner or operator shall obtain this \*[rate]\* **\*FSEL\*** by submitting a proposed facility-specific NO<sub>x</sub> control plan pursuant to (b) below;



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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 **\*[maximum allowable]\* NO<sub>x</sub> emission \*[rates]\* \*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 **\*[maximum allowable]\* emission \*[rate]\* \*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 **\*[rate]\* \*limit\***, the owner or operator shall submit a proposed facility-specific NO<sub>x</sub> control plan or a request for an alternative **\*[maximum allowable]\* emission \*[rate]\* \*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<sub>x</sub> control plan or an alternative **\*[maximum allowable]\* emission \*[rate]\* \*limit\*** as follows:
1. Any facility-specific NO<sub>x</sub> control plan, including the facility-specific **\*[maximum allowable]\* emission \*[rate]\* \*limit\***, approved by the Department after (the operative date of these new rules and amendments) shall not have an expiration date, except in accordance with (b)6 **\*and (j)\*** below;
  2. Any alternative **\*[maximum allowable]\* emission \*[rate]\* \*limit\*** approved by the Department after (the operative date of these new rules and amendments) shall have a term of 10 years, unless the source operation or item of equipment with the alternative **\*[maximum allowable]\* emission \*[rate]\* \*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 **\*[and the owner or operator shall also meet the requirements at (b)6 below]\***;
  3. (No change from proposal.)
  4. Any owner or operator of a facility described in (a)2 above shall submit to the Department a written request for an alternative **\*[maximum allowable]\* emission**

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\*[rate]\* **limit**\* for each applicable source operation or item of equipment. In the request, the owner or operator shall include the information listed in **(d)**\* **(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 **[maximum allowable]**\* emission **[rate]**\* **limit**\* or a proposed facility-specific NO<sub>x</sub> control plan by (90 days after the operative date of these amendments). The owner or operator may request a **[60-day]**\* **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<sub>x</sub> control plan, the owner or operator shall include the information listed at (b)3i and ii above. In a request for an alternative **[maximum allowable]**\* emission **[rate]**\* **limit**\*, the owner or operator shall include the information listed at **(d)**\* **(c)**\* below;
  - ii. If the owner or operator submits a request or proposed plan by (90 days after the operative date of these new rules and amendments) or by the date of any extension approved by the Department, the owner or operator's existing alternative **[maximum allowable]**\* emission **[rate]**\* **limit**\* or facility-specific **[maximum allowable]**\* emission **[rate]**\* **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 (90 days after the operative date of these new rules and amendments), the owner or operator's existing alternative **[maximum allowable]**\* emission **[rate]**\* **limit**\* or facility-specific **[maximum allowable]**\* emission **[rate]**\* **limit**\* shall terminate on (90 days after the operative date of these amendments);
6. If the owner or operator of a facility has an approved alternative **[maximum allowable]**\* emission **[rate]**\* **limit**\* or an approved facility-specific **[maximum allowable]**\* emission **[rate]**\* **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 **[maximum allowable]**\* emission **[rate]**\* **limit**\* would change, the existing alternative or facility-specific **[maximum allowable]**\* emission **[rate]**\* **limit**\* shall terminate on the **[start]**\* **start-up**\* date of the **[modification, alteration or**

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reconstruction]\* **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 \*[maximum allowable]\* emission \*[rate]\* **limit**\*, the owner or operator shall, pursuant to this section, apply for and obtain approval of a new alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\* or facility-specific NO<sub>x</sub> 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 \*[maximum allowable]\* emission \*[rate]\* **limit**\* plans to continue operating under an alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\* beyond the existing \*[rate's]\* **limit's**\* expiration date, the owner or operator shall submit a request for a new alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\* at least one year prior to the termination date of the existing alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\*. The existing \*[rate]\* **alternative emission limit**\* shall terminate on its termination date or on the date of the Department's final action on the proposed new alternative \*[maximum allowable]\* emission \*[rate]\* **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 \*[maximum allowable]\* emission \*[rate]\* **limit**\* in accordance with this section. In the request, the owner or operator shall include:
- 1.-3. (No change from proposal.)
- (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<sub>x</sub> control plan or request for an alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\*:
- 1.-6. (No change from proposal.)
  7. For each source operation or item of equipment listed in (b)3i above or (c)1 above, as applicable, a proposed \*[maximum allowable]\* NO<sub>x</sub> emission \*[rate]\* **limit**\*;
  - 8.-9. (No change from proposal.)
- (e) Within 30 days after receiving a proposed NO<sub>x</sub> control plan or request for an alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\*, the Department shall notify the

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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<sub>x</sub> control plan or request for an alternative \*[maximum allowable]\* emission \*[rate]\* **limit** is incomplete, the following shall apply:

- 1.-4. (No change from proposal.)
  5. If the owner or operator fails to submit a complete request for an alternative \*[maximum allowable]\* emission \*[rate]\* **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<sub>x</sub> control plan or request for an alternative \*[maximum allowable]\* emission \*[rate]\* **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<sub>x</sub> facility is located.
- (g) Within six months after receiving a complete proposed NO<sub>x</sub> control plan or request for an alternative \*[maximum allowable]\* emission \*[rate]\* **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.-2. (No change from proposal.)
  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:

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- i.-ii. (No change from proposal.)
- iii. Would carry costs disproportionate to the improvement in the reduction of the NO<sub>x</sub> emissions \*[rate]\* **limit**\* which the control technology is likely to achieve, or disproportionately large in comparison to the total reduction in NO<sub>x</sub> emissions which the control technology is likely to achieve over its useful life; or
- iv. (No change from proposal.)
- 4. The emission \*[rate]\* **limit**\* proposed for each source operation and item of equipment is the lowest \*[rate]\* **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 \*[rate]\* **limit**\* would be disproportionate to the size and environmental impact of that additional emission reduction; and
- 6. (No change from proposal.)
- (h) Any alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\* pursuant to (c) above or NO<sub>x</sub> \*[Control Plan]\* **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)1)\* **(b)3i**\* or (c)1 above necessary to minimize any adverse impact upon human health, welfare and the environment.
- (j) (No change from proposal.)
- (k) An approval of an alternative \*[maximum allowable]\* emission \*[rate]\* **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 \*[maximum allowable]\* emission \*[rate]\* **limit**\* if the proposed alteration does not materially affect the basis of the Department's original approval; or

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2. The owner or operator, before altering any equipment or source operation which is subject to an alternative\*[maximum allowable]\* emission \*[rate]\* **limit**\*, applies for and obtains the Department's approval of:
  - i. A revised alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\* pursuant to this section, reflecting the proposed alteration; and
  - ii. (No change from proposal.)
- (l) (No change from proposal.)
- (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 \*[rate]\* **limit**\* under this section;
  2. (No change from proposal.)
  3. The Department has revoked the person's approval pursuant to (l)1, 2 or \*[4]\* **(3)**\* above.
- (n) The owner or operator of a facility described in (a)1 above shall implement the NO<sub>x</sub> control plan (including, without limitation, complying with the \*[maximum allowable]\* emission \*[rates]\* **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 \*[maximum allowable]\* NO<sub>x</sub> emissions \*[rate]\* **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 \*[maximum allowable]\* emission \*[rate]\* **limit**\* shall cause it to emit NO<sub>x</sub> at a rate no greater than the approved alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\*.
- (o) The owner or operator submitting a proposed NO<sub>x</sub> control plan or request for an alternative \*[maximum allowable]\* emission \*[rate]\* **limit**\* shall send it to the Department at the following address:

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Chief, Bureau of \*[Preconstruction Permitting]\* **Operating Permits**  
Division of Air Quality  
Department of Environmental Protection  
401 East State Street  
PO Box 027  
Trenton, New Jersey 08625-0027

(p) (No change from proposal.)

7:27-19.15 Procedures and deadlines for demonstrating compliance

(a) (No change from proposal.)

(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<sub>x</sub> 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) (No change from proposal.)

(d) For any equipment or source operation at an asphalt pavement production plant subject to a NO<sub>x</sub> 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 [180] **365** days from the date at N.J.A.C. 7:27-19.9(f)1\*[,]\* **or** 2 \*[or 3]\*, and thereafter at the frequency set forth in the permit for such equipment or source operation.

(e)-(f) (No change from proposal.)

7:27-19.27 \*[Use of NO<sub>x</sub> budget allowances by a former DER credit user

(a) A former DER credit user who used DER credits to comply with a NO<sub>x</sub> emissions limit under this subchapter, and who would continue to require the use of DER credits to comply with that limit, may use NO<sub>x</sub> budget allowances, as defined by the provisions of

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N.J.A.C. 7:27-31, to achieve compliance with the applicable NO<sub>x</sub> RACT emission limits of this subchapter.

- (b) The number of NO<sub>x</sub> budget allowances to be retired during any given calendar year pursuant to (a) above shall be determined as follows:
1. Determine the allowable NO<sub>x</sub> emissions for the equipment or control apparatus for the calendar year in question by calculating the quantity of NO<sub>x</sub> emissions in tons per year (tpy) which would be allowed for the equipment or control apparatus. The allowable NO<sub>x</sub> emissions for a single fuel shall be the total BTU (higher heating value) burned in the calendar year times the maximum allowable NO<sub>x</sub> emission rate, in pounds per million BTU, for the equipment or control apparatus in question, converted to tons per year (by dividing by 2,000). The allowable NO<sub>x</sub> emissions for a stationary internal combustion engine shall be the total number of horsepower hours produced in the calendar year times the maximum allowable NO<sub>x</sub> emission rate, in grams per horsepower hour, for the equipment or control apparatus in question, converted to tons per year (by dividing by 908,000). Maximum allowable NO<sub>x</sub> emission rates are codified at N.J.A.C. 7:27-19.4(a), Table 1; 19.5(a), Table 2; 19.5(b), Table 3; 19.7(b), Table 4; N.J.A.C. 7:27-19.7(c), Table 5 and N.J.A.C. 7:27-19.8(a), (b) and (c). If more than one fuel is burned, determine the allowable emission separately for each fuel and then sum these allowable emissions;
  2. Determine the actual NO<sub>x</sub> emissions, in tons, for the equipment or control apparatus for the calendar year in question as follows:
    - i. For a facility using a continuous emissions monitoring system to demonstrate compliance with the requirements of this subchapter pursuant to N.J.A.C. 7:27-19.15(a)1, integrate the measured concentration with a stack gas volumetric flow rate monitor, corrected for oxygen concentration and temperature, and convert it to cumulative tons. Use only instrumentation and methodology approved by the Chief of the Department's Bureau of Technical Services, whose address is set forth at N.J.A.C. 7:27-19.18(m);
    - ii. For a facility using the average of three one-hour tests to demonstrate compliance with the requirements of this subchapter pursuant to N.J.A.C. 7:27-19.15(a)2, multiply the measured average pounds per hour by the operating hours per calendar year, or multiply the measured average emission factor in pounds per million BTU (higher heating value) by the



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measured annual fuel use expressed in million BTU per calendar year, based on the higher heating value of the fuel; or

- iii. For a stationary internal combustion engine, multiply the measured average emission rate in grams per horsepower hour by the measured annual horsepower hours generated by the engine, then convert into tons by dividing by 908,000;
  - 3. Subtract the allowable NO<sub>x</sub> emissions determined in (b)1 above from the actual emissions determined in (b)2 above to yield the quantity of excess NO<sub>x</sub> emissions, in tons, from the equipment or control apparatus, that occurred during the calendar year in question; and
  - 4. Take the quantity of excess NO<sub>x</sub> emissions calculated under (b)3 above (expressed in tons) and round it up to the next whole number of tons to yield the number of NO<sub>x</sub> allowances to be retired.
- (c) By April 1 of the year following the calendar year when the NO<sub>x</sub> budget allowances were used, the former DER credit user using NO<sub>x</sub> budget allowances to comply with the applicable NO<sub>x</sub> RACT emission limits set forth in this subchapter shall provide the Department with documentation demonstrating that the appropriate number of allowances has been retired, along with the supporting calculations described in (b) above, using the form set forth at the Appendix to this subchapter, promulgated and incorporated herein by reference.]\* **Reserved.**\*

\*[APPENDIX  
New Jersey Department of Environmental Protection  
Notice of Use of NO<sub>x</sub> Budget Allowances

A. General Information

Name of User: \_\_\_\_\_

User Address: \_\_\_\_\_

\_\_\_\_\_

County: \_\_\_\_\_

User Type of Business: \_\_\_\_\_

Air Program Interest No. \_\_\_\_\_

Equipment Permit No. \_\_\_\_\_.

Location of the equipment at the facility: \_\_\_\_\_

\_\_\_\_\_

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Name of Contact Person: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

**B. Allowance Information**

Calendar Year NO<sub>x</sub> Budget Allowances Were Used: \_\_\_\_\_

Maximum Quantity of Excess Emissions: \_\_\_\_\_

Number of NO<sub>x</sub> Budget Allowances Needed: \_\_\_\_\_

Specify the NO<sub>x</sub> Budget Allowance Serial Number(s): \_\_\_\_\_

**C. Supporting Documentation:** This submission is not complete without attached documentation of the calculation of the number of NO<sub>x</sub> Budget Allowances Needed using the protocol set forth at N.J.A.C. 7:27-19.27(b).

Confirm attachment of supporting documentation and number of pages: \_\_\_\_\_

**D. Certification by Source Owner or Operator**

I certify under penalty of law that I believe the information provided in this Notice of Use, 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.

Signed: \_\_\_\_\_

Title: \_\_\_\_\_

This form (and all attachments) are to be submitted to the Department at the applicable address listed below:

If the source is located in Mercer, Middlesex, Monmouth, Ocean or Union County:

If the source is located in Bergen, Essex, or Hudson County:

Department of Environmental Protection

Department of Environmental Protection

Air Compliance & Enforcement

Air Compliance & Enforcement

Central Regional Office

Metro Regional Office

Horizon Center, PO Box 407

2 Babcock Place

Trenton, New Jersey 08625-0407

West Orange, New Jersey 07052-5504

If the source is located in Hunterdon, Morris, Passaic, Somerset or Warren County:

If the facility is located in Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester or

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Salem County:

Department of Environmental Protection

Air Compliance & Enforcement

Northern Regional Office

1259 Route 46 East, Building 2

Parsippany-Troy Hills, New Jersey 07054-4191

Department of Environmental Protection

Air Compliance & Enforcement

Southern Regional Office

2 Riverside Drive, Suite 201

Camden, New Jersey 08102]\*

7:27-19.29 2009 HEDD Emission Reduction Compliance Demonstration Protocol

(a) (No change from proposal.)

(b) Each owner or operator identified in (a) above shall:

\*[1. Assure that the NO<sub>x</sub> emission reductions, determined by Equation 1 at (c) below, occur on each high electric demand day from (the operative date of these amendments) through September 30, 2014, unless the Department approves a phased compliance plan pursuant to N.J.A.C. 19.22 with a later initial compliance date. All emission reductions must be obtained through one or more measures that meet the requirements at (d) below;]\*

\*[2.]\* **\*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;

\*[3.]\* **\*2.\*** Submit to the Department, at the address **\*at (b)5\*** below, by (\*[30 days after]\* the operative date of this rule), a 2009 Protocol; \*[and]\*

**\*3. Obtain the NO<sub>x</sub> 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 (the operative date of these amendments) through September 30, 2014, unless the Department has approved, pursuant to N.J.A.C. 7:27-19.22, a phased**

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**compliance plan with an initial compliance date that is after (the operative date of these amendments);**

**4. Demonstrate that all NO<sub>x</sub> 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<sub>x</sub> 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\***

\*[4.]\* **5.** Submit to the Department, at the address below, an annual report, pursuant to (k) below.

\*[Chief, Bureau of Operating Permits  
Air Quality Permitting Program]\*  
**\*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\*[.]\***

(c) The owner or operator shall **\*[achieve]\* \*obtain\*** the NO<sub>x</sub> 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:

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ER, BE, EF and RF are in units of tons of NO<sub>x</sub> per high electric demand day (t/HEDD);

ER (Emission Reduction) = The total tons of NO<sub>x</sub> reductions that is required from an owner or operator on each high electric demand day;

BE (Baseline Emission) = The total tons of NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> emitted, in tons, for each HEDD unit operated on July 26, 2005, from the \*[US]\*EPA Clean Air Markets Division (CAMD) NO<sub>x</sub> emission data, which as of (the date of this rulemaking) can be found at <http://camddataandmaps.epa.gov/gdm/>; and

RF (Reduction Factor) = The HEDD NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> emissions emitted by a HEDD unit on July 26, 2005 obtained from the \*[US]\*EPA Clean Air Markets Division (CAMD) NO<sub>x</sub> emission data, which as of (the date of this rulemaking) can be found at <http://camddataandmaps.epa.gov/gdm/>; and

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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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> emission rate of less than 0.15 lb/MMBtu on July 26, 2005,\*** then C is equal to 0.

- (d) (No change from proposal.)
- (e) The list of records to be maintained pursuant to (d)\*[2]\*\***3**\*vi above are the following:
  - 1.-16. (No change from proposal.)
- (f) (No change from proposal.)
- (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**

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- 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.-3. (No change from proposal.)
- (i) If the owner or operator of \*[a HEDD or non-HEDD]\* **\*an electric generating\*** unit that is included in an approved 2009 Protocol changes between (the operative date of these amendments) 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.

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- (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.-4. (No change from proposal.)

#### 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.

\*[Chief, Bureau of Operating Permits  
Air Quality Permitting Program]\*  
**\*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<sub>x</sub> 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 \*[shut down]\* **\*taken out of service\*** by May 1, 2015, in lieu of complying **\*by May 1, 2015\*** with the applicable maximum allowable NO<sub>x</sub> 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 \*[shut down]\* **\*taken out of service\***:



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- i.-iv. (No change from proposal.)
  - v. The proposed schedule for \*[shut down]\* **\*taking the unit out of service\***;
  - vi. An explanation of any obstacles that may prevent this unit from being \*[shut down]\* **\*taken out of service according to the schedule at 2v above\***; and
  - vii. (No change from proposal.)
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<sub>x</sub> 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.-viii. (No change from proposal.)
  - 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<sub>x</sub> 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<sub>x</sub> emission rate in the preconstruction permit or the operating permit for the HEDD unit, for each fuel combusted by the unit.\***

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\*[(c) Each owner or operator of an HEDD unit shall submit to the Department, with the annual compliance certification, submitted pursuant to N.J.A.C. 7:27-22, for the calendar years 2010 through 2014, an update on the progress of the 2015 Plan. All HEDD units shall be included in the update. For each HEDD unit owned or operated, the following information shall be included in the update:

1.-7. (No change from proposal.)\*

**\*(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<sub>x</sub> 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 Department at the address at (a) above; and**

**4. An update shall include the following information for each HEDD unit meeting the criteria at (c)1i through iii above:\***

Recodify (c)1 through 4 as (c)4i through iv.

\*[5.]\***v.**\* The progress made toward achieving the proposed schedule for permitting, installation and operation at \*[(b)2vii]\* **(b)3vii**\* above;

Recodify (c)6 and 7 as (c)4vi and vii.

SUBCHAPTER 21. EMISSION STATEMENTS

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7:27-21.5 Required contents of an Emission Statement

(a)-(i) (No change.)

(j) The owner or operator of any VOC stationary storage tank with a floating roof shall include the following roof landing emission information:

1. As part of the Emission Statement, submit each tank's annual roof landing emissions \*[as a separate operating scenario; and]\* **as follows:**

**i. If the tank's preconstruction permit or operating permit, as applicable, contains a separate operating scenario for roof landing emissions, submit the tank's annual roof landing emissions as a separate operating scenario; or**

**ii. If the tank's preconstruction permit or operating permit, as applicable, does not contain a separate operating scenario for roof landing emissions, add a separate operating scenario for roof landing emissions to the Emission Statement and submit the tank's annual roof landing emissions as a separate operating scenario; and\***

2. (No change from proposal.)

CHAPTER 7:27A

AIR ADMINISTRATIVE PROCEDURES AND PENALTIES

SUBCHAPTER 3. CIVIL ADMINISTRATIVE PENALITES AND REQUESTS FOR ADJUDICATORY HEARINGS

7:27A-3.10 Civil administrative penalties for violation of rules adopted pursuant to the Act

(a)-(l) (No change.)

(m) The violations of N.J.A.C. 7:27, whether the violation is minor or non-minor in accordance with (q) through (t) below, and the civil administrative penalty amounts for each violation are as set forth in the following Civil Administrative Penalty Schedule. The numbers of the following subsections correspond to the numbers of the corresponding subchapter in N.J.A.C. 7:27. The rule summaries for the requirements set forth in the Civil Administrative Penalty Schedule in this subsection are provided for informational purposes only and have no legal effect.

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### CIVIL ADMINISTRATIVE PENALTY SCHEDULE

1.-15. (No change from proposal.)

16. The violations of N.J.A.C. 7:27-16, Control and Prohibition of Air Pollution by Volatile Organic Compounds (VOC), and the civil administrative penalty amounts for each violation, are as set forth in the following table:

<u>Citation</u>	<u>Class</u>	<u>Type of Violation</u>	<u>First Offense</u>	<u>Second Offense</u>	<u>Third Offense</u>	<u>Fourth and Each Subsequent Offense</u>
...						
<b><u>*N.J.A.C. 7:27-16.2(h)</u></b>	<b><u>Seal-Envelope</u></b>	<b><u>NM</u></b>	<b><u>\$2,000<sup>3</sup></u></b>	<b><u>\$4,000</u></b>	<b><u>\$10,000<sup>3</sup></u></b>	<b><u>\$30,000<sup>3</sup>*</u></b>
*[N.J.A.C. 7:27-16.2(k)	Records	M	\$500 <sup>3</sup>	\$1,000	\$2,500 <sup>3</sup>	\$7,500 <sup>3</sup> ]*
...						

17.-32. (No change from proposal.)

(n)-(t) (No change from proposal.)