3052

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT of ENVIRONMENTAL PROTECTION
Division of Air Quality
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BOB MARTIN
Commissioner

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June 12, 2014

Environmental Quality Board
P.O. Box 8477
Harrisburg, PA 17105-8477

RE: One Page Summary – April 19, 2014 Proposal to amend Chapters 121 and 129, Additional RACT Requirements for Major Sources of NOx and VOCs

Dear Ladies and Gentlemen of the Board:

In addition to the submission of more detailed written comments on proposed amendments to Chapters 121 and 129, "Additional RACT Requirements for Major Sources of NOx and VOCs", proposed on April 19, 2014, the New Jersey Department of Environmental Protection submits this one page summary of those comments to be distributed to the Board and made publicly available prior to the meeting when the final-form rulemaking will be made. See enclosure.

Thank you for your consideration.

Sincerely,

William O'Sullivan
Director
Division of Air Quality

Enclosure (1)

c: Joyce E. Epps, Director, Bureau of Air Quality, PADEP
Jane Kozinski, Assistant Commissioner, Environmental Management
Chris Salmi, Assistant Director, AQM
Francis Steitz, Assistant Director, AQPP
Richard Ruvo, Chief, Air Programs Branch, USEPA Region II
Diana Esher, Director, Air Protection Division, USEPA Region III

Summary of the State of New Jersey Department of Environmental Protection's Comments regarding Amendments to Chapters 121 and 129, "Additional RACT Requirements for Major Sources of NO_x and VOCs", proposed on April 19, 2014, by the Environmental Quality Board

The New Jersey Department of Environmental Protection urges the Board to adopt Reasonably Available Control Technology (RACT) limits that are at least equivalent to those adopted by New Jersey five years ago in 2009. The Department's NO_x RACT limits for existing electric generating units (EGUs) are substantially lower than the corresponding Pennsylvania proposed emission limits as illustrated below.

1. Coal Fired Boilers
    - NJ Limit 0.15 lb./MMBTU (all units, converted from 1.5 lb/MWh)
    - PA Limit 0.35 lb./MMBTU (>250 Tangential)
    - PA Limit 0.40 lb./MMBTU (>250 All Others)
2. Simple Cycle Turbines
    - Natural Gas
        - NJ Limit 25 ppm @ 15% O2
        - PA Limit 42 ppm @ 15 % O2
    - Fuel Oil
        - NJ Limit 42ppm @ 15% O2
        - PA Limit 75 ppm @ 15 % O2
3. Combined Cycle Turbines
    - Natural Gas
        - NJ Limit 25 ppm @ 15% O2
        - PA Limit 42 ppm @ 15% O2
    - Fuel Oil
        - NJ Limit 42 ppm @ 15% O2
        - PA Limit 75 ppm @ 15 % O2

For compliance demonstration during the ozone season, New Jersey requires compliance each calendar day; Pennsylvania demonstrates compliance based on a 30-day rolling average, which is less stringent. Hence, the difference in stringency is more pronounced than indicated in this summary. Also, a daily limit is more protective of the ozone health standard which is an 8-hour limit.

New Jersey's RACT limits are reasonable performance standards that are necessary to attain and maintain the 75 ppb NAAQS throughout the region. Implementing up to date RACT limits, especially NO_x performance limits for EGUs, would help us all achieve clean air. More detailed comments have also been submitted, including RACT recommendations regarding electric generating internal combustion engines. Thank you for considering New Jersey RACT rules when evaluating those in your state.

State of New Jersey

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June 12, 2014

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P.O. Box 8477
Harrisburg, PA 17105-8477

RE: April 19, 2014 Proposal to amend Chapters 121 and 129, Additional RACT Requirements for Major Sources of NOx and VOCs

Dear Ladies and Gentlemen of the Board:

Thank you for the opportunity to comment on proposed amendments to Chapters 121 and 129, "Additional RACT Requirements for Major Sources of NOx and VOCs", proposed on April 19, 2014, by the Environmental Quality Board. Pennsylvania's proposed Reasonably Available Control Technology (RACT) provisions do not meet the requirements of the federal Clean Air Act, and the New Jersey Department of Environmental Protection (Department) urges the Board to adopt RACT limits that are at least equivalent to those adopted by New Jersey five years ago (2009).

The Clean Air Act requires implementation of RACT by states in the Ozone Transport Region (OTR) and other areas that exceed the 2008 Ozone (75 ppb) National Ambient Air Quality Standard (NAAQS). Pennsylvania must submit a plan to the U.S. Environmental Protection Agency (EPA) that evaluates and updates RACT requirements for major sources of NOx and VOCs.

The use of more advanced air pollution controls and lower NOx and VOC emission limits must be evaluated if achieved in practice by other existing sources in the same source category. If technologically and economically feasible, the more advanced air pollution controls must be required for other sources within the source category. Pennsylvania's proposed RACT limits for electric generating units are based on low NOx burner technology that is over 20 years old. This might have been suitable for the old 120 ppb ozone health standard in the 1990's, but is no longer sufficient or allowed for the current 75 ppb ozone health standard in 2014. For example, selective catalytic reduction technology for control of NOx is proven and in widespread use, demonstrating technological and economic feasibility of emission limits that reflect the use of this air pollution control technology.

New Jersey's RACT limits are reasonable performance standards that are necessary to attain and maintain the 75 ppb NAAQS throughout the region. A copy of New Jersey's rule can be found at: http://www.state.nj.us/dep/aqm/Sub19.pdf.

New Jersey's RACT limits for coal-fired boilers used to generate electricity are substantially lower than the corresponding Pennsylvania proposed emission limits (see Figure 1). Our HEDD simple cycle turbine RACT emission limits are also lower than the corresponding Pennsylvania proposed emission limits for natural gas and distillate oil fired simple cycle combustion turbines. See Figures 2 and 3. Likewise, New Jersey's combined-cycle turbine RACT emission limits are lower than the corresponding Pennsylvania proposed emission limits for natural gas and distillate oil fired combined-cycle combustion turbines (see Figures 4 and 5). Also, New Jersey's RACT limits for existing electric generating internal combustion (IC) engines are lower than those proposed by Pennsylvania (see Figures 6 - 9).

Pennsylvania's RACT rules should include performance standards that have relatively short averaging times to ensure that air pollution control systems are operating optimally when there is high ozone potential. Experience with the US Environmental Protection Agency summertime NO_x trading programs has shown that without also having performance standards with appropriate averaging times, selective catalytic reduction (SCR) systems were turned off for some EGUs, causing high NO_x emissions on high ozone days. This occurred in Pennsylvania and appears to have been responsible for an increase of NO_x emissions of about 40 percent from Pennsylvania EGU's, on high ozone days, as compared to the NO_x emissions that would have occurred if the SCRs had been operated. Therefore, short averaging times to determine compliance, as well as lower NO_x emission rates, are needed in Pennsylvania to comply with RACT requirements and help attain the ozone NAAQS.

New Jersey's EGU summertime NO_x limits are based on three-hour averages if compliance is determined by stack testing and on a 24-hour basis if compliance is determined by continuous emissions monitoring system. Having NO_x emission limits based on 24 hour averaging or less is important to ensure that air pollution control systems are installed and operated on EGUs that are used during the hot summer days.

Implementing up to date RACT limits in Pennsylvania, especially NO_x performance limits for EGUs, would contribute to improved air quality in Pennsylvania and its downwind neighbors. Thank you for considering New Jersey RACT rules when evaluating those in your state.

If you have any questions regarding the 2009 RACT rule, please contact Margaret Gardner at (609) 292-7095.

Sincerely,

William O'Sullivan
Director
Division of Air Quality

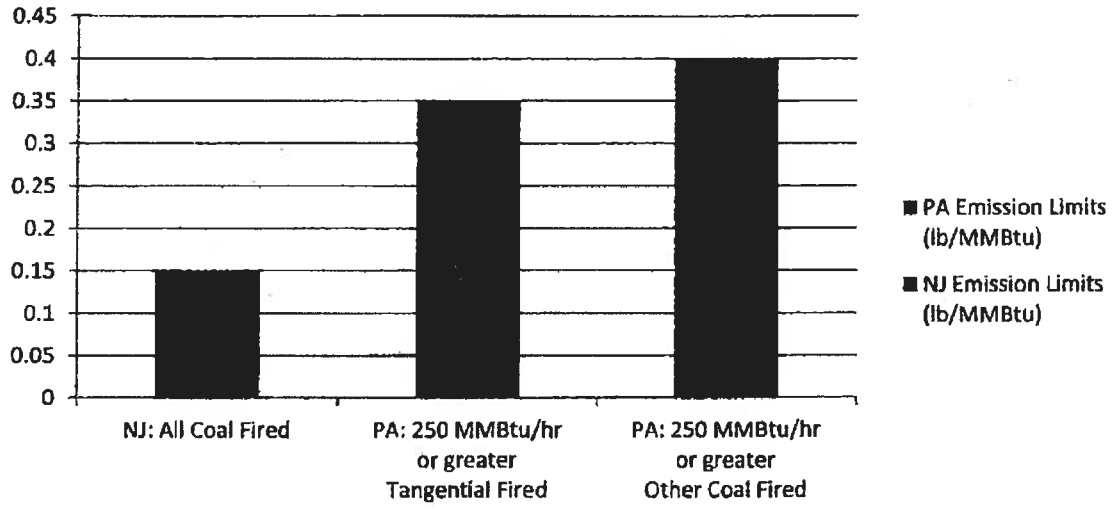
c: Joyce E. Epps, Director, Bureau of Air Quality, PADEP
Jane Kozinski, Assistant Commissioner, Environmental Management
Chris Salmi, Assistant Director, AQM
Francis Steitz, Assistant Director, AQPP
Richard Ruvo, Chief, Air Programs Branch, USEPA Region II
Diana Esher, Director, Air Protection Division, USEPA Region III

Comparison of NJ RACT Emission Limits and PA Proposed RACT NOx Emission Limits for Existing Units that Generate Electricity

1. Coal Fired Boilers (figure 1)
    - NJ Limit 0.15 lb./MMBTU (daily limit during ozone season)
    - PA Limit 0.35 lb./MMBTU >250 Tangential (30 day limit)
    - PA Limit 0.40 lb./MMBTU >250 All Others (30 day limit)
2. Simple Cycle Turbines
    - Natural Gas (figure 2)
        - NJ Limit 25 ppm @ 15% O2
        - PA Limit 42 ppm @ 15 % O2
    - Fuel Oil (figure 3)
        - NJ Limit 42 ppm @ 15% O2
        - PA Limit 75 ppm @ 15 % O2
3. Combined Cycle Turbines
    - Natural Gas (figure 4)
        - NJ Limit 25 ppm @ 15% O2
        - PA Limit 42 ppm @ 15% O2
    - Fuel Oil (figure 5)
        - NJ Limit 42 ppm @ 15% O2
        - PA Limit 75 ppm @ 15 % O2
4. Internal Combustion Engines
    - Lean Burn
        - Natural Gas (figure 6)
            - NJ Limit 1.5 g/bhp-hr (>200 BHP-hr)
            - PA Limit 3.0 g/bhp-hr (>500 BHP-hr)
        - Fuel Oil (figure 7)
            - NJ Limit 2.3 g/bhp-hr (>200 BHP-hr)
            - PA Limit 8.0 g/bhp-hr (>500 BHP-hr)
    - Rich Burn
        - Natural Gas (figure 8)
            - NJ Limit 1.5 g/bhp-hr (>200 BHP-hr)
            - PA Limit 2.0 g/bhp-hr (>500 BHP-hr)
        - Fuel Oil (figure 9)
            - NJ Limit 1.5 g/bhp-hr (>200 BHP-hr)
            - PA Limit 8.0 g/bhp-hr (>500 BHP-hr)

Comparison of NJ RACT Emission Limits and PA Proposed RACT Emission Limits for Existing Coal Fired Boilers Used to Generate Electricity

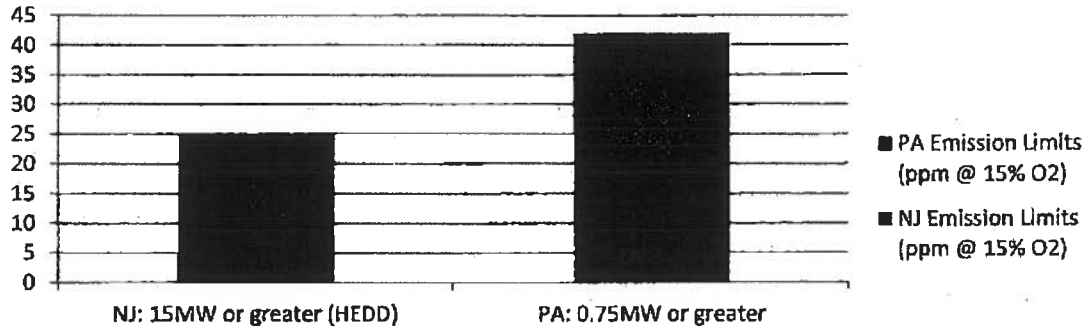
Figure 1: **RACT Emission Limits For Existing Coal Fired Boilers Used To Generate Electricity**



- NJ limit converted from lb/MWhr using a heat rate of 10,000 (Btu/KW-hr)
- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.

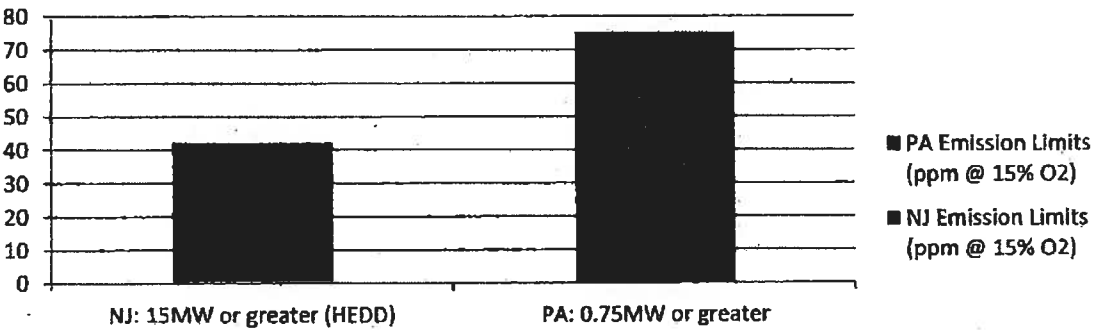
Comparison of NJ RACT Emission Limits and PA Proposed RACT Emission Limits for Existing Simple Cycle Turbines that Generate Electricity

Figure 2: RACT Emission Limits For Existing Natural Gas Fired Simple Cycle Turbines



- NJ limit converted from lb/MWhr using a simple cycle turbine efficiency of 35%.
- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.

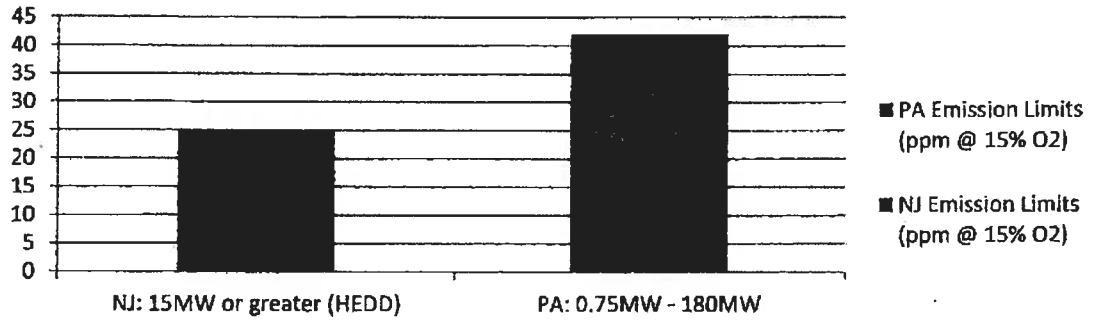
Figure 3: RACT Emission Limits For Existing Distillate Oil Fired Simple Cycle Turbines



- NJ limit converted from lb/MWhr using a simple cycle turbine efficiency of 35%.
- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.

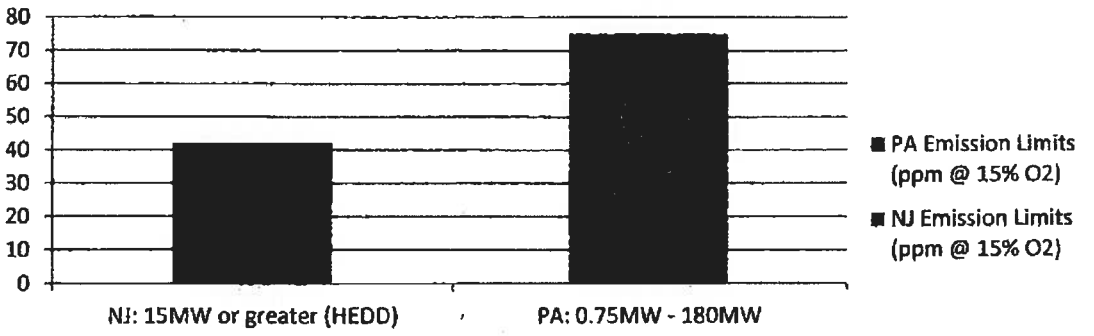
Comparison of NJ RACT Emission Limits and PA Proposed RACT Emission Limits for Existing Combined Cycle Turbines

Figure 4: RACT Emission Limits For Existing Natural Gas Fired Combined Cycle Turbines



- NJ limit converted from lb/MWhr using a combined cycle turbine efficiency of 46%.
- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.

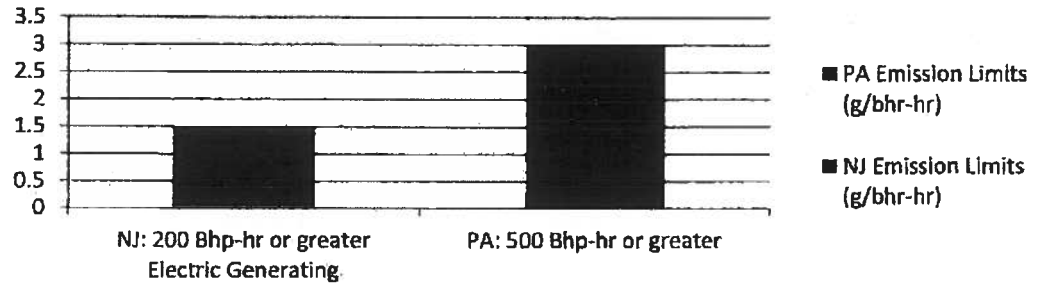
Figure 5: RACT Emission Limits For Existing Distillate Oil Fired Combined Cycle Turbines



- NJ limit converted from lb/MWhr using a combined cycle turbine efficiency of 46%.
- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.

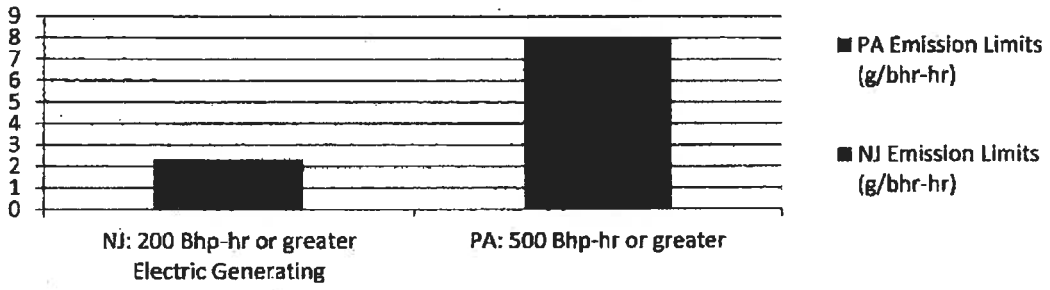
Comparison of NJ RACT Emission Limits and PA Proposed RACT Emission Limits for Existing Lean Burn Internal Combustion Engines that Generate Electricity

Figure 6: RACT Emission Limits For Existing Natural Gas Fired Lean Burn IC Engines



- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.

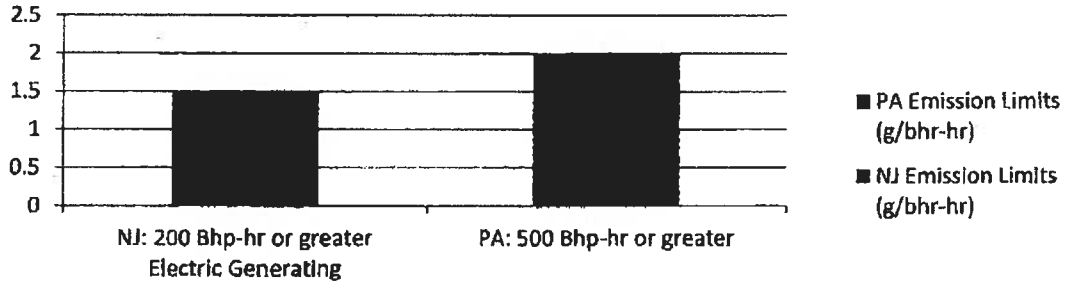
Figure 7: RACT Emission Limits For Existing Distillate Oil Fired Lean Burn IC Engines



- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling

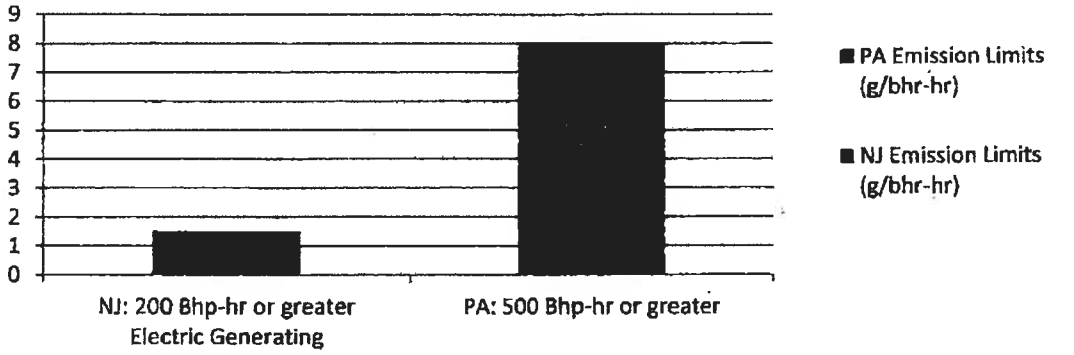
Comparison of NJ RACT Emission Limits and PA Proposed RACT Emission Limits for Existing Rich Burn Internal Combustion Engines that Generate Electricity

Figure 8: RACT Emission Limits For Existing Natural Gas Fired Rich Burn IC Engines



- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.

Figure 9: RACT Emission Limits For Existing Distillate Oil Fired Rich Burn IC Engines



- For CEMS compliance demonstration during ozone season, NJ requires compliance demonstration each calendar day; PA requires compliance demonstration based on 30 day rolling average.