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President

February 25, 2009

Mr. Seth Barna
Program Manager
Ozone Transport Commission
Hall of the States
444 North Capitol St.; Suite 638
Washington, DC 20001

RE: Draft Stationary Generator Regulation

Dear Mr. Barna:

The Northeast Energy and Commerce Association (“NECA”) appreciates this opportunity to provide input into the Ozone Transport Commission’s (“OTC”) proposed regulation for stationary generators.

NECA is New England’s oldest and most broadly based, non-profit trade association serving the competitive electric power industry. NECA promotes environmentally sound, reliable, and cost-effective wholesale and retail markets for the production and delivery of energy. NECA’s diverse membership includes developers and owner/operators of competitive power projects, regulated and merchant transmission and distribution companies, power marketers and traders, fuel and equipment suppliers, power consumers, environmental consultants, attorneys, consulting engineers, and other service providers to the energy industry.

It is understood that the OTC is considering modeling its Stationary Generator Regulation on Delaware’s Rule No. 1144, “Control of Stationary Generator Emissions.” NECA has serious concerns with the proposed regulation, namely the **extremely stringent “fuel and technology-neutral” emissions limitations** proposed as the criteria for certification eligibility. While NECA understands that the proposed regulation is based on the “Model Regulations for the Output of Specified Air Emissions from Smaller-Scale Electric Generation Resources” issued by the Regulatory Assistance Project (“RAP”) in late 2002, NECA believes that these model regulations are flawed and that their development did not include an open and valid stakeholder process. The Northeast States for a Coordinated Air Use Management (“NESCAUM”), the New York State

Department of Environmental Conservation (“NYSDEC”), and many others have not endorsed the RAP Model Rule. Few states have adopted regulations following the model rule and some (e.g., New York, New Hampshire) have developed or are developing quite different rules. For those states that have adopted the RAP Model Rule, very few, if any, engines have been installed that fall under the stringent emission limits. In light of this, a detailed technical support document must be prepared before proceeding further with this rule.

While NECA is in favor of fuel-neutral, output-based performance standards, we recognize that having such standards is not possible due to the inherent limitations of technology (which are reflected in the BACT-analysis process). In reality, the need for electric reliability and fuel diversification “trumps” the need for setting the extremely low emission limits currently proposed by the OTC, which only can be met based on the use of natural gas. No particular technology should be ruled out due to its limitations. Instead, less efficient and/or higher polluting technologies should bear an emissions fee burden, as discussed below, as an incentive to spur the development of more efficient and cleaner technologies.

In addition to the stringent emission limits, the Delaware Regulation does not distinguish between emergency demand response (“DR”) or peak shaving. This directly conflicts with the regulations or policies adopted by many of the OTC states including all of New England, New York, Pennsylvania, Maryland, and Virginia that allow the use of emergency engines during emergency DR events.

NECA has detailed comments in four areas related to the proposed regulations: (1) the proposed emissions standards for distributed generators; (2) efficiency considerations, (3) peaking versus base load considerations and an alternative “market-based” approach that would consider this; and (4) the definition of “emergency.” NECA believes that load deferral in emergencies and in under local grid availability problems, emergency generators should be allowed to operate. Furthermore, if regulators set emission limits that are too difficult to meet rather than allowing the market to evolve, then research and development conducted by the engine manufacturers will halt which will be a net loss for the environment.

Proposed Emission Standards for Distributed Generators

As detailed below, NECA recommends the following changes to the proposed emissions standards.

- Increase the lower size threshold from 10 to 300 kW;
- Include more achievable emissions standards for fuels by allowing a fuel Best Available Control Technology (“BACT”) analysis;
- Eliminate the second and third categories of limits (installation on or after January 1, 2008);
- Work towards the development of a market-based approach by allowing an emissions fee system, such as a fee-based system similar to what New Hampshire has enacted or an allowance system, as an alternative to the emissions standards. Such a system would, by its nature, consider unit efficiencies and differentiate between heavy and light use (see next section).

The OTC is proposing very strict emissions standards for new distributed generators for non-emergency use. It is unlikely that any new diesel (liquid fuel) generators will be able to meet these proposed standards even with BACT. The June 2003 NESCAUM report “Stationary Diesel Engines in the Northeast: An Initial Assessment of the Regional Population Control Technology Operations and Air Quality Policy Issues” states: “stationary diesel engines are, by a large margin, the most commonly used engines for distributed generation.” As the proposed distributed generator regulations are currently written, very few diesel (liquid

fuel) distributed generator engines will be able to be in compliance without obtaining an individual permit, even if post-combustion controls were added.¹

The NESCAUM report indicates that selective catalytic reduction (“SCR”) technology has been successfully applied to large diesel engines where it can achieve NO_x reductions of 80-90% or more. However, these systems are more cost effective for large engines that operate frequently. Less costly NO_x control strategies include injection-timing adjustments; generally provide more modest reductions on the order of 10-20%. Thus, there are no cost-effective controls available yet that will lower NO_x emissions from smaller scale diesel engines or those that operate infrequently to the proposed levels. The use of SCR does not even guarantee that the proposed emission limits will be met.² Finally the OTC’s estimate for SCR of \$580 to \$1,412 per ton is extremely low.

NECA can only support the proposed stringent standards during the first phase (units installed prior to January 1, 2008) if they become applicable only to natural gas firing and achievable limits are established for other fuels (e.g., by allowing a fuel BACT analysis) so long as the OTC establishes a market-based system in the near future. NECA also urges that the second and third phases of limits (effective in 2008 and 2012) be eliminated since the ability of any new reciprocating engines or turbines to achieve these stringent limits in a cost-effective manner is highly speculative at this time. These limits become unnecessary if a market-based approach to regulating these sources is adopted within the next few years as recommended below.

NECA also recommends that the lower size threshold for this regulation be set to 300 kW. Regulating the extremely small sources is unnecessary because their total emissions burden is minor relative to the significant administrative burden to both source owners/operators and the regulatory agencies.

Combined Heat and Power Credit

It is recommended that the regulations provide for an emissions credit in Combined Heat and Power (CHP) applications, provided that the proposed efficiency standard does not penalize some efficient systems while allowing other inefficient systems. CHP systems that save energy over conventional systems will meet the following formula:

$$E_{\text{chp}} + (H_{\text{chp}} * (E_{\text{conv}} / H_{\text{conv}})) > E_{\text{conv}}$$

where E_{chp} and H_{chp} are electrical and heating efficiencies of CHP and E_{conv} and H_{conv} are efficiencies of conventional systems displaced. E_{conv} should instead be the *marginal* delivered efficiency for electricity, with a likely value of between 0.30 and 0.40.

Alternative “Market-Based” Approach

The regulations need to recognize the environmental differences between systems that operate frequently and those that only run occasionally. Expensive after treatments provide little environmental benefit in peaker systems when the peakers do not run. Cleaner systems should be encouraged to operate more frequently than

¹ For example, using AP-42 emission factors, a 1-MW, 4-stroke lean-burn diesel (liquid fuel) engine has oxides of nitrogen (“NO_x”) emissions of more than 19 lbs/MWh which is more than thirty-one times the proposed standard of 0.6 lbs/MWh for new DGs installed before May 1, 2008. The estimated PM emissions of 1 lb/MWh are higher than the proposed standard of 0.7 lbs/MWh.

² A new 1-MW Caterpillar Tier 2 Rated C32, 4-stroke diesel reciprocating engine with SCR that reduces NO_x emissions by 90% will not meet the standards for new DGs – even though that engine currently represents BACT. The estimated NO_x emissions from the engine with SCR which represents BACT are 1.4 lbs/MWh, which is 40% greater than the proposed standard of 1.0 lbs/MWh for new DGs installed after January 1, 2008 and more than two times the proposed standard of 0.6 lbs/MWh for new DGs installed after January 1, 2012.

dirtier systems. NECA believes that a market-based system could best address both the frequency of operation and the combined heat and power credit.

Realizing that the development of a market-based approach may require a long lead time, NECA encourages the OTC to immediately work towards the development of a market-based system to replace these standards as soon as possible. As stated previously, as an interim measure while a market-based system is being developed over the next several years, NECA recommends that more reasonable fuel-specific standards be developed and added to the existing initial standards which would then be applicable for natural gas only.³ These additional standards would be for sources installed on or after January 1, 2008 firing fuels other than natural gas.

One example of a “market-based” system that NECA recommends be considered is the emissions fee system that is being used by New Hampshire. As the NESCAUM report states:

“innovative regulatory approaches can provide attractive alternatives to mandating costly retrofit controls. New Hampshire has introduced a program of emissions fees for small diesel generators. Fees are imposed per ton of NO_x generated and are scheduled to increase over time. Similar incentive programs could be used to promote less polluting engines elsewhere, with resulting revenues applied to research, development and demonstration and to support available cleaner technologies. Another option would be to require distributed generators to obtain pollution allowances, especially where emissions budget and trading programs already exist.”

Charges under the New Hampshire emissions fee system range from \$500 to \$1,000 per ton of NO_x emissions, depending on whether emissions occur during the summer ozone season. Small engines (i.e., those with NO_x emissions below 5 tpy) and emergency generators are exempted.

NECA recommends that the OTC consider a similar emissions fee system that would apply to generators used to meet economic demand response. Under such a plan, units with annual emissions in demand response mode exceeding a certain threshold would be subject to emissions fees. The fee would not be required for units that run during periods of emergency (including periods of OP-4, Action 12 or higher operations in New England or during PJM’s Emergency Load Response Program or ELRP). Although New Hampshire exempts existing sources from this program for seven years, NECA recommends that existing sources be allowed to participate in such an emissions fee system in lieu of the proposed standards for existing generation.

Definition of Emergency

The definition of emergency in the Delaware regulation directly conflicts with the definitions or emergency engine policies in many of the OTC states. The Delaware regulations do not distinguish between emergency demand response and peak shaving; thus, the regulations are severely flawed. In all of the OTC, the electric grid managers have determined that electric load could exceed the capability of existing electric generating and transmission resources in the region. Under certain conditions, these existing resources may not be able to supply the load without overloading the lines or reducing voltage. The entities that manage the electricity grid have emergency DR programs in place to address these shortfalls.

³ While the initial limits are extremely stringent even for natural gas-fired distributed generators, NECA can support them for natural gas fired applications above 300 kW in size with the important exception of ammonia. It is apparent that many applications would require SCR to achieve the NO_x limit and 2 ppm ammonia slip is inappropriate for the size of generators being regulated here and does not represent BACT. NECA recommends 10 ppm for the ammonia standard.

For example, when ISO New England declares Action 12 under NEPOOL Operating Procedure 4 (“OP 4”) “Action During A Capacity Deficiency” or higher for a specified area the ISO New England emergency DR program is activated. This allows back-up generators to participate in ISO New England’s 30-minute real-time demand response program (the “emergency” demand response program). OP 4, Action 12, as it is referred to, is the start of brownouts with the next step being involuntary interruptions of load. This declaration is taken very seriously by the ISO. In fact, even under the extreme weather conditions which occurred during the summer of 2002, the ISO did not declare OP 4, Action 12. It is truly reserved for emergency situations. Since 2002, the program has only been called three times. This declaration should not be confused with other ISO programs that are enacted for economic reasons (such as the ISO’s price response program).

OP 4, Action 12, as approved by the NEPOOL Participants Committee on June 26, 2003, is:

“Implement a voltage reduction of five percent (5%) of normal operating voltage requiring more than 10 minutes to implement. Interrupt Real-Time Demand Response – 30 Minutes or Less Notification (that requires a voltage reduction to be implemented).”

Connecticut, Massachusetts, Rhode Island, and New Hampshire have formally changed their regulations to allow emergency engines to operate during emergency DR events. Vermont has implemented a policy to allow this and Maine permits the use of emergency engines in emergency DR programs on a case-by-case basis.

A report prepared by Synapse Energy Economics, Inc. for the Environmental Protection Agency (“EPA”) entitled “Results of Demand Response Emissions Modeling” by Geoff Keith, Bruce Biewald, David White and Mike Drunisc dated August, 2003 and revised September 4, 2003, assesses the impacts of demand response (“DR”) and energy efficiency programs in New England using an electric system dispatch model.⁴ As the report states, “when the DR resource is used to meet reserve requirements, the result is more efficient unit commitment, reduced operation of oil- and gas-fired steam units and increased operation of combined-cycle units in New England.” Even assuming all DR is from diesels, the report showed a net benefit in air quality. Thus, by changing the definition of “emergency”, more DR resources will provide the necessary reserve capacity and regional air quality should actually improve.

As noted in the Synapse report, “New England has a small amount of quick-start capacity relative to the regional peak load compared to most other control areas. Many analysts have noted that this requires large power plants to operate more than they would otherwise have to in order to maintain sufficient operating reserves – capacity that can be provided quickly in response to unplanned losses of capacity. A key goal of this work for EPA was to verify that large units were indeed being operated more than necessary in New England to meet reserve requirements, to gauge the probable emission impacts of this dynamic, and to estimate potential emission reductions that additional DR could provide if it were used to meet operating reserve requirements.”

Summary

NECA is supportive of the OTC’s efforts to foster the development of improved combustion and pollution control technologies that would lower emissions of air pollutants and improve air quality in the OTC region. However, the ensuing requirements cannot be so stringent that the goals of promoting new technologies, ensuring the reliability of the electrical supply system, and improving environmental quality are not realized.

⁴ A hypothetical near-term year in New England using projected 2006 fuel prices and loads was modeled. The modeling included 500 MW of DR capability: 60 percent load response and 40 percent generation. The emissions impacts when DR is used for reserves results in significant decreases of criteria pollutant emissions, even when it is assumed that the DR used to meet reserves is all diesel (e.g., summer air impacts include: NO_x decreases 23 tons, sulfur dioxide decreases 216 tons, carbon dioxide decreases 31,400 tons, particulate matter 2.5 microns or less decreases 12.5 tons, particulate matter decreases 21.2 tons and mercury decreases 0.29 tons).

NECA hopes that the OTC will recognize the importance of reliability and the role of fuel diversity in promoting reliability. NECA hopes the OTC will give further consideration to NECA's proposal. We are confident that through such a deliberative process the appropriate balance that is needed in this instance can be realized to the ultimate benefit of the environment and the regulated community alike.

In advance, thank you for your consideration of our comments.

Sincerely,

A handwritten signature in cursive script that reads "Sandi Hennequin".

Sandi Hennequin
President
Northeast Energy and Commerce Association