Gas Turbine Association
Robert Hilton, Chairman

December 24, 2012

RE: Docket ID No. EPA–HQ–OAR–2004–0490
Standards of Performance for Stationary Gas Turbines (Subpart KKKK)
Proposed Rule

To: Air and Radiation Docket
U.S. Environmental Protection Agency
Attention: Docket ID No. EPA–HQ–OAR–2004–0490
Mail Code 6102T
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Washington, D.C. 20460

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The Gas Turbine Association (GTA) appreciates the opportunity to provide comments on the U.S. Environmental Protection Agency's (EPA's) proposed rule to amend 40 CFR Part 60 subpart KKKK. *See* 77 Federal Register 52554 (August 29, 2012). The GTA leads gas turbine industry efforts to support research and development initiatives in the national interest, to assure that energy and environmental regulations are reasonable and technically sound, and to support the electric power industry in its efforts to provide secure, reliable, clean, and affordable electric power to the nation.

INTRODUCTION AND SUMMARY OF COMMENTS

While the GTA supports some of EPA's proposed changes to subpart KKKK, we are concerned that a number of the proposed amendments are impracticable in light of the economic and technological realities of the combustion turbine industry. Many of the proposed amendments would create substantial new regulatory burdens without significant environmental benefits.

The GTA is particularly concerned with:

(1) EPA's proposal to redefine an affected facility for the purposes of a reconstruction analysis. The proposed change in scope of an affected facility will cause many routine maintenance activities to trigger reconstruction.
(2) EPA's proposals for how the revised definitions would apply to offsite overhauls of turbines.
(3) The inclusion of part speed, no load, start-up and shutdown emissions in the NSPS.
(4) EPA's suggestion to change longstanding practice and the current regulation by treating multi-engine facilities as a single combined source.

Another set of prominent concerns relate to the overall organization of the rewritten standard and the inconsistent use of terminology. The proposed rewrite of subpart KKKK has not improved rule clarity; in fact, the GTA believes that the rewrite is less clear than the current rule. The issues of clarity and organization may be due to the proposed rule's focus on combined heat and power (CHP) and combined cycle (CC) applications, as well as combustion turbines with NO_x continuous emissions monitoring systems (CEMS). That emphasis is not well founded, however, as simple cycle units without CEMS make up the vast majority of the installed combustion turbines.

Finally, contrary to statements in the preamble suggesting that the proposed amendments are technical and do not affect compliance burdens, *see* 77 Federal Register 52555, the GTA respectfully contends that the amendments constitute significant, substantive revisions to subpart KKKK. The current version of subpart KKKK was developed with considerable EPA engagement of stakeholders and vetting of issues. It is troubling that the current proposed changes to subpart KKKK did not include similar consultation with stakeholders before release. The GTA respectfully urges EPA to make such consultations going forward.

In light of our concerns, the GTA recommends that EPA maintain the existing subpart KKKK language and add targeted provisions as necessary to address the CHP/CC issues that seem to have motivated the more extensive substantive revisions. Likewise, the pertinent issues in the Utility Air Regulatory Group's reconsideration request, *see* EPA-HQ-OAR-2004-0490-0325, technical omissions, grammatical and typographical errors, and the SO_2 standard as it relates to low-Btu gases can also be easily incorporated into the existing standard.

The GTA's comments and recommendations on the proposed rule are discussed more fully herein. We gladly offer our assistance and welcome any opportunity to discuss the proposal further as EPA considers comments and prepares the final rule.

ANALYSIS OF THE PROPOSED RULE

Proposed Amendments to the Applicability of Subpart KKKK

EPA has proposed and requested comment on five amendments to the scope of applicability of subpart KKKK. The GTA supports three of the proposed amendments, providing for certain exemptions from the SO_2 standard, as well as a voluntary petition process to comply with subpart KKKK in lieu of 40 CFR Part 60, subpart GG and other associated steam generating unit NSPS. *See* 77 Federal Register 52556-57.

As noted above and discussed herein, however, we have serious concerns regarding the other two proposed amendments, which redefine an affected source for purposes of reconstruction analysis, and apply that reconstruction analysis to offsite overhauls of turbine engines. *See* 77 Federal Register 52556-57. We urge EPA not to adopt these two proposed amendments.

Proposed Amendment: **Only consider the gas turbine engine for purposes of determining applicability and determination of a "new" or "reconstructed" turbine.**

Subpart KKKK currently defines a "stationary combustion turbine" to include "all equipment," including "ancillary components and sub-components" which are part of the turbine facility (40 CFR 60.4420). Thus, under the cost-based definition of an "affected facility" due to reconstruction, existing turbine facilities undergoing maintenance do not become subject to subpart KKKK until the cost of new components "exceeds 50 percent of the … cost that would be required to construct a comparable entirely new facility." Reference 40 CFR 60.15.

EPA proposes to narrow the definition of "stationary combustion turbine" to only include the combustion turbine engine (the air compressor, combustion, and turbine sections), for the purposes of determining when a turbine is "new" or "reconstructed." *See* 77 Federal Register 52555-56. The practical effect of this amendment would be to lower the value of the 50% reconstruction threshold. The amendment apparently is intended to clarify treatment of large CHP and CC turbines under subpart KKKK. However, as proposed, there are significant unintended consequences for simple cycle and small CHP applications.

Subpart KKKK's broad definition of a "stationary combustion turbine," combined with section 60.15's cost-based definition of "affected facility" is crucial, due to the economic structure of the turbine industry. The effectively reduced 50% reconstruction threshold that would result from the proposed amendment would trigger hundreds of reconstruction analyses annually on combustion turbines that already satisfy the emissions standards in subpart KKKK. Indeed, EPA acknowledges that this would contravene the purpose of subpart KKKK, which was "not intended to change the circumstances in which a turbine engine is designated as new or reconstructed." 77 Federal Register 52556. It should be noted that non-dry-low-NO_x (DLN) systems (traditionally subpart GG affected facilities) are not easily retrofitted to DLN systems (subpart KKKK affected facilities) without substantial capital investment. In some cases DLN retrofits are not technically feasible or available.

EPA is proposing to change a fundamental, longstanding NSPS reconstruction definition as it is applied to combustion turbines so that when combustion turbines are maintained and repaired or turbine engines are replaced, reconstruction provisions are triggered. This is in direct opposition to the intent as stated in the original combustion turbine NSPS support document.[1]

> 5.2.3 Reconstruction
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> A reconstructed turbine, as discussed in 5.1.2, is essentially a turbine which has undergone a major rebuilding when it would otherwise have been scrapped or recycled. It is difficult to apply the definition of reconstruction to a gas turbine because substantial portions of a turbine may be replaced as a matter of routine maintenance during the normal overhauls as described in 5.2.1. Since it is current practice to replace substantial portions of turbines, it would be difficult to discriminate between a major overhaul that was performed to avoid the purchase of a new turbine and one that was performed in accordance with a routine maintenance program. Such routine maintenance should be exempted from the regulatory consequences of becoming a reconstructed turbine, subject to the "50 percent rule" discussed in 5.1.2.

[1] Standards Support and Environmental Impact Statement, Volume 1: Proposed Standards of Performance for Stationary Gas Turbines, EPA-450/2-77-017a, September 1977.

The proposed change in scope of an affected facility will cause many routine maintenance activities to trigger reconstruction. GTA contends EPA never intended routine maintenance to trigger reconstruction.

The proposed rule also states that in the event EPA does not adopt the proposed "clarification" (*i.e.*, change) to the definition of an affected source under subpart KKKK, EPA would amend subpart GG to include NO_x standards identical to subpart KKKK. *See* 77 Federal Register 52556. The GTA also has serious concerns about this approach. Redefining the entire NO_x NSPS would be an overreaction to an issue limited to new and reconstructed CHP and CC turbines. And as EPA notes, such a response would increase regulatory complexity by creating a cumbersome two-track process each time subpart KKKK is amended in the future. *See* 77 Federal Register 52556.

Rather than the major revisions to subpart KKKK or subpart GG that EPA proposes, a simpler solution would be an Applicability Determination letter or a supplement to the current rule with language applicable only to large, complex CHP/CC applications. That approach would address the impetus for the proposed amendment head-on, and also would avoid the unintended impacts on other turbines which constitute the majority of currently active facilities.

Proposed Amendment: **Exempt stationary combustion turbines that meet the applicability requirements of subparts J or Ja from the SO_2 requirements of subpart KKKK.**

The GTA supports this amendment

Proposed Amendment: **Exempt turbines subject to federally enforceable fuel sulfur permit limits that are more restrictive than the sulfur limits of subpart KKKK.**

The GTA supports this amendment.

Proposed Amendment: **Allow owners/operators of stationary combustion turbines to petition to comply with subpart KKKK in lieu of subpart GG and other associated steam generating unit NSPS.**

The GTA supports this amendment.

Proposed Amendment: **Treatment of combustion turbines that are overhauled or refurbished off site in such a manner that neither the owner, operator nor manufacturer can identify which components have been replaced and therefore, cannot conduct the otherwise required reconstruction analysis.**

EPA has requested comment on how to approach the reconstruction analysis for a turbine facility when the turbine engine is refurbished offsite, and in a manner in which it is not possible to identify which specific components have been replaced.

The GTA believes this proposed amendment is based upon a flawed premise. As described earlier, reconstruction determinations are cost based. Per 40 CFR 60.15, an "existing facility" is reconstructed when "the fixed capital cost of the new components exceeds 50

percent of the fixed capital cost that would be required to construct a comparable entirely new facility." A reconstruction analysis therefore can be conducted without precise knowledge of which parts of a turbine were replaced or refurbished.[2] Because the premise of this proposed amendment is flawed, GTA urges EPA to remove the proposal from further discussion.

EPA also has requested comment on whether the reconstruction analysis for onsite and offsite refurbishment should be treated identically. *See* 77 Federal Register 52557. EPA should treat on-site and offsite overhauls identically for purposes of reconstruction analysis. There is nothing about offsite refurbishment that requires a special rule for reconstruction analysis. Regardless of where it is performed, an overhaul involves the complete disassembly, inspection, rework, reassembly and test of a combustion turbine to original thermodynamic and mechanical performance. An overhauled combustion turbine has identical horsepower, heat rate, and emissions characteristics as the originally purchased combustion turbine.

Proposed Amendments to the NO_x Emissions Standard

EPA has proposed several amendments to subpart KKKK's NO_x emissions standard. While the GTA supports some parts of the proposed revisions—for example, allowing site-specific NO_x standards in some instances—we strongly oppose other proposals. In particular, EPA should not extend the NO_x NSPS to turbine tuning, start-up and shutdown emissions. GTA's analysis of specific proposed amendments follows herein.

Proposed Amendment: Including turbine tuning, start-up and shutdown emissions in the NO_x NSPS.

EPA is proposing that the current part-load NO_x emission standard apply during periods of turbine tuning, start-up and shutdown (SU/SD) operation. *See* 77 Federal Register 52558. The GTA strongly opposes this amendment, for several reasons.

Fundamental Revision to NSPS. To begin, the inclusion of SU/SD emissions would represent a fundamental change in the performance standard. *Cf. AT&T Corp. v. FCC*, 113 F.3d 225, 229 (D.C. Cir. 1997) (rules modified upon petition for reconsideration must be a "logical outgrowth" of the earlier version of the rule). Such a fundamental change in a regulatory requirement is certainly a substantive change to subpart KKKK and should include formal consultation with stakeholders prior to public issuance. *Cf. Center for Biological Diversity v. Salazar*, 770 F. Supp. 2d 68, 92 (D.D.C. 2011) (noting "[p]ush-back from stakeholders" on proposed rule "forced a re-evaluation" by agency, "the exact purpose of public comment and peer review").

Inappropriate to Base SU/SD Standard on Part-Load Emission Limit. The preamble states that "[s]ince periods of start-up and shutdown are by definition periods of low load, the "part-load standard" would apply to all hours that contain a start-up and shutdown event." 77 Federal Register 52558. The GTA respectfully disagrees that start-up and shutdown operations are the same as operating a turbine at part-load. While starting a gas turbine,

[2] The cost that the vendor or repair shop invoices is the capital cost of the repair or refurbished to owner/operators. The costs can clearly be identified for use in a reconstruction analysis.

especially a dry low NO_x combustor, the turbine transfers through a number of transient operations including part-speed and no load operation. From an emissions standpoint, this kind of SU/SD operation is very different than maintaining a steady part load operation. It is therefore inappropriate to apply a part-load emission standard during these periods of operation. If SU/SD emissions limits were ever to be established, those limits would need to be tailored to SU/SD operations, not pegged to standards designed for steady part-load operation. An appropriate and representative start-up and shutdown emission standard would need to be established, across the full range of regulated turbines, installations and fuels, based on an accurate assessment of equipment capabilities.

Concerns with EPA's CEMS Data to Verify Standard. The preamble states a review of available CEMS data indicates that over 99% of existing units will currently satisfy the start requirements. *See* 77 Federal Register 52558. The GTA's review of the docket identified a document titled "Turbines List - Medium." *See* EPA-HQ-OAR-2004-0490-0336. This document identifies 42 gas turbines ranging in size from 300 to 545 MMBtu/hr. All of the identified turbines fit within the "medium" classification based on heat input during steady operation, while 24 of these turbines fit within the "large" classification based on start emission limits and 18 fit within the "small" classification. The analysis indicates these combustion turbines will satisfy the proposed emission standard for 99.9% of the measured averaging periods. However, 19 of these same 42 turbines—a full 45%—have demonstrated exceedences of the emission standards. While there is not sufficient information to determine the root cause of those exceedences, the data clearly casts considerable doubt on EPA's contention that the part-load NSPS already is being achieved consistently by the existing fleet of turbines. There is a similar document included in the same Docket (ID EPA-HQ-OAR-2004-0490-0336) labeled "Turbine List – Large." Similar comments could be made regarding this dataset.

Further the smallest turbine evaluated in this dataset is 300 MMBtu/hr. There is no data identified for smaller turbines, a majority of which do not include CEMS equipment. Similarly, there are no combined cycle installations included in the dataset. Combined cycle plants have very different start-up and shutdown profiles than simple cycle, resulting in various hold points for the gas turbine at low and partial loads. An evaluation of these combustion turbines classes and plant installations must be conducted to ensure the appropriateness of the proposed emission standard to the full range of turbines that are applicable to this standard.

Verification of Compliance using CEMS. Our recommendation is that SU/SD emissions (from the CEM) not be included in the averaging period. CEMS accuracy is dependent upon calibration of the CEM system in the range of the normal operation of the combustion turbine. During those periods where the unit is in a start mode (where ramping is likely to be taking place), emissions are changing rapidly. We would expect the measured emissions during these periods to be of questionable accuracy. As an alternative, if SU/SD emissions must be included, that they only be included at the operating point where the combustion turbine has reached its minimum steady state operating point where the CEM system has been calibrated to accurately quantify the emissions.

Compliance Verification without CEMS. A majority of new and existing smaller combustion turbines are not equipped with a CEMS system and it is not cost effective or feasible to require CEMS on all of these units. Start emissions are highly variable and are literally dependent on the weather. As such the use of a stack test and applying those emissions to

all starts is not representative of real life emissions. Verification of start-up and shutdown emissions is not feasible for a majority of combustion turbine installations.

Not Appropriate to Consider First 30 Minutes of Operation as Part-Load. EPA is requesting comment on whether to account for start-up condition by considering the first 30 minutes of operation as "part-load." As stated previously, emissions during a start-up or shutdown sequence are not the same as emissions during steady-state part load operation. Further, combined cycle start sequences are fundamentally controlled by the steam turbine bottoming cycle thermal requirements. For a cold start, in which the plant has been shutdown for an extended period and the equipment is all at ambient temperature, a combined cycle plant start can require 3 hours or more to reach full operation. The use of a blanket assumption that a plant will start within 30 minutes is clearly not appropriate.

In short, SU/SD emissions should not be included in the averaging of the total emission signature of a combustion turbine.

Proposed Amendment: Alter the applicable NO_x standard for multi-fuel turbines.

EPA is proposing to amend the NO_x emissions standard for stationary combustion turbines that burn multiple fuels. EPA proposed that the natural gas standard would apply at those times when the fuel input to the combustion turbine engine meets the definition of natural gas, regardless of the fuel, if any, that is burned in the duct burners. *See* 77 Federal Register 52558.

EPA's conclusion assumes that duct burner emission contribution is not significant. Duct burner emissions are not always insignificant, however, and can be additive to a concentration based emission level. GTA recommends that an appropriate emission standard be established that considers the contribution of duct burner emissions.

Proposed Amendment: Allow site-specific NO_x standards for facilities burning by-product fuels.

EPA is proposing to add a provision allowing an owner/operator of a stationary combustion turbine which burns by-product fuels to petition for a site-specific NO_x standard. *See* 77 Federal Register 52558.

The GTA supports this proposal. We encourage EPA, however, to expand the opportunity for site-specific NO_x standards. Restricting this provision only to facilities burning "by-product fuels," and then further restricting the definition of "by-product fuels" to exclude fuels that contain greater than 50% CO_2 or >10% CO, *cf. id.* (Citing 40 CFR 60.41b), appears arbitrary. The restrictions could exclude developing waste-to-energy fuel markets. The GTA recommends EPA eliminate the restrictions.

Proposed Amendment: Extend the simple cycle turbine averaging time.

EPA is requesting comment on whether it is appropriate to extend the averaging time for simple cycle combustion turbines to an operating day average. *See* 77 Federal Register 52558. The GTA supports this revision and recommends that EPA adopt the proposal.

Proposed Amendment: Amending the output-based standard from gross to net output.

EPA has proposed amending the optional output-based NSPS from gross to net output in the final rule, stating that "the net power supplied to the end user is a better indication of environmental performance than gross output from the power producer." See 77 Federal Register 52558.

There are several technical complications with determining the parasitic load for a combustion turbine. Most notably, the parasitic load for combined cycle plants is very different than simple cycle. For a multiple turbine installation many of these loads are shared among the turbines. Also, the parasitic load will vary with configuration, load and ambient conditions. Therefore, a single load curve would not accurately represent the total parasitic load. The GTA opposes this revision and recommends the output-based standard be maintained on gross energy basis.

Comments on Specific Proposed Rule Provisions

Consistent with our comments above, the GTA offers the following recommendations on the specific regulatory language in the proposed rule. *See* 77 Federal Register 52562-81.

Section 60.4305(a) EPA is proposing to add a "MW input" unit to the applicability text and Table 1. Since combustion turbines are commonly categorized by "MW output" the inclusion of MW input, using the same nomenclature, is confusing. The European Union frequently uses "MW input" in its regulations and signifies such as "MWth" to differentiate it from MW output (MW). The GTA suggests EPA add "th" to each occurrence of "MW" that is referring to input.

Section 60.4305(b) The GTA recommends that EPA strike section 60.4305(b). We understand that much of the motivation for the subpart KKKK rewrite was driven by at least one large CHP facility that found a supposed "loophole" to remain classified under subpart GG. Section 60.4305(b) is a departure form historical interpretation/practice and also has NSR implications.

Section 60.4320(e) The GTA asks that EPA continue to exempt start-up, shutdown, and malfunction periods.

Section 60.4330(b) In the preamble, EPA requested comment as whether or not to exempt low-Btu gases from the SO2 standards. The GTA agrees with EPAs proposal to include exemption language. The GTA supports proposed revisions that provide an exemption from SO2 limits for natural gas fired units with a fuel sulfur specification. However, options other than a "federally enforceable requirement" should be allowed to document fuel quality. The organization and hierarchy of the section diminish this important exemption. Since the vast majority of affected units will utilize the exemption it should be emphasized appropriately.

Section 60.4330(g) The GTA requests section 60.4330(g) be rewritten to exempt start-up, shutdown, and malfunction for all affected facilities.

Section 60.4333(a) Remove inclusion of start-up, shutdown, and malfunction language.

Section 60.4333(c) Despite section 60.4333(b) detailing the option for performance tests, section 60.4333(c) says each combustion turbine must demonstrate continuous compliance using CEMS. The GTA requests EPA reword the section to reflect the options, or better yet, use the text from the original subpart KKKK.

Section 60.4340(a)(3) This section references section 60.4242, a section for water/steam injection. Section 60.4340 is for applications that do NOT use water/steam injection. Please correct reference.

Section 60.4345(a)(3) This section specifies that if you are using a NO_x CEMS and elect to comply with the input based emissions standard, you must install, calibrate, maintain and operate either a fuel flow meter or an O_2 or CO_2 CEMS and a stack flow meter to continuously monitor the heat input. Input based emission standards are based on either ppmv corrected to 15 percent oxygen or lb/MMBtu. Neither of these input based standards requires a measurement of fuel flow or stack flow. The part per million standard is a direct measurement while the lb/MMBtu standard can be calculated using the methodologies of Appendix F to Part 75 (RM19).

Section 60.4345(a)(4) This section specifies that if you are using a NO_x CEMS and elect to comply with the output based emissions standard, you must install, calibrate, maintain and operate a stack flow meter. It is not technically necessary to require a stack flow meter. An alternative should be provided to allow owner/operators to determine the output based standard based on the methodologies of Appendix F to Part 75 (RM19), a fuel flow meter, and a wattmeter.

Section 60.4345(a)(5) This section specifies that if you are using a NO_x CEMS and elect to comply with the part load based emissions standard, you must install, calibrate, maintain and operate a fuel flow meter or an O_2 or CO_2 CEMS and a stack flow meter. The requirements of this condition seem to be redundant with 60.4345(a)(3). Comments are identical.

Section 60.4345(a)(6) This section specifies that if you intend to comply with the temperature dependent emissions standard, you must install, calibrate, maintain and operate a thermometer to measure ambient temperature. It is recommended that the requirement for an ambient temperature measurement be changed to compressor intake temperature. If there is any heating or cooling of the intake air, the two temperatures may vary and the turbine is actually controlled off of compressor intake temperature.

Section 60.4390(c) The GTA recommends that EPA remove the newly created “turbine tuning” standard, definition, and reference in Table 1.

Section 60.4400(b) This section specifies that you must use the methods in either (b)(1) or (b)(2) of this section to measure the NO_x concentration for each test run. It appears that (b)(1) is to be used for an output based demonstration and (b)(2) is for an input based demonstration. If section (b)(2) is indeed being specified to calculate an input based emission value, then neither a fuel flow meter nor a stack gas flow meter is required. If the owner/operator is determining input based standard using NO_x lb/hr calculated from a stack flow measurement and the heat input in MMBtu/hr using the fuel flow, then shouldn’t the performance test be based on a measurement using EPA methods 1 and 2 rather than calling out the use of a stack flow meter?

Section 60.4400(d) EPA has arbitrarily changed the minimum run time per run from 20 minutes to 60 minutes. The 60 minutes does not match the minimum run times in EPA Method 20 or EPA Method 7E. Extending the run time will increase the cost of conducting a performance test and will not provide improved test results.

Section 60.4420 Turbine tuning. If EPA elects to maintain the turbine tuning definition, the GTA recommends EPA remove the last sentence. A limit to 30 hours of turbine tuning annually is arbitrary.

Section 60.4420 Combustion turbine engine. The GTA disagrees with the proposed definition of "combustion turbine engine", which changes the reconstruction determination for simple cycle combustion turbines. The GTA requests that EPA delete the definition and maintain the current approach for conducting a reconstruction analysis based on definitions under the current rule and Section 60.15.

Section 60.4420 Offshore turbine. An offshore combustion turbine is defined as a stationary combustion turbine located on a platform in an ocean. It is unclear why EPA has specified that a platform must be in an ocean. Any combustion turbine located on a platform will have the same constraints, including a limited footprint for adding controls and restricted access, regardless of where it is located.

Table 1 All references to MW in the second column need a "th" after the "MW" so it's understood that the intent is "input". Also, the column heading should read: "Combustion turbine heat input (MWth) at base load rating (HHV)"

The "ppm" standard is the most prevalent standard used to comply with the NSPS. This should not be labeled as an alternative standard. List all standards as "NO_x emission standards".

Additional Request for Comments

The GTA offers the following recommendations in response to EPA's additional requests for comments. *See* 77 Federal Register 52558-61.

Amending the Definition of the Affected Facility for Systems with Multiple Combustion Turbine Engines. The GTA opposes EPA's suggestion to alter its longstanding practice of treating turbine engines capable of independent operation, but sharing a common stack or generator, as separate entities for purposes of size class determination in NSPS regulation. *Cf.* 40 CFR 60.4320(b) (codifying EPA's policy by providing that when "two or more turbines … are connected to a single generator, each turbine must meet the emission limits for NO_x" NSPS) *with* 77 Federal Register at 52560 (requesting comment on "amending the definition of the affected facility for systems with multiple combustion turbine engines," by potentially treating such configurations "as single affected facilities"). Contrary to EPA's suggestion, *see* 77 Federal Register at 52560, changing subpart KKKK would not benefit the regulated community. Rather, this amendment would subject smaller turbine engines to more stringent NO_x standards designed for an entirely different class of facility, and would impose a regulatory burden far beyond that borne by other similarly-sized turbines. Burdening multi-engine configurations would ultimately hurt the overall aims of the NSPS regulations, due to the environmentally beneficial efficiencies of such systems. We therefore also urge EPA not

to adopt any changes to 40 CFR 60.4320(b) [July 6, 2006 version of subpart KKKK, not the renumbered 60.4320(b) in the proposal].

Averaging Period. The EPA requested comment on shortening the averaging period for the input based standards to a 4-hour period for either simple cycle or CC based on an analysis that CEMS data are relatively steady for the input based parameters. The GTA recommends retention of the 30-day average for CC and CHP facilities due to potential operating variations for certain installations. Examples would include duct burner operation, or a wide range of potential CHP design factors. If, contrary to GTA's recommendation, start-up and shutdown emissions are incorporated in the average, a 30-day period will most certainly be required to ensure compliance across highly variable operating scenarios. GTA recommends retaining the current averaging period.

Affected Facility. The GTA recommends EPA leave the definition as promulgated. EPA's suggested approach increases complexity for a low volume application.

District Energy. The GTA recommends EPA abandon the concepts presented. Other regulatory mechanisms, namely NSR programs and incentive programs, exist to address system losses.

Low-Btu Gases. The GTA strongly supports EPA's consideration to specifically exempt, from the SO_2 emission standards, combustion turbines combusting over 50% low-Btu gases. These low-Btu gases are generally process "waste" gases that would otherwise be flared or vented. The combustion of these gases within a turbine will allow the generation of useful electrical output with no change in sulfur emissions, and generally a reduction in both NO_x emissions and the equivalent CO_2 emissions (CO_2e) through the conversion of methane to CO_2 with a lower green house gas potential. When considering the displaced electrical generation from other thermal sources, the productive use of these low-Btu gases will result in a net reduction in overall emissions.

Additional Proposed Amendments

The GTA is supportive of the EPA's additional proposed amendments, *see* 77 Federal Register 52560, that:

1. Exempt units that are out of operation at the time of the required performance test from conducting the required performance test until 45 days after the facility is brought back into operation.

2. Combustion turbines that have operated <50 hours since the previous performance test can request an extension until the combustion turbine has operated over 50 hours. The choice of 50 hours appears arbitrary. The GTA recommends extending that period, to perhaps 500 hours, to reduce regulatory burden. Gas turbine performance and associated emissions are not anticipated to change within this operating period.

3. Authorize a single emissions test as adequate demonstration for up to four additional affected facilities. The preamble to the proposed rule does not clarify the basis for limiting the custom schedule to only five units. Please explain rationale.

4. Allowing sources using only combustion controls to use the parametric NO_x monitoring in 40 CFR Part 75 to demonstrate continuous compliance without requiring prior approval.

Technical Issues and Economic Impact

In addition to the specific issues raised by the proposed rule, the GTA notes that the rewritten standard is difficult to read and determine compliance requirements. If a decision is made to go forward with the revisions, EPA should explore ways to improve clarity, including format, section organization, and hierarchy of criteria and requirements. As an example, the compliance criteria that are the most common in practice (*e.g.* natural gas fired sulfur exemption, NO_x periodic tests) must be clearly and prominently identified, not buried in their respective sections.

With regard to terminology, the GTA recommends that EPA carefully review the rule, select the minimum number of terms necessary to identify the affected unit, clearly define the terms, and consistently implement nomenclature throughout the rule. For example, EPA uses at least thirteen (13) different terms to reference a combustion turbine in the proposal.[3] The vast array of turbine references coupled with the new definitions makes it very difficult to interpret the proposed amendments and regulation text.

Furthermore, because EPA concluded that the proposed rule did not include substantive changes, a detailed cost/benefit analysis was not completed. EPA concluded the proposed changes result in no cost impact. However, there are significant cost implications that EPA has not considered. Upon review, EPA will determine that the impact of the proposed changes to subpart KKKK will be far above the $100MM threshold for triggering an analysis. If EPA proceeds on a path to adopt the proposed revisions, the GTA requests a cost-benefit analysis be conducted, and stakeholders be provided the opportunity to review and comment on the analysis.

[3] The following terms are found throughout the proposal: turbine engine, new turbine engine, entire turbine engine, combustion turbine engine, combustion turbine, stationary combustion turbine, turbine, engine, simple cycle turbine, reconstructed turbine engine, combined cycle combustion turbine, stationary gas turbine, and refurbished turbine engine. Some of the terms are specifically defined, the majority, are not.