



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0900067

Category: NSPS
 EPA Office: CAMPD
 Date: 07/03/2008
 Title: Gas Turbine Refurbishment & Commence Construction
 Recipient: Guthrie, Laura
 Author: Gigliello, Kenneth
 Comments:

Part 60, A	General Provisions	
	GG	Stationary Gas Turbines
	KKKK	Standards of Performance for Stationary Combustion Turbines

References:	60.2
	60.15
	60.15(f)
	60.331(a)
	60.4420

Abstract:

Q1. Does work performed on a stationary gas turbine owned by CenterPoint Energy Gas Transmission at a compressor station in Morrilton, Arkansas, that is subject to 40 CFR part 60, subpart KKKK, and that included moving the turbine to a new site, qualify the turbine as a new source?

A1. No. Relocation in and of itself does not trigger applicability. Further, because only portions of the affected facility as defined in NSPS subpart KKKK were replaced, it does not appear that a new affected facility was constructed.

Q2. Is the turbine modified?

A2. It is not clear whether the turbine has been modified, as the submission does not include sufficient information to evaluate whether emissions at the affected facility increased.

Q3. Does overhauling and uprating the turbine with old and new parts constitute reconstruction?

A3. The request letter does not contain sufficient information to make a determination about whether this is reconstruction. The cost of the new and old components that were added to the affected facility is included in the reconstruction analysis. Equipment that is outside of the affected facility is not included in the reconstruction calculation. Reconstruction involves consideration of whether it is technically and economically feasible to meet the applicable standards.

Q4. Does the Letter of Authorization (LOA) with the manufacturer to purchase the turbine constitute commencement of construction? The letter predates the applicability date for 40 CFR part 60, subpart KKKK.

A4. No. The LOA does not require the type of activities that commence construction. Planning work does not commence construction, and contracts for services such as site preparation, planning, engineering, or architectural drawings do not constitute a contractual obligation for construction within the meaning of NSPS subpart KKKK.

Letter:

Laura L. Guthrie
Senior Environmental Specialist
CenterPoint Energy
Gas Transmission
P.O. Box 21734
Shreveport, LA 71151-0001

Dear Ms. Guthrie:

This is regarding your inquiry as to which New Source Performance Standards (NSPS) for stationary gas turbines applies to a compressor station located in Morrilton, Arkansas. NSPS Subpart GG, Standards of Performance for Stationary Gas Turbines applies to stationary gas turbines which commenced construction, modification, or reconstruction after October 3, 1977; whereas, NSPS Subpart KKKK, Standards of Performance for Stationary Combustion Turbines applies to stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005. Your initial inquiries from October 5, 2005, and November 16, 2005, pre-dated the July 6, 2006 promulgation of NSPS Subpart KKKK and were submitted after the close of the public comment period on the proposed rule so we did not provide a response at that time. By an e-mail dated September 12, 2007, you confirmed that you are still seeking clarification on the applicability of the NSPS to the turbine.

Your submissions state that CenterPoint Energy Gas Transmission (CEGT) began incurring expenses in 2003 related to the design and engineering of a refurbished natural gas-fired stationary gas turbine for the Round Mountain compressor station in Morrilton, Arkansas. You describe the gas turbine in question as a refurbished stationary gas turbine dating from some time prior to the applicability date for NSPS Subpart KKKK which was overhauled and uprated using vintage parts from the 1970's and 1980's and some new parts. The purchase order for the turbine was not issued until March 29, 2005, which is after the applicability date for Subpart KKKK; however, a Letter of Authorization (LOA) with Solar Turbines (Solar) to purchase the turbine had an effective date of February 8, 2005, which predates the applicability date for Subpart KKKK. The turbine was transferred from Solar to CEGT on July 28, 2005 upon delivery to the Round Mountain station.

Your submissions assert that NSPS Subpart GG applies to this turbine rather than NSPS Subpart KKKK. It is correct that simply relocating the stationary gas turbine to the Morrilton site would not trigger applicability under NSPS Subpart KKKK. However, this turbine was not simply relocated, it was overhauled and uprated. Therefore, it must be determined if the work performed on the turbine constituted construction, modification, or reconstruction of the turbine commencing after February 18, 2005, the applicability date for NSPS Subpart KKKK.

New Construction

The situation you describe is one where an existing stationary gas turbine is refurbished off-site and shipped for installation at a compressor station. Your letter indicates that an existing turbine that was previously in place at the Round Mountain compressor station was subject to NSPS Subpart GG. However, it is unclear whether the turbine in question, the refurbished turbine you purchased from Solar, was an existing facility prior to the refurbishment, if it was already subject to Subpart GG prior to refurbishment, or if it was assembled by Solar for the first time using new and vintage parts.

In evaluating the applicability of NSPS Subpart GG versus Subpart KKKK it is important to remember the different scope of the affected facilities in each subpart. In NSPS Subpart GG, the affected facility is restricted essentially to the turbine itself; whereas, in Subpart KKKK, the affected facility includes the turbine and its ancillary facilities. See the following definitions from Subparts GG and KKKK respectively:

Stationary gas turbine means any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability.

NSPS Subpart GG - 40 CFR Section 60.331(a).

Stationary combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/ recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

NSPS Subpart KKKK - 40 CFR Section 60.4420.

Given that the affected facility for NSPS Subpart KKKK includes not only the turbine that was overhauled or constructed at Solar, but also certain ancillary facilities, the Solar turbine in question probably does not constitute the entire affected facility under NSPS Subpart KKKK. Therefore it does not appear that a new affected facility under NSPS Subpart KKKK has been constructed.

Modification

Your letter asserts that the Solar turbine is not subject to NSPS Subpart KKKK as a modification because the work performed did not result in an increase in emissions from the turbine. The validity of this statement cannot be evaluated because you have not provided data or specific information to support this assertion. Also it is unclear which turbines you are comparing in your analysis. In evaluating whether a modification occurred under NSPS Subpart KKKK we would compare emissions from the turbine that was previously in place at the Round Mountain Station (the existing stationary combustion turbine) to emissions from the new/overhauled Solar gas turbine. Emissions from the overhauled Solar turbine cannot be assumed to be the same or less than the emissions from the turbine that was removed.

Reconstruction

The work you have described warrants consideration under the reconstruction provisions. As described under 40 CFR 60.15, the fixed capital cost of the new components must be compared to the fixed capital cost of a comparable entirely new facility.

CEGT represents that the gas turbine in question is not a reconstructed source because more than 50% of the components replaced in the refurbishment were vintage parts rather than new parts. However, the reconstruction provisions are not based on the age of the components that are added, but rather on the fixed capital cost of those components. See the definition of "reconstruction" and "fixed capital cost" at 40 CFR Section 60.15:

b) "Reconstruction" means the replacement of components of an existing facility to such an extent that:
(1) 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, and (2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(c) "Fixed capital cost" means the capital needed to provide all the depreciable components.

The word "new" in the term "new components" is a comparative term in relation to existing components. It does not distinguish whether those new components are used, refurbished, old but unused, or brand new parts, so long as they are "new" to that existing facility. Although the age of a part may affect its cost, it does not remove it from consideration as a new component.

When determining the cost of the comparable entirely new facility, one must include all of the components identified in the definition of the affected facility in NSPS Subpart KKKK, but cannot include components outside of the defined affected facility. Guidance on what costs to include can be found in the December 16, 1975 preamble to the reconstruction regulations (40 FR 58417-8) and in several letters posted on the ADI.1

Reconstruction also involves consideration of whether it is technically and economically feasible to meet the applicable standards. If CEGT wishes to assert a claim that it is not technically or economically feasible for them to meet the standard, that claim must be substantiated with more than just the cost of the project; it must include the information required in 40 CFR 60.15. As specified in the regulation, our determination of infeasibility is based on:

- (1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;
- (2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;
- (3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and
- (4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

NSPS Subpart A; 40 CFR Section 60.15(f).

In making determinations of technical or economic infeasibility for gas turbines we have considered: the cost associated with the alterations being made to the turbine; the cost for a new gas turbine of equivalent capacity; discussion of emission control technology available to reduce NOx emissions to meet the standard; and the cost associated with the use of emission control technology. You should submit any information you wish us to consider, in a form that readily allows our analysis of that information, addressed to your local delegated authority for applicability determinations. Consistent with 40 CFR Section 60.4, for a source located in Arkansas your request should be sent to John Blevins, Director Compliance Assurance and Enforcement Division, in EPA Region 6, and to the Arkansas Department of Environmental Quality.

Commence Construction Date

CEGT asserts that the reconstruction work commenced prior to the February 18, 2005, applicability date for NSPS Subpart KKKK. However, the activities CEGT describes as occurring before the applicability date are not activities which trigger commencement of construction under the NSPS. The definition of "commenced" in the NSPS is as follows:

Commenced means, with respect to the definition of new source in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

40 CFR 60.2.

The contractual obligations which CEGT points to are a March 29, 2005 purchase order, and a Letter of Authorization (LOA) with an effective date of February 8, 2005. Although the LOA was effective before the February 11, 2005, applicability date for NSPS Subpart KKKK, it does not require the types of activities which EPA has determined commence construction. Further, it does not appear that the LOA constituted a contractual obligation for construction within the meaning of the NSPS.

The work to be performed as stated by the LOA is "long-lead engineering and planning work." EPA and the courts have determined on multiple occasions that these types of activities do not commence construction; see especially the June 26, 1997 letter from EPA Region 5 concerning Tenneco Packaging, "planning and design work does not include fabrication, erection or installation"; the June 22, 1982 letter from EPA Region 3 concerning Pepco Chalk Point which summarizes several applicability determinations and court cases on construction and contractual obligation, "EPA can interpret "program of construction" to include fabrication, erection or installations and to exclude planning and design work"; the Sierra Pacific Power Company v. EPA, 647 F.2d 60 (9th circuit, 1981) court case, "The EPA approach of looking to physical construction on the boiler itself is not only a reasonable interpretation of the definitions in 40 C.F.R. §§ 60.2(g) and (i), but also provides a more workable test for determining the commencement of construction." Other letters and memoranda on the topic may be found by searching on "commence construction" on the Applicability Determination Index available on the Internet at <http://cfpub.epa.gov/adi>.

EPA has clarified what types of activities constitute a contractual obligation to undertake and complete a continuous program of construction or modification.² "Commenced construction" is determined in part by a legally binding contract for construction of the affected facility. EPA has confirmed that the contractual obligation begins when the purchaser would incur a significant loss of funds if the contract is canceled. Contracts for services such as site preparation, planning, engineering or architectural drawings are not activities which commence construction, therefore, a contractual obligation to complete these activities does not constitute "a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification" (40 CFR 60.2). Further, EPA is not required to consider lost investments related to construction activities other than those which are part of the actual physical construction of the affected facility.

The activities to be completed under the LOA are of the nature of planning, preliminary design and engineering, and permitting, none of which are considered as construction or reconstruction under the NSPS. Further, the LOA provides that it may be terminated at any time prior to February 25, 2005, and the \$50,000 advance payment on engineering and planning work required under the LOA would be returned to CEGT. If the LOA was terminated by CEGT for convenience without the fault of Solar, CEGT would pay Solar for costs and expenses incurred in performing the early engineering work plus 10%, not to exceed a total of \$50,000. Therefore, the LOA does not constitute a "contractual obligation" for construction.

Since this LOA pertains to preliminary design and engineering work which are not considered construction under the NSPS, and since the LOA could be canceled by CEGT prior to the applicability date of February 18, 2005 without incurring expenses for construction, this LOA does not trigger commencement of construction prior to February 18, 2005.

Summary

In summary, construction did not commence on the Solar turbine prior to the applicability date for NSPS Subpart KKKK. Your letter does not contain sufficient information for us to determine whether reconstruction of a modification has occurred. As such, we cannot support your assertion that NSPS Subpart KKKK does not apply.

For future correspondence on the potential reconstruction and modification of this facility, please follow the procedures in 40 CFR Section 60.4 and submit your request to the Compliance Assurance and Enforcement Division, in EPA Region 6, and to the Arkansas Department of Environmental Quality. For questions on this response, you may contact Sally Harmon of my staff, at 202-564-7012. Also, please copy Ms. Harmon on any future correspondence with the Region 6 office on this issue.

Sincerely yours,

Kenneth Gigliello, Acting Director
Compliance Assessment and Media Programs Division
Office of Compliance

cc: John Blevins, EPA Region 6
Mike Bates, Arkansas Department of Environmental Quality

¹ See especially the letters on this subject dated September 3, 1999 from EPA Region 1; May 11, 1998 from EPA Region 4; April 23, 1998 from EPA Region 2; April 4, 1997 from EPA Region 9; June 20, 1994 from EPA Headquarters; and November 25, 1986 from EPA Headquarters, which are ADI Control Numbers 0200048, 9800085, 9900057, 0000081, 9700125 and NB28, respectively. ² See especially letters dated June 22, 1994 from EPA Headquarters and June 22, 1982 from EPA Region 5 (ADI control numbers 0600036 and CO05). These letters reference many prior EPA letters and court cases on the subject.