U.S. Environmental Protection Agency
Applicability Determination Index

Control Number: 0600086

Category:	NSPS
EPA Office:	Region 4
Date:	12/14/2005
Title:	Initial Test Waiver for Identical Gas Turbines
Recipient:	Wylie, Dwight K.
Author:	Spagg, Beverly A.
Comments:	

Part 60, GG Stationary Gas Turbines

Abstract:

Q1: Is the proposal to use information regarding the fuel consumption rate, flue gas oxygen concentration, and F-factors to calculate the exhaust gas flow rate for two stationary gas turbines at Mississippi State University in Starkville, Mississippi acceptable under 40 CFR part 60, subpart GG?

A1: Yes. EPA finds that the proposed approach for determining the turbines' exhaust gas flow rate is acceptable, provided that the accuracy of the meters used to determine fuel usage rates is comparable to that of EPA Method 2.

Q2: Does EPA find that emission test results from one of the two identical stationary gas turbines can be used to verify compliance for both units under 40 CFR part 60, subpart GG?

A2: Yes. EPA finds that the requested waiver under NSPS subpart GG will be acceptable, provided that the emission rate for the unit that is tested does not exceed 50 percent of the applicable emission standard.

Letter:

4APT-ATMB

Dwight K. Wylie, P.E., Chief
Air Division
Office of Pollution Control
MS Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

Dear Mr. Wylie:

This letter is in response to a letter in which Mr. Michael Canerdy of your staff requested determinations regarding an alternative test method proposal and a test waiver request for two stationary gas turbines located at Mississippi State University in Starkville, Mississippi. These turbines are subject to 40 CFR Part 60, Subpart GG (Standards of Performance for Stationary Gas Turbines), and based upon our review, the alternative test method proposal from the University would be acceptable provided that the meters used to measure the fuel flow rates to the turbines have an accuracy of 5.0 percent. In addition,

waiving the initial nitrogen oxides (NOx) performance testing requirement for one of the two identical turbines would be acceptable provided that the NOx emission rate for the turbine that is tested does not exceed 50 percent of the applicable limit. Details regarding the MSU proposals and the basis for our determination are provided in the remainder of this letter.

In order to convert NOx concentration data from the MSU turbines into mass emission rates, it is necessary to determine the gas flow rate in the turbine exhaust. As an alternative to using the U.S. Environmental Protection Agency (EPA) Methods 1 - 4 to measure the turbines exhaust flow rate directly, MSU has proposed to calculate flow rates using fuel consumption data, flue gas oxygen concentration data, and equations from EPA Method 19. Under this proposed alternative, the company would use fuel flow meters to monitor the amount of natural gas and oil burned during each test and would use EPA Method 3A to measure flue gas oxygen concentrations. These data would be used in combination with equations derived from EPA Method 19 to calculate the flue gas volumetric flow rate generated by the fuel combusted during each test. These flow rate results, along with NOx concentration data, would be used to calculate NOx mass emission rates. Since F-factors relate the amount of flue gas generated to the amount of fuel combusted, the theoretical basis for the alternative method proposed by MSU is sound. Therefore, the alternative method that MSU has proposed to use for determining the turbines' exhaust flow rate would be acceptable to Region 4 provided that the accuracy of the flow meters used to determine fuel flow rates is comparable to the expected accuracy of the EPA Method 2 (i.e., 5.0 percent).

The second proposal from MSU was that the results of the NOx performance test conducted on one of the two identical turbines be used to verify compliance for both of the units. In several previous cases, EPA has waived the requirement to conduct performance tests on multiple identical turbines when the results from a representative number of turbines indicate an acceptable margin of compliance. Therefore, MSU's request that the initial performance test be waived for one of its turbines would be acceptable provided that the emission rate from the unit which is tested does not exceed 50 percent of the applicable emission limit.

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,

Beverly A. Spagg
Acting Director
Air, Pesticides and Toxics
Management Division

cc: Michael Canerdy
Environmental Compliance and Enforcement Division
Division of pollution Control
MS Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385