

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JAN 9 1980

Mr. Amarjit S. Gill
Environmental/Regulatory Planner
Gas Turbine Products Division
General Electric Company
One River Road
Schenectady, New York 12345

Dear Mr. Gill;

Your October 9, 1979 letter to Doug Bell of EPA's Standards Development Branch, has been forwarded to our office for response. You requested a determination as to whether a proposed new maintenance program for existing gas turbines would cause the turbines to be considered modified under §60.14.

The special program would update certain turbines to improve reliability, efficiency and output. Under this program, you believe there will be an increase in NOx emissions when firing distillate fuel, and a greater decrease when firing natural gas. Although an increased use of natural gas is planned, distillate fuel would still be fired part of the time.

You have raised three questions concerning this situation, which are included with our accompanying determinations:

1) If, after the update, these gas turbines are fired part of the time on natural gas and the remainder of the time on distillate fuel, such that the yearly average NOx and SO2 emissions do not increase would this be considered a modification under 40 CFR 60.14?

Yes, this would be considered a modification under §60.14, and the modified turbines would be required to meet NSPS. A modification is defined at §60.14(a) as "any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies". Certain exemptions are provided for under §60.14 (e) and (f), but these gas turbines are not eligible for any of these exemptions.

Even though, according to your data, the turbines will emit less over the course of a year, you feel there will be increases when distillate fuel is used. Since modification is based on increased emission rate, and emission rate under §60.14(b), is expressed in terms of kg/hr, any increase in emission rate during the periods when distillate fuel is burned, will require the source be considered modified for NSPS purposes.

This position is supported by a discussion in the preamble to the proposed provisions for NSPS modification, notification and reconstruction (39 FR 36946, October 15, 1974). The preamble states: "In the Act the phrase "increase in emissions" is not defined and therefore can be interpreted to mean any increase in emissions."

Should there be subsequent disagreement between your company and the Administrator as to whether an increase in emission rate occurs, the procedures outlined under §60.14(b) should be used to determine if a clear increase occurs.

2) Does EPA consider on either a de minimis or administrative necessity basis that certain small increases in the level of emissions would not require that the changes be classified as modifications?

There is no specific de minimis level or percent whereby increases below that level would not be considered modifications. If the Administrator determines that emission levels will increase, a modification will be deemed to have occurred. Emission rates can be determined, under §60.14(b)(1) and (2), from either Compilation of Air Pollutant Emission Factors (EPA No. AP-42) or other emission factors if they demonstrate a clear increase or decrease. If these factors cannot so demonstrate, then material balance, continuous monitor data, or manual emission tests can be used. When the emission rate is based on results from manual emission tests or continuous monitoring, Appendix C (Student's t test) shall be used to determine if an increase or decrease has occurred. Thus, in this instance, a modification occurs only if the emission rate after the change is statistically significantly higher than the rate before the change.

3) Under NSPS and PSD (proposed), is it correct that any available fuel suitable for use in operation of the equipment (subject to any applicable permit limitation) may be used to determine "before" emissions, and any fuel with characteristics for which the operator is willing to accept enforceable permit conditions may be used to determine the "after" emissions?

Under 40 CFR 60.14, emission rates before and after a change are based on actual source emissions. Again citing from the proposed provisions for NSPS modifications (39 FR 36946): "for an existing facility to undergo a modification there must be an increase in actual emissions... The Administrator considered defining "modification" so that increases in precontrolled (potential) emissions would be considered modifications. However, the proposed definition of modification is limited to increases in actual emissions in keeping with the intent of §111 of controlling facilities only when they constitute a new source of emission".

Your interpretation of §52.21 (proposed September 5, 1979), with regard to determining major modifications, is correct. The potential emissions of the source before the modification should be based on any type of fuel that the source was capable of firing. The term "type of fuel" refers not to sulfur content but to e.g., gas, oil, coal. Enforceable permit conditions on the "type of fuel" combusted will limit the potential emissions level. These conditions must be enforceable under the Clean Air Act.

The potential emissions after the modification should be determined on the same basis: the dirtiest type of fuel the source is capable of burning. Again, enforceable permit conditions on the type of fuel combusted may limit potential emissions.

The sulfur content of the fuel used in the calculation of pre-modification potential emissions should be the average sulfur content used over the preceding one-to-two year period if the source was burning the same type of fuel to be used in the calculation. If the source had been burning a different type of fuel, the sulfur content to be used in the calculation shall be based on the most stringent of the applicable SIP, any applicable NSPS, any SIP permit, or any other enforceable requirement.

For instance, assume that a source is capable of burning either oil or coal. For the past two years it has been burning oil with a sulfur content of 2%. The applicable SIP specifies a 2% sulfur limit for both oil and coal. The source now wants to adopt enforceable permit conditions which would limit it to burning oil.

The source's pre-modification potential emissions may be based on the dirtiest fuel that could be accommodated: coal. Because the source has not burned coal over the past two years, the sulfur content used in the calculation shall be the applicable SIP limitation: 2%.

The source's post-modification emissions may be based on oil burning, assuming that the source has agreed to permit conditions enforceable under the Clean Air Act. The sulfur content used to calculate potential emissions is the nominal sulfur content the source actually plans to use.

If you have any questions concerning the NSPS aspects of this modification issue, please contact Robert Myers of my staff at (202) 755-2564. Should you have any questions relating to the PSD aspect, please contact Libby Scopino at the same number.

Edward E. Reich

cc: Doug Bell, SDB
Regional NSPS Contacts
Regional PSD Contacts