



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 1111 East Main Street, Suite 1400, Richmond, VA 23219

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Matthew J. Strickler  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

### MEMORANDUM

**TO:** Regional Directors  
Regional Air Compliance Managers  
Regional Air Permit Managers  
Regional Enforcement Managers  
Central Office Air Managers

**CC:** James Golden, Director of Operations

**FROM:** Michael G. Dowd - Director, Air and Renewable Energy Division MGD

**SUBJECT:** ACG-011: Air Compliance Guidance for Sulfur/SO<sub>2</sub> Testing  
Requirements for Combustion Turbines Subject to 40 CFR Part 60,  
Subpart KKKK

**DATE:** February 28, 2018

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#### Purpose:

The purpose of this guidance is to provide clarification and promote consistency regarding the sulfur/SO<sub>2</sub> testing requirements outlined in 40 CFR Part 60, Subpart KKKK, §60.4415<sup>1</sup>. Questions or comments concerning this guidance should be directed to DEQ's Office of Air Compliance Coordination.

#### Applicability:

This guidance is applicable to stationary combustion turbines that are subject to 40 CFR Part 60, Subpart KKKK, as described under §60.4305.<sup>2</sup>

<sup>1</sup> [https://www.ecfr.gov/cgi-bin/text-idx?SID=70de678a4c6f9d1fc82a59f48e5f8741&mc=true&node=se40.8.60\\_14415&rqn=div8](https://www.ecfr.gov/cgi-bin/text-idx?SID=70de678a4c6f9d1fc82a59f48e5f8741&mc=true&node=se40.8.60_14415&rqn=div8)

<sup>2</sup> [https://www.ecfr.gov/cgi-bin/text-idx?SID=3924e7ac9711cc99a6997978c01b3565&mc=true&node=se40.8.60\\_14305&rqn=div8](https://www.ecfr.gov/cgi-bin/text-idx?SID=3924e7ac9711cc99a6997978c01b3565&mc=true&node=se40.8.60_14305&rqn=div8)

### **Background:**

40 CFR Part 60, §60.4415 provides requirements for initial and subsequent performance testing for combustion turbines subject to 40 CFR Part 60, Subpart KKKK. On July 28, 2017, DEQ requested that EPA Region 3 waive specific provisions for certain turbines located in Virginia (Attachment 1). Specifically, DEQ requested a waiver for each combustion turbine meeting both of the following criteria:

1. The combustion turbine's fuel is limited to pipeline quality natural gas by a federally enforceable permit condition and
2. The combustion turbine is exempted from the fuel sulfur monitoring requirements of 40 CFR Part 60, §60.4360 by use of a current, valid purchase contract, tariff sheet or transportation contract as described in 40 CFR Part 60, §60.4365(a).

To substantiate the request, DEQ cited the 2012 40 CFR Part 60, Subpart KKKK reconsideration proposal, which clarifies and simplifies the requirements by exempting natural gas-fired and low sulfur fuel oil-fired units from the SO<sub>2</sub> standard. DEQ also requested EPA Region 3 confirm the determination from EPA's Office of Air Quality Planning and Standards (OAQPS) that the 40 CFR Part 60, §60.4415 testing requirements are not applicable to combustion turbines meeting the above criteria even in the absence of a waiver.

EPA Region 3 responded to DEQ's request on November 14, 2017 (Attachment 2) denying the request for the following reasons:

1. Under 40 CFR Part 60, §60.4415, initial and subsequent performance tests must be conducted; and
2. EPA's 2012 reconsideration proposal for this rule was never finalized, nor are there currently any plans to finalize the proposal.

Additionally, EPA confirmed with OAQPS the above tests must be conducted; however, the testing requirements may be satisfied using fuel analyses performed by the facility, a contractor, the fuel vendor, or any other qualified agency.

### **Implementation:**

EPA's November 14, 2017 response definitively states performance tests for SO<sub>2</sub> are required for all turbines subject to 40 CFR Part 60, Subpart KKKK, regardless of fuel type. Accordingly, DEQ staff will ensure the initial and subsequent performance tests for all combustion turbines subject to 40 CFR Part 60, Subpart KKKK are conducted in accordance with §60.4415. The testing requirement may be satisfied through the use of fuel analyses in lieu of conducting a formal stack test, as described under §60.4415(a)(1).

ATTACHMENT 1



*COMMONWEALTH of VIRGINIA*

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

*Street address: 629 East Main Street, Richmond, Virginia 23219*

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Molly Joseph Ward  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

July 28, 2017

Zelma Maldonado  
Associate Director  
U.S. EPA Region 3  
Office of Air Enforcement and Compliance Assistance (3AP20)  
1650 Arch Street  
Philadelphia, PA 19103

Dear Ms. Maldonado:

The Virginia Department of Environmental Quality (DEQ) is hereby requesting that the U.S. Environmental Protection Agency (EPA) approve a waiver of all performance testing requirements (both initial and subsequent) required by 40 CFR 60.4415 for certain NSPS Subpart KKKK-applicable combustion turbines located in Virginia. Specifically, DEQ requests this waiver for each combustion turbine meeting both of the following criteria: (1) the combustion turbine's fuel is limited to pipeline quality natural gas by a federally enforceable permit condition and (2) the combustion turbine is exempted from the fuel sulfur monitoring requirements of 40 CFR 60.4360 by use of a current, valid purchase contract, tariff sheet or transportation contract as described in 40 CFR 60.4365(a). Alternatively, DEQ requests that EPA Region 3 confirm the attached analysis from EPA's Office of Air Quality Planning and Standards (OAQPS) that the 40 CFR 60.4415 testing requirements are not applicable to combustion turbines meeting the above criteria even in the absence of a waiver.

EPA has the authority to grant the requested waiver using the authority provided by 40 CFR 60.8(b) since the mechanisms specified by 40 CFR 60.4365 would provide ample demonstration that each combustion turbine is in compliance with the 40 CFR 60.4320 SO<sub>2</sub> emission standard. As such, there is no environmental benefit in conducting sulfur performance tests for units firing fuels with tariff sheets that are significantly below the 40 CFR 60.4320 SO<sub>2</sub> emission standard. In addition, the 2012 NSPS Subpart KKKK reconsideration proposal clarifies and simplifies the requirements by exempting natural gas-fired and low sulfur fuel oil-fired units from the SO<sub>2</sub> standard completely. Considering these factors, waiving the 40 CFR 60.4415 performance test requirements would eliminate the unnecessary administrative and financial burdens associated with conducting and reviewing the tests.

If EPA grants the requested waiver, DEQ would have the flexibility to establish sulfur fuel testing requirements on a case-by-case basis as appropriate to implement the provisions of the new source review and Title V permitting programs.

If you have any questions relating to this request, please contact Stanley Faggert at 804-698-4424 or through electronic mail at [stanley.faggert@deq.virginia.gov](mailto:stanley.faggert@deq.virginia.gov).

Sincerely,



Michael Dowd  
Director, Air and Renewable Energy Division

c: Tamera Thompson – Air Division, DEQ  
c: Todd Alonzo – Air Division, DEQ  
c: Mary Cate Opila  
U.S. EPA Region 3  
Office of Permits and State Programs (3AP10)  
1650 Arch Street  
Philadelphia, PA 19103

Attachment

## **Faggert, Stanley (DEQ)**

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**From:** Fellner, Christian <Fellner.Christian@epa.gov>  
**Sent:** Monday, May 22, 2017 1:50 PM  
**To:** King, Melanie; Faggert, Stanley (DEQ)  
**Cc:** Ayres, Sara  
**Subject:** RE: NSPS Subpart KKKK sulfur monitoring/testing question

Stanley,

My understanding is that the fuel tariff sheet can be used to satisfy both the initial performance test and ongoing performance test requirements. Specifically, a natural gas tariff sheet would satisfy all the testing and monitoring sulfur requirements. In the 2012 reconsideration proposal (we have not acted on finalizing the proposal), we proposed to clarify and simplify the requirements by exempting natural gas-fired and low sulfur fuel oil-fired units from the SO<sub>2</sub> standard completely. We did not see any environmental benefit to having sulfur performance tests for units firing fuels with tariff sheets that are below the emission rate.

Hope this helps,

### Reconsideration Proposal

#### **§ 60.4330 What SO<sub>2</sub> emissions standard must I meet?**

(f) A combustion turbine that is subject to a federally enforceable requirement limiting the sulfur content of gaseous fuels combusted in the stationary combustion turbine to no more than 460 mg/scm (20 gr/100 scf) and/or for liquid fuels no more than 0.050 weight percent sulfur is not subject to the SO<sub>2</sub> emission standards in this subpart.

### Current Reg Text

#### **§60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?**

You must monitor the total sulfur content of the fuel being fired in the turbine, except as provided in §60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in §60.4415. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17), which measure the major sulfur compounds, may be used.

#### **§60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?**

You may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input for units located in continental areas and 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input for units located in noncontinental areas or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit. You must use one of the following sources of information to make the required demonstration:

(a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for oil use in continental areas is 0.05 weight percent (500 ppmw) or less and 0.4 weight percent (4,000 ppmw) or less for noncontinental areas, the total sulfur content for natural gas use

measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the SO<sub>2</sub> emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the SO<sub>2</sub> emission rate in lb/MWh.

(b) [Reserved]

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Christian Fellner  
Energy Strategies Group  
Sector Policies and Programs Division  
Office of Air Quality Planning and Standards  
United States Environmental Protection Agency  
919.541.4003 (phone)  
919.541.5450 (fax)

**From:** King, Melanie  
**Sent:** Friday, May 19, 2017 3:57 PM  
**To:** Faggert, Stanley (DEQ) <Stanley.Faggert@deq.virginia.gov>  
**Cc:** Fellner, Christian <Fellner.Christian@epa.gov>  
**Subject:** RE: NSPS Subpart KKKK sulfur monitoring/testing question

Hi,  
Christian Fellner is our contact for subpart KKKK. I've copied him on his email so that he can reply.

Melanie King  
Energy Strategies Group  
Sector Policies and Programs Division  
Office of Air Quality Planning and Standards  
(919) 541-2469  
[king.melanie@epa.gov](mailto:king.melanie@epa.gov)

**From:** Faggert, Stanley (DEQ) [<mailto:Stanley.Faggert@deq.virginia.gov>]  
**Sent:** Friday, May 19, 2017 3:54 PM  
**To:** King, Melanie <[King.Melanie@epa.gov](mailto:King.Melanie@epa.gov)>  
**Subject:** NSPS Subpart KKKK sulfur monitoring/testing question

Melanie,

The Virginia DEQ has encountered a question regarding NSPS Subpart KKKK (combustion turbines). I saw your name associated with the 2012 proposed revision to Subpart KKKK, but let me know if you are not the correct contact person for this issue.

Our question concerns the interaction between 60.4360 (total sulfur content of the turbine's combustion fuel), 60.4365 (exemption from monitoring the total sulfur content of the fuel) and 60.4415 (initial and subsequent performance tests for sulfur).

It is our understanding that if a source meets the requirements of 60.4365(a) via tariff sheet, etc., than the source may elect not to conduct the fuel sulfur content monitoring specified in 60.4360.

## ATTACHMENT 2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

NOV 14 2017

In Reply Refer to: 3AP20

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Mr. Michael Dowd  
Director  
Air and Renewable Energy Division  
Virginia Department of Environmental Quality  
Post Office Box 1105  
Richmond, Virginia 23218

RE: Regulatory Interpretation and Waiver Request for Performance Testing Requirements under 40 C.F.R. Part 60 Subpart KKKK, Standards of Performance for Certain Stationary Combustion Turbines

Dear Mr. Dowd:

The Environmental Protection Agency Region III Office (EPA or Region III) received a letter from you dated July 28, 2017, requesting a regulatory interpretation or waiver of performance testing requirements (initial and subsequent) under 40 C.F.R. § 60.4415 for stationary combustion turbines meeting both of the following criteria: (1) the combustion turbine's fuel is limited to pipeline quality natural gas by a federally enforceable permit condition, and (2) the combustion turbine is exempted from the fuel sulfur monitoring requirements of 40 C.F.R. § 60.4360 by use of a current, valid purchase contract, tariff sheet or transportation contract as described in 40 C.F.R. § 60.4365(a).

Attached to your July 28, 2017 letter were copies of e-mail correspondence with EPA's Office of Air Quality Planning and Standards (OAQPS). This correspondence referenced EPA's 2012 reconsideration proposal for 40 C.F.R. Part 60 Subpart KKKK, which suggested that the types of turbines meeting the aforementioned criteria would not have to conduct performance testing.

EPA has determined that performance test requirements under 40 C.F.R. § 60.4415 apply to stationary combustion turbines described under 40 C.F.R. § 60.4305(a) whose fuel is limited to pipeline quality natural gas by a federally enforceable permit condition, and who are exempted from the fuel sulfur monitoring requirements of 40 C.F.R. § 60.4360 by use of a current, valid purchase contract, tariff sheet or transportation contract as described in 40 C.F.R. § 60.4365(a). Therefore, EPA is not approving your waiver request for the following reasons:



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- 1) Under 40 C.F.R. § 60.4415, initial and subsequent performance tests must be conducted; and
- 2) EPA's 2012 reconsideration proposal for this rule was never finalized, nor are there currently any plans to finalize it.

However, it is worth noting that the initial and subsequent performance tests required under 40 C.F.R. § 60.4415 may be satisfied through the use of fuel analyses performed by the facility, a contractor, the fuel vendor, or any other qualified agency as described under 40 C.F.R. § 60.4415(a)(1). Region III reviewed your request and consulted with OAQPS on this response.

If you have questions regarding this letter, please contact Amelie Isin, Environmental Engineer, of EPA Region III's Office of Air Enforcement and Compliance Assistance at 215-814-2160 or [isin.amelie@epa.gov](mailto:isin.amelie@epa.gov).

Sincerely,



Cristina Fernandez  
Director, Air Protection Division

cc: Stanley Faggert, VDEQ (electronically)  
Christian Fellner, EPA (electronically)  
Sara Ayres, EPA (electronically)