



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

March 23, 2023

Mr. Christian Kiernan, Environmental Director  
Florida Power and Light Company  
700 Universe Blvd.  
Juno Beach, Florida 33408

Dear Mr. Kiernan:

This is in response to your letter dated July 29, 2022, requesting approval of a continuous monitoring system (CMS) plan petition for Title 40, Code of Federal Regulation (C.F.R.), Part 63, Subpart YYYYY - National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Combustion Turbines, as it applies to two combustion turbines operated by Florida Power and Light Company (FPL), Fort Myers Plant (Plant), in Ft. Myers, Florida. The U.S. Environmental Protection Agency (EPA) requested additional information from you on January 23, 2023, and received information on February 7, 2023. Based on our review of available information, your CMS plan is acceptable, subject to specific conditions. Details regarding the CMS plan and the basis for our determination are provided in the remainder of this letter.

**Description of Combustion Turbine Unit Emission Points (3C and 3D)**

The Plant operates two lean premix gas-fired General Electric Model 7F.05 simple-cycle combustion turbines (units 3C and 3D). Each combustion turbine is rated at a nominal capacity of approximately 200 megawatt (MW) and can operate at a minimum load of 92 MW (46% of nominal capacity - <https://www.ge.com/gas-power/products/gas-turbines/7f>). Since the turbines were constructed after January 14, 2003, they are new affected sources under Subpart YYYYY. Neither of the units are equipped with an oxidation catalyst to control emissions of formaldehyde.

**Description of FPL's CMS Petition**

The Plant proposes to continuously monitor and record combustion turbine gross loads (MW) and Dry Low NOx (DLN) mode of operation to indicate compliance with the formaldehyde emission standard during normal operation. On July 29, 2022, and August 10, 2022, the Plant conducted formaldehyde emissions standard compliance demonstration testing on Units 3D and 3C, respectively, using the procedures and methods specified by Subpart YYYYY. The initial test results indicate compliance with the formaldehyde emissions standard. The Plant affirms that operation of the turbines within the DLN mode of operation will ensure compliance with the formaldehyde emission standard. Combustion fuel and air are premixed upstream of the DLN combustors to provide a uniform air-to-fuel mixture before entering the primary combustion zone where turbine combustion controls continuously monitor, adjust, and maintain stable combustion dynamics and efficiency to minimize emissions of carbon monoxide and total hydrocarbons (e.g., volatile organic compounds, formaldehyde, etc.). The Plant also proposes to

monitor and record the gross load and determine the four-hour rolling averages of gross load to indicate compliance with the formaldehyde emission limitation during normal operation.

The Plant uses Ametek Electricity Meters (model JS-0576010-B5) to measure gross loads and they are calibrated and tested annually according to the owner's manual specifications for each installed unit. The Plant currently monitors gross load and reports the information to the EPA's Clean Air Market Database under 40 C.F.R. Part 75 since the turbines are regulated affected sources under the Acid Rain Program.

### **EPA's Review of Subpart YYYY Standards and CMS Petition Requirements**

Under 40 C.F.R. § 63.6085, owners and operators are subject to Subpart YYYY if they own or operate a stationary combustion turbine located at a major source of hazardous air pollutant (HAP) emissions. Under 40 C.F.R. § 63.6090(a)(2), a stationary combustion turbine is a new source if construction commenced after January 14, 2003. Under 40 C.F.R. § 63.6095(a)(3), new lean premix gas-fired stationary combustion turbines which start operation on or before March 9, 2022, must comply with the emissions limitations and operating limitations in Subpart YYYY no later than March 9, 2022.

Under 40 C.F.R. § 63.6100, each new lean premix gas-fired stationary combustion turbine must comply with the emission limitations and operating limitations in Table 1 and Table 2 of Subpart YYYY, respectively. Regarding the emissions standard, Table 1 of Subpart YYYY limits the concentration of formaldehyde to 91 parts-per-billion by volume, dry basis (ppbvd), or less, at 15-percent O<sub>2</sub> for new lean premix gas-fired stationary combustion turbines, except during the period of turbine startup excluded by the rule (*e.g.*, first hour of startup for single cycle operation and first three hours of startup for combined cycle operation). Table 2 of Subpart YYYY requires owners/operators to maintain the turbines within operating limitations approved by the EPA Administrator to continuously demonstrate compliance with the emission limit during non-testing periods.

Under 40 C.F.R. § 63.6105(a), after September 8, 2020, owners/operators must comply with the applicable emission limitations, operating limitations, and other requirements of Subpart YYYY. Under 40 C.F.R. § 63.6105(c), after September 8, 2020, owners/operators must always operate and maintain any affected source in a manner consistent with safety and good air pollution control practices for minimizing emissions.

Under 40 C.F.R. § 63.6110(a), owners/operators must conduct the initial performance tests, or other initial compliance demonstrations in Table 4 to Subpart YYYY that apply, within 180 calendar days after the compliance date specified (*e.g.*, by September 5, 2022) for affected source stationary combustion turbines according to the provisions in 40 C.F.R. § 63.7(a)(2), unless a historical test may be accepted according to the provisions of 40 C.F.R. § 63.6110(b). Under 40 C.F.R. § 63.6115, subsequent performance tests must be performed on an annual basis as specified in Table 3 to Subpart YYYY.

Under 40 C.F.R. § 63.6125(b), for a stationary combustion turbine not using an oxidation catalyst to comply with the formaldehyde emission limit, owners/operators must continuously monitor any parameters specified in a petition approved by the Administrator to comply with the operating limitations in Table 2 to Subpart YYYY, as specified in Table 5 to Subpart YYYY.

Under 40 C.F.R. § 63.6120(f), for a stationary combustion turbine not equipped with an oxidation catalyst, owners/operators may petition the Administrator for approval of operating limitations to demonstrate compliance with the formaldehyde emission limitation during non-testing periods. In these cases, the petition must include:

- (1) Identification of the specific parameters you propose to use as additional operating limitations;
- (2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters and how limitations on these parameters will serve to limit HAP emissions;
- (3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
- (4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
- (5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

Under 40 C.F.R. § 63.6125(e), after September 8, 2020, for owners/operators using a CMS to indicate compliance with the formaldehyde emissions standard during non-testing periods, a CMS quality control program must be developed and implemented which includes written procedures for the CMS according to 40 C.F.R. § 63.8(d)(1) through (2). Additionally, a program of corrective action should be included in the plan required under 40 C.F.R. § 63.8(d)(2).

Under 40 C.F.R. § 63.6135(a), except for monitor malfunctions, associated repairs, and required applicable quality assurance or quality control activities, owners/operators must always conduct all parametric monitoring when the stationary combustion turbine is operating.

Under 40 C.F.R. § 63.6120(e), when a CMS petition is required to be submitted to the Administrator, owners/operators must not conduct the initial performance test until after the petition has been approved or disapproved by the Administrator.

Under 40 C.F.R. § 63.6110(b), an owner or operator is not required to conduct an initial performance test to determine outlet formaldehyde concentration on units for which a performance test has been previously conducted. The test: (1) must have been conducted using the methods specified in Subpart YYYYY, (2) must not be older than 2 years, (3) must have been conducted at any load condition within plus or minus 10 percent of 100 percent load, and (4) must be reviewed and accepted by the Administrator. Additionally, either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

### **The EPA's Determination for FPL's CMS Plan Petition**

The EPA has reviewed the initial formaldehyde emission standard compliance demonstration test results submitted by FPL. The initial compliance demonstration testing results (Unit 3C – 56 ppbvd at 15% O<sub>2</sub>; Unit 3D – 23 ppbvd at 15% O<sub>2</sub>;) indicate that the turbines are operating in compliance with the formaldehyde emission standard (91 ppbvd at 15% O<sub>2</sub>). During the testing, Units 3C and 3D operated at 107 % and 105 % of nominal capacity, respectively. Based on EPA's understanding, DLN mode of

operation indications at or above 92 MW for the General Electric Model 7F.05 turbines at the Plant are comparable to lean premix mode indication for lean premix combustion turbines and may be used to indicate compliance status with the formaldehyde emission standard. Based on supporting and available information, the following CMS plan is acceptable to the EPA:

- i.) To demonstrate compliance with the formaldehyde emission standard, The Plant must conduct annual periodic compliance demonstration testing (post initial testing) using procedures of 40 C.F.R. § 63.6120 at high load, defined as 100 percent plus or minus 10 percent.
- ii.) Gross load must be continuously monitored and recorded at least once every 15 minutes during the formaldehyde emission standard compliance demonstration testing, and continuously thereafter, to successfully demonstrate compliance with the formaldehyde emission standard promulgated in 40 C.F.R. § 63.6100 and Table 1 of Subpart YYYY. An hourly averaged gross load shall be determined by using all readings taken at least once every 15 minutes during that hour.
- iii.) Using the results from the initial formaldehyde emission standard compliance demonstration testing events (*e.g.*, July 29, 2022 (unit 3D), and August 10, 2022 (unit 3C)), the three-hour average gross load must be used to determine compliance with the emissions standard until the next testing event(s). For future formaldehyde emission standard compliance demonstration testing events, four separate test runs for each testing event must be conducted. Each test run must last at least 1 hour. The four-hour average gross load shall be determined by computing the four-hour average using all hourly averaged readings taken during the event.
- iv.) Using the results from the initial formaldehyde emission standard compliance demonstration testing events, the three-hour rolling average gross load must be continuously monitored and recorded to indicate compliance with the formaldehyde emission standard. For future formaldehyde emission standard compliance demonstration testing events, the four-hour rolling average gross load shall be determined by computing the four-hour average using all hourly averaged readings for the current hour and preceding three hours of operation. Following future formaldehyde emission compliance demonstration testing events, the four-hour rolling average gross load must be continuously monitored and recorded to indicate compliance with the formaldehyde emission standard. The four-hour rolling average gross load shall be determined by computing the four-hour average using all hourly averaged readings for the current hour and preceding three hours of operation.
- v.) Data collected during periods of startup (*e.g.*, before achieving DLN mode of operation at or above 92 MW or at a power rating otherwise established by emission standard compliance demonstration testing), shutdown, or malfunction may not be included in the four-hour average for the formaldehyde emission compliance demonstration testing and four-hour rolling averages used to indicate compliance with the formaldehyde emission standard. Startup times must not extend longer than the times specified by the manufacturer's standard operating procedure for startups. Startups must be conducted, to the extent possible, in a manner consistent with ensuring that safety and good air pollution control practices for minimizing emissions are followed.
- vi.) During normal operation, the turbines must be operated in the DLN mode of operation at or above the minimum turndown operating ratio of the turbine (*e.g.*, at or above 92 MW or at a power rating otherwise established by emission standard compliance demonstration testing) to ensure compliance with this approval. While enabled, the Plant must monitor and record DLN mode of operation at least once every fifteen minutes.

vii.) The Plant must verify the gross load meter's accuracy once annually according to the manufacturer's recommended procedures and maintain records of the annual verifications for inspection purposes.

The EPA's approval of the Plant's CMS plan is based on information provided in the FPL's submission and research conducted by the EPA. The EPA's approval is contingent on successful demonstration of formaldehyde emission standard compliance resulting from testing events. Should the Plant change the operating conditions of the turbine to an operation which is different than the operating conditions represented in this approval such that formaldehyde emissions increase because of the change, FPL must submit a revised CMS plan petition to address the change(s).

Nothing in this CMS plan approval excludes the EPA from reopening this CMS plan approval to adjust its conditions, if needed, for enhancement of emission standard compliance assurance. If FPL discovers an additional parameter, or additional parameters, which indicates additional parametric monitoring operating limits are necessary to assure compliance with the formaldehyde emission standard, FPL must submit a revised CMS plan petition to the EPA to revise the CMS plan and incorporate the additional operating limit(s) based on the discovery. Finally, if FPL recognizes an opportunity to revise the CMS plan based on other CMS plan approvals issued by the EPA, or new information is obtained by FPL which may reduce the burden of tasks necessary for compliance assurance but still effectively assure compliance with the formaldehyde emission standard, FPL may file a petition to the EPA referencing that information to revise this CMS plan.

Please note that our approval does not alter FPL's obligations to meet all other applicable NESHAPs, including, but not limited to, the following NESHAP general provisions:

- The requirement to maintain and operate affected facilities and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, per 40 C.F.R. § 63.6, and

- The prohibition against concealing emissions which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere, per 40 C.F.R. § 63.4.

This CMS petition approval was coordinated with the EPA's Office of Enforcement and Compliance Assurance and Office of Air Quality Planning and Standards. If you have any questions about this CMS petition conditional approval, please contact Tracy Watson at (404) 562-8998, or by email at [watson.marton@epa.gov](mailto:watson.marton@epa.gov).

Sincerely,

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Caroline Y. Freeman

Director

Air and Radiation Division

cc: Hastings Read, FDEP  
Melanie King, EPA OAQPS  
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