

**SAN DIEGO COUNTY
AIR POLLUTION CONTROL DISTRICT**

**DRAFT PROPOSED AMENDMENTS TO RULE 69.3.1 – STATIONARY
GAS TURBINE ENGINES - BEST AVAILABLE RETROFIT CONTROL
TECHNOLOGY, AND THE PROPOSED REPEAL OF EXISTING RULE 69.3 –
STATIONARY GAS TURBINE ENGINES - REASONABLY
AVAILABLE CONTROL TECHNOLOGY**

WORKSHOP REPORT

The San Diego County Air Pollution Control District (District) held a public webinar on February 2, 2021, to discuss and receive input on the draft proposed amendments to Rule 69.3.1 – Stationary Gas Turbine Engines-Best Available Retrofit Control Technology. A meeting notice was posted on the District’s website, distributed to interested parties via the District’s electronic mail listserv, and mailed to affected permit holders, local chambers of commerce, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB).

The webinar was attended by 29 people. A summary of the comments and District responses are provided below:

1. WORKSHOP COMMENT

Solar Turbines Incorporated (Solar) recommends that Subsection (b)(1)(i) be revised to remove the term “exclusively” from the existing exemption for gas turbine engine test cells. First, the scope of Reasonable Available Control Technology and Best Available Retrofit Control Technology requirements for stationary gas turbines does not include gas turbine test cells/stands/pads as an affected source category. Therefore, when Rule 69.3.1 was first adopted in 1998, the generation and use of electricity when incidental to operations conducted in a test cell would not preclude the applicability of the exemption. Second, the proposed revision aligns with the CARB guidance and similar exemptions in other California air districts’ turbine rules. Third, the proposed revision is consistent with the exemption for combustion turbine test cells/stands provided in the federal Standards of Performance for Stationary Combustion Turbines, Subpart KKKK. Finally, stationary gas turbine rules generally do not apply to gas turbine test cells/stands/pads due to the significant technical and operational differences between turbines that are used for power or heat generation and those that are attached to a test bed for development and product testing. For example, the varying load cycles required during turbine testing, plus the different turbine models or components tested in each test cell, make it technologically infeasible to meet the narrow operational parameters required by most add-on emission control systems.

DISTRICT RESPONSE

The recommendation to remove the term “exclusively” from the exemption in existing Subsection (b)(1)(i) is not necessary. The District agrees that gas turbine engines are exempt from the provisions of Rule 69.3.1 when operated exclusively for the research, development or testing of gas turbine engines or their components, consistent with CARB guidance, federal Subpart KKKK, and other air districts’ turbine engine rules. However, the exemption does not apply if the

electricity generated from the operation of turbine engines in a test cell, stand or pad is supplied to the electrical grid for commercial profit. Such operation would not comply with the requirement that the turbine engine be used exclusively for the research, development or testing of gas turbine engines or their components.

2. WORKSHOP COMMENT

Solar is a prominent, reputable, and environmentally conscientious business in San Diego County, contributing both to the regional economy and environmental stewardship. Ensuring that Solar can continue its compliant operations in San Diego County is not only critical to Solar, but also reassures other existing industries and companies that contemplate starting or expanding in San Diego that it is possible to both protect the environment and promote the manufacturing industry and jobs in the community. The Industrial Environmental Association strongly urges the District to consider and incorporate Solar's recommendation to revise Subsection (b)(1)(i) to remove the term "exclusively" from the exemption for gas turbine test cells.

DISTRICT RESPONSE

Please see District Response to Comment No. 1 above.

3. WORKSHOP COMMENT

Proposed amended Subsection (c)(4), definition of "Extended Startup", includes more operational parameters than what is specified in existing facility Permits to Operate. Will the District consequently revise the existing permits to include the proposed rule language?

DISTRICT RESPONSE

No. The rule proposal does not require a change to the conditions in a facility's existing Permit to Operate. The steam turbine reheat bowl temperature of less than or equal to 750°F in Subsection (c)(4) is proposed to align with a requested permit modification that is currently under District review. The steam turbine inner casing temperature of less than or equal to 500°F is proposed to align with, and not replace, the conditions currently specified in existing Permits to Operate. A third operational parameter of zero fuel flow for a period of 24 hours or more is proposed as an alternative option to define an extended startup.

4. WORKSHOP COMMENT

An application for a permit modification has been submitted and is currently under District review to allow an extended startup to occur when the steam turbine reheat bowl temperature is less than or equal to 750°F when the startup period begins. Will the proposed rule requirements for an

extended startup in proposed amended Subsection (c)(4) be incorporated into the Permit to Operate?

DISTRICT RESPONSE

Proposed amended Subsection (c)(4), definition of “Extended Startup”, includes the operational parameter of the steam turbine reheat bowl temperature of less than or equal to 750°F. While this proposal aligns with the aforementioned application for permit modification of the steam turbine reheat bowl temperature to less than or equal to 750°F, the application is currently being evaluated by the District. Ultimately, the steam turbine reheat bowl temperature condition to be specified on the Permit to Operate will be determined once the evaluation by the District has been completed. Please also see District Response to Comment No. 3 above.

5. WORKSHOP COMMENT

Lean premix combustion occurs during steady state operation of a gas turbine engine, and accordingly, all manufacturers exclude startup, shutdown, and transient load events from operation in lean premix mode. Also excluded are turbine operation during extreme ambient temperatures and operating loads outside of the warranted lean premix operating mode, e.g., low load conditions. For consistency with the conditions whereby a gas turbine engine typically operates in non-lean-premix mode, Solar recommends that the definition for “Lean Premix Combustor” in proposed amended Subsection (c)(9) retain the terms “extreme ambient temperature” and “transient load.”

DISTRICT RESPONSE

The District disagrees. The suggested revision to retain the terms “extreme ambient temperature” and “transient load” is not necessary because the list of operating conditions in proposed amended Subsection (c)(9) of when a lean premix combustor may operate in non-lean-premix mode is not an all-inclusive list, and thus does not preclude other operating conditions not explicitly listed. For clarification, proposed amended Subsection (c)(9) has been revised to add “including, but not limited to.” Please also see District Response to EPA Comment No. 12 below.

6. CARB COMMENT

CARB has no official comments at this time.

7. EPA COMMENT

Rule 69.3.1 applies to all existing turbine engines with a power rating of 1.0 megawatt (MW) or greater, and all new units rated at 0.3 MW or greater. Rule 69.3, which was approved into the State Implementation Plan (SIP), applies to any unit rated at 0.3 MW or greater. The District should consider combining the two rules into a single regulation to simplify the SIP.

DISTRICT RESPONSE

The District agrees. Proposed amended Rule 69.3.1 has been revised to apply to any stationary gas turbine engine with a power rating of 0.3 MW or greater. In addition, proposed amended Rule 69.3.1 includes requirements similar to or more stringent than the requirements in Rule 69.3. Upon adoption of proposed amended Rule 69.3.1, Rule 69.3 will be repealed and Rule 69.3.1 will be submitted, through CARB, for inclusion into the SIP to replace Rule 69.3.

8. EPA COMMENT

The definition for “Emergency Situation” in existing Subsection (c)(3) allows for Air Pollution Control Officer discretion in determining when a power failure is beyond the reasonable control of the owner or operator. This is a rule approvability issue, and therefore Air Pollution Control Officer discretion should be removed. Also, the term “life-threatening situation” is too ambiguous and should be more clearly defined.

DISTRICT RESPONSE

Proposed amended Subsection (c)(2), definition of “Emergency Situation”, formerly Subsection (c)(3), has been revised to remove Air Pollution Control Officer discretion as suggested. In addition, for clarification, the definition of “life threatening situation” has been revised to “an unforeseen event that requires the use of gas turbine engines to help alleviate the threat to public health and safety.”

9. EPA COMMENT

The definition for “Emergency Unit” in existing Subsection (c)(4) is unenforceable due to the deficiency in Subsection (c)(2), and is a rule approvability issue.

DISTRICT RESPONSE

Proposed amended Subsection (c)(3), definition of “Emergency Unit”, formerly Subsection (c)(4), has been revised to mean “a stationary gas turbine engine used exclusively in emergency situations, or for testing or maintenance purposes only.” Please also see District Response to EPA Comment No. 8 above.

10. EPA COMMENT

The definition for “Extended Startup” in existing Subsection (c)(6) allows for Air Pollution Control Officer discretion in determining the key parameters that shall be met to demonstrate an extended startup has occurred. This is a rule approvability issue, therefore Air Pollution Control Officer discretion should be removed, and specific and technically justified operational parameters for an extended startup should be included.

DISTRICT RESPONSE

Proposed amended Subsection (c)(4), definition of “Extended Startup”, formerly Subsection (c)(6), has been revised to remove Air Pollution Control Officer discretion, and to include specific operational parameters such as steam turbine reheat bowl temperature, steam turbine inner casing temperature, and period of zero fuel flow, as suggested.

11. EPA COMMENT

The definition for “Force Majeure Natural Gas Curtailment,” in existing Subsection (c)(7) allows for California Public Utility Commission determinations that are not SIP enforceable, and are not based upon must-run emergencies for units facing natural gas curtailment. There are also no time limitations on such operations specified in the rule. This is a rule approvability issue, therefore the definition should be revised for consistency with other air districts’ definitions for natural gas curtailment situations.

DISTRICT RESPONSE

The definition for “Force Majeure Natural Gas Curtailment” is proposed to be deleted because the term only applied to peaking turbines that were installed and operated before December 16, 1998. These peaking units have since been retired and are no longer in operation.

12. EPA COMMENT

The definition for “Lean Premix Combustor” in existing Subsection (c)(11) allows for Air Pollution Control Officer discretion in determining “normal operating conditions.” The terms “extreme ambient temperature” and “transient load” are also not defined. This is a rule approvability issue, therefore the discretion should be removed, and specific and technically justified definitions for these terms should be included, or the definition for “Lean Premix Combustor” should be revised to not rely on the undefined terms. In addition, the term “lean mixture” should be clearly defined in the rule.

DISTRICT RESPONSE

Proposed amended Subsection (c)(9), definition of “Lean Premix Combustor”, formerly Subsection (c)(11), has been revised to remove Air Pollution Control Officer discretion and the terms “extreme ambient temperature” and “transient load” as suggested. In addition, the definition for “lean mixture” has been added in new proposed Subsection (c)(8) as suggested.

13. EPA COMMENT

The definition for “Peaking Unit” in existing Subsection (c)(17) is imprecise and unenforceable. This is a rule approvability issue, therefore the definition should be revised to clearly specify the criteria for a turbine engine to be considered a peaking unit.

DISTRICT RESPONSE

Proposed amended Subsection (c)(14), definition of “Peaking Unit”, formerly Subsection (c)(17), has been revised to mean “a stationary gas turbine engine that is only operated for generation of electric power during periods of high energy demand as directed by the California Independent System Operator (CAISO), or for testing or maintenance purposes only.”

14. EPA COMMENT

The definition for “Period of Operation at Low Load” in existing Subsection (c)(18) allows for Air Pollution Control Officer discretion in determining the “critical level.” This is a rule approvability issue, therefore the definition should be revised to include specific and technically justified criteria.

DISTRICT RESPONSE

Proposed amended Subsection (c)(15), definition of “Period of Operation at Low Load”, formerly Subsection (c)(18), has been revised to remove Air Pollution Control Officer discretion and the term “critical level,” and to mean “a period of time that begins when the gas turbine power level is reduced from a higher level to a lower level such that the gas turbine is unable to comply with the standards of Section (d) Standards, and ends 10 minutes after the turbine power level next exceeds the level where the gas turbine is capable of complying with the standards of Section (d) Standards.”

15. EPA COMMENT

The definition for “Testing or Maintenance” in proposed amended Subsection (c)(24)(v) allows for the operation of an emergency unit to provide electric power for a facility during an electrical upgrade. How frequently do these electrical upgrades occur, and what are the duration hours of emergency unit operation for such an event?

DISTRICT RESPONSE

Electrical upgrades are performed infrequently, and therefore the District anticipates few, if any, such events to occur within a given year. Subsection (b)(2) has been revised to clarify that the total hours of operation of an emergency unit for testing or maintenance purposes, which include electrical upgrades as specified in proposed amended Subsection (c)(24)(v), shall not exceed 80 hours per calendar year.

16. EPA COMMENT

The provisions in existing Subsections (d)(3) and (d)(4) allow for meteorologically based emission requirements for peaking units on certain days that violate Clean Air Act Section 123(a)(2) and (b). The various provisions for peaking units in the rule are therefore inappropriate for inclusion into the SIP, and are rule approvability issues.

DISTRICT RESPONSE

Existing Subsections (d)(3) and (d)(4) are proposed for removal, along with other provisions in the rule that only applied to peaking turbines that were installed and operated before December 16, 1998. These peaking units have since been retired and are no longer in operation.

17. EPA COMMENT

Peaking units are treated similarly to emergency units for testing and maintenance requirements. Are there emission limits or operating requirements specific to peaking units only that would differentiate them from other types of turbine engines?

DISTRICT RESPONSE

The existing emission standards specified in Subsection (d)(1) apply to all turbine engines, including peaking units. The requirements applicable to peaking units only are specified in existing Subsection (e)(6), which include the maintenance of records of dates and times of operation, the hours of operation each calendar day, and the total cumulative hours of operation during each calendar year.

AMF:RC:jlm
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