AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

RULE 69.3 - STATIONARY GAS TURBINES WORKSHOP REPORT

A workshop notice was mailed to owners and operators of stationary gas turbines in San Diego County. Notices were also mailed to all Economic Development Corporations and Chambers of Commerce in San Diego County, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on July 25, 1994 and was attended by 17 people.

1. WORKSHOP COMMENT

Turbines operating on landfill gas are exempt under the District's proposed rule because they are rated below 1 MW. However, if the rule is revised to satisfy EPA, the applicability limit will be changed to 0.3 MW. In this case such turbines would not be able to meet RACT limits. Selective Catalytic Reduction is not practical for turbines operating on landfill gas because the gas impurities poison the catalyst. Water or steam injection would also not work because landfill gas contains almost 50% carbon dioxide.

DISTRICT RESPONSE

The District agrees with this comment and is planning to provide EPA with documentation justifying the economic and/or technological infeasibility of applying RACT to existing turbines smaller than 1 MW including landfill gas turbines. This documentation will be submitted to EPA as Alternative RACT.

2. WORKSHOP COMMENT

Some turbines are equipped with the Best Available Control Technology (BACT) which results in NOx emission concentrations significantly lower than the 42 ppm required by the proposed rule. Current permit conditions based on the BACT requirements, however, allow a limit exceedance during a 90 minute startup period . What requirements will apply to these turbines?

DISTRICT RESPONSE

After Rule 69.3 becomes effective, all permit conditions for turbines subject to the rule will be reconsidered, and the most stringent requirements will be incorporated in new permit conditions. Rule 69.3 has been revised to limit NOx emissions to not more than 42 ppm (on gaseous fuel) after the first 120 minutes of startup.

3. WORKSHOP COMMENT

EPA provided a comment which recommends correcting the measured NOx concentration to ISO standard conditions. The ISO formula could result in a correction of more than 10% depending on the ambient humidity. However, turbines equipped with water/steam injection have 100% relative humidity in the combustion chamber, and therefore ambient humidity does not affect the combustion process of such turbines.

DISTRICT RESPONSE

The District agrees. The equation for correction to ISO conditions does not appear to be applicable for turbines equipped with water or steam injection. Such turbines comprise the entire population of turbines subject to the rule. Therefore, the rule will not be revised.

4. WORKSHOP COMMENT

The proposed rule requires that continuous emission monitors (CEMs) comply with a protocol approved by the Air Pollution Control Officer. Would any additional approval be needed for CEMs which have already been approved by the District?

DISTRICT RESPONSE

No additional approval would be required by Rule 69.3 for existing equipment operating according to permit conditions. Future federal EPA regulations may require changes to CEMs or CEMs operations/maintenance and may necessitate reapprovals by the District.

5. WORKSHOP COMMENT

Is it the District's intent to require monitoring of all listed variables in Subsection (e)(1)?

DISTRICT RESPONSE

No. A facility needs to only monitor those operational characteristics of a unit which are needed to ensure compliance with the rule. For example, turbines equipped with water injection would likely need to monitor only water injection rate and fuel flow rate.

6. WORKSHOP COMMENT

The proposed rule requires that CEMs be installed, maintained and calibrated in accordance with applicable federal regulations. However, some continuous emission monitors do not meet all the requirements of 40 CFR 60, Appendix F.

DISTRICT RESPONSE

The reference to applicable federal regulations is at EPA's request. Whether or not such a reference is included in Rule 69.3, operators of CEMs that are also subject to applicable EPA requirements for CEMs are responsible for compliance with those requirements or alternatives approved by EPA. The District will work with affected facilities in approving protocols to coordinate District and federal requirements.

7. WORKSHOP COMMENT

Unmanned peaking turbines would need to run significantly longer during the source test if they are required to meet the quality control requirements of 40 CFR 60, Appendix F.

DISTRICT RESPONSE

The District will work with operators of such turbines to seek approval from EPA for alternatives to federal requirements that will eliminate or minimize excess emissions that would result from meeting such requirements.

8. WORKSHOP COMMENT

Some CEMs monitor operational characteristics continuously but record them only at certain time intervals. Would they meet the rule requirements?

DISTRICT RESPONSE

Yes, they would.

9. WORKSHOP COMMENT

How would the proposed rule affect the reporting of a breakdown of the monitoring equipment installed on peaking turbines located at unmanned sites?

DISTRICT RESPONSE

The proposed rule would make no change to the breakdown reporting requirements specified in Rule 98.

10. WORKSHOP COMMENT

The proposed rule requires use of District Test Method 20 rather than EPA Method 20. What is the reason for this?

DISTRICT RESPONSE

District Method 20 includes measurements of NOx, carbon monoxide (CO) and oxygen concentration simultaneously. In cases where a unit is a subject to New Source Review and BACT such measurements are required by permit conditions. The rule has been revised to include an option to use EPA Method 20 for the determination of NOx emission concentration. However, the rule has been revised to refer to ARB Test Method 100. ARB Test Method 100 has been conditionally appoved by EPA pending revisions to be made by ARB.

11. WORKSHOP COMMENT

If turbines are equipped with CEMs which are properly calibrated and kept in good working order do they need to be tested annually?

DISTRICT RESPONSE

Currently, periodic source testing of certain emission units is required to verify compliance. Some are tested more than once per year, others less than once per year. Some testing is dictated by EPA requirements. The issue of using emissions data from properly calibrated, operated, maintained and QA/QC 'ed CEMs in lieu of annual source testing is being considered by the District for both NOx and VOC sources.

12. WORKSHOP COMMENT

The proposed rule requires all affected turbines be in compliance by May 31, 1995. What is the reason for choosing this date?

DISTRICT RESPONSE

This Federal Clean Air Act requires that all major sources of NOx emissions be in compliance with rules reflecting RACT by May 31, 1995.

13. WORKSHOP COMMENT

It is unclear whether a test protocol needs to be approved before testing. The protocol may not have been approved before the scheduled renewal testing. Any anticipated delays in approval of these protocols may result in a compliance problem.

DISTRICT RESPONSE

Emissions source testing must be conducted in accordance with a test protocol approved by the District prior to actual testing. Such a protocol may also be usable in subsequent source tests if equipment requirements and tests methods have not been changed significantly. Prior test protocol approval is intended to ensure that the time and cost of testing is not wasted due to faulty and un-acceptable methods or procedures. The District will work with affected sources to review protocols in a timely manner.

14. WORKSHOP COMMENT

What is the District's schedule for amending the rule to require the Best Available Retrofit Control Technology (BARCT) of the California Clean Air Act?

DISTRICT RESPONSE

The San Diego 1991 Regional Air Quality Strategy as approved by the Air Pollution Control Board and the Air Resources Board contains a schedule for such a rule to be adopted some time in 1995. It is the District's intent to meet that commitment.

15. WRITTEN COMMENT

Rule 69.3 should exempt gas turbines rated at less than 2 MW burning landfill gas. Turbines burning landfill gas cannot meet the 42 ppmv limit due to technological constraints. If landfill gas turbines were not exempted from the rule, owners of such turbines would be forced to switch to reciprocating internal combustion engines or flare systems.

DISTRICT RESPONSE

There are no existing turbines between 1 and 2 MW that burn landfill gas. New turbines would be subject to New Source Review and require best available control technology (BACT) or lowest achievable emissions reduction (LAER) which may result in emissions concentrations below the levels proposed in Rule 69.3.

16. WRITTEN COMMENT

Subsection (b)(2)(i) provides an exemption for emergency units and specifies a maximum of 80 hours of operation for maintenance purposes. How was the threshold of 80 hours determined?

DISTRICT RESPONSE

District permitting engineers indicate that standby, emergency turbines typically require only about 50 hours of maintenance operation in a year (1 hour of operation per week). The threshold was set at 80 hours to give flexibility to those sources which need some additional hours.

17. WRITTEN COMMENT

It is unclear why peaking units are not considered emergency units. Several of the San Diego Gas and Electric Company (SDG&E) units provide operations in emergency situations, specifically those associated with meeting system needs and related scenarios. Subsection (c)(2) should be revised.

DISTRICT RESPONSE

The District disagrees. The definition of an emergency situation is specific and applies in limited situations. An emergency unit is not expected to operate except in an emergency situation. Peaking units operate in other than emergency situations. Peaking units, by the nature of their function in the utility, are expected to operate in order to fulfill the business of the utility which is the production and sale of electricity.

18. WRITTEN COMMENT

Subsection (e)(1) should be revised to include the control technology along with the operational characteristic to be monitored. The present language of Subsection (e)(1) is unnecessarily broad. It has the potential to require the monitoring of unnecessary parameters and produce wide variations in the contents of approved monitoring protocols.

DISTRICT RESPONSE

Due to the variety of turbines and NOx controls, the District cannot specify operating characteristics to be applicable to every turbine. The District has added clarifying language to Subsection (e)(1).

19. WRITTEN COMMENT

Subsections (e)(4) and (e)(5) should be revised to cite 40 CFR Part 51, Appendix P and 40 CFR Part 60, Appendix B. The current language is too broad and may be interpreted to require costly and complex quality control procedures such as those for New Source Performance Standards (NSPS), 40 CFR Part 60, Appendix F.

DISTRICT RESPONSE

Please refer to Comments #6 and #7.

20. WRITTEN COMMENT

Steam injection and SCR systems for NOx control do not function correctly until the turbine exhaust is close to normal operating temperature. The RACT/BARCT Guidance Document proposes an exemption from emission limits of two hours and some permit conditions allow 90 minutes for start-up. Subsection (b)(2)(iii) should be revised to reflect "90 continuous minutes".

DISTRICT RESPONSE

Subsection (b)(2)(iii) has been changed to "120 continuous minutes" to be consistent with the RACT/BARCT Guidance Document.

21. WRITTEN COMMENT

Subsection (g)(1) requires that source testing be performed at no less than 80% of the power rating. Federal requirements do not mandate a specific percentage of power rating. Subsection (g)(1) should be deleted. How was this percentage determined?

DISTRICT RESPONSE

This percentage was based on the experience and recommendations from District permitting engineers. Combustion equipment should be source tested within a certain range of its usual operating mode which for a gas turbine is usually at its full power rating. When combustion equipment is permitted, it is assumed that the equipment will operate at its full power rating, or within a certain range of that power rating, unless the equipment is specifically limited by permit conditions. Subsection (g)(1) has been revised to allow flexibility for turbines which may not be able to reach full power rating.

22. WRITTEN COMMENT

Because of the operational scenarios of peaking units, "continuous" should be deleted in the definition of "power rating," Subsection (c)(11).

DISTRICT RESPONSE

The District disagrees. The District understands that turbine manufacturers rate their turbines based on the maximum, continuous power output.

23. WRITTEN COMMENT

Section (e) should provide an exemption for monitoring of peaking units. It appears that Rule 69.3 requires some additional monitoring of control system operating parameters not currently specified by Rule 68. Because SDG&E peaking units are remotely dispatched, unmanned and operating at low capacity factor, rigorous monitoring and recordkeeping would be costly and provide no additional air quality benefits.

DISTRICT RESPONSE

Section (e) has been revised to clarify that additional monitoring and recordkeeping requirements would not required from any unit at this time to satisfy the requirements for federal RACT.

However, the District cannot ensure that these requirements would satisfy state BARCT. In addition, owners of gas turbines should be aware that the enhanced monitoring requirements of future EPA regulations could affect most gas turbines and would apply as well to any District rule or regulation.

24. WRITTEN COMMENT

Subsections (e)(4) and (e)(5) refer to applicable federal regulations. What are these regulations?

DISTRICT RESPONSE

An example of an applicable federal regulation would be Subpart GG - New Source Performance Standards for Stationary Gas Turbines, 40 CFR 60. Future regulations may include EPA's Part 64 Enhanced Monitoring Requirements. Applicable federal regulations are distinct from District rules and regulations and are subject to change. For these reasons, the District believes that stating every federal requirement in the rule would not be prudent.

25. WRITTEN COMMENT

Some existing military turbine engines rated at 0.38 MW are ground support equipment used for starting aircraft engines. They are Military Deployable Emission Units (MDEU) designed specifically to maintain operational readiness of military equipment, and, as installed, easily capable of being moved from one location to another. Complying with the proposed limits would require these engines to be modified. Such modification would make them unusable in other parts of the country or abroad, and would be contrary and detrimental to military readiness. It is recommended that such equipment be exempt from Rule 69.3, or the rule applicability limit for new units be changed from 0.3 to 0.4 MW.

DISTRICT RESPONSE

The District is planning to provide EPA with documentation justifying the economic and/or technological infeasibility of applying RACT to turbines smaller than 1 MW. This documentation will be submitted to EPA as Alternative RACT.

26. WRITTEN COMMENT

The compliance date of May 31, 1995 is insufficient time to determine compliance status of gas turbines; and to prepare and implement a compliance plan. If MDEU exemption is not included in the final rule, it is recommended that the compliance date be extended to December 1, 1995.

DISTRICT RESPONSE

The compliance date of May 31, 1995 is mandated by the 1990 Clean Air Act Amendments. EPA has indicated there is no latitude for accepting a later date.

27. WRITTEN COMMENT

An explanation of the basis for 42 ppmv for gaseous fuel and 65 ppmv for liquid fuel should be included in the rule.

DISTRICT RESPONSE

The proposed emission standards are required by EPA. They are based on the California RACT/BARCT Guidance Document. Copies of excerpts of this document were provided at the workshop. Copies of the full document are available from the California Air Resources Board.

28. WRITTEN COMMENT

The rule should specify the correlation between the NOx emissions standards and operational characteristics of the NOx control system. This would allow a source to determine its compliance status based on the operational characteristics.

DISTRICT RESPONSE

Such operational parameters can be established in conjunction with the permits for individual turbines. Appropriate parameters will likely differ between turbines and cannot all be incorporated into the rule.

29. WRITTEN COMMENT

If source test protocols have been developed, a schedule of appropriate District fees for protocol review should be published.

DISTRICT RESPONSE

Once standardized protocols have been established, the District will propose including the associated fees in Rule 40, Fee Schedule 92.

30. WRITTEN COMMENT

Do all source tests have to be witnessed by the District?

DISTRICT RESPONSE

This is past and current District policy. District personnel are present during the source test to ensure an acceptable test is conducted in order to avoid uncertainties that will require retesting. In addition, they are available to answer questions regarding testing procedures or source operation, or to approve any changes to the protocol due to unforeseen or unexpected circumstances. The District is open to suggestions to change this policy. However, since this policy affects many sources beyond those subject to Rule 69.3, it should not be addressed solely in conjunction with Rule 69.3.

31. WRITTEN COMMENT

If there are multiple gas turbines of the same model and manufacturer, the rule should allow for one turbine to be source tested for compliance with other turbines using monitoring requirements as a basis for compliance.

DISTRICT RESPONSE

The District disagrees. Although turbine combustion is generally fairly stable and turbine maintenance is typically good, several factors can influence turbine emissions such as age, operating history, and type of control employed. The frequency and scope of retesting may consider comparable NOx and CO control performance of identical turbines. Subsection (g)(2) allows for some flexibility in the frequency of source testing.

32. WRITTEN COMMENT

Annual source testing will be an economic burden. If the monitoring requirements are a valid indication of compliance, annual source testing is not necessary.

DISTRICT RESPONSE

EPA considers the RACT requirements of the ARB RACT/BARCT Guidance Document to be applicable as federal RACT. The ARB RACT/BARCT Guidance Document states that source testing reports shall be submitted annually. This requirement implies annual source testing. The District has provided affected sources with some flexibility as indicated in Subsection (g)(2). In order to adequately determine the frequency of future renewal source testing and the validity of using continuous emissions monitors in lieu of source testing, the District will have to address several issues such as the applicability of other federal EPA requirements, the compliance history of a turbine, and the availability of source testing companies. It should be noted that existing turbines greater than 1 MW and subject to Rule 69.3 have been undergoing annual source testing pursuant to New Source Review requirements and Rule 68 for several years or more.

33. EPA COMMENT

In general, the provisions of Rule 69.3 do not reflect the requirements for RACT according to the California RACT/BARCT document for gas turbines. Furthermore, gas turbines rated at 10 MW and above must satisfy the NSPS requirements of 40 CFR 60, Subpart GG. The District should ensure that Rule 69.3 is consistent with both sets of requirements.

DISTRICT RESPONSE

The District disagrees. The RACT/BARCT Guidance Document has separate requirements for RACT and for BARCT. With the exception of the 1 MW applicability level, the District has incorporated all RACT requirements into Rule 69.3. In addition, the RACT/BARCT Guidance Document, Subsection IV.A.(4), allows for specific exemptions determined by the Districts to be technologically or economically infeasible. The District will provide EPA with justification for alternative RACT.

With regard to NSPS requirements, the District has been granted delegation by EPA to enforce NSPS regulations and has implemented Subpart GG into the District Rules and Regulations as Rules 260.330 through 260.335. Rules 260.330 through 260.335 stand on their own.

34. EPA COMMENT

The de minimis level for all gas turbines is 0.3 MW according to the RACT/BARCT Guidance Document.

DISTRICT RESPONSE

As discussed in Comment #33 above, the RACT/BARCT Guidance Document allows for specific exemptions determined to be technologically or economically infeasible. The District has proposed to exempt existing turbines less than 1 MW because such turbines cannot be retrofitted with controls to meet the NOx emissions standards. The manufacturer of such turbines has stated that attempts to control NOx emissions have failed and there is no control technology available. The District agrees and will submit documentation to EPA for alternative RACT for existing turbines in this category.

35. EPA COMMENT

Subsection (b)(1)(ii), a portable engine, by definition, is an engine located at a site for 90 days or less.

DISTRICT RESPONSE

The RACT/BARCT Guidance Document does not explicitly define "portable". The definition of "portable engine" proposed in Rule 69.3 is consistent with the District definition for portable equipment contained in New Source Review rules.

36. EPA COMMENT

In Subsection (b)(2)(i), an annual hourly limit of 200 hours should be specified for emergency units.

DISTRICT RESPONSE

The District disagrees. The rule limits operations of emergency units to 80 hours for maintenance purposes. The duration of emergency operations cannot be predicted nor should it be limited by this rule.

37. EPA COMMENT

Standards for peaking units should be added including an annual hourly limit. 200 hours is a typical standard for these type of units.

DISTRICT RESPONSE

The District disagrees. The RACT/BARCT Guidance Document does not impose an annual hourly limitation on peaking units for RACT requirements, but imposes an annual hourly limitation of 877 hours on peaking units for BARCT requirements. In addition, existing peaking units have been required to meet the emissions standards of Rule 68 (125 ppmv on natural gas, 225 ppmv on fuel oil, 3% O2) which are equivalent or nearly equivalent to the emissions standard of proposed Rule

oil, 3% O2) which are equivalent or nearly equivalent to the emissions standard of proposed Rule 69.3. Thus, peaking units are already in compliance with the NOx emissions standards of proposed Rule 69.3 and will be subject to the same NOx emissions standards of Rule 69.3 as other gas turbines, regardless of the number of hours operated.

38. EPA COMMENT

NOx emissions in Section (d) have to be corrected to International Standards Organization (ISO) standard conditions

DISTRICT RESPONSE

Please see the response to Comment #3.

39. EPA COMMENT

In Subsection (f)(1), the NSPS test method for gas turbines is EPA Method 20.

DISTRICT RESPONSE

Subsection (f)(1) has been revised to refer to ARB Test Method 100. ARB Test Method 100 has been conditionally approved by EPA pending revisions to be made by ARB.

40. EPA COMMENT

Other districts restrict annual maintenance operations for emergency units to 50 hours.

DISTRICT RESPONSE

Please see the response to Comment #16.

41. EPA COMMENT

How are the monitors required in Subsection (e)(4) different from the monitors required in Subsection (e)(5)?

DISTRICT RESPONSE

Subsection (e)(4) refers to continuous (operational parameter) monitors required by Subsection (e)(1). Subsection (e)(5) refers to emissions monitors installed pursuant to any federal requirement.

KC:jo
8/11/94

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

NEW PROPOSED RULE 69.3

RULE 69.3 STATIONARY GAS TURBINE ENGINES

(a) APPLICABILITY

This rule shall apply to any existing stationary gas turbine engine with a power rating of 1.0 megawatt (MW) or greater, or to any new stationary gas turbine engine with a power rating of 0.3 MW or greater. Any unit subject to this rule shall not be subject to Rule 68.

(b) EXEMPTIONS

(1) The provisions of this rule shall not apply to the following:

(i) Any gas turbine engine when operated exclusively for the research, development or testing of gas turbine engines or their components.

(ii) Any portable gas turbine engine located at a stationary source 180 days or less in a consecutive 12-month period. It is the responsibility of any person claiming this exemption to maintain records indicating the dates that such turbine was located at a stationary source. These records shall be maintained for a minimum of two calendar years by the owner of such turbine and made available to the District upon request.

(iii) New gas turbines with a power rating less than or equal to 0.4 MW used in conjunction with military tactical deployable equipment operated at military sites, provided that operations do not exceed 1000 hours per calendar year. It is the responsibility of any person claiming this exemption to maintain records indicting the hours that such turbine was operated. These records shall be maintained for a minimum of two calendar years by the owner of such turbine and made available to the District upon request.

(2) The provisions of Section (d) shall not apply to the following:

(i) Any emergency unit provided that operation for maintenance purposes to ensure operability in the event of an emergency situation does not exceed 80 hours per calendar year. It is the responsibility of any person claiming this exemption to maintain records in accordance with Subsections (e)(2) and (e)(6) of this rule.

(ii) Any unit during startup, shutdown or a fuel change for a period not to exceed ~~30~~ 120 continuous minutes. It is the responsibility of any person claiming this exemption to maintain records in accordance with Subsections (e)(3) and (e)(6) of this rule. Nothing in this rule shall be construed to limit the actual time needed to conduct a startup, shutdown or fuel change.

(c) **DEFINITIONS**

For the purposes of this rule, the following definitions shall apply:

(1) **"Emergency Situation"** means any one of the following:

(i) an unforeseen electrical power failure of the serving utility or of onsite electrical transmission equipment; or

(ii) an unforeseen flood, fire or life-threatening situation.

Emergency situation shall not include operation of any unit for training purposes or other foreseeable event, or operation of any peaking unit for the purpose of supplying power for distribution to an electrical grid.

(2) **"Emergency Unit"** means a stationary gas turbine engine used only in the event of an emergency situation. A peaking unit shall not be considered an emergency unit.

(3) **"Existing" or "Existing Unit"** means any stationary gas turbine engine which was installed and operating in San Diego County on or before *(date of adoption)*.

(4) **"Fuel Change"** means the transitory operating period when a switch occurs between liquid or gaseous fuels, or any combination thereof.

(5) **"Gaseous Fuel"** means natural gas, digester gas, landfill gas, methane, ethane, propane, butane, or any gas stored as liquids at high pressure such as liquefied petroleum gas.

(6) **"Liquid Fuel"** means distillate oils, kerosene and jet fuel.

(7) **"Military Tactical Deployable Equipment"** means equipment operated by the United States armed forces which is designed specifically for military use in an off-road, dense terrain and/or hostile environment or on board military combat vessels and is capable of being moved from one location to another. This equipment requires the ability to perform in a uniform manner with a minimum amount of maintenance which has been standardized throughout the United States military and/or NATO forces.

~~(7)~~ (8) **"New" or "New Unit"** means a stationary gas turbine engine installed in San Diego County after *(date of adoption)*.

~~(8)~~ (9) **"Peaking Unit"** means a stationary gas turbine engine that is operated intermittently for generation of electric power during periods of high energy demand.

~~(9)~~(10) **"Portable Gas Turbine Engine"** means t~~he same as "Portable Emissions Unit" defined in Rule 20.1 as it would apply to a gas turbine engine.~~ a gas turbine which is designed and equipped to be easily movable and, as installed, easily capable of being moved from one stationary source to another, as determined by the Air Pollution Control Officer. Portable gas turbine engines are periodically moved and may not be located more

than 180 days at any one stationary source within any consecutive 12-month period. Days when portable gas turbine engines are stored in a designated holding or storage area shall not be counted towards the 180-day limit, provided the gas turbine engine was not operated on that calendar day except for maintenance and was in the designed holding area the entire calendar day.

~~(10)~~(11) **"Power Augmentation"** means an increase in the gas turbine engine shaft output, or a decrease in turbine fuel consumption, by the addition of energy recovered from exhaust heat.

~~(11)~~(12) **"Power Rating"** means the maximum, continuous power output of a unit, in megawatts (MW) or equivalent, as certified by the manufacturer unless limited by a condition in a District Authority to Construct or a Permit to Operate. Power augmentation shall not be included in power rating.

~~(12)~~(13) **"Shutdown"** means to cease operation of a unit and includes the amount of time needed to safely do so.

~~(13)~~(14) **"Stationary Gas Turbine Engine"** means any gas turbine engine system, with or without power augmentation, which is permanently attached to a foundation, or is not a portable gas turbine. Two or more gas turbines powering a common shaft shall be treated as one gas turbine.

~~(14)~~(15) **"Stationary Source"** means the same as is defined in Rule 20.1.

~~(15)~~(16) **"Startup"** means to begin operation of a unit and includes the amount of time needed for a unit and ancillary equipment to achieve stable operation.

~~(16)~~(17) **"Unit"** means any stationary gas turbine engine.

(d) **STANDARDS**

(1) The emissions concentration of oxides of nitrogen (NOx) from any unit subject to this rule, calculated as nitrogen dioxide at 15% oxygen on a dry basis, shall not exceed the following:

(i) 42 parts per million ~~(ppm)~~ by volume (ppmv) when operated on a gaseous fuel.

(ii) 65 parts per million (ppm) by volume (ppmv) when operated on a liquid fuel.

(e) **MONITORING AND RECORDKEEPING REQUIREMENTS**

(1) An owner or operator of a unit which is subject to the requirements of Section (d) shall install continuous monitors to allow for ~~instantaneous~~ monitoring of the operational characteristics of the unit and of any NOx emissions reduction system, as

applicable~~.~~, to demonstrate continuous compliance, such as: ~~Operational characteristics may include, but are not limited to, the following:~~

(i) exhaust gas flow rate;

(ii) exhaust gas temperature;

(iii) ammonia injection rate;

(iv) water injection rate; and

(v) stack-gas oxygen content.

(2) An owner or operator of an emergency unit shall maintain an operating log and record the hours of operation for maintenance purposes and during an emergency situation. At a minimum, these records shall include the dates and actual times and duration of all startups and shutdowns, total cumulative annual hours of operation for maintenance purposes, and a description of any operation that occurred due to emergency situations.

(3) An owner or operator of any unit subject to this rule shall maintain an operating log and record actual times and duration of all startups, shutdowns and fuel changes, and the type of fuel used.

(4) Continuous monitors shall be installed, calibrated and maintained in accordance with applicable federal regulations and a protocol approved in writing by the Air Pollution Control Officer.

(5) For any existing unit, continuous emissions monitors which have been installed to measure NOx emissions pursuant to any federal regulation shall be certified, calibrated and maintained in accordance with applicable federal regulations and a protocol approved in writing by the Air Pollution Control Officer.

(6) The owner or operator of any unit subject to this rule shall maintain all records required by Section (e) for a minimum of three calendar years. These records shall be maintained on the premises and made available to the District upon request.

(f) TEST METHODS

(1) To determine compliance with Section (d), measurement of oxides of nitrogen and stack-gas oxygen content shall be conducted in accordance with ~~San Diego Air Control District Method 20~~ ARB Test Method 100, as approved by the U.S. Environmental Protection Agency (EPA).

(2) The averaging period to calculate NOx emissions concentration shall be any thirty consecutive minute period.

(3) Measurements of emissions concentrations shall not include calibration or span check measurements of the emissions testing equipment.

(g) SOURCE TEST REQUIREMENTS

(1) Source testing shall be performed at no less than 80% of the power rating. If an owner or operator of an existing turbine demonstrates to the satisfaction of the Air Pollution Control Officer that the turbine cannot operate at these conditions, then emissions sources testing shall be performed at the highest achievable continuous power rating.

(2) A unit subject to the requirements of Section (d) shall be tested for compliance at least once every 12 months, unless otherwise specified in writing by the Air Pollution Control Officer. Testing shall be conducted in accordance with Section (f) and a source test protocol approved in writing by the Air Pollution Control Officer. Test reports shall include the operational characteristics, as listed in Subsection (e)(1), of the unit and of all add-on NOx control systems.

(h) COMPLIANCE SCHEDULE

(1) An owner or operator of an existing unit shall be in compliance with all applicable provisions of this rule no later than May 31, 1995.

(2) Any person installing a new unit subject to the provisions of this rule shall comply with the applicable provisions of Section (d) upon initial installation and commencement of operation.