

**RULE 69. ELECTRICAL GENERATING STEAM BOILERS,
REPLACEMENT UNITS AND NEW UNITS**
(Adopted 1/18/94; Rev. Adopted & Effective 12/12/95)

(a) APPLICABILITY

(1) Except as provided in Section (b) or otherwise specified in this rule, this rule is applicable to the following existing electrical generating steam boilers, and to all replacement units and to all new units, including any auxiliary boiler used in conjunction with such electrical generating steam boilers, replacement units or new units:

- (i) Encina Power Plant Units 1, 2, 3, 4 and 5
- (ii) South Bay Power Plant Units 1, 2, 3 and 4
- (iii) Silvergate Power Plant Units

(2) Equipment subject to this rule shall also comply with the emission limitations and exemptions set forth in Rule 68.

(b) EXEMPTIONS

(1) The provisions of Sections (d), (e), (f) and (g) shall not apply to:

- (i) Any electrical generating steam boiler with a maximum heat input capacity of less than 100 million Btu's per hour.
- (ii) Boilers which generate steam used exclusively for space heat or process heat and not used for electrical generation.

(c) DEFINITIONS

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

(1) **"Boiler"** means any combustion equipment fired with solid, liquid and/or gaseous fuels and used to produce steam, excluding electrical generating gas turbines.

(2) **"Calendar Day"** means the 24-hour period starting on the 00:00 hour and ending on the 24:00 hour.

(3) **"Calendar Year"** means the consecutive 12-month period beginning January 1 and ending December 31.

(4) **"Compliance Emissions Testing"** means any emissions or continuous emissions monitor (CEM) quality assurance/quality control (QA/QC) testing required by federal, state, or local regulations.

- (5) **"Clock Hour"** means every 60-minute period starting on the hour.
- (6) **"Electrical Generating Steam Boiler"** means any boiler used to produce steam to be expanded in a turbine generator used for the generation of electric power.
- (7) **"Electrical Generating Gas Turbine"** means any combustion turbine fired with solid, liquid and/or gaseous fuels and used to provide direct shaft work for the generation of electric power.
- (8) **"Force Majeure Natural Gas Curtailment"** means an interruption in natural gas service such that the daily fuel needs of a boiler or replacement unit subject to this rule cannot be met with the natural gas available due to:
- (i) Unforeseeable natural disaster or other cause resulting in the failure or malfunction of natural gas supply, delivery or storage system facilities, not resulting from an intentional or negligent act or omission on the part of an owner or operator of a boiler, a new unit or a replacement unit, or
 - (ii) A supply restriction resulting from a California Public Utilities Commission priority allocation ruling, or
 - (iii) Delivery restrictions due to pipeline capacity limitations of the natural gas supplier or upstream transports or within a gas utility's delivery system.
- (9) **"Heat Input"** means the heat derived from combustion of fuel in an electrical generating unit and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc. The maximum heat input rating means the lesser of the steady state heat input capacity of an electrical generating unit, as limited by its design and construction or as limited by an Authority to Construct or Permit to Operate.
- (10) **"Megawatt-hour (MW-hr)"** means the total electrical energy generation of a boiler, new unit or replacement unit subject to this rule.
- (11) **"New Unit"** means any electrical generating steam boiler or electrical generating gas turbine for which the first Authority to Construct is issued on or after January 18, 1994.
- (12) **"Oxides of Nitrogen (NOx)"** means the sum of all compounds containing at least one atom of nitrogen and one atom of oxygen, measured as nitrogen dioxide, except nitrous oxide.
- (13) **"Reasonable Further Progress"** means annual incremental reductions in emissions of the applicable air pollutant which are sufficient, in the judgment of the Air Pollution Control Officer, to provide for attainment of the applicable National Ambient Air Quality Standard by the date required by law.

(14) **“Reasonably Available Control Technology”** means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available, considering technological and economic feasibility and any technology findings made by the U. S. Environmental Protection Agency.

(15) **“Replacement Unit”** means any electrical generating steam boiler or electrical generating gas turbine which permanently replaces or augments, on or after January 18, 1994, an existing electrical generating steam boiler subject to this rule. For purposes of this rule, a replacement unit need not be limited to the same electrical generating capacity as the existing boiler being replaced.

(16) **“SIP Control Measures”** means those emission control measures approved by the Air Pollution Control Board for inclusion in the State Implementation Plan (SIP) required by federal law or contained in the SIP approved by the U.S. Environmental Protection Agency.

(d) **STANDARDS**

A person shall not operate an existing electrical generating steam boiler, replacement unit or new unit subject to this rule unless only natural gas, alternative fuel and/or fuel oil is burned and the following requirements are met. If an alternative fuel is burned in an existing boiler subject to the provisions of Subsection (d)(7), the operator shall have previously demonstrated to the satisfaction of the Air Pollution Control Officer that the emissions of oxides of nitrogen (NO_x) per megawatt-hour of electricity generated is not greater than would be the emissions from the burning of natural gas in the same boiler, replacement unit or new unit.

(1) **Fuel Oil Firing**

A person shall not operate an electrical generating steam boiler, replacement unit or new unit when burning fuel oil on or after January 1, 1997 unless: the Air Pollution Control Officer has determined that an exceedance of the state ambient air quality standard for ozone is not predicted at any location in the air basin at any time during the fuel oil burning. This paragraph shall not apply when burning of fuel oil is required due to a force majeure natural gas curtailment. Prior to January 1, 1998, this paragraph shall not apply to fuel oil burning in the existing South Bay Power Plant Unit 4 boiler on days when fuel oil burning is needed to meet peak electrical generation demand.

(2) **Replacement Units and New Units NO_x Emission Limits**

A person shall not operate a replacement unit or new unit subject to this rule unless such unit has been built with, and is operated in conjunction with, the Lowest Achievable Emission Rate or Best Available Control Technology as applicable and defined in Rule 20.1 for emissions of oxides of nitrogen.

(3) Maximum NOx Emissions Control Performance

On and after January 1, 1997, a person shall not operate an electrical generating steam boiler, replacement unit or new unit unless all NOx emissions controls associated with such boiler, replacement unit or new unit are operated in a manner that achieves the maximum NOx emission control performance, taking into consideration the electrical generation load, for that boiler or unit. The Air Pollution Control Officer shall specify allowable NOx emission rates and/or key emission control device and boiler or unit operating parameters in the Authority to Construct and/or Permit to Operate for NOx emission controls proposed by the owner or operator to be used on each such boiler, replacement unit or new unit as necessary to ensure compliance with this requirement.

(4) Aggregate NOx Emission Limit

(i) Except as provided in Subsection (d)(5), no person who owned or operated an electrical generating steam boiler subject to this rule on January 18, 1994 shall operate any existing electrical generating steam boiler, replacement unit or new unit subject to this rule unless such person has demonstrated that the aggregate emissions of oxides of nitrogen, expressed as nitrogen dioxide, from all such boilers, replacement units and new units located in San Diego County and owned or operated by such person and any electrical generating steam boilers, replacement units and new units located in San Diego County that are owned or operated by another entity in which such person has a controlling interest, are not greater than:

(A) On and after January 1, 1997, 2100 tons during every calendar year.

(B) On and after January 1, 2001, 800 tons during every calendar year.

(C) On and after January 1, 2005, 650 tons during every calendar year.

(ii) The aggregate NOx emission limits specified in Subsections (d)(4)(i)(A), (d)(4)(i)(B) and (d)(4)(i)(C) shall be adjusted if any existing boiler replacement unit or new unit subject to the aggregate limit is transferred to another entity in which the person who owned or operated an existing boiler on January 18, 1994 does not have a controlling interest. The transferred existing boiler, replacement unit or new unit shall not be subject to an aggregate NOx emission limit pursuant to this rule, but shall be subject to unit specific emission limits, as applicable, specified in Subsections (d)(2) and (d)(7) of this rule.

(iii) The aggregate NOx emission limits shall be adjusted when boilers or units are transferred by reducing the limits by an amount equal to the annual average megawatt-hours generated over the five years preceding transfer when burning natural gas, fuel oil, and any combination of natural gas and fuel oil, for each such boiler or unit, multiplied by a NOx emission rate of 0.15 pounds per megawatt-hour when burning natural gas, a NOx emission rate of 0.40 pounds per megawatt-hour when burning fuel oil and, when burning a combination of natural

gas and fuel oil, a NO_x emission rate prorated for the relative heat input from natural gas and fuel oil, as specified in Subsection (d)(7) of this rule. For boilers, replacement units or new units that have operated less than five years prior to transfer, the annual average megawatt-hours generated shall be based on the most representative years of operation preceding transfer, as determined by the Air Pollution Control Officer.

(iv) The annual oxides of nitrogen emission limits specified in this subsection shall be adjusted to account for fuel oil burning that results from a force majeure natural gas curtailment, or is due to compliance emissions testing, using methods approved by the Air Pollution Control Officer. The adjustment shall be made by adding to the applicable limit the difference between the total pounds of oxides of nitrogen emissions occurring during such fuel oil burning and the total pounds of oxides of nitrogen emissions which would have occurred during the same period had natural gas been fired in that boiler, replacement unit or new unit. The adjustment shall be prorated for the relative heat inputs of fuel oil and natural gas when co-firing both fuels.

(5) Exceedances of an Aggregate NO_x Emission Limit

An owner or operator subject to the requirements of Subsection (d)(4) may operate its electrical generating steam boilers, replacement units and new units when aggregate oxides of nitrogen emissions exceed the calendar year limits specified in Subsection (d)(4) provided:

(i) The Air Pollution Control Officer has approved the exceedance in advance and has issued modified permits to operate for the affected equipment adding conditions that establish a new, enforceable calendar year aggregate emission limit, and

(ii) Such owner or operator has provided, in advance, offsetting emission reductions, on an annual basis and at a 1.0 to 1.0 offset ratio, for all emissions of oxides of nitrogen in excess of the calendar year limits specified in Subsection (d)(4).

The new calendar year aggregate oxides of nitrogen emission limit established pursuant to the above shall be based on the sum of the aggregate emission limit specified in Subsection (d)(4) and the emission offsets provided pursuant to Subsection (d)(5). Offsetting emission reductions shall conform to the criteria for emission offsets specified in Rule 20.1.

(6) Waiver from New Source Review NO_x Offset Requirements

On and after January 1, 1997, oxides of nitrogen emission increases from any new, modified or replacement unit subject to and in compliance with Subsections (d)(4) and (d)(5) of this rule, shall not be subject to the offset provisions of Regulation II, Rules 20.1 through 20.3, and 20.9 (New Source Review) of these Rules and Regulations provided that:

(i) The owner or operator of the new, modified or replacement unit has demonstrated, using methods approved by the Air Pollution Control Officer and the U.S. Environmental Protection Agency, the extent to which the NOx emission reductions that have been achieved by the owner or operator from electrical generating steam boilers existing prior to January 18, 1994 by compliance with this rule are in excess of the NOx emission reductions required to demonstrate compliance with Reasonably Available Control Technology, any NOx emission reductions from electrical generating steam boilers contained in SIP Control Measures and any NOx emission reductions from electrical generating steam boilers necessary to demonstrate compliance with Reasonable Further Progress, and

(ii) The excess NOx emission reductions determined in Subsection (d)(6)(i) are greater than 1.2 times the NOx emissions increases from the new, modified or replacement unit that would otherwise be subject to the offset provisions of Regulation II, Rules 20.1 through 20.3, and 20.9 (New Source Review) of these Rules and Regulations, and

(iii) The excess NOx emission reductions determined in Subsection (d)(6)(i) are reduced by 1.2 times the NOx emissions increases from the new, modified or replacement unit that would otherwise be subject to the offset provisions of Regulation II, Rules 20.1 through 20.3, and 20.9 (New Source Review) of these Rules and Regulations.

Only oxides of nitrogen emission increases associated with generating capacity which the California Energy Commission or the California Public Utilities Commission or their successor, as applicable, has determined a need for shall be eligible for this waiver.

(7) NOx Emission Rate Limits for Existing Boilers Not Subject to an Aggregate NOx Emission Limit

The emissions of oxides of nitrogen from any existing electrical generating steam boiler that has been transferred to another entity in which the person who owned or operated the boiler on January 18, 1994 does not have a controlling interest, shall not exceed 0.15 pounds per megawatt-hour when burning exclusively natural gas, 0.40 pounds per megawatt-hour when burning exclusively fuel oil, and a prorated emissions limit, determined as follows, when burning a combination of natural gas and fuel oil:

$$EL = \frac{[(Lo)(Qo)(HHVo)] + [(Lg)(Qg)(HHVg)]}{(Qo)(HHVo) + (Qg)(HHVg)}$$

where,

EL	=	Emission limit, pounds per megawatt-hour
Lo	=	0.40 pounds per megawatt-hour
Qo	=	Quantity of fuel oil burned, barrels per hour
HHVo	=	Higher heating value of fuel oil, Btu's per barrel

Lg = 0.15 pounds per megawatt-hour
Qg = Quantity of natural gas burned, scf per hour
HHVg = Higher heating value of natural gas, Btu per scf,

Compliance with the standards of this subsection shall be based on emissions of oxides of nitrogen from an affected boiler averaged over each calendar day of operation, or portion thereof.

(8) Emission Standards for Ammonia

The emissions of ammonia from any electrical generating steam boiler, replacement unit or new unit subject to the requirements of this rule, or from any emissions control device used to achieve compliance with this rule, shall not be greater than the lowest emission rate achievable, consistent with the requirements of this rule, taking into consideration the costs of achieving that emission rate and the potential public health impacts associated with such emissions.

(9) Banking of Excess Emission Reductions

No person shall be eligible to obtain emission reduction credits for emissions of oxides of nitrogen below the limits specified in this Section (d), with the exception of any boiler subject to and in compliance with the emission limits specified in Subsection (d)(7).

(e) **COMPLIANCE SCHEDULE, PLAN AND REPORT**

(1) Compliance Schedule

A person subject to the provisions of Section (d) shall comply with the following increments of progress:

(i) Any replacement unit or any new unit shall be in compliance with the applicable requirements of Section (d) on and after initial startup.

(ii) Any existing electrical generating steam boiler subject to the requirements of Subsection (d)(7) shall be in compliance with the requirements of this rule within two years after the first transfer of such boiler that occurs after December 12, 1995, but not later than January 1, 2001.

(iii) The owner or operator of an existing electrical generating steam boiler, replacement unit or new unit subject to the provisions of Subsection (d)(4) shall be in compliance with the applicable aggregate NOx emission limits specified in Subsections (d)(4) and (d)(5) beginning with calendar year 1997, and each calendar year thereafter.

(2) Initial Compliance Plan

The owner or operator of any equipment subject to the provisions of this rule shall submit to the Air Pollution Control Officer, for approval, by June 9, 1996, a Compliance Plan describing the actions, and contingencies, which are proposed by the owner or operator to meet the requirements of Section (d). The Compliance Plan shall be approved if it demonstrates that the requirements of this rule will be met. The Compliance Plan shall contain, at a minimum, the following applicable information for each electrical generating steam boiler, replacement unit and new unit subject to this rule:

- District Permit to Operate number.
- Equipment location.
- Manufacturer.
- Model number.
- Maximum permitted heat input rating.
- Primary and backup fuels to be used.
- Proposed methods to measure, record and report emissions of oxides of nitrogen, measured as parts per million by volume (ppmv) as nitrogen dioxide at 3% O₂, as pounds per million Btu's of fuel heat input, as pounds per day, as tons per calendar month and as tons per calendar year.
- For existing boilers subject to the provisions of Subsection (d)(7), proposed methods to measure, record and report megawatt-hours generated and watt transducer calibration method with supporting documentation.
- Maximum hourly, daily and annual pre-controlled NO_x emission rates.
- Method and type of emission controls to be used.
- Expected performance of the emission controls.
- Proposed schedule for applications for Authorities to Construct, issuing purchase orders for emission controls, commencing construction of emission controls, completing construction, conducting compliance tests and demonstrating compliance with the provisions of this rule.
- For boilers and replacement units and new units subject to the aggregate NO_x emission limits specified in Subsections (d)(4) and (d)(5), a forecast of aggregate emissions of oxides of nitrogen, in tons, for each calendar month of the next calendar year, a forecast of aggregate emissions of oxides of nitrogen, in tons, for each calendar year through the year 2001, and a demonstration of how compliance will be achieved with the aggregate NO_x emission limits specified in Subsections (d)(4) and (d)(5).
- All analyses, operating data, emission factors, assumptions and calculations used to develop the forecast of aggregate calendar month and calendar year emissions of oxides of nitrogen.

The initial Compliance Plan submittal need not contain detailed information regarding emission control specifications, performance and schedules, but must contain at least preliminary information regarding the type of control equipment and the anticipated date for installation of any planned emission controls for each affected unit. A copy of the Compliance Plan shall be kept at each affected site and shall be made available for District inspection upon request. Adherence to a Compliance Plan does not relieve the owner or operator from complying with any other provisions of this rule. The owner or operator of any boiler, replacement unit or new unit subject to this rule shall update the Compliance Plan annually.

(3) Compliance Reporting

(i) Annual Compliance Report

The owner or operator of any equipment subject to the provisions of this rule shall submit by the submittal date in 1997 of the Emissions Statement Form(s) required by Rule 19.3, and each year thereafter, a Compliance Report which describes the measures taken in the preceding calendar year to achieve compliance with the requirements of Section (d). The Compliance Report shall contain, at a minimum, the following information for the preceding calendar year for each electrical generating steam boiler, replacement unit and new unit subject to Section (d) of this rule:

- District Permit to Operate number.
- Number of hours of operation.
- Types and amounts of fuels consumed, and the number of hours on each fuel type.
- Dates and times of any force majeure natural gas curtailments that occurred.
- Mass emissions of oxides of nitrogen for each calendar month and for the calendar year for each such boiler and unit and for the aggregate emissions of such boilers and units under common ownership or control.
- Megawatt-hours generated and total mass emissions of NO_x each calendar day and for the calendar year for each boiler subject to the NO_x emission rate limits of Subsection (d)(7).
- Indication of whether the owner or operator is on schedule to meet the Compliance Plan(s) submitted pursuant to Subsection (e)(1).
- Identification of each exceedance of the applicable requirements of Section (d).

The Compliance Report submitted in 1998 for calendar year 1997, and each annual compliance report thereafter, shall contain a demonstration by the owner or operator, in the manner and form prescribed by the Air Pollution Control Officer, that the applicable requirements of Section (d) were met in the preceding calendar year. The Compliance Report shall be certified by the owner or operator as to its accuracy and completeness.

Where the Air Pollution Control Officer has approved emissions monitoring on a common stack that serves more than one electrical generating steam boiler, replacement unit, or new unit subject to this rule, the annual Compliance Report may contain aggregate emissions data from such boilers or units in lieu of emissions data for each such boiler or unit.

The Compliance Report shall also contain any proposed revisions to the Compliance Plan. These revisions shall include the justification for the changes and a demonstration that the changes will ensure compliance with the requirements of Section (d) and Subsection (e)(1). The Compliance Report submitted in year 2001, and each year thereafter, shall include a forecast of aggregate emissions of oxides of nitrogen, in tons, for each calendar year through the year 2005, and a demonstration of how compliance will be achieved with the aggregate NO_x emission limits specified in Subsections (d)(4) and (d)(5).

Documentation and calculations used to prepare the material presented in the Compliance Report shall be maintained by the owner or operator for at least two years and shall be made available to the District upon request.

(ii) Monthly Compliance Reporting

The owner or operator of any boiler, replacement unit or new unit subject to the provisions of Subsections (d)(4) and (d)(5) shall submit monthly, by the 15th day of the calendar month, a report of the aggregate oxides of nitrogen emissions for the preceding calendar month and cumulatively for the current calendar year from each and all such boilers, replacement units and new units under the control of the owner or operator, and a comparison of oxides of nitrogen emissions during the preceding calendar months for the current calendar year to that forecast in the current Compliance Plan.

Where the Air Pollution Control Officer has approved emissions monitoring on a common stack that serves more than one electrical generating steam boiler, replacement unit or new unit subject to this rule, the monthly Compliance Report may contain aggregate emissions data from such boilers or units in lieu of emissions data for each such boiler or unit.

If the actual monthly or cumulative aggregate emissions exceed that forecast in the current Compliance Plan, the owner or operator shall submit an explanation of the exceedance, a description of all emission control and operational steps to be taken to ensure that the applicable calendar year aggregate emission limit of Section (d) will not be exceeded, and a revised forecast of the aggregate oxides of nitrogen emissions from each and all electrical generating steam boilers, replacement units and new units for each calendar month for the remainder of the calendar year.

(f) **RECORDKEEPING**

(1) On and after January 1, 1997, no person shall operate any electrical generating steam boiler, replacement unit or new unit subject to this rule unless such boiler or

unit is equipped with continuous monitors, and associated data collection, processing and storage systems, which record and preserve, on a daily basis and in the manner and form prescribed by the Air Pollution Control Officer, all of the information needed to demonstrate compliance with Subsections (d)(1) through (d)(5) and (d)(7) of this rule, as applicable, including but not limited to:

- (i) The daily emissions, in pounds, of oxides of nitrogen from each boiler, replacement unit, or new unit.
- (ii) The aggregate daily emissions, in pounds, of oxides of nitrogen from all such boilers, replacement units or new units under common ownership or control.
- (iii) The cumulative calendar month and annual emissions, in tons, of oxides of nitrogen, commencing with January 1 of the current calendar year, for each such boiler, replacement unit or new unit.
- (iv) The cumulative calendar month and annual emissions, in tons, of oxides of nitrogen, commencing with January 1 of the current calendar year, for the aggregate of all such boilers, replacement units or new units under common ownership or control.
- (v) The hours of operation for each such boiler, replacement unit or new unit.
- (vi) For each such boiler, replacement unit or new unit, the following, averaged over each clock hour or portion thereof:
 - (A) NO_x emission concentration, in parts per million by volume (ppmv) as nitrogen dioxide at three percent oxygen on a dry basis.
 - (B) Diluent concentration (CO₂ or O₂), in percent on a dry basis.
 - (C) NO_x emission rate, in pounds per million Btu's of fuel heat input.
 - (D) Fuel heat input, in millions of Btu's.
 - (E) NO_x mass emission, in pounds.
 - (F) For boilers subject to the provisions of Subsection (d)(7), NO_x emissions per unit of electrical energy generated, in pounds per megawatt-hour, megawatt-hours of electrical energy generated, and the type and amount of fuel being burned.
 - (G) Any emission control device and boiler or unit key operating parameters specified by the Air Pollution Control Officer pursuant to Subsection (d)(3).

Oxides of nitrogen emission concentrations shall be measured at equally spaced intervals, not to be less frequent than once every five minutes, or such other period determined by the Air Pollution Control Officer to be necessary to determine compliance with this rule and not inconsistent with monitoring requirements imposed under these rules or state or federal law, and averaged up to each clock hour, or portion thereof. Only the clock hour average data, or portion thereof, must be recorded and preserved.

(2) For each electrical generating steam boiler, replacement unit or new unit, emissions of oxides of nitrogen, and megawatt-hours of electrical energy produced, if applicable, shall be measured, and the resultant data processed and reported, in accordance with a protocol prepared by the owner or operator of such boiler or unit and approved by the Air Pollution Control Officer. The protocol shall specify the maintenance, calibration and quality assurance procedures to be followed for each emission or energy measurement device and all data processing and associated equipment.

The Air Pollution Control Officer may approve continuous emissions monitoring on a common stack that serves more than one electrical generating steam boiler, replacement unit, or new unit subject to this rule provided that the owner or operator of such boilers or units demonstrates, to the satisfaction of the Air Pollution Control Officer, that such monitoring will be sufficient to determine compliance with the applicable requirements of this rule.

The records required by this section shall be retained on site for at least three years and shall be made available to the District upon request. Records of aggregate daily emissions required by Subsection (f)(1)(ii) shall be available within two working days of a request. Records of cumulative emissions required by Subsections (f)(1)(iii) and (f)(1)(iv) shall be available within 15 working days of a request.

(g) TEST METHODS

The following methods shall be used to determine compliance with the requirements of this rule:

(1) Oxides of nitrogen emissions shall be measured utilizing District Method 100 as it exists on December 12, 1995. This method shall not apply to continuous emission monitors required by Subsection (f)(1).

(2) The oxides of nitrogen (NO_x) emission rate, in pounds, in pounds per megawatt-hour, if applicable, and in pounds per million Btu's of fuel heat input for each clock hour of operation, or portion thereof, for each boiler, replacement unit or new unit subject to the requirements of Section (d), shall be calculated in accordance with procedures approved by the Air Pollution Control Officer.