

SOCIOECONOMIC
ANALYSIS
PROPOSED RULE

REGULATION 9, RULE 9:
NITROGEN OXIDES
FROM STATIONARY GAS TURBINES

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Prepared for

Bay Area Air Quality
Management District

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1. EXECUTIVE SUMMARY

INTRODUCTION

This report describes the socioeconomic impacts of proposed amendments to Regulation 9, Rule 9 that, if implemented, will help the Bay Area Air Quality Management District (District) to achieve and maintain state ambient air quality standards for ozone. Following this summary, the report summarizes the proposed rule requirements and describes the methodology for the socioeconomic analysis. The report also describes the economic characteristics of sites affected by the proposed rule amendments along with the socioeconomic impacts of the proposed amendments.

SUMMARY

The proposed rule amendments affect Bay Area businesses engaged in petroleum refining and electric power generation, transmission and distribution (utilities). Two oil refineries and three utilities will be impacted by the proposed rule amendments. Combined, the five impacted businesses generate sales of approximately \$2.8 billion annually. Profits for these businesses are estimated at nearly \$96.9 million.

The compliance with the proposed amendments is expected to cost a total of \$2.18 million per year. This represents just over one percent of total profits for the impacted businesses. Additionally, slightly more than 96 percent of the total compliance cost will be borne by four (three plus a subsidiary) of the five impacted businesses.

The analysis concludes that the costs associated with compliance will not result in significant economic dislocation or job losses. The total annual cost of compliance is far below the 10 percent of profits threshold for significant impact. Additionally, small businesses will not be disproportionately impacted by the proposed amendments.

2. DESCRIPTION OF THE PROPOSED RULE

CURRENT STATUS OF THE RULE

In 1992, the California Air Resources Board developed a guidance document to aid local air districts in adopting regulations governing NO_x emissions. This document was titled *Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for the Control of Oxides of Nitrogen from Stationary Gas Turbines* (RACT/BARCT). On May 5, 1993, using the RACT/BARCT document as a guideline, BAAQMD adopted Regulation 9, Rule 9 to govern NO_x emissions from stationary gas turbines in the Bay Area. On September 21, 1994, the rule was amended to accommodate a delay in development of Dry Low NO_x (DLN) combustion technology.

Regulation 9, Rule 9 currently sets the following emissions limits based upon MW output and the number of hours the turbine is in operation annually. For turbines that operate 877 hours per year or more, the current NO_x emissions limits are as follows:

TURBINE SIZE	FUEL		
	Natural Gas	Refinery Gas	Liquid Fuel
Less than 0.3 MW	Exempt	Exempt	Exempt
0.3 MW to 10 MW	42	55	65
10 MW or more	Without SCR	15	42
	With SCR	9	25

For those turbines that operate less than 877 hours per year, the current NO_x emissions limits are as follows:

TURBINE SIZE	FUEL		
	Natural Gas	Refinery Gas	Liquid Fuel
Less than 4 MW	Exempt	Exempt	Exempt
4 MW to 10 MW	42	N/A	65
10 MW or more	42	N/A	65

As currently adopted, the rule provides for the following exemptions to the emissions limits listed above:

- Testing of aircraft gas turbine engines for flight certification
- Gas Turbines used exclusively for fire fighting and/or flood control
- Laboratory turbines used exclusively in turbine technology research
- Small turbines under 0.3 MW (or under 4.0 MW for backup/standby turbines used less than 877 hours per year)
- Emission limits do not apply during startup, shutdown, or inspection and maintenance periods.

All gas turbines subject to the regulation were required to be in compliance with all applicable standards by January 1, 1997. Since the adoption of Regulation 9, Rule 9, improvements have been made in Dry Low NO_x (DLN) combustion technology as well as improvements in Selective Catalytic Reduction (SCR) catalysts that can achieve lower NO_x emissions than currently required by this rule.

PROPOSED RULE AMENDMENTS

With consideration to comments the District has received regarding potential amendments the Regulation 9, Rule 9, the following amendments are proposed;

- Provide an operating window for turbines of up to 400 hours per year for testing and minor production before any new emission limits are required.
- Require SCR or an equivalent retrofit for gas turbines that are greater than 40 MW.
- Categorize emission limits by heat input (turbine heat input rating) rather than MW output.¹
- Provide the option of lbs NO_x/MW-hr “output based” emission limits.
- Include the heating value of steam or direct drive mechanical work in the total useful work component of the MW-hr calculation.
- Determine compliance based on three hour averaging.
- Make minor clarifying changes to the rule, such as addition of definitions and deletion of obsolete references.
- Provide an implementation timetable of 18 months for design and application for an Authority to Construct, and 18 months for construction and startup, or at the next scheduled turnaround, whichever is later, but not later than January 1, 2012.

EMISSIONS REDUCTIONS

BAAQMD estimates that proposed reduced emissions limits, as detailed in Appendix A to this report, will lower NO_x emissions by 0.43 tons per day; which combined with recent turbine shutdowns is a reduction of approximately 241 tons per year.

¹ Appendix A to this report details the NO_x emissions limits proposed with these amendments.

3. IMPACT OF PROPOSED RULE AMENDMENTS

This section of the socioeconomic analysis describes demographic and economic trends in the San Francisco Bay Area (Bay Area) region. Following an overview of the methodology for the socioeconomic analysis, the first part of this section compares the Bay Area against California and provides a context for understanding demographic and economic changes that have occurred within the Bay Area between 1995 and 2005. After an overview of Bay Area industries, we focus on the following industries:

- NAICS 32411, Petroleum Refineries
- NAICS 2211, Electric Power Generation, Transmission, and Distribution

Then the impacts on businesses within these industries of the proposed changes to Regulation 9, Rule 9 concerning nitrogen oxides from stationary gas turbines are analyzed. For the purposes of this report, the Bay Area region is defined as Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

METHODOLOGY

The socioeconomic analysis of the proposed rule amendments concerning nitrogen oxides from stationary gas turbines involves the use of information provided directly by BAAQMD, as well as secondary data used to describe the industries affected by the proposed rule amendments.

Based on information provided by BAAQMD staff, ADE determined that the impacts would affect oil refineries and companies engaged in electric power generation, transmission, and distribution (utilities). In relation to the refineries, we further focused attention on Chevron and Valero refineries, as well as Calpine, OLS Energy-Agnews

which is a subsidiary of Calpine, and International Power Technology².

With this information we began to prepare economic descriptions of the industry groups of which the impacted sites are a part, as well as to analyze data on the number of jobs, sales levels, the typical profit ratios and other economic indicators for the Bay Area businesses. ADE also reviewed and summarized documents available to the public such as annual reports for publicly traded companies.

With the annual reports and data from the US Economic Census, ADE was able to estimate revenues and profit ratios for many of the sites impacted by the proposed rule amendments. In calculating aggregate revenues generated by Bay Area refineries and utilities, ADE first estimated annual revenue based upon available data. Using annual reports and publicly available data, ADE calculated ratios of profit per dollar of sales for the businesses on which the analysis focused. To estimate employment, ADE used employment data from 2002 Economic Census, the California Employment Development Department, and Dun & Bradstreet.

The result of the socioeconomic analysis shows what proportion of profit the compliance costs represent. Based on a given threshold of significance, ADE discusses in the report whether the affected sites are likely to reduce jobs as a means of recouping the cost of compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the job losses area estimated using a regional IMPLAN input-output model.

REGIONAL DEMOGRAPHIC TRENDS

The Bay Area experienced moderate population growth from 1995 to 2005. Between 1995 and 2000, the nine-county region increased by nearly 6.7 percent, from 6.3 million in

² International Power Technology is a private sector organization that offers power plant operations, maintenance, and management services.

1995 to almost 6.8 million in 2000. From 1995 to 2005, the population increase was from 6.3 million to close to 7.1 million for an increase of approximately 10.4 percent. At the same time, California had population growth of almost 14 percent.

Within the Bay Area, the greatest percentage increase occurred in Contra Costa County. From 1995 to 2005 Contra Costa increased its population by nearly 15 percent. All other Bay Area counties had population increases slower than the State. The smallest percentage increase occurred in Marin County where population grew less than 5.5 percent from 1995 to 2005. Table 1 shows the population changes that have occurred in the Bay Area and California from 1995 to 2005.

Table 1
Population Growth: San Francisco Bay Area

	Population			Percent Change		
	1995	2000	2005	95-00	00-05	95-00
California	31,617,000	33,871,648	36,728,196	6.7%	7.8%	13.9%
Bay Area	6,329,800	6,783,760	7,067,403	6.7%	4.0%	10.4%
Alameda County	1,332,900	1,443,741	1,500,228	7.7%	3.8%	11.2%
Contra Costa County	869,200	948,816	1,019,101	8.4%	6.9%	14.7%
Marin County	238,100	247,289	251,820	3.7%	1.8%	5.4%
Napa County	116,800	124,279	132,990	6.0%	6.6%	12.2%
San Francisco County	741,600	776,733	792,952	4.5%	2.0%	6.5%
San Mateo County	673,300	707,161	719,655	4.8%	1.7%	6.4%
Santa Clara County	1,568,200	1,682,585	1,752,653	6.8%	4.0%	10.5%
Solano County	368,000	394,542	420,307	6.7%	6.1%	12.4%
Sonoma County	421,700	458,614	477,697	8.0%	4.0%	11.7%

Source: Applied Development Economics, based on household population estimates from The California Department of Finance

REGIONAL ECONOMIC TRENDS

The Bay Area is one of the world's greatest regional economies. It benefits from pre-eminent knowledge-based industries, with competitive strength flowing from an unmatched culture of entrepreneurship, world-leading research institutions, and some of the nation's best educated and most highly skilled workforce. With these remarkable advantages, it has led through innovation in a wide range of research and industrial fields.

Many of the Bay Area's most prominent industries are manufacturing related. From Intel to PowerBar, Bay Area manufacturers are often high profile companies with world-renowned recognition. From small to large, Bay Area industry has been dynamic, creating wealth and jobs in both the export sector and local serving industries.

The economic base is typically comprised of export industries within the manufacturing, minerals-resource extraction, and agricultural sectors. There are also the "local support industries" such as retail or service sectors, the progress of which is a function of the economic base and demographic changes, and more so the latter than the former. As population increases in a given area, demand for services – such as realtors, teachers, healthcare – increases, as does demand for basic retail items like groceries, gas for commuting, or clothing at the local apparel shops.

The industries affected by the proposed rule amendments are a prominent part of the region's economic base. The oil refineries are classified as manufacturers with the firms engaged in chemical manufacturing. In the Bay Area, manufacturing jobs have decreased over the last decade. In 1995, manufacturing accounted for 14.5 percent of all Bay Area employment. By 2005, manufacturing declined 3.5 percentage points to account for 11 percent of all Bay Area employment.

As of 2005, the professional and business services sector was the largest employer in the region, at 529,100 jobs or 17 percent of all private and public sector jobs. This is a change from 1995 when professional and business services accounted for 16 percent of all Bay Area employment. During the same period, professional and business services increased 14 percent. The next largest industry in the Bay Area is public service, or government, with 468,100 jobs. In 2005, government accounted for 15 percent of all Bay Area employment. From 1995 to 2005, government had one of the lowest growth rates of all industries at less than 6 percent. Two other industries came close to manufacturing in total employment. Retail trade and education & health care both made up 11 percent of total employment and had only a few thousand jobs less than manufacturing. Unlike

manufacturing, both retail trade and education & health care had significant job gains from 1995 to 2005. All other industries made up less than manufacturing in total employment in 2005. Table 2 shows Bay Area industry sectors and their trends from 1995 to 2005.

Table 2
Employment Profile of the San Francisco Bay Area, 1995-2005

Industry	1995	2000	2005	% of Total Employment in 2005	% Change 1995 - 2000	% Change 2000 - 2005
Farm	21,100	25,800	20,000	1%	22%	-22%
Natural Resources & Mining	2,920	4,600	4,560	0%	58%	-1%
Construction	105,200	165,700	164,100	5%	58%	-1%
Manufacturing	428,800	484,500	351,300	11%	13%	-27%
Wholesale Trade	121,700	138,800	122,900	4%	14%	-11%
Retail Trade	304,900	350,600	336,600	11%	15%	-4%
Transportation, Warehousing and Utilities	116,600	125,600	100,400	3%	8%	-20%
Information	92,100	151,600	112,300	4%	65%	-26%
Financial Activities	189,300	198,500	213,000	7%	5%	7%
Professional and Business Services	464,400	670,300	529,100	17%	44%	-21%
Educational and Health Services	299,300	334,300	361,600	11%	12%	8%
Leisure and Hospitality	260,400	297,700	311,000	10%	14%	4%
Other Services	100,700	110,800	109,900	3%	10%	-1%
Government	442,100	465,200	468,100	15%	5%	1%
Total	2,949,520	3,524,000	3,204,860	100%	19%	-9%

Source: Applied Development Economics from data supplied by the Labor Market Information Division of the California Employment Development Department

DESCRIPTION OF AFFECTED INDUSTRIES

The proposed amendments to Regulation 9, Rule 9 affect industries in the following NAICS codes:

- NAICS 32411, Petroleum Refineries
- NAICS 2211, Electric power generation, transmission and distribution

What follows is a description of these industries, along with their economic trends in the Bay Area, and it provides a comparison between 2001 and 2005. Data in Table 3 below are for all sources, not just the major sites that have been focused on in the Bay Area. As shown in Table 3, employment in petroleum refineries decreased by 6 percent over the four-year period from 2001 to 2005. Though employment in this industry decreased during this period, it fared much better than the overall manufacturing sector.

Between 2001 and 2005, Bay Area manufacturing lost almost 110,000 jobs, a 24 percent decline. In California, petroleum refinery jobs declined by 7 percent during the same period and manufacturing jobs declined 16 percent. In short, while employment in Bay Area refineries decreased in a fashion similar to what happened in refineries in the state as a whole, refinery employment decline was not as drastic as regional and statewide employment declines for the manufacturing sector as a whole.

Table 3
Employment Trends: Industries Affected by Proposed Amendments, 2001 - 2005

	2001	2005	Change from 2001 to 2005	% Change from 2001 to 2005
San Francisco Bay Area				
MANUFACTURING	460,992	351,005	(109,987)	-24%
Petroleum Refineries	6,424	6,031	(393)	-6%
TRADE, TRANSPORTATION, & UTILITIES	559,947	608,519	48,572	9%
Electric Power Generation, Transmission and Distribution	3,007	2,771	(236)	-8%
California				
MANUFACTURING	1,780,544	1,498,373	(282,171)	-16%
Petroleum Refineries	13,447	12,498	(949)	-7%
TRADE, TRANSPORTATION, & UTILITIES	2,719,610	2,792,887	73,277	3%
Electric Power Generation, Transmission and Distribution	54,800	55,800	1,000	2%

Source: California Employment Development Department, Quarterly Census of Employment and Wages, Minnesota IMPLAN Group; calculations by Applied Development Economics.

As shown in Table 3 above, employment in electric, power, generation, transmission and distribution (NAICS 2211) in the Bay Area decreased by 8 percent in the four-year period from 2001 to 2005. This industry did not fare as well as overall economic sector that NAICS 2211 is a part of, i.e. trade, transportation and utilities. Between 2001 and 2005, the trade, transportation and utilities sector increased by 48,572 jobs in the Bay Area, a 9 percent increase. In California, this sector increased by 3 percent during the same period. Moreover, at the state level, NAICS 2211 increased

somewhat by 2 percent in the four-year period from 2001 to 2005.

Table 4 identifies the economic characteristics of the specific sites affected by the proposed amendments to Regulation 9, Rule 9. This table shows that the affected refineries and electric, power, generation, transmission and distribution sites employ an estimated 880 workers. These five sites have an estimated aggregate payroll of \$96.9 million, and estimated revenues of \$2.8 billion. In calculating aggregate revenues generated by impacted businesses, the consultant utilized corporate annual reports for three impacted businesses (Calpine, Chevron and Valero). The consultant also used the 2002 Economic Census to estimate an average revenue figure per business that was then applied to two other businesses impacted by the proposed amendments. Then, the consultant summed the businesses' estimated revenue to arrive at the aggregate amount of \$2.85 billion.

	No. of Businesses	Estimated Sales	Estimated Employment	Estimated Payroll
Petroleum Refineries and Utilities	5	\$2,809,938,162	880	\$96,860,123

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; SEC 10-K filings; Calculations by Applied Development Economics

Note: This includes International Power Technology, which provides operations, maintenance and management of power plants.

As Table 5 shows, the impacted sites represent 10 percent of all employment within their respective industry in the Bay Area. Overall, there are an estimated 8,802 employees in the Bay Area refineries (NAICS 32411) and electric power generation, distribution and transmission plants (NAICS 2211). Of the 8,802 workers, 880 work in the impacted sites, or 10 percent. In California as a whole, there are 68,298 workers in NAICS 32411 and NAICS 2211, meaning that the affected Bay Area sites equal 1.4 percent of 68,298 workers.

Table 5
Employment at Impacted Sites Relative to Bay Area and California

	No. of Businesses	Estimated Employment	Impacted Sites as a % of Bay Area Total	Impacted Sites as a % of California Total
Petroleum Refineries and Utilities	5	880	10%	1%

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; SEC 10-K filings; Calculations by Applied Development Economics

Note: This includes International Power Technology, which provides operations, maintenance and management of power plants.

COMPLIANCE COSTS

Table 6 breaks down the estimated cost to comply with the proposed nitrogen oxides from stationary gas turbines rule amendments. This estimate is based upon conversations with the impacted businesses and vendor pricing information for products the materials necessary to implement the planned compliance actions. The total compliance cost is estimated at approximately \$2.2 million. The planned compliance actions range from installation of SCR or state of the art DLN technology to enhanced injection of water, steam, or ammonia. In terms of share of compliance cost, BAAQMD staff estimates that approximately 96 percent (\$2,087,282) of the total compliance cost will be borne collectively by Calpine³, Chevron, and Valero. The estimates in Table 6 above represent the aggregate costs for each of the five impacted businesses.

³ Including its subsidiary, OLS Enertry-Agnews

Table 6
Cost of Compliance

Capital Cost	
Recovery	\$ 1,129,765
Operating Costs	\$ 714,150
Lost Capacity	\$ 0
Lost Efficiency	\$ 0
Ammonia & Util	\$ 92,817
Cat Costs	\$ 243,500
Total Annual Cost	\$2,180,233

Source: BAAQMD

This rule also has a provision to require additional retrofits if the technologies become commercially available for different makes and models of gas turbines. It is unlikely that adapting these technologies to additional turbines would introduce new costs substantially different from those today. Analysis for current unit will hold true for these future installations.

BUSINESS RESPONSE TO COMPLIANCE COSTS

Sites impacted by the proposed gas turbine rule amendments may respond in a variety of ways when faced with new regulatory costs. These responses may range from simply absorbing the costs and accepting a lower rate of return to shutting down the business operation all together. Businesses may also seek to pass the costs on to their customers in the form of higher prices, although, at least in the oil industry, prices are set in global markets and individual producers or refineries are not in a position to affect prices. In the utilities industry, prices are subject to a regulatory structure and/or contracts, so it can be difficult to pass along costs. More likely, they may renew efforts to increase productivity and reduce costs elsewhere in their operation in order to recoup the regulatory costs and maintain profit levels.

IMPACT ANALYSIS

The businesses' responses to increased compliance costs hinge on the effect of the costs on the profits generated at the

affected sites. An impact on estimated profits greater than 10 percent implies that the source would experience serious economic effects because of the compliance cost. When compliance costs are greater than 10 percent of estimated profits, companies typically respond to the impact by laying off some workers, closing parts of manufacturing facilities or, in the most drastic case, possibly closing the manufacturing facility.

Using the compliance cost estimates developed for the proposed nitrogen oxides from stationery gas turbines rule amendments ADE calculated the socioeconomic impacts of the proposed actions. In calculating impacts on profits, ADE used return on sales ratios identified by media reports and in annual reports of companies directly affected by the proposal. Based on this information, we estimate that the impacted businesses generated a combined profit of \$161.42 million on \$2.9 billion in revenues.

Table 7 details the projected impacts of compliance with the proposed NOx reductions on affected site profits. Due to the relatively low number of impacted businesses within each of the impacted industries, the refineries and utilities have been aggregated for the purposes of this table. The estimated annual compliance cost of \$2,180,233 represents just over one percent of profits for the impacted businesses in each of the impacted industries, well below the 10 percent threshold for a significant impact.

	No. of Businesses	Estimated Profits	Annual Compliance Cost	Cost as % of Profits
Petroleum Refineries and Utilities	5	\$ 161,416,439	\$ 2,180,233	1.35%

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; SEC 10-K filings; Calculations by Applied Development Economics

Note: This includes International Power Technology, which provides operations, maintenance and management of power plants.

IMPACT ON SMALL BUSINESS

DEFINITION OF SMALL BUSINESS PER CALIFORNIA STATUTE

For purposes of qualifying small businesses for bid preferences on state contracts and other benefits, the State of California defines small businesses in the following manner:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California
- Must have its owners (or officers in the case of a corporation) domiciled in California; and,
- Together with its affiliates, be either:
 - A business with 100 or fewer employees, and an average gross receipts of \$10 million or less over the previous tax years, or
 - A manufacturer with 100 or fewer employees

SMALL BUSINESS IMPACT ANALYSIS

Based upon close inspection of the five impacted sources and their anticipated annual compliance cost, we do not believe that small businesses are disproportionately impacted by the proposed rule amendments. Two of the businesses are oil refineries, which, as documented in previous reports, are not small businesses. These two affected sources are not independently-owned and operated businesses. These refineries are publicly-traded global corporations that employ more than 100 workers and generate over \$1 billion in annual sales. Calpine is another publicly-traded business that is impacted by the proposed amendments to Regulation 9, Rule 9. Calpine is in NAICS 2211. Although this company is in receivership, this company and its various subsidiaries (including OLS Energy-Agnews) continue to generate over \$1 billion in revenues. Combined, these three businesses, will bear slightly over 96 percent of the total compliance cost

associated with the proposed amendments to Regulation 9, Rule 9. The remaining affected site will incur costs that amount to approximately four percent of the total annual compliance cost, or \$92,951 out of \$2,180,233. Since the average wage (including benefits) of workers at this site is approximately \$97,800, the annual compliance cost amounts to 0.95 full-time equivalent (FTE) positions, if the annual compliance cost is mitigated by reduction in the workforce. In all likelihood, the site can mitigate the loss of 0.95 FTE through normal workforce attrition, improved worker productivity, or a combination of administrative overhead reductions and increases in fee-for-service to the extent market forces allow. Thus, the proposed amendments to Regulation 9, Rule 9 do not disproportionately impact small businesses.

APPENDIX A: PROPOSED EMISSION LIMITS

STATIONARY GAS TURBINES OPERATING 877 HOURS PER YEAR OR MORE

TURBINE HEAT RATE	FUEL		
	Natural Gas	Refinery Gas/Landfill Gas/LPG	Liquid Fuel
< 5MM Btu/hour	Exempt	Exempt	Exempt
5 – 50 MM Btu/hour (0.3 – 3 MW)	2.12 lbs/MW hr or 42 ppm	2.53 lbs/MW hr or 50 ppm	3.28 lbs/MW hr or 65 ppm
> 50 – 150 MM Btu/hour (3 – 10 MW)	1.97 lbs/MW hr or 42 ppm	2.34 lbs/MW hr or 50 ppm	3.04 lbs/MW hour or 65 ppm
♦ WI/SI enhancement available	1.65 lbs/MW hr or 35 ppm		
♦ Where DLN technology available	1.17 lbs/MW hr or 25 ppm		
> 150 – 250 MM Btu/hour (10 – 19 MW)	0.70 lbs/MW hr or 15 ppm	0.70 lbs/MW hr or 15 ppm	1.97 lbs/MW hr or 42 ppm
> 250 – 500 MM Btu/hour (19 – 40 MW)	0.43 lbs/MW hr or 9 ppm	0.43 lbs/MW hr or 9 ppm	1.17 lbs/MW hr or 25 ppm
> 500 MM Btu/hour (40+ MW)	0.15 lbs/MW hr or 5 ppm	0.26 lbs/MW hr or 9 ppm	0.72 lbs/MW hr or 25 ppm

Note: Shaded limits are those proposed to be changed.

STATIONARY GAS TURBINES OPERATING LESS THAN 877 HOURS PER YEAR

TURBINE HEAT RATE	FUEL		
	Natural Gas	Refinery Gas/Landfill Gas/LPG	Liquid Fuel
< 50 MM Btu/hr	Exempt	Exempt	Exempt
50 – 150 MM Btu/hr (3 – 10 MW)	1.97 lbs/MW hr or 42 ppm	N/A	3.04 lbs/MW hr or 65 ppm
> 150 – 250 MM Btu/hr (10 – 19 MW)	1.97 lbs/MW hr or 42 ppm	N/A	3.04 lbs/MW hr or 65 ppm
> 250 – 500 MM Btu/hr (19 – 40 MW)	1.17 lbs/MW hr or 25 ppm	N/A	1.97 lbs/MW hr or 42 ppm
> 500 MM Btu/hr (40+ MW)	0.72 lbs/MW hr or 25 ppm	N/A	1.21 lbs/MW hr or 42 ppm

Note: Shaded limits are those proposed to be changed.