

**SOCIOECONOMIC IMPACT ASSESSMENT**

**PROPOSED AMENDED RULE 69.4.1 -  
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES**

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## EXECUTIVE SUMMARY

The San Diego County Air Pollution Control District (District) is required by federal and State law to adopt and periodically update rules to control and reduce ozone-forming emissions from stationary sources in the San Diego region, which is an ozone nonattainment area. The District's proposed amended Rule 69.4.1 (Stationary Reciprocating Internal Combustion Engines) is the result of these federal and State requirements.

Additionally, when adopting, amending or repealing a rule that will significantly affect air quality or emissions limitations, the District is required by State law to assess the socioeconomic impacts. Proposed amended Rule 69.4.1 will affect emissions limitations by establishing emissions standards for new stationary engines. Accordingly, this Socioeconomic Impact Assessment (SIA) has been prepared pursuant to State law.

Rule 69.4, which was last amended on July 30, 2003, was subsequently approved by the U.S. Environmental Protection Agency (EPA) as part of the San Diego County portion of the State Implementation Plan for attaining and maintaining the air quality standards. The rule contains federal-only standards (Reasonably Available Control Technology – RACT) that reduce oxides of nitrogen (NO<sub>x</sub>) emissions from stationary engines with a brake horsepower (bhp) rating of 50 or more that are located at major stationary sources (facilities emitting 50 or more tons per year of NO<sub>x</sub>).

Rule 69.4.1, which was adopted on November 15, 2000, also applies to stationary engines with a bhp rating of 50 or greater. However, this rule contains more health-protective State requirements (Best Available Retrofit Control Technology – BARCT) for lower air pollutant emissions from stationary engines located at both major and non-major sources.

Following the adoption of these District rules, federal and State regulations were enacted which further limit the allowable air pollutant emissions from new and replacement stationary engines. These federal and State requirements are currently in effect and sources must comply regardless of whether they are incorporated in Rule 69.4.1. Nevertheless, incorporating the requirements in Rule 69.4.1 will enable the District to take credit for the resulting emissions reduction benefits in the region's air quality attainment plans, which it cannot do until Rule 69.4.1 incorporates the more stringent emissions limitations. Additionally, the proposed amended rule will increase regulatory certainty for businesses by enhancing consistency with existing federal and State requirements, improving clarity, and providing a single, local regulation identifying all applicable requirements.

An estimated 3,300 existing stationary engines will be affected by the proposed amended rule. Upon full implementation, when all existing engines are replaced through normal attrition, proposed amended rule will reduce NO<sub>x</sub> emissions from affected equipment by approximately 55% or 292 tons per year, with an average cost-effectiveness of about \$5 per pound of NO<sub>x</sub> emissions reduced.

If adopted by the Board, proposed amended Rule 69.4.1 will be submitted to the EPA for approval into the State Implementation Plan pursuant to federal RACT requirements, and for attaining and maintaining the air quality standards. Existing Rule 69.4 will be automatically repealed at that time, as it is outdated and no longer needed.

The proposed rule amendments do not impose requirements beyond federal and State regulations that are already in effect, therefore the proposal does not result in additional costs to businesses. The proposed emissions standards apply to new and replacement stationary engines only and do not require early replacement or modification of existing engines. The proposal increases regulatory certainty for businesses by enhancing consistency with existing federal and State requirements, improving clarity, and providing a single, local regulation identifying all applicable requirements. Therefore, adoption of proposed amended Rule 69.4.1 is not expected to pose significant impacts on the affected industry sectors in San Diego County.

## **I. INTRODUCTION**

California law requires air pollution control districts (with populations of 500,000 people or higher) to perform an SIA when adopting, amending, or repealing rules and regulations that will significantly affect air quality and emission limitations.

The Health and Safety Code section 40728.5 specifies the following elements to be included in the SIA:

1. The type of industry or business, including small business, affected by the rule or regulation.
2. The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.
3. The range of probable costs to industry or business, including small business, of the rule or regulation.
4. The availability and cost-effectiveness of alternatives to the rule or regulation.
5. The emission reduction potential of the rule or regulation.
6. The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air quality standards.

Pursuant to Health and Safety Code Section 40728.5(e), the analyses specified in 2. and 4. above are not required if the proposed rule is substantially similar to or required by a state or federal law, regulation, or formal guidance document, including federal Control Techniques Guidelines. Proposed amended Rule 69.4.1 has included requirements that mirror those of the federal New Source Performance Standards Subpart IIII (Compression Ignition Internal Combustion Engines), Subpart JJJJ (Spark Ignition Internal Combustion Engines), the State Airborne Toxic Control Measure for Stationary Compression Ignition Engines, and the State RACT/BARCT Determination for Stationary Spark-Ignited Internal Combustion Engines in terms of emission standards, and administrative and testing requirements. Therefore, based on the Health and Safety Code stipulation, this SIA does not address either the availability or cost-effectiveness of the alternatives to proposed amended Rule 69.4.1, or its impact on the employment and the economy of San Diego County.

## **II. NECESSITY OF PROPOSED AMENDED RULE 69.4.1**

The proposed amendments to Rule 69.4.1 is needed for two reasons. First, updating the rule will provide greater clarity for the entities subject to these already implemented federal and State requirements because the updated rule will accurately reflect them. Second, the District is required to have air quality attainment plans that demonstrate our progress toward meeting the federal National Ambient Air Quality Standards for ozone in a timely manner. Because the attainment plans are developed using air quality models that depend on how much air pollution is emitted into the air, it is important to account for all air pollutant emissions reductions that occur as a result of the District's activities and because of the rules adopted by the Board. In this case, the District cannot currently use

the emissions reductions realized via its permitting actions and updating Rule 69.4.1 with the more stringent emissions requirements would enable the District to account for those emission reductions in the region's air quality attainment plans. Being able to include these currently unused emission reductions in the air quality attainment modeling will improve the modeling and the prognosis for attaining National Ambient Air Quality Standards for ozone.

### **III. SUMMARY OF PROPOSED AMENDED RULE 69.4.1**

In summary, proposed amended Rule 69.4.1 will:

#### New or Replacement Engines

- Provide an exemption from the rule for a new or replacement engine used in agricultural operations that is located at a site that is exempt from Permit to Operate requirements.
- Provide an exemption from the emission standards for new or replacement engines during commissioning periods of no more than 100 hours.
- Specify lower emission standards for the following new or replacement engine categories: prime gaseous-fueled; prime diesel-fueled (Tier 4 final certified); emergency standby gaseous-fueled; and emergency standby diesel-fueled (Tier 2 or Tier 3 certified).
- Require the installation of a Continuous Emissions Monitoring System for a new or replacement gaseous-fueled engine rated at 1,000 brake horsepower (bhp) or greater and permitted to operate more than 2,000 hours per calendar year.
- Require a new or replacement gaseous-fueled engine rated at 1,000 bhp or greater and permitted to operate more than 2,000 hours per calendar year to be source tested at least once every permit year.

#### Existing and New or Replacement Engines

- Provide an exemption from the emission standards for an engine during startup and shutdown periods.
- For a prime gaseous-fueled engine, unless otherwise exempted, require the use of a portable analyzer to take emission readings to verify compliance with the rule emission standards during any calendar quarter in which a source test is not performed.
- Require written notification to the District within 10 calendar days of replacing an engine hour meter.

#### **IV. TYPE OF INDUSTRIES AFFECTED BY THE PROPOSED AMENDED RULE**

Proposed amended Rule 69.4.1 will affect many diverse industrial sectors in San Diego County. Businesses and entities directly affected by the rule will be those who use stationary internal combustion engines in their daily operations. Distributors, wholesale vendors, other suppliers and manufacturers of the regulated products are expected to experience little impact from the rule.

Businesses affected by proposed amended Rule 69.4.1 fall into many different industries as designated by SIC code. As the rule affects a wide spectrum of San Diego County's local economy, this SIA divides the local industries into seven broad industry categories: *Manufacturing, Mineral, Shipbuilding, Utilities, Airport, Military, and Services.*

*"Manufacturing"* includes all manufacturing segments that are not rock/mineral industry or shipbuilding industry related. End users of the manufacturing group use their engines in applications such as compressors, generators and other production related tasks.

*"Mineral"* includes companies using engines for rock/mineral related manufacturing and processing, special construction (such as dredging) and other industrial applications like concrete and asphalt recycling operations.

*"Shipbuilding"* includes manufacturing and associated sectors in the shipbuilding and repair industries. It excludes dredging operations.

*"Utilities"* includes the transportation, communication and utilities sectors with the exception of airport and air transport related segments. Many government agencies with municipal utility services also belong in this group. Landfills and non-mineral recycling facilities (e.g., mulching) are included in this group as well.

*"Airport"* includes airport and air transport related segments that use airport ground support engines. These engines provide backup electrical power or compressed air to aircraft on the ground.

*"Military"* includes military operators of stationary internal combustion engines used in non-tactical support areas such as hospitals and on-base public works.

*"Services"* includes a wide spectrum of SIC groups, including retail, finance, insurance, real estate, services, health care and all other (non-military) government services sectors. Mainly, this group addresses engine operators in building operation, management, and maintenance (office, recreational facilities, parks, hotels, and schools). These engines are used most commonly as emergency standby engines or for cogeneration.

## V. RANGE OF PROBABLE COSTS TO INDUSTRY INCLUDING SMALL BUSINESS

A variety of engines that comply with the emissions limits of the proposed amended rule are commercially available as a result of federal and State regulations that are currently in effect. Therefore, compliance with proposed amended Rule 69.4.1 is not expected to increase costs for manufacturers to develop new technology.

Table 1 shows the average annualized costs for prime (non-emergency) diesel engines and emergency diesel or gaseous fueled engines upon replacement with compliant equipment. Costs are grouped by engine brake horsepower ratings as costs rise with increased engine size.

**TABLE 1 – Total Annualized Costs of Engines Subject to Proposed Amended Rule 69.4.1**

<i>Engine Rating (bhp)</i>	<i>Replacement Non-Emergency Diesel Engines Average Annualized Cost (\$/yr)</i>	<i>Replacement Emergency Engines (diesel or gaseous fuel) Average Annualized Cost (\$/yr)</i>
50 – 120	1,964	82
121 - 175	3,100	145
176 - 250	4,449	210
251 – 500	7,531	384
501 - 750	15,550	603
751 – 1,000	19,091	828
1,001 – 1,500	31,237	1,305
1,501 – 2,000	40,452	1,614
2,001 – 3,000	63,656	2,618
>3000	N/A	4,664

## VI. EMISSION REDUCTION POTENTIAL AND COST-EFFECTIVENESS OF THE PROPOSED AMENDED RULE

An estimated 3,300 existing stationary engines, the vast majority of which are emergency standby engines, will be subject to the proposed amended rule. The total NOx emissions from these existing units are estimated to be about 533 tons per year. Upon full implementation, when all existing engines are replaced through normal attrition, the proposed amended rule will reduce NOx emissions from affected equipment by approximately 55% or 292 tons per year, with an average cost-effectiveness of about \$5 per pound of NOx emissions reduced.

## VII. CONCLUSION

Proposed amended Rule 69.4.1 does not impose requirements beyond federal and State regulations that are already in effect. The proposed amended rule is not expected to negatively impact affected residences or industries, including small businesses, nor to affect employment or the economy of San Diego County. The proposed amended rule will bring considerable environmental benefits by reducing NOx emissions that are precursors of ground level ozone, a major component of photochemical smog.