



Air Pollution Control Board
Greg Cox District 1
Dianne Jacob District 2
Pam Slater District 3
Ron Roberts District 4
Bill Horn District 5

Air Pollution Control District
R. J. Sommerville Director

DATE: June 17, 1998
TO: Air Pollution Control Board
SUBJECT: Adoption of New Rule 69.5 - Natural Gas-Fired Water Heaters and
New Rule 69.6 - Natural Gas-Fired, Fan-Type Central Furnaces
(District: All)

SUMMARY:

Overview

The California Air Resources Board designated San Diego County as a Serious nonattainment area regarding the state ozone standard. State law requires air districts in nonattainment areas to prepare plans identifying emission control measures to attain state clean air standards as early as possible (Health and Safety Code Section 40910 et seq., enacted in 1988). Districts unable to reduce nonattainment pollutants by 5 percent annually must include an expeditious schedule for adopting all feasible control measures. Accordingly, the San Diego Regional Air Quality Strategy (RAQS) was adopted by the Board on June 30, 1992 (APCB #1), and updated December 12, 1995 (APCB #3). The RAQS commits to the expeditious adoption of all feasible control measures since 5 percent annual reductions are not achievable in San Diego. Proposed new Rules 69.5 and 69.6 implement feasible control measures identified in the RAQS.

Effective January 1, 1999, proposed new Rules 69.5 and 69.6 will prohibit the distribution, sale or installation of new natural gas-fired residential-type water heaters and central furnaces unless the oxides of nitrogen emissions meet prescribed limits. Oxides of nitrogen are a precursor to ozone (the primary component of smog). The rules apply only to the sale or installation of new residential-type water heaters and furnaces; existing units are not affected. Assuming a 10-year life span for such equipment, the annual emission reductions by 2009 will be 426 tons per year (Rules 69.5, 318 tons per year; Rule 69.6, 108 tons per year).

The rule provisions are the same as those in several other California air districts, including the South Coast, Bay Area, and Ventura, among others. The control technology is well established. Manufacturers indicate units being shipped to California, including San Diego County, meet the proposed requirements. Further, manufacturers indicate no price difference between conventional and emission-controlled units. The Gas Appliance Manufacturers Association confirmed this fact and has indicated support for adopting the proposed rules.

Recommendation

AIR POLLUTION CONTROL OFFICER:

Adopt the resolution adding new proposed Rules 69.5 and 69.6 to the District Rules and Regulations and make appropriate findings:

SUBJECT: Adoption of New Rule 69.5 - Natural Gas-Fired Water Heaters and
New Rule 69.6 - Natural Gas-Fired, Fan-Type Central Furnaces

- (i) of necessity, authority, clarity, consistency, non-duplication and reference as required by Section 40727 of the State Health and Safety Code;
- (ii) that the adoption of new Rules 69.5 and 69.6 will alleviate a problem and will promote attainment of ambient air quality standards (Section 40001 of the State Health and Safety Code);
- (iii) that an assessment of socioeconomic impacts of the proposed amendments has been prepared as required by Section 40728.5 of the State Health and Safety Code and that the socioeconomic impacts of the new rules have been actively considered and the District has made good faith effort to minimize adverse socioeconomic impacts; and
- (iv) that there is no reasonable possibility that the new rule may have a significant adverse effect on the environment, and that adoption of new Rules 69.5 and 69.6 is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Sections 15308, as an action taken to assure the maintenance or protection of the environment and where the regulatory process involves procedures for protection of the environment.

Fiscal Impact

Adopting the proposed rules will have no fiscal impact on the District.

Business Impact Statement

Water heaters and fan-type central furnaces meeting the proposed requirements are currently in production and commercially available. Manufacturers indicate there is no price difference between conventional and emission-controlled units. Consequently, Rules 69.5 and 69.6 are not expected to increase costs for manufacturers, distributors, or consumers.

Alternatives

No alternative is recommended because state law requires the District to adopt all feasible control measures and the state Air Resources Board has determined that water heater and central furnace rules, as proposed, are feasible control measures. Further, the control measures are included in the adopted Regional Air Quality Strategy and will assure significant emissions reduction (426 tons per year) at no additional cost.

Advisory Statement

The Air Pollution Control Advisory Committee recommended adopting proposed new Rules 69.5 and 69.6 at its May 27, 1998, meeting.

SUBJECT: Adoption of New Rule 69.5 - Natural Gas-Fired Water Heaters and
New Rule 69.6 - Natural Gas-Fired, Fan-Type Central Furnaces

BACKGROUND

Attachment I contains background information, information on compliance with Board policy on adopting new rules, and information on compliance with the California Environmental Quality Act.

Additional Information

Attachment II contains the Resolution for Rules 69.5 and 69.6.

Attachment III contains the report for the public workshop held on April 22, 1998.

Attachment IV contains the Socioeconomic Impact Assessment for Rules 69.5 and 69.6.

Attachment V contains the Comparative Analysis of Rules 69.5 and 69.6 and Existing Requirements (Health & Safety Code Section 40727.2).

Concurrence:

Respectfully submitted,

LAWRENCE B. PRIOR III
Chief Administrative Officer

BY: ROBERT R. COPPER
Deputy Chief Administrative Officer


R. J. SOMMERVILLE
Air Pollution Control Officer

**AIR POLLUTION CONTROL BOARD
AGENDA ITEM INFORMATION SHEET**

SUBJECT: Adoption of New Rule 69.5 - Natural Gas-Fired Water Heaters and
New Rule 69.6 - Natural Gas-Fired, Fan-Type Central Furnaces

CONCURRENCES

COUNTY COUNSEL APPROVAL: Approval of Form Yes N/A
Type of Form: Standard Form Ordinance Resolution Contract
Review Board Letter Only Yes No

CHIEF FINANCIAL OFFICER/AUDITOR REVIEW: Yes N/A
Requires Four Votes: Yes No

CHIEF INFORMATION OFFICER: Yes N/A

DEPARTMENT OF HUMAN RESOURCES: Yes N/A

CONTRACT REVIEW PANEL: Yes N/A

Other Concurrences: _____ N/A

BUSINESS IMPACT STATEMENT: Yes N/A

PREVIOUS RELEVANT BOARD ACTION: 1991 RAQS Approved 6/30/92 (APCB #1)
1995 RAQS Update Approved 12/12/95
(APCB #3)

BOARD POLICIES APPLICABLE: N/A

ORIGINATING DEPARTMENT: Air Pollution Control District, County of San Diego

CONTACT PERSON: Richard Smith, Deputy Director (S50) 694-3303 MS: 0-176


R. J. SOMMERVILLE

DEPARTMENT AUTHORIZED REPRESENTATIVE

JUNE 17, 1998
MEETING DATE

ATTACHMENT I

ADOPTION OF NEW RULE 69.5 - NATURAL GAS-FIRED WATER HEATERS AND NEW RULE 69.6 - NATURAL GAS-FIRED, FAN-TYPE CENTRAL FURNACES

BACKGROUND INFORMATION

The California Air Resources Board designated San Diego County as a Serious nonattainment area regarding the state ozone standard. State law requires air districts in nonattainment areas to prepare plans identifying emission control measures to be implemented to attain state clean air standards as early as possible (Health and Safety Code section 40910 et seq., enacted in 1988). Districts unable to reduce nonattainment pollutants by 5 percent annually must include an expeditious schedule for adopting all feasible control measures. The San Diego Regional Air Quality Strategy (RAQS) was adopted by the Board on June 30, 1992 (APCB #1), and updated on December 12, 1995 (APCB #3). The RAQS commits to the expeditious adoption of all feasible control measures since 5 percent annual reductions are not achievable in San Diego. Proposed new Rules 69.5 and 69.6 implement control measures identified in the RAQS.

The state Air Resources Board has determined that water heater and central furnace rules, as proposed, are feasible control measures. Rule 69.5 is designed to reduce oxides of nitrogen emissions from natural gas-fired water heaters. Rule 69.6 is designed to reduce oxides of nitrogen emissions from natural gas-fired, fan-type central furnaces. Both rules are the same as those in other Districts.

Rule 69.5 will limit emissions from new and replacement water heaters installed in single-family, multi-family, mobile homes, and small commercial establishments. The proposed emission reductions are 318 tons per year by 2009. The rule applies to natural gas-fired water heaters with a rated heat input capacity less than 75,000 British Thermal Units (Btu) per hour. Existing water heaters, water heaters installed in recreational vehicles, and water heaters used to heat swimming pools or hot tubs are exempt.

Specifically, Rule 69.5 limits emissions from new residential-type water heaters to 40 nanograms per Joule of heat output and from new mobile-home water heaters to 50 nanograms per Joule of heat output. In addition, manufacturers are required to conduct an emission test on each applicable water heater model (not each unit) and submit a statement certifying compliance with the rule. A certification statement approved by the South Coast Air Quality Management District may be submitted to avoid duplicative testing and certification costs. Emission test and certification records must be retained for as long as the water heater is offered for sale or sold within San Diego County, or for three calendar years after manufacture, whichever is longer. Though not likely necessary, a six-month grace period is provided for affected companies to deplete existing inventories before rule implementation.

Rule 69.6 will limit emissions from new and replacement fan-type central furnaces installed in single and multi-family homes. The emission reductions are 108 tons per year by 2009. The rule applies to central furnaces with a rated heat input capacity less than 175,000 Btu per hour, and to any combination heating and cooling unit with a rated cooling capacity less than 65,000 Btu per hour. Existing central furnaces and those used in mobile homes are exempt.

Specifically, Rule 69.6 limits emissions from new residential-type central furnaces to 40 nanograms per Joule of heat output. In addition, manufacturers are required to conduct an emission test on each applicable central furnace model (not unit) and submit a statement certifying compliance with the rule. A central furnace certification statement approved by the South Coast Air Quality

Attachment I
Rules 69.5 & 69.6

Management District may be submitted to avoid duplicative testing and certification costs. Emission test and certification records must be retained for as long as the central furnace is offered for sale or sold within San Diego County, or for three calendar years after manufacture, whichever is longer. A six-month grace period is provided for affected companies to deplete existing inventories before rule implementation.

COMPLIANCE WITH BOARD POLICY ON ADOPTING NEW RULES

On February 2, 1993, the Board directed that, with the exception of a regulation requested by business or a regulation for which a socioeconomic impact assessment is not required, no new or revised regulation shall be implemented unless specifically required by federal or state law. Proposed new Rules 69.5 and 69.6 are consistent with this Board directive because they are feasible control measures, therefore required by state law.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act requires an environmental review for certain actions. No significant adverse impacts on the environment have been suggested; no such impacts are reasonably possible. Adopting Rules 69.5 and 69.6 will not have a significant effect on the environment and is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the maintenance or protection of the environment where the regulatory process involves procedures for protection of the environment.

RESOLUTION
WEDNESDAY, JUNE 17, 1998
NEW ADDED RULES

Re Rules and Regulations of the)
Air Pollution Control District)
of San Diego County)

**RESOLUTION ADDING RULE 69.5 AND
RULE 69.6
TO REGULATION IV
OF THE RULES AND REGULATIONS OF THE
SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT**

On motion of Member SLATER, seconded by Member JACOB the following resolution is adopted:

WHEREAS, the San Diego County Air Pollution Control Board, pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District of San Diego County; and

WHEREAS, said Board now desires to amend said Rules and Regulations; and

WHEREAS, notice has been given and a public hearing has been had relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code.

NOW THEREFORE IT IS RESOLVED AND ORDERED by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be and hereby are amended as follows:

1. New Rule 69.5 is to read as follows:

RULE 69.5 NATURAL GAS-FIRED WATER HEATERS

(a) APPLICABILITY

Except as otherwise provided in Section (b), this rule shall apply to any person who manufactures, distributes, sells, offers for sale, or installs natural gas-fired water heaters for use in San Diego County.

(b) EXEMPTIONS

The provisions of this rule shall not apply to:

- (1) Water heaters with a rated heat input capacity of 75,000 Btu per hour or greater;
- (2) Water heaters used in recreational vehicles; or
- (3) Water heaters used exclusively to heat swimming pools and hot tubs.

(c) **DEFINITIONS**

For the purpose of this rule the following definition shall apply:

- (1) **"Btu"** means British thermal units.
- (2) **"Heat Output"** means the product obtained by multiplying recovery efficiency, as defined by Section 6.1.3 of the Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix E, by the rated heat input capacity of the water heater.
- (3) **"Mobile Home"** means a structure as defined in Section 18008 of the California Health and Safety Code.
- (4) **"Mobile Home Water Heater"** means a water heater manufactured exclusively for mobile home use.
- (5) **"Rated Heat Input Capacity"** means the heat input capacity of a water heater, in Btu per hour, as specified by the manufacturer on the nameplate of the water heater.
- (6) **"Recreational Vehicle"** means a motor vehicle designed and equipped for human habitation as defined in Section 362 of the California Vehicle Code.
- (7) **"Water Heater"** means a closed vessel in which water is heated by combustion of natural gas and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).

(d) **STANDARDS**

Except as otherwise provided in Section (b), effective January 1, 1999, no person shall manufacture, distribute, sell, offer for sale, or install within San Diego County any:

- (1) Natural gas-fired water heater that emits more than 40 nanograms of oxides of nitrogen (calculated as nitrogen dioxide) per joule (93 lbs of oxides of nitrogen per billion Btu) of heat output, or
- (2) Natural gas-fired mobile home water heater that emits more than 50 nanograms of oxides of nitrogen (calculated as nitrogen dioxide) per joule (116 lbs of oxides of nitrogen per billion Btu) of heat output.

(e) **CERTIFICATION**

(1) A manufacturer of any new water heater to be offered for sale in San Diego County shall submit to the Air Pollution Control Officer a statement certifying that each model of water heater subject to the requirements of Section (d) of this rule complies with the provisions of this rule.

(i) The statement shall be signed, dated, and attest to the accuracy of all information.

(ii) The statement shall be submitted at least 30 days before the water heater model is offered for sale, sold, or installed within San Diego County.

(iii) The statement shall include:

- (A) Brand name,
- (B) Model number,
- (C) Rated heat input capacity as specified on the nameplate, and
- (D) Oxides of nitrogen emission test results of each model being certified.

(2) A manufacturer shall submit to the Air Pollution Control Officer a new certification statement for any water heater model whose design is changed in any manner which may alter oxides of nitrogen emissions.

(3) To comply with Subsections (e)(1) or (e)(2), a manufacturer may submit to the Air Pollution Control Officer a South Coast Air Quality Management District certification statement for the water heater model.

(f) LABELING

On the shipping carton and the nameplate of every water heater to be offered for sale in San Diego County, the manufacturer shall display the model number of the water heater complying with Section (e) of this rule.

(g) RECORDKEEPING

A manufacturer shall keep oxides of nitrogen emission test records and certification records for as long as the water heater model is offered for sale or sold within San Diego County, or for three calendar years after manufacture, whichever is longer. Such records shall be provided to the District upon request.

(h) TEST METHODS

To determine compliance with Section (d) of this rule, measurement of oxides of nitrogen shall be conducted in accordance with:

(1) San Diego Air Pollution Control District Test Method 100 as approved by the federal Environmental Protection Agency in May 1995, or

(2) South Coast Air Quality Management District Test Method 100.1 as approved by the federal Environmental Protection Agency in March 1989.

(i) EMISSION TEST REQUIREMENTS

Emission tests shall be performed in accordance with the procedures and methods outlined in the South Coast Air Quality Management District Protocol: Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers as it exists on June 17, 1998.

2. New Rule 69.6 is to read as follows:

RULE 69.6 NATURAL GAS-FIRED FAN-TYPE CENTRAL FURNACES

(a) APPLICABILITY

Except as otherwise provided in Section (b), this rule shall apply to any person who manufactures, distributes, sells, offers for sale, or installs natural gas-fired, fan-type central furnaces, including combination heating and cooling units, for use in San Diego County.

(b) EXEMPTIONS

The provisions of this rule shall not apply to:

- (1) Fan-type central furnaces with a rated heat input capacity of 175,000 Btu per hour or greater, or
- (2) Combination heating and cooling units with a rated cooling capacity of 65,000 Btu per hour or greater, or
- (3) Fan-type central furnaces installed in mobile homes.

(c) DEFINITIONS

For the purpose of this rule the following definitions shall apply:

- (1) **"Btu"** means British thermal units.
- (2) **"Fan-Type Central Furnace"** means a self-contained space heater providing for circulation of heated air at pressures other than atmospheric through ducts more than 10 inches in length that has a rated heat input capacity of less than 175,000 Btu per hour or, for combination heating and cooling units, that has a rated cooling capacity of less than 65,000 Btu per hour.
- (3) **"Heat Output"** means the product obtained by multiplying the Annual Fuel Utilization Efficiency, as defined by Section 4.6 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N, by the rated heat input capacity of the furnace.
- (4) **"Mobile Home"** means a structure as defined in Section 18008 of the California Health and Safety Code.
- (5) **"Rated Cooling Capacity"** means the cooling capacity, in Btu per hour, as specified by the manufacturer on the nameplate of the cooling unit.
- (6) **"Rated Heat Input Capacity"** means the heat input capacity of a furnace, in Btu per hour, as specified by the manufacturer on the nameplate of the furnace.

(d) STANDARDS

Except as otherwise provided in Section (b), effective January 1, 1999, no person shall manufacture, distribute, sell, offer for sale, or install within San Diego County any natural gas-fired, fan-type central furnace that emits more than 40 nanograms of oxides of nitrogen

(calculated as nitrogen dioxide) per joule (93 lb of oxides of nitrogen per billion Btu) of heat output.

(e) CERTIFICATION

(1) A manufacturer of any new furnace to be offered for sale in San Diego County shall submit to the Air Pollution Control Officer a statement certifying that each model of furnace subject to the requirements of Section (d) of this rule complies with the provisions of this rule.

(i) The statement shall be signed, dated, and attest to the accuracy of all information.

(ii) The statement shall be submitted at least 30 days before the furnace model is offered for sale, sold, or installed within San Diego County.

(iii) The statement shall include:

(A) Brand name,

(B) Model number,

(C) Rated heat input capacity as specified on the nameplate, and

(D) Oxides of nitrogen emission test results of each model being certified.

(2) A manufacturer shall submit to the Air Pollution Control Officer a new certification statement for any furnace model whose design is changed in any manner which may alter oxides of nitrogen emissions.

(3) To comply with Subsections (e)(1) or (e)(2), a manufacturer may submit to the Air Pollution Control Officer a South Coast Air Quality Management District certification statement for the furnace model.

(f) LABELING

On the shipping carton and the nameplate of every furnace to be offered for sale in San Diego County, the manufacturer shall display the model number of the furnace complying with Section (e) of this rule.

(g) RECORDKEEPING

A manufacturer shall keep oxides of nitrogen emission test records and certification records for as long as the furnace model is offered for sale or sold within San Diego County, or for three calendar years after manufacture, whichever is longer. Such records shall be provided to the District upon request.

(h) TEST METHODS

To determine compliance with Section (d) of this rule, measurement of oxides of nitrogen shall be conducted in accordance with:



(1) San Diego Air Pollution Control District Test Method 100 as approved by the federal Environmental Protection Agency in May 1995, or

(2) South Coast Air Quality Management District Test Method 100.1 as approved by the federal Environmental Protection Agency in March 1989.

(i) **EMISSION TEST REQUIREMENTS**

Emission tests shall be performed in accordance with the procedures and methods outlined in the South Coast Air Quality Management District Protocol: Rule 1111 Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired, Fan-Type Central Furnaces as it exists on June 17, 1998.

IT IS FURTHER RESOLVED AND ORDERED that the subject additions of Rule 69.5 and Rule 69.6 to Regulation IV, shall take effect on January 1, 1999.

PASSED AND ADOPTED by the Air Pollution Control Board of the San Diego County Air Pollution Control District, State of California, this 17th day of June, 1998 by the following votes:

AYES: Cox, Jacob, Slater, Roberts, Horn

I hereby certify that the foregoing is a full, true and correct copy of the Original Resolution which is now on file in my office.

THOMAS J. PASTUSZKA
Clerk of the Board of Supervisors

By Adair Gomez (SEAL)
Adair Gomez, Deputy

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY Dutton
DEPUTY

No. 98-153
6/17/98 (APCB 1)

This is a true certified copy of the original document on file or of record in my office. It bears the seal of the County of San Diego and signature of the Clerk of the Board of Supervisors, imprinted in purple ink.

Thomas J. Pastuszka
Clerk of the Board, San Diego County, California

Date: 6/30/98 By Deputy: Adair Gomez



**AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO**

**PROPOSED NEW RULE 69.5 - NATURAL GAS-FIRED WATER HEATERS,
AND PROPOSED NEW RULE 69.6 - NATURAL GAS-FIRED,
FAN-TYPE CENTRAL FURNACES**

WORKSHOP REPORT

A workshop notice was mailed to all affected parties involved in manufacturing, distributing, selling, or installing residential-type natural gas-fired water heaters and natural gas-fired, fan-type central furnaces. Notices were also mailed to all local Chambers of Commerce, all local Economic Development Corporations, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on April 22, 1998, and was attended by three industry representatives and six District staff. One comment was received by letter before the workshop. Comments and District responses follow.

1. WORKSHOP COMMENT

Are there any on-site emissions testing requirements for installed units?

DISTRICT RESPONSE

No, these rules do not require emissions testing for installed water heaters or furnaces. Testing affected models to demonstrate compliance will be the responsibility of manufacturers before unit distribution, sale, and installation.

2. WORKSHOP COMMENT

The proposed six-month grace period is adequate for depleting current retailer, distributor, and contractor stock inventory before rule implementation.

DISTRICT RESPONSE

Comment noted.

3. COMMENT BY LETTER

The Gas Appliance Manufacturers' Association (GAMA) advised that the proposed requirement to display "certification status" on the rating plate and shipping carton is not necessary. Instead, displaying the model number of the complying unit on the rating plate and shipping carton is adequate to identify certified models. Otherwise, manufacturers would incur unnecessary labeling expenses by applying a separate and distinct marking for the San Diego Air Pollution Control District. Other California air districts that have adopted NOx emission rules do not require a "certification status" marking, and the lack of such a marking has not been a problem in those districts. Revise section (f) of each rule as follows:

(f) Labeling

On the shipping carton and the nameplate of every water heater [furnace] to be offered for sale in San Diego County, the manufacturer shall display the model number ~~and South Coast Air Quality Management District certification status or San Diego Air Pollution Control District certification status~~ of the water heater [furnace] complying with Section (e) of this rule.

DISTRICT RESPONSE

The District agrees and proposes to revise Section (f), Labeling, of both Rule 69.5 and 69.6.

4/28/98
RR:RM:jo

**SOCIOECONOMIC IMPACT ASSESSMENT OF
RULE 69.5 - NATURAL GAS-FIRED WATER HEATERS AND
RULE 69.6 - NATURAL GAS-FIRED, FAN-TYPE CENTRAL FURNACES**

Effective January 1, 1992, state law requires that whenever the District proposes adoption, amendment or repeal of a rule or regulation significantly affecting air quality or emission limitations, a socioeconomic impact assessment must be prepared, insofar as data are available (Section 40728.5 of the State Health & Safety Code). The Health and Safety Code specify the following elements be included in the socioeconomic impact assessment:

- (1) Type of industries or business, including small business, affected by the rule or regulation.
- (2) Range of probable costs, including costs to industry or business, including small business, of the rule or regulation.
- (3) Emission reduction potential of the rule or regulation.
- (4) Necessity of adoption, amending, or repealing the rule or regulation in order to attain the state and federal ambient air standards.

NECESSITY OF ADOPTING RULE 69.5 & RULE 69.6

The California Air Resources Board designated San Diego County as a Serious nonattainment area regarding the state ozone standard. State law requires air districts in nonattainment areas to prepare regional air quality plans identifying emission control measures to be implemented to attain state clean air standards as early as possible (Health and Safety Code section 40910 et seq., enacted in 1988). Districts unable to reduce nonattainment pollutants by 5 percent annually must include in their plans an expeditious schedule for adopting all feasible control measures. The San Diego Regional Air Quality Strategy (RAQS) was adopted by the Board on June 30, 1992 (APCB #1), and updated on December 12, 1995 (APCB #3). The RAQS commits to the expeditious adoption of all feasible control measures since 5 percent annual reductions are not achievable in San Diego. Proposed new Rules 69.5 and 69.6 implement control measures identified in the RAQS.

The rules are expected to have minimal impact on employment and the economy in San Diego County and will not have a significant adverse effect on manufacturers of water heaters and central furnaces. At the same time, the amount of emissions reduced will provide tangible benefits to air quality in San Diego and will contribute to attaining federal and state ambient air quality standards for ozone.

RULE 69.5 - NATURAL GAS-FIRED WATER HEATERS

Rule 69.5 limits oxides of nitrogen emissions from new natural gas-fired water heaters by requiring emission standards of 40 nanograms per Joule or less of heat output for residential-type water heaters, and 50 nanograms per Joule or less of heat output for mobile home water heaters. The rule applies to water heaters with a rated heating capacity less than 75,000 Btu per hour. Existing water heaters and water heaters used in recreational vehicles or used exclusively to heat swimming pools and hot tubs are exempt.

Type of Industries Affected by Rule

Rule 69.5 will directly affect manufacturers of water heaters (Standard Industrial Classification (SIC) 3639). There are no manufacturers in San Diego County. The rule will indirectly affect home improvement stores and dealers; installation, plumbing, repair and replacement, and general contractors; home builders and remodelers (SIC 1521, 1522, 1711, 5074, and 5251); and consumers.

Range of Probable Costs

A variety of complying water heaters are commercially available as a result of rules adopted by the South Coast, Ventura County, Bay Area, and other California air districts. Therefore, compliance with Rule 69.5 is not expected to increase costs for manufacturers to develop new technology or increase costs to consumers. Cost-effectiveness varies from a minimal or no cost increase to a net benefit (cost savings) of \$4,962 per ton (\$2.48 per pound) of emissions reduced.

In 1992, the Environmental Protection Agency (EPA) performed a study for control of oxides of nitrogen emission sources in the Sacramento Ozone Nonattainment Area. The study estimated a capital savings by installing emission-controlled water heaters instead of conventional units. The lower manufacturer's cost was attributed to increased production, competition, and recovery of initial development costs. Retail prices obtained from a 1992 sales catalog for one brand of tall, high-efficiency water heaters meeting an emission limit of 40 nanograms per joule of heat output averaged \$4 less than those for conventional units. Furthermore, according to costs published in a 1990 catalog for the same vendor, cost of emission-controlled units decreased since 1990.

A 1997 District survey of water heater manufacturers and distributors compared more recent prices for emission-controlled and conventional water heaters. Survey results support EPA's findings. Suggested retail prices, obtained from two California distributors, were the same for both conventional and emission-controlled type water heaters. Furthermore, distributors indicated that generally all water heaters shipped to southern California, including San Diego County, are emission-controlled units consistent with rules of other California air districts. Another manufacturer offers for sale only emission-controlled water heaters, prices for which were obtained from a local distributor. Accordingly, although costs may vary depending on retail outlet, water heater model, and time of purchase, Rule 69.5 is not expected to increase costs to consumers.

Emission Reduction Potential

Because similar rules were previously adopted by other California air districts, emission-controlled water heaters are widely available in San Diego County. The 1992 EPA study estimated that half of water heaters sold in the Sacramento area were emission-controlled units prior to adoption of a local Sacramento water heater rule. An equivalent mix of emission-controlled and conventional water heaters is assumed for the San Diego County area in 1998. This is a conservative estimate because the existing share of emission-controlled units is likely greater. Gradual turnover of typical water heaters occurs over an average 10-year life span. Consequently, it is assumed that all water heaters in use will meet the emission limit by 2009. Implementing Rule 69.5 is expected to reduce emissions by 318 tons per year.

RULE 69.6 - NATURAL GAS-FIRED, FAN-TYPE CENTRAL FURNACES

Rule 69.6 limits oxides of nitrogen emissions from new natural gas-fired, fan-type central furnaces by requiring emission standards of 40 nanograms per Joule or less of useful heat delivered to the heated space for residential central furnaces. The rule applies to central furnaces with a rated heating capacity less than 175,000 Btu per hour, and for any combination heating and cooling unit with a rated cooling capacity less than 65,000 Btu per hour. Existing central furnaces and central furnaces used in mobile homes are exempt.

Types of Industries Affected by Rule

Rule 69.6 will directly affect manufacturers of fan-type central furnaces (SIC 3585). There are no manufacturers in San Diego County. The rule may indirectly affect home improvement stores and dealers; installation, repair and replacement, and general contractors; home builders and remodelers (SIC 1521, 1522, 1711, 5074, and 5075); and consumers.

Range of Probable Costs

A variety of complying furnaces are commercially available as a result of rules adopted by the South Coast, Ventura County, and Bay Area air districts. Therefore, compliance with Rule 69.6 is not expected to increase costs for manufacturers to develop new technology or increase costs to consumers. Cost-effectiveness varies from a minimal or no cost increase to a worst case scenario of \$6,773 per ton (\$3.39 per pound) of emissions reduced. The worst case scenario assumes a \$10 cost increase to manufacture emission-controlled central furnaces as estimated by the South Coast Air Quality Management District (AQMD) during rule development in 1978.

A District survey of manufacturers and distributors conducted in 1998 to compare emission-controlled and conventional furnace prices shows no price differential. Manufacturers advised that generally all units shipped to California are emission-controlled units consistent with rules of other California air districts, and that there is no price differential between conventional and emission-controlled units. Accordingly, although costs may vary depending on retail outlet, furnace model, and time of purchase, Rule 69.6 is not expected to increase costs to consumers.

Emission Reduction Potential

Because similar rules were previously adopted by other California air districts, emission-controlled central furnaces are widely available in San Diego County. An equivalent mix of in-use emission-controlled and conventional central furnaces was assumed for the San Diego County area in the 1998 base year, the same as that used for water heaters. Gradual turnover of typical central furnaces occurs over an average 10-year life span. Consequently, it is assumed that all central furnaces in use will meet the emission limit by 2009. Implementing Rule 69.6 is expected to reduce emissions by 108 tons per year.

**COMPARATIVE ANALYSIS OF
 RULE 69.5 - NATURAL GAS-FIRED WATER HEATERS AND
 RULE 69.6 - NATURAL GAS-FIRED, FAN-TYPE CENTRAL FURNACES
 AND EXISTING REQUIREMENTS**

Effective January 1, 1998, state law requires that whenever the District proposes adopting or amending a rule or regulation, an analysis be prepared to identify and compare the air pollution control requirement elements of the proposal with corresponding elements of existing or proposed District rules and guidelines, and existing federal or state rules, requirements and guidelines that apply to the same equipment or source type (Section 40727.2 of the State Health & Safety Code). State law specifies the following elements be analyzed:

- (1) Averaging provisions, units, and any other pertinent provisions associated with emission limits.
- (2) Operating parameters and work practice requirements.
- (3) Monitoring, reporting, and recordkeeping requirements, including test methods format, content, and frequency.
- (4) Any other element that the District determines warrants review.

RESULTS OF ANALYSIS

Proposed Rules 69.5 and 69.6 would limit oxides of nitrogen emissions from new residential-type water heaters and furnaces. There are no existing or proposed federal, state, or other District air pollution control rules, requirements, or guidelines that apply to the same equipment.

Elements	Existing or Proposed Rules, Requirements, or Guidelines		
	Federal	State	District
1. Emission limits	Not Applicable	Not Applicable	Not Applicable
2. Operating parameters and work practices	Not Applicable	Not Applicable	Not Applicable
3. Monitoring, reporting, and recordkeeping	Not Applicable	Not Applicable	Not Applicable
4. Other elements	Not Applicable	Not Applicable	Not Applicable