

State of California
AIR RESOURCES BOARD

Resolution 80-39

May 22, 1980

WHEREAS, the Air Resources Board (Board) and/or the federal Environmental Protection Agency have set health-based ambient air quality standards for nitrogen dioxide, oxidant (ozone), particulate (TSP), and visibility which are consistently exceeded in several of the state's air basins, notably the South Coast Air Basin; and

WHEREAS, Health and Safety Code Sections 39003, 39500, 39602, and 41500 authorize the state Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards; and

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the state Board to do such acts as may be necessary to execute the powers and duties granted to and imposed upon the state Board, to assist the air pollution control districts, and to hold public hearings; and

WHEREAS, the California Environmental Quality Act and ARB regulations require that an activity not be adopted as proposed if mitigation measures or alternatives exist which would substantially reduce any significant adverse environmental effects of the proposed activity, and further require that the Board respond in writing to significant environmental issues raised; and

WHEREAS, the Board, after at least 30 days notice, has held two public meetings on this matter, and has heard and considered the evidence and testimony presented by the ARB staff, affected industries and utilities, and other interested persons at the two meetings held on November 29 and 30, 1979 and May 21 and 22, 1980; and

WHEREAS, the Board finds:

1. That emissions of oxides of nitrogen (NO_x) from stationary internal combustion engines contribute significantly to exceedances of the state and national ambient standards for nitrogen dioxide (NO₂), oxidant (ozone), TSP, and visibility in several of the state's air basins;
2. That such NO_x emissions are not currently subject to air pollution control measures;
3. That reductions in NO_x emissions from this source to approximately one-tenth the present emission rate are technologically feasible and cost-effective;

4. That amendments proposed for the suggested control measure by the staff in response to written and oral testimony adequately address concerns regarding compliance dates, retrofit of controls on existing engines, cogeneration, and exemptions;
5. That the evidence suggests that the fuel penalty associated with the control measure is more likely to be in the range of 3-5% than at the substantially greater levels alleged by some utility representatives, and that this fuel penalty has been taken into consideration by the Board, along with other costs, when assessing the cost-effectiveness of the control strategy;
6. That the staff-predicted fuel penalty is further justified by the substantial air quality benefits which would result from implementation of the suggested control measure;
7. That the amount of additional water needed for water injection systems which control NOx emissions is insignificant and is justified by the air quality benefits to be obtained from such use;
8. That in some instances, the use of NOx emission control devices will cause increases in carbon monoxide (CO) emissions from stationary internal combustion engines and that such CO emissions should be controlled in order to assure maintenance of ambient CO standards;
9. That control of CO emissions from this source, as required by the suggested control measure, is technologically feasible and economically reasonable;
10. That the staff report adequately responds to other environmental issues raised and the Board concurs in the staff's finding that no significant adverse effects on air quality are likely to result from adoption and implementation of the suggested control measure as amended.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board approves and adopts the suggested control measure for the control of NOx emissions from stationary internal combustion engines as amended and set forth as Attachment A to this resolution;

BE IT FURTHER RESOLVED, that the Executive Officer is directed to forward the suggested control measure to districts needing reductions in NOx emissions to achieve and maintain state and/or national ambient air quality standards with a recommendation that these districts adopt a rule of equivalent effectiveness and modify their permit rules and regulations to delete present exemptions for stationary internal combustion engines.

BE IT FURTHER RESOLVED, that the aforementioned districts are requested to repeal existing exemptions for stationary internal combustion engines from CO emission limitations, or establish limitations of equivalent effectiveness as those set forth in the suggested control measure where limitations do not currently exist;

May 22, 1980

BE IT FURTHER RESOLVED, that the Board recommends that in considering the adoption of the attached suggested control measure, districts should consider the economic problems of small businesses and other problems of local concern and should afford appropriate relief which does not significantly reduce the effectiveness of the measure.

BE IT FURTHER RESOLVED, that the Executive Officer is directed to provide assistance to any district requesting assistance in adopting, interpreting, or implementing the suggested control measure;

BE IT FURTHER RESOLVED, that the Board recommends that each district adopting the suggested control measure conduct a hearing, upon receipt of a petition from an affected party, to consider a delay of not more than one year in the compliance dates for "lean burn" engines if the district finds that the technology needed to comply with the measure does not perform adequately despite the good faith efforts of the engine manufacturers and users.

BE IT FURTHER RESOLVED, that if significant adverse environmental effects, including the emission of high concentrations of ammonium nitrate, ammonia, hydrogen cyanide, or nitrosamines, become apparent before or during operation of the control equipment utilized to comply with this suggested control measure once it is adopted into regulatory form by the relevant districts, the Board will consider the adoption of mitigation measures or other appropriate action to reduce such adverse impacts.

I certify that the above is a true
and correct copy of Resolution 80-39
as passed by the Air Resources Board.

Lillian R. Percin
for Board Secretary

SUGGESTED CONTROL MEASURE FOR THE CONTROL OF OXIDES
OF NITROGEN EMISSIONS FROM STATIONARY INTERNAL COMBUSTION ENGINES

Within the boundaries of the _____ district, no person shall operate a stationary internal combustion engine that discharges oxides of nitrogen into the atmosphere in excess of the limits specified in the following table:

Existing Engines	NOx (Calculated as NO ₂)	Effective Date
Diesel cycle	90% Reduction Across Control Device or 0.28 $\mu\text{g}/\text{J}$ output whichever is less stringent	January 1, 1984
Otto cycle engines that can be adjusted to run with an exhaust stream O ₂ concentration <1%	90% Reduction Across Control Device or 0.28 $\mu\text{g}/\text{J}$ output whichever is less stringent	January 1, 1983
Otto cycle engines that cannot be adjusted to run with an exhaust stream O ₂ concentration <1%	90% Reduction Across Control Device or 0.28 $\mu\text{g}/\text{J}$ output whichever is less stringent	January 1, 1984
Brayton cycle	0.28 $\mu\text{g}/\text{J}$ output	January 1, 1983
<u>New Engines</u>		
Brayton cycle	0.28 $\mu\text{g}/\text{J}$ output	January 1, 1983
Diesel cycle	0.28 $\mu\text{g}/\text{J}$ output	January 1, 1983
Otto cycle engines that can be adjusted to run with an exhaust stream O ₂ concentration <1%	0.28 $\mu\text{g}/\text{J}$ output	January 1, 1982
Otto cycle engines that cannot be adjusted to run with an exhaust stream O ₂ concentration <1%	0.28 $\mu\text{g}/\text{J}$ output	January 1, 1983

All emissions determinations shall be made at any load conditions chosen by the Air Pollution Control Officer within the range stated in the permit to operate, other than low load or idle, using EPA Method 20 for gas turbines and the amended EPA Method 20 for reciprocating engines.

For the purpose of this control measure, the output shall be defined as the shaft output from the internal combustion engine plus the energy reclaimed by any heat recovery system. Quantification of output shall be the responsibility of the engine owner to the satisfaction of the Air Pollution Control Officer.

Exemptions

- All internal combustion engines that are operated less than 100 hours per year for testing, and 1) are only used for power when normal mechanical or electrical power service fails, or 2) are only used for the emergency pumping of water or 3) are used only for the production of power during Stage II and Stage III alerts as defined in California's Electrical Emergency Plan.
- All internal combustion engines that are laboratory engines used in research or teaching programs.
- All internal combustion engines that are operated for the purposes of performance verification.
- All gas turbines that are used for the production of electric power and are owned by a private or public utility as defined by the California Public Utilities Commission.
- All existing Otto and diesel cycle engines with a total displacement less than 1700 cubic centimeters (104 in³).

Memorandum

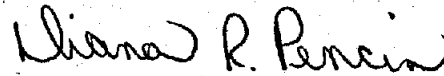
: Huey D. Johnson
Secretary
Resources Agency

Date : June 6, 1980

Subject: Filing of Notice
of Decision of the
Air Resources Board

From : Air Resources Board

Pursuant to Title 17, Section 60007(b), and in compliance with Air Resources Board certification under Section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decision and response to environmental comments raised during the comment period.



Diana Pencin
Acting Board Secretary

Attachments
Resolution 80-39

State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Public Meeting to Consider Suggested Control Measure for the Control of
Oxides of Nitrogen Emissions from Stationary Internal Combustion Engines.

Public Meeting Date: May 21 and 22, 1980

Response Date: May 22, 1980

Issuing Authority: Air Resources Board

Comment: The comments are contained in the staff report dated
April 4, 1980.

Response: The Board's response is contained in Resolution 80-39,
numbers 5 thru 10.

Certified: Marian P. Pencia
for Board Secretary

Date: June 6, 1980

State of California

AIR RESOURCES BOARD

Supplement Staff Report Regarding Significant Environmental Issues

Public Meeting to Consider Suggested Control Measure for the Control of Oxides of Nitrogen Emissions from Stationary Internal Combustion Engines.

80-9-3

Date of Release: April 4, 1980

Scheduled for Consideration: May 21, 1980

1. Discussion

Section 60007 of the Board's regulations in Title 17, California Administrative Code, directs staff to report to the Board regarding environmental issues raised by public comments, for consideration by the Board on any matter for which a public hearing is required.

The environmental issues are discussed in the staff report dated April 4, 1980.

2. Recommendation

The staff recommends that the Board adopt, before it takes any final action on this item, the attached proposed Response to Significant Environmental Issues.