

State of California
AIR RESOURCES BOARD

Resolution 85-73

February 28, 1986

Agenda Item Nos.: 85-15-3
85-18-3
86-2-1

WHEREAS, Health and Safety Code Section 39601 requires the Air Resources Board (the "Board") to adopt rules and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, Health and Safety Code Section 39606(b) requires the Board to adopt standards of ambient air quality in consideration of the public health, safety and welfare, including but not limited to health, illness, irritation to the senses, aesthetic value, interference with visibility, and effects on the economy;

WHEREAS, Health and Safety Code Section 39606(b) provides that standards relating to health effects shall be based upon the recommendation of the state Department of Health Services;

WHEREAS, the Board periodically reviews existing state ambient air quality standards to ensure that they reflect current scientific knowledge;

WHEREAS, the existing state ambient air quality standard for nitrogen dioxide (NO_2) of 0.25 parts per million (ppm) ($470 \mu\text{g}/\text{m}^3$) averaged over one hour is based upon evidence of effects at slightly higher levels in experimental animals which implies a risk to the public health, and upon evidence that NO_2 at the standard level produces atmospheric discoloration;

WHEREAS, pursuant to Sections 108 and 109 of the federal Clean Air Act (42 U.S.C. Sections 7401 et seq.), the Environmental Protection Agency (EPA) has adopted national ambient air quality standards for NO_2 based on health and welfare effects; both the primary standard (health protection) and secondary standard (welfare protection) are $100 \mu\text{g}/\text{m}^3$ (0.053 ppm) as an annual arithmetic average; there is no national short-term standard;

WHEREAS, the health effects data suggests that short-term peaks in NO_2 levels, as regulated by a one-hour standard, result in the most relevant acute health effects;

WHEREAS, the Board has received and considered a recommendation from the Department of Health Services, dated August 29, 1985, to retain the statewide NO_2 ambient air quality standard;

WHEREAS, the Board, in accordance with the Administrative Procedure Act, Government Code Section 11341 et seq., has held a duly noticed public hearing at which it has received and considered a substantial body of evidence, both written and oral, presented to it by staff, other scientists, industry representatives, and other members of the public relating to the proposed amendment of the standard;

WHEREAS, the California Environmental Quality Act and Board regulations require that action not be taken as proposed if feasible mitigation measures or alternatives exist which would substantially reduce any significant adverse environmental effects of the proposed action;

WHEREAS, the Board finds that

The Board staff and the Department of Health Services review of health effects literature indicates that the current state NO₂ ambient air quality standard is necessary to afford children and sensitive adults protection against bronchial irritation and to prevent key biochemical and cellular alterations that, while observed in animals, are indicative of adverse health effects in both normal and sensitive individuals;

The present standard also serves to limit the intensity of atmospheric discoloration of NO₂, although intense discoloration of the atmosphere at distances of a few miles will still occur when concentrations of NO₂ reach the level of the present standard;

The text in the "Most Relevant Effects" and "Comments" columns in the existing regulation should reflect the current evidence of the effects of NO₂, and the "Concentration and Methods" column should be amended to clarify that the standard is violated when concentrations exceed those set forth in the body of the regulation; and

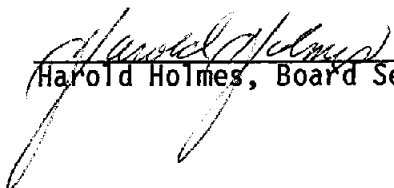
WHEREAS, the Board has determined, pursuant to the requirements of the California Environmental Quality Act and Board regulations, that this regulatory action will have no significant adverse impact on the environment;

NOW, THEREFORE, BE IT RESOLVED that the Board hereby retains the existing state ambient air quality standard for NO₂ at 0.25 ppm (470 µg/m³) averaged over one hour.

BE IT FURTHER RESOLVED that in determining what control strategies and measures are necessary to attain and maintain the one-hour NO₂ standard, local districts may, in consultation with the Air Resources Board, take into account whether an exceedance of the standard is caused by a rare and exceptional localized meteorological event that may be anticipated to occur only at intervals of many years or by a rare and exceptional breakdown of pollution control equipment, and districts shall not be required to adopt generally applicable control measures to address an exceedance which is caused by such exceptional circumstances.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the amendments, as set forth in Attachment A, after making them available to the public for a period of 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

I hereby certify that the above is a true and correct copy of Resolution 85-73, as adopted by the Air Resources Board.


Harold Holmes, Board Secretary

Amend Section 70200, Title 17, California Administrative Code, to read as follows:

70200. Table of Standards***

Substance	Concentrations and Methods*	Duration of Averaging Periods	Most Relevant Effects	Comments
* * * * *				
Nitrogen Dioxide	0.25 ppm Gas Phase Chemiluminescence**	1 hour	<p>a. At slightly higher dosage effects are observed in experimental animals, which imply a risk to the public health. <u>May cause aggravation of chronic respiratory disease by bronchopneumonia and respiratory symptoms in sensitive groups.</u></p> <p>b. Produces atmospheric discoloration. <u>Risk to public health is implied by pulmonary and extra-pulmonary biochemical and cellular changes, and pulmonary structural changes, observed in short-term animal tests at or above concentration of the standard.</u></p> <p>c. <u>An upper limit on adverse effects on welfare, including atmospheric discoloration by <u>NO₂</u>, is imposed.</u></p>	<p>a. <u>The standard is intended to prevent adverse health effects.</u></p> <p>b. <u>Contributes to intense discoloration of the atmosphere at short distances/is produced by NO₂ at the level of the standard.</u></p>

* * * * *

* Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

- ** These standards are violated when concentrations exceed those set forth in the body of the regulation. All other standards are violated when concentrations equal or exceed those set forth in the body of the regulation.
- *** Applicable statewide unless otherwise noted.

* * * * *

NOTE: Authority cited: Sections 39600, 39601 (a) and 39606 (b), Health and Safety Code.
Reference: Sections 39014, 39606 (b), 39701 and 39703 (g), Health and Safety Code.

NOTE: Some of the unamended language shown above differs from that included in the text of the regulation originally made available to the public on November 19, 1984. These differences reflect earlier amendments adopted by the Board which did not become effective until December 27, 1985, after the original proposal was released.

State of California
AIR RESOURCES BOARD

Public Availability of Modified Text

PUBLIC HEARING TO CONSIDER AMENDMENTS TO SECTION 70200, TITLE 17, CALIFORNIA ADMINISTRATIVE CODE, REGARDING THE SHORT-TERM (ONE-HOUR) STATE AMBIENT AIR QUALITY STANDARD FOR NITROGEN DIOXIDE

Public Hearing Date: October 24, 1985
December 19, 1985
February 28, 1986

Public Availability Date: April 14, 1986

At public hearings held October 24, 1985, December 19, 1985, and February 28, 1986 the Air Resources Board (the "Board") considered the adoption of proposed amendments to regulations contained in Section 70200 of Title 17, California Administrative Code, regarding the California ambient air quality standard for nitrogen dioxide (one-hour) and the measurement method specified for nitrogen dioxide (NO₂). After receiving and considering extensive testimony, the Board on February 28, 1986, approved the proposed amendments with modifications to the originally proposed text in response to public comments. The modifications to the originally proposed text are described below.

Attached is a copy of Board Resolution 85-73 approving the proposed amendments with the modifications made by the Board. Attached to the resolution is the approved language as it will appear in Title 17, California Administrative Code, Section 70200, with additions to the original staff proposal shown by double underlining and deletions shown by slashes. (In the original staff proposal, additions are shown by single underlining and deletions are shown by horizontal cross-outs.) In response to comments, the Board approved changing the text of the "Most Relevant Effects" column for NO₂, at letter a., from "Aggravation of bronchoconstriction" to "May cause aggravation of chronic respiratory disease." This text will therefore read as follows: "May cause aggravation of chronic respiratory disease and respiratory symptoms in sensitive groups."

The Board also approved adding the word "is" after the word "health" and before "implied" in the "Most Relevant Effects" column for NO₂, at letter b. This change was made to improve readability and clarity. The text will read: "Risk to public health is implied by pulmonary and extra-pulmonary biochemical and cellular changes, and pulmonary structural changes, observed in short-term animal tests at or above concentration of the standard."

In the "Most Relevant Effects" column for NO₂, at letter c., the Board approved inserting the phrase "by NO₂" after the word "discoloration." The text will read as follows: "An upper limit on adverse effects on welfare, including atmospheric discoloration by NO₂, is imposed". This phrase was added to make it clear that the effects on discoloration were those of NO₂ alone, and not those of aerosols or particles.

Finally, under the "Comments" column for NO₂, the Board approved changing the text in letter b. The Board deleted the word "Intense" and replaced it with the phrase "Contributes to" and deleted all words after "atmosphere". The revised text will read: "Contributes to discoloration of the atmosphere."

In accordance with Section 11346.8 of the Government Code, the Board directed the Executive Officer to adopt the approved regulatory amendments after making them available to the public for comment for a period of at least 15 days, provided that the Executive Officer shall consider written comments received and make minor modifications to the language as appropriate in response to comments, and shall present the regulations to the Board for further consideration if he determines that this is warranted in light of the written comments received.

Comments must be submitted to the Board Secretary, Air Resources Board, P.O. Box 2815, Sacramento, CA 95812 no later than April 29, 1986, for consideration by the Executive Officer.

State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Section 70200, Title 17, California Administrative Code, Regarding the Short-Term (One-Hour) State Ambient Air Quality Standard for Nitrogen Dioxide

Agenda Item Nos.: 85-15-3
85-18-3
86-2-1

Public Hearing Dates: October 24, 1985
December 19, 1985
February 28, 1986

Response Date: April 29, 1986

Issuing Authority: Air Resources Board

Comment: Staff indicated that changing the basis of determining compliance with the standard from "not to be equalled or exceeded" to "not to be exceeded" has the effect of making the standard itself slightly less stringent.

Response: The level of the ambient standard, and whether monitoring data indicates that it is exceeded in any given area, determines the level of controls which will apply to sources of emissions of the pollutant. The staff report indicated that changing the basis for determining compliance with the standard from "not to be equalled or exceeded" to "not to be exceeded" would not engender significant environmental effects. This is because the health effects data provide no basis for differentiating between health effects associated with a 0.245 ppm concentration (i.e., the value which would be interpreted as a violation of the "not to be equalled or exceeded" standard) and a 0.255 ppm concentration (i.e., the value which would signal a violation of the "not to be exceeded" standard). A review of monitoring data indicates that although some stations would change from "non-compliance" to "compliance", nearby sites would continue to register "non-compliance", thus necessitating the same control strategies as are currently required. No fewer controls are anticipated to be needed in order to meet the standard as currently expressed as would have been needed to meet the standard as previously expressed.

Comment: Gladys Meade, representing the American Lung Association, commented that the Board should retain the existing "not to be equalled or exceeded" method for determining violations of the standard because defining violations on a "not to be exceeded" basis allows more NO₂ in the ambient air, endangering public health.

Response: As the response above indicates, while the effect of the change is to make the standard minutely less stringent, health effects data indicate no basis for differentiating between adverse effects anticipated at the two levels. Further, because the same number and stringency of control measures will be required, no adverse health effects will result from the change. (The Board adopted the "not to be exceeded" basis for determining violations of ambient standards in 1982 in order to conform to federal practice and has applied this policy to all ambient standards considered since that date.)

CERTIFIED:

David Holmes
Board Secretary

Date:

08-13-86