State of California
AIR RESOURCES BOARD

Resolution 81-42

June 24, 1981

Agenda Item No.: 81-11-2

WHEREAS, The Air Resources Board ("Board") pursuant to Health and Safety Code Section 39606 and the Environmental Protection Agency (the "EPA") under the provisions of the federal Clean Air Act have established state and national ambient air quality standards, respectively, including standards for nitrogen dioxide, sulfur dioxide, hydrocarbons, suspended particulate matter, oxidant and ozone;

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

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to act as necessary to execute the powers and duties granted to and imposed upon the Board and to provide assistance to the air pollution control districts;

WHEREAS, two California public utility companies have proposed to construct coal-fired power plants in California which would emit substantial amounts of nitrogen oxides (NOx), sulfur oxides (SOx), hydrocarbons, and particulate matter (TSP) to the detriment of California's air quality;

WHEREAS, air pollution control technology is presently available to permit such facilities to be built to protect California air quality and to satisfy other environmental protection requirements;

WHEREAS, pursuant to Section 111 of the Clean Air Act, the EPA has established new source performance standards (NSPS) applicable to new coal-fired power plants;

WHEREAS, Board staff has reviewed these NSPS, and the emission limitations contained in permits issued by EPA for power plants in other states for their adequacy for the protection of California air quality in view of their potential applicability to coal-fired power plants proposed for California through EPA approvals;

WHEREAS, the Board staff has also reviewed recent developments in air pollution control technology for coal-fired power plants;

WHEREAS, the Board staff has developed draft minimum guidelines for the control of air contaminant emissions from new coal-fired power plants in California;

WHEREAS, on June 24, 1981, the Board held a duly noticed public meeting to consider the staff's proposed minimum guidelines and to hear and consider the comments of the public and interested persons on the staff proposal;

WHEREAS, the Board has determined that substantially lower (more stringent) levels of air pollutant emissions than those specified by the EPA NSPS have been achieved with current technology and are necessary for the protection of air quality in California;

WHEREAS, new sources, which are subject to local new source review rules as well as federal requirements, must apply the best available air pollution control technology (BACT);

WHEREAS, the Board finds:

That combustion process modification is a proven and commercially available technology for the reduction of oxides of nitrogen (NOx) emissions from coal-fired power plants;

That combustion process modifications have been shown to reduce NOx emissions to less than 0.45 lb/10^6 BTU over the full load range;

That the selective catalytic reduction (SCR) flue gas treatment technique is also a proven, commercially available NOx control technology;

That tests on specific coal types are required before the installation of SCR units;

That SCR flue gas treatment systems have been demonstrated to reduce flue gas NOx concentrations by over 80% and as much as 95% over the load range of 50% to 100% of full load;

That a NOx flue gas emissions rate of 0.45 lb/10^6 BTU, achieved with combustion modification techniques, in combination with an SCR flue gas treatment system designed and operated for an 80% flue gas NOx emissions reduction, will result in a total NOx emissions reduction to a level of 0.09 lb/10^6 BTU or less over a load range of 50% to 100% of full load.

That fabric filter systems (baghouses) are a commercially available and proven technology for the control of particulate matter emissions from coal-fired power plants;

That particulate matter emission levels of 0.005 gr/ACF and lower have been demonstrated on commercial pulverized coal-fired units;

That baghouses, at emission levels of 0.005 gr/ACF and less, as a baghouse manufacturer guaranteed maximum emission rate for a properly designed, engineered and maintained fabric filtration system, are commercially competitive with other particulate matter (fly ash) control technologies;

That flue gas desulfurization (FGD) systems have achieved wide-spread acceptability as the primary sulfur oxide (SOx) control technology for coal-fired power plants;

That a flue gas SOx emissions control level of 95% or more for coal-fired power plants is technologically feasible, economically reasonable, and commercially demonstrated without coal pretreatment or sulfur credits, using FGD systems;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available; and

WHEREAS, the Board has reviewed the staff's analysis of environmental impacts associated with the proposed guidelines and finds that no significant adverse environmental impacts are likely to result from the implementation of the proposed minimum guidelines for the control of air contaminant emissions from new coal-fired power plants in California.

NOW, THEREFORE, BE IT RESOLVED, that the Board adopts the minimum guidelines shown in Attachment A hereto for the control of emissions from coal-fired power plants in California.

BE IT FURTHER RESOLVED, that the Board encourages local air pollution control districts to adopt these, or more stringent, emissions control requirements to be applied to new coal-fired power plants on a case-by-case basis in addition to local new source review requirements.

I certify that the above is
a true and correct copy of
Resolution 81-42, as adopted
by the Air Resources Board.

Sally Rump

Sally Rump, Board Secretary

Attachment A
to Resolution 81-42

MINIMUM GUIDELINES FOR THE CONTROL OF EMISSIONS FROM COAL-FIRED POWER PLANTS

A. MINIMUM GUIDELINES FOR NOx EMISSION CONTROL

1. Minimum Guideline for NOx Removal

After the date on which the initial performance test is completed, no owner or operator shall cause to be discharged into the atmosphere from any affected facility burning coal, any gases which contain nitrogen oxides (expressed as nitrogen dioxide) in excess of 0.09 pound per million BTU of heat input when the boiler is operated at or above 50 percent of its rated capacity and 0.45 pound per million BTU of heat input when the boiler is operated below 50 percent of its rated capacity.

2. Compliance

Compliance with the minimum guidelines shall continuously be established by the owner or operator of the affected facility on a three-hour moving average using continuous emission monitoring.

3. Continuous Emission Monitoring

The owner or operator of a coal-fired power plant shall install, calibrate, maintain and operate a continuous monitoring system and record the data produced in the measurement of nitrogen dioxide emissions. All continuous nitrogen dioxide monitors shall be required to meet the performance specifications outlined in 40 CFR Part 60, Appendix B, Performance Specification 2.

B. MINIMUM GUIDELINE FOR PARTICULATE MATTER EMISSION CONTROL

1. Minimum Guideline for Particulate Matter Removal

After the date on which the initial performance test is completed, no owner or operator shall cause to be discharged out of the particulate matter collection device, any gases which contain particulate matter in excess of 0.005 grain per actual cubic foot of flue gas.

2. Compliance

Compliance with the minimum guidelines shall be established by the owner or operator of the affected facility by the average of three 3-hour tests by EPA Method 5, or equivalent. The owner or operator of the affected facility shall also install a continuous opacity monitor and conduct performance tests to establish the relationship of opacity and particulate matter mass emission rate for the specific source over a load range up to the full rated capacity.

3. Continuous Mass Rate Emission Monitoring

While highly desirable, current state of the art monitoring techniques preclude recommending continuous mass rate particulate matter monitoring. However, continuous monitoring of particulate matter emissions is a developing technology, and monitors may be commercially available prior to the operational date of a new coal-fired power plant in California. For a detailed discussion of the measurement of particulate matter emissions, see Appendix A of staff report 81-11-2.

4. Opacity Monitoring

The owner or operator of a coal-fired power plant shall install, calibrate, maintain, and operate a continuous opacity monitoring system, and record the data produced in the measurement of opacity of emissions. All opacity monitors shall be required to meet the performance specifications outlined in 40 CFR Part 60, Appendix B, Performance Specification 1.

C. MINIMUM GUIDELINE FOR SO_2 EMISSION CONTROL

1. Minimum Guideline for SO_2 Removal

After the date on which the initial performance test is completed, no owner or operator shall cause to be discharged into the atmosphere from any affected facility any gases which contain SO_2 in excess of five percent (95 percent reduction) of the inlet concentration to the SO_2 removal device when the inlet SO_2 concentration exceeds 300 ppm. If the inlet SO_2 concentration is equal to or less than 300 ppm, the removal efficiency may be relaxed as long as the outlet SO_2 concentration is no greater than 15 ppm.

2. Compliance

Compliance with the minimum guidelines shall continuously be established by the owner or operator of the affected facility on a three-hour moving average using continuous emission monitoring.

3. Continuous Emission Monitoring

The owner or operator of a coal-fired power plant shall install, calibrate, maintain and operate a continuous monitoring system, and record

State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Meeting to Consider Minimum Guidelines for the Control of Emissions from Coal-Fired Power Plants

Agenda Item No.: 81-11-2

Public Hearing Date: June 24, 1981

Response Date: June 24, 1981

Issuing Authority: Air Resources Board

Comment: No comments were received identifying any significant environmental issues pertaining to this item. The staff report identified no adverse environmental effects.

Response: N/A

CERTIFIED: Sally Rump
Board Secretary

Date: 6/30/81

State of California

Memorandum

To : Huey D. Johnson
Secretary
Resources Agency

Date : June 30, 1981

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.

Sally Rump

Sally Rump
BOARD SECRETARY

att. Res. 81-42

RECEIVED BY
Office of the Secretary

JUN 30 1981

Resources Agency of California