UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUL 7 1980

MEMORANDUM

SUBJECT: Applicability of PSD and NSPS to Northern States Power Company

FROM: Director
Division of Stationary Source Enforcement

TO: Sandra Gardebring, Director
Enforcement Division, Region V

This is in response to yourMay 29, 1980 memo concerning Northern States Power Company (NSP). You requested a determination as to whether modifications proposed for units 1, 2, 3, and 4 at Black Dog generating plant and units 3, 4, 5 and 6 at High Bridge generating plant would subject the units to NSPS and the generating plants to PSD requirements. This response is based on the information presented in the attachment to your letter, and on the information obtained during a June 19 ,1980 phone conversation between Robert Myers of my staff and Joseph Bizzano, Jr., of NSP.

The original design fuel for these units was 100% high sulfur, high Btu Illinois coal. To comply with the state's sulfur-in-fuel requirement, NSP in the early 1970's shifted to burning a blend of 70% low sulfur, low Btu Montana coal and 30% Illinois coal. Because of the limitations in the capacity of the fuel handling and feeding equipment, NSP has since been unable to burn enough of the blended coal to achieve the same level of steam/electricity production as it enjoyed when it burned 100% Illinois coal.

The company is studying a program of modifications to restore the derate the boilers currently are experiencing. The modifications principally involve the enlargement of the fuel handling and feeding equipment to each boiler so that the original output of steam/electricity can once again be attained. This will result in SO_2 emissions increases of well above 100 tons per year at each plant. NSP reports that particulate emissions will increase as well, however, there is no indication as to the effect the modification will have on NOx emissions. The issue is whether NSPS or PSD requirements would apply to this proposed modification.

Under NSPS a modification is defined at 40 CFR 60.2(h) as "any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted". This is limited somewhat by 40 CFR 60.14(e)(2), as revised July 1, 1979, which states that an increase in production rate of an existing facility is not considered a modification if that increase can be accomplished without a capital expenditure on that facility. Capital expenditure is defined at 45 FR 5617, 40 CFR 60.2(bb) (January 23, 1980) and means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable IRS asset guideline and the existing facility's basis as defined in the IR code.

It appears that NSP is undergoing an increase in production rate. This would be subject to NSPS if it involves a capital expenditure on the facility, the individual boiler. It is thus essential to determine if the components being enlarged, the fuel handling and feeding equipment, are part of the affected facility.

We have been in contact with OAQPS and they have provided general guidance as to what they consider to be the components of the affected facility. Under EPA's BID for proposed Particulate Matter Emission Standards from Electric Utility Steam Generating Units (450/2-78-006a, July 1978) boiler components include burners (pulverizer, crusher, stoker), combustion air system, steam generation system (firebox, tubes) and draft system.

Joseph Bizzano mentioned to Robert Myers, that the ,changes being considered include changing the superheater spacing, adding soot blowers to the boiler, and increasing pulverizer size. Since the superheater and pulverizer are considered part of the affected facility, replacement or redesign which would change the physical characteristics of these components may be a case where modification provisions apply. A final decision must await a complete description by NSP of the specific changes to be made and equipment involved.

For purposes of PSD applicability during the period of the February 5, 1980 stay (45 FR 7800), major modification is determined by a source’s potential to emit under both the September 5, 1979 (44 FR 51924) proposed PSD regulations and the June 19, 1978 (43 FR 26388) regulations. Major modification considers changes over the entire source, the generating plant, rather than changes for each boiler.

Under the June 19, 1978 regulations major modification is defined as any physical change in, change in the method of operation of, or addition to a stationary source which increases the potential emission rate (regardless of any emissions reduction achieved elsewhere in the source) of any air pollutant regulated under the Act by 100 tons per year for fossil fuel-fired boilers totaling over 250 mm Btu per hour heat input. Potential to emit means the capability at maximum capacity unless otherwise limited by an enforceable permit condition (43 FR 26404), to emit a pollutant in the absence of air pollution control equipment.

Under the September 5, 1979 proposed PSD regulations, potential to emit is the capability at maximum design capacity to emit a pollutant after the application of air pollution control equipment. Major modification is defined as any physical change in or change in the method of operation of a major stationary source, or series of contemporaneous physical changes in or changes in the method of operation of a major stationary source that would result in a significant net increase in that source's potential to emit the pollutant for which the stationary source is major. For SO_2 and particulate matter ten tons was proposed to be a significant net increase.

Under the June 19, 1978 regulations (43 FR 26404) and the September 5, 1979 proposal, (44 FR 51948) potential to emit includes enforceable permit conditions on the type of materials combusted or processed. Thus, for the two generating plants in question, potential to emit would include Minnesota's sulfur-in-fuel requirement under both definitions.

Generating potential emissions is limited by the quantity of fuel the source is capable of combusting. The ability of the generating plants to combust additional fuel subsequent to the modification results in increased emissions. Since the generating plants were not capable of accommodating this additional fuel without changes to the fuel handling and feeding equipment, this would represent an increase in the potential to emit. NSP would be subject to PSD review if the changes would result in an increase of 100 tons per year of uncontrolled SO_2 or particulate matter emissions and 10 tons per year of controlled emissions. The June 18, 1978 regulations would be applied. This determination assumes that the sources in question are located in attainment or unclassified areas and that no additional controls will be added to the sources to offset any emission increase.

The final PSD regulations are expected to be promulgated before the end of this month. If the proposed modifications of the sources in question take place after promulgation, the new regu1ations will apply (providing the sources cannot be

"grandfathered"). Under the lastest draft of these regulations, a source must have an increase of 40 tons of particulate or SO_2 controlled emissions in order to be subject to PSD review. These regulations also allow a source's potential to emit to include enforceable limitations on hours of operation or type or amount of material combusted or processed.

This response was prepared in conjunction with the Office of Air Quality Planning and Standards and the Office of General Counsel, if you have any questions concerning this determination, please contact either Robert Myers or Janet Littlejohn of my staff, at FTS 755-2564.

Edward E. Reich

cc: Peter Kelly
Peter Wyckoff
Earl Salo
Dave Patrick
Walt Stevenson
Jim Weigold

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE MAY 29 1980

SUBJECT New Source Performance Standards:
Applicability determination (40 CFR 60.l4(e))

FROM Sandra Gardebring
Director, Enforcement Division

TO Edward Reich, Director
Division of Stationary Source
Enforcement (EN-341)

The attached request from Northern States Power Company is being forwarded to you for your advice on the appropriate determination.

Please contact Peter Kelly (8/886-6838) with any questions regarding this matter.

Attachment

N O R T H E R N S T A T E S P O W E R C O M P A N Y
LAW DEPARTMENT
414 NICOLLET MALL
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May 9, 1980

Lisa Tiegel, Esquire
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Peter J. Kelly, Esquire
Enforcement Attorney
U.S. ENVIRONMENTAL PROTECTION
Region V
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Re: Request for Determination of Applicability
of the NSPS and PSD Regulations to Proposed
Restoration of Generating Capability:
Black Dog Generating Plant, Units 1, 2, 3, 4
High Bridge Generating Plant, Units 3, 4, 5, 6

Northern States Power Company (NSP) is studying a program of modifications to the above steam-electric generating units. The purpose of these modifications is to restore the derate currently being experienced by each of the affected boilers on the generation of steam to produce electricity. This reduction in steam/electric output is due solely to the discontinuing of burning 100% high sulfur, high Btu Illinois coal the original design fuel - in the early 1970's to comply with the State Implementation Plan's sulfur-in-fuel requirement.

At that time, and continuing to date, NSP shifted to burning a blend of 70% low sulfur, low Btu Montana coal and 30% Illinois coal. However, because of the limitations in the capacity of the fuel handling and feeding equipment, NSP has since been unable to burn enough of the blended coal to achieve the same revel of steam/electricity production as it enjoyed when it burned 100% Illinois coal.

The modification the Company is now studying, and for which it requests this applicability determination, principally involves the enlargement of the fuel handling and feeding equipment to each of theabove boilers so that

the original outputof steam/electricity can once again be attained. Such a modification to achieve the original production capacity of steam/electricity does not appear to be expressly dealt with in 40 C.F.R. 60.14(e). However, I would urge that the modification described herein be considered on its own merits as being within the intent and spirit of those actions qualifying for exemption under the 40 C.F.R. 60.14(e) modification exemption provision.

To aid in your determination of this matter I am enclosing herewith a table which identifies the following: Case 1 shows the results of burning the present 70-30 blend of coal, both in terms of steam production and the corresponding heat input; Case 2 shows in the same terms the results of burning the original design fuel - 100% Illinois coal; Case 3 shows the results of burning 100% low sulfur Western coal after the desired modification is made to achieve the original steam/electric production rate; and Case 4 shows the results of burning the 70-30 blend of coal after the desired modification is made to achieve the original steam/electric production rate. As can readily be seen in Cases 3 and 4, in order to achieve the original steam/electric production rate shown in Case 2, a greater heat input is required simply because low sulfur Western coal burns less efficiently than Illinois coal due to the greater moisture content of Western coal. The enclosed table also illustrates certain fuel characteristics as well as particulate collection efficiencies.

I want to thank you for your timely consideration of this request for determination of applicability of NSPS and PSD regulations to the proposed modification project. If you need further information, please let me know.

Yours very truly,

JOSEPH D. BIZZANO, JR.