HOPPING BOYD GREEN & SAMS
ATTORNEYS AND COUNSELORS
123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314
(904) 222-7500
FAX (904) 224-8551

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
GARY P. SAMS
ROBERT P. SMITH, JR.

KATHLEEN BLIZZARD
THOMAS M. DEROSE
RICHARD W. MOORE
DIANA M. PARKER
LAURA BOYD PEARCE
MICHAEL P. PETROVICH
DAVID L. POWELL
DOUGLAS S. ROBERTS
CECELIA C. SMITH
SAM J. SMITH
CHERYL G. STUART

OF COUNSEL
W. ROBERT FOKES

MEMORANDUM

April 2, 1990

RE: RAMIFICATIONS OF NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND PREVENTION OF SIGNIFICANT DETERIORATION (PSD) REGULATIONS ON THE PROPOSED ORIMULSION PROJECT

BACKGROUND AND ASSUMED FACTS

Florida Power & Light Company (FPL) is proposing a test burn of an emulsified bitumen fuel, known as Orimulsion, at its Sanford Generating Unit #4. The test burn is part of a more than decade-long effort of FPL to expand its fuel base. This liquid fossil fuel is produced in Venezuela and is handled, stored, transported and burned like residual oil. In view of the vast Venezuelan reserves of the hydrocarbon from which Orimulsion can be produced, the fuel promises to substantially expand the energy base of FPL and potentially the United States. It has been estimated that these reserves may be the equivalent of one-half of the present coal reserves in the United States. The Venezuelan government is marketing Orimulsion at coal-equivalent prices.

FPL operates nine 400 MW generating units that use standard front wall-fired boilers and four 800 MW boilers that are scaled up versions of the 400 MW design. Tests of Orimulsion in the laboratory and in a full-scale demonstration project in Canada have indicated that Orimulsion can be utilized as a fuel in these FPL boilers with no change in boiler design. However, the addition of pollution control equipment would be necessary for a permanent fuel switch if increases in current stack emissions are to be avoided. FPL engineers have proposed a test burn of Orimulsion in order to confirm their projections, and to allow testing of various pollution control methods required to select and size the optimum

EXHIBIT 2

control technology to be used with a permanent conversion. The proposed test burn can be carried out at Sanford Unit #4 without changes to the boiler. In fact, the only boiler auxiliaries that will need to be changed will be the burner guns and tips at a cost of approximately $100,000, and the reinstallation of furnace wall blowers. Minimal new fuel handling equipment will be required because Orimulsion behaves essentially the same as the residual oil that the Plant has burned for years. Hot water heat exchangers, circulating hot water pumps, a hot water storage tank and an Orimulsion fuel flow meter will be added. Existing fuel storage tanks, burner feed pumps and tank vertical mixers will be used.

Sanford Unit #4 was designed to accommodate a range of solid, liquid and gaseous fuels. It was placed under construction prior to 1971 and originally brought on-line burning residual fuel oil. The unit was tested over a period of several months with a coal oil mixture (COM) in the early 1980's pursuant to EPA and DER approvals. At that time the agencies confirmed that Sanford Unit #4 was "designed-to-accommodate" coal because the combustion of coal could be accommodated without changes to the boiler. Boiler auxiliaries changed for the COM test included the burner guns, so that steam atomization could be used, and wall blowers to deal with greater ash production. However, the COM test did require the addition of major fuel related facilities at the site, including coal pulverization equipment, conveyors and other fuel handling facilities that did not previously exist. Consequently, EPA determined that a PSD permit was required for the test. The PSD permit did not impose new pollution control equipment to control boiler emissions, although particulate matter emissions and opacity were temporarily increased by the switch to COM.

In the early 1980's, FPL also evaluated the conversion to 100% coal-related fuels at its 400 MW and 800 MW units. EPA developed a policy in 1983 which concluded that such conversions would not trigger NSPS at coal capable boilers, but would trigger PSD review if coal handling equipment had to be added to the sites to allow coal use. (See Attachment 1). EPA's 1983 coal conversion policy also provided that a Best Available Control Technology (BACT) analysis was not required for boilers capable of firing coal, but that it would be required to control emissions from non-boiler related new equipment needed to handle and store coal.

DISCUSSION

FPL is committed, if the Orimulsion test burn proves successful from an operational and economic standpoint, to the installation of continuous emission reduction equipment that will achieve a decrease in current emissions of sulfur dioxide and particulate matter. This commitment will preclude the possibility that NSPS or PSD review will be required for these pollutants at that time. However, like COM, the combustion of Orimulsion at the Sanford facility for a test burn would be expected to temporarily increase emissions. Sulfur dioxide emissions will increase because of the higher sulfur content associated with Orimulsion fuel. Particulate matter and opacity emissions are expected to increase somewhat as well. In light of these temporary emissions increases, the question is raised whether the test would trigger NSPS for boiler emissions and whether the changes would trigger PSD review, potentially including Best Available Control Technology (BACT) requirements. An analysis of pertinent EPA and DER statutes, regulations and precedents follows:

NSPS: THE PROPOSED CHANGES WILL NOT TRIGGER THE APPLICABILITY OF NSPS.

NSPS emission limitations apply to new sources which commence construction on or after the date that applicable NSPS are proposed as well as to existing sources which undergo certain physical or operational changes that result in increased emissions. There are three sets of NSPS that require consideration with regard to the proposed Orimulsion test. These are found at 40 CFR, Part 60, Subpart D, Subpart Da, and Subpart Db.[1/] The applicability years of those standards are 1971, 1978 and 1984. The question is whether the physical and operational changes required to burn Orimulsion would trigger any of these NSPS requirements. The determinative provision of EPA regulations is found at 40 CFR, Section 60.14.[2/] That

---

1/ Subparts D, Da and Db are incorporated by reference in DER Rule 17-2.660(2)(a), Table 660-1, F.A.C.
(continued)

section defines modifications that can cause existing sources to be deemed new sources, subject to NSPS. It also establishes certain exemptions from the modification provision, including a provision explicitly covering fuel-switches. In particular, a modification will not include:

> Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type [1971, 1978 or 1984], ... the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change... .

40 CFR, Section 60.14(e)(4). (Emphasis added)

The boiler manufacturer, Foster Wheeler Energy Corporation, has evaluated the characteristics of Orimulsion and determined that the original design envelope for the Sanford Unit #4 boiler will accommodate the combustion of Orimulsion with minimal changes (e.g. burners). (See Attachment 2).

The NSPS fuel-switch exemption has been construed and honored by EPA on numerous occasions. As noted earlier, the exemption was applied by EPA with regard to the COM test conducted at the facility in the early 1980's. That ruling was consistent with the later adopted 1983 coal conversion policy of EPA. As for the COM test, the Orimulsion test will involve the use of new burner guns with steam atomization and the use of wall blowers.[3/] Thus, under EPA

2/ Section 60.14 is incorporated by reference in DER Rule 17-2.660(3)(f), F.A.C.

3/ The addition of soot blowers has been held in other situations by EPA to be a minimal change not triggering NSPS requirements. For example, on March 28, 1973, EPA determined that the installation of soot blowers in a power (continued)

NSPS regulations and associated EPA interpretations, the changes in boiler auxiliaries proposed for the Orimulsion project are not of sufficient magnitude to trigger the applicability of NSPS to the boiler emissions.

PSD: PSD REVIEW SHOULD NOT BE REQUIRED FOR THE ORIMULSION TEST BURN BECAUSE, UNLIKE THE COM AND COAL CONVERSION SITUATIONS, THE PLANTWIDE CHANGES NEEDED FOR THE FUEL SWITCH ARE MINIMAL. IN THE EVENT THAT PSD REVIEW IS DETERMINED TO BE APPLICABLE, BACT SHOULD NOT APPLY TO THE BOILER.

PSD review, like NSPS applicability, is ordinarily associated with the construction of new sources. However, certain modifications at existing sources can constitute "construction" which triggers PSD review and, potentially, the imposition of BACT requirements. The threshold test for determining whether an existing source will be modified for PSD purposes is whether non-exempted changes at the facility as a whole will result in a net emissions increase which exceeds significance levels established by agency regulations.[4/] We have assumed that the emissions increases associated with Orimulsion will be significant. The changes will be exempted if they involve the:

> Use of an alternative fuel or raw material which the facility was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition established after January 6, 1975.

Rule 17-2.500(2)(c)4., F.A.C. (Emphasis added).[5/]

---

plant did not constitute a modification under 40 CFR, Part 60. (See Attachment 3).

4/ Significant levels are listed in Rule 17-2.500(8), Table 500-2, F.A.C.

5/ This rule has been approved by EPA.

No federally enforceable permit condition precludes the use of Orimulsion. Therefore, the changes will not trigger PSD review if it is determined that the facility was "capable of accommodating" the Orimulsion fuel before January 6, 1975.

The "capable of accommodating" test examines the fuel switch capability of the entire facility rather than simply the boiler itself, which we have already concluded was designed to accommodate Orimulsion. Historically, EPA has denied the PSD fuel switch exemption where the facility involved did not have on-site all of the major fuel handling, storage and preparation facilities needed for the new fuel usage, even where the boiler involved qualified for the NSPS fuel switch exemption. It is for this reason that EPA concluded that the need to add coal pulverization and conveyance equipment for the COM test at Sanford Unit #4 triggered PSD review. The question for the proposed Orimulsion burn is whether the addition of heat exchangers, hot water pumps, a hot water storage tank, and a fuel flow meter would be deemed of sufficient import to negate the PSD exemption.

PSD review is a preconstruction permit program that applies to the "construction" of major sources. Section 169(1)(c) of the Clean Air Act defines the term "construction" as used in the PSD provisions of the Act as follows:

> The term "construction", when used in connection with any source or facility, includes the modification (as defined in Section 111(a) of this Title) of any source or facility.

Section 111(a) referred to in this definition is the NSPS section of the Act. In essence, if an NSPS triggering modification results in a significant net increase in emissions from a "facility", then PSD will be required. If a modification is exempted from NSPS, then it can be argued that the emissions increases of the "source" (boiler) should <u>not</u> require PSD review. Accordingly, where the NSPS regulations which implement Section 111(a) have been construed to exempt changes from NSPS, PSD review should not apply to such changes.

This interpretation is completely consistent with the coal conversion policy developed by EPA Region IV in 1983. That policy exempted boilers designed to accommodate an alternate fuel from BACT, as follows:

> In the situation where the individual boiler being converted is capable of firing coal with minimal physical changes (for example, change of burners only) BACT analysis would apply to the coal handling and storage equipment as well as other necessary new equipment. BACT analysis would not apply to the boilers since, individually, they were designed to accommodate coal and therefore, will not be undergoing a physical change or change in the method of operation.[6/]

Early this year, EPA reconfirmed an NSPS/PSD determination for a proposed natural gas addition at a generating unit of Detroit Edison which was initially designed to fire either gas or oil. (See Attachment 4). The physical changes at the plant included the addition of equipment necessary to deliver gas to the existing boiler and several minor changes to the boiler including burner modifications. The determination reaffirmed the historical approach that EPA has followed when it applied the fuel switch exemptions of the NSPS and PSD regulations to utility boiler changes:

> ... [A]lthough the addition of gas firing would subject the source as a whole to a PSD review, the requirement to apply BACT is applicable only to those emissions units at the source which undergo both a physical or operational change and a significant net emissions increase. It appears that the only emissions unit at the Greenwood Plant affected by the proposal to fire gas would be the existing boiler. Historically, it has

---

6/ See Attachment 1.

> been EPA's policy that where the individual boiler being converted is capable of accommodating the alternate fuel, BACT would not apply.

Though EPA reserved judgement with regard to certain non-burner related changes, it concluded that burner modification would not subject the boiler to BACT review. The Detroit Edison determination supports the view that BACT should not apply to the Sanford Unit #4 boiler changes at hand.

Although the boiler-related changes such as burner changes and the addition of soot blowers (discussed earlier) clearly should be exempted from BACT review, the regulatory consequences of the addition of non-boiler related Orimulsion handling equipment is less clear. Our review of EPA precedent has disclosed an earlier determination that provides some guidance. In 1975, a paper mill in Michigan needed to add oil preheating equipment at two boilers that had previously burned natural gas and No. 2 oil, in order to allow the burning of No. 6 oil which has different heating requirements. EPA concluded that the installation of the No. 6 fuel oil firing equipment, including the oil preheating equipment, would not constitute a modification for NSPS purposes. See Attachment 5. Sanford Unit #4 currently burns No. 6 oil and would be fitted with equipment to optimize heating of Orimulsion, a similar fuel. It can thus be argued that the Orimulsion heating system should also be exempted from consideration under NSPS and PSD. The recent Detroit Edison ruling does require a PSD permit even when the boiler itself was exempted from NSPS and BACT; however, in that case, Detroit Edison did not have equipment to deliver gas to the combustion unit. In the case of Sanford Unit #4, existing equipment is available to deliver Orimulsion to the combustion unit, with only minor changes needed to better assure fuel stability during handling.

CONCLUSIONS

The Orimulsion test should not be deemed to trigger NSPS because Sanford Unit #4 is "designed to accommodate" the fuel. This is borne out by the absence of changes to the boiler itself, by the minimal changes in boiler auxiliaries

needed to burn the fuel, by prior EPA precedent, and by the conclusions of the boiler manufacturer. EPA regulations and precedent clearly support the conclusion that a PSD/BACT analysis should not apply to boiler-related emissions resulting from an Orimulsion fuel switch at Sanford Unit #4.

PSD applicability to the project as a whole is less clear because of the non-boiler related changes needed to burn Orimulsion. An early EPA determination has held that the addition of fuel heating equipment at boilers to allow the burning of a different grade of oil would not be deemed a modification for NSPS purposes; therefore, one can argue that the simple addition of fuel heating equipment at Sanford Unit #4 should not be deemed to constitute a modification for PSD purpose. The recent Detroit Edison decision focused on the absence of any alternate fuel delivery equipment at the site, which is not the case at Sanford Unit #4. In effect, there is ample room for a favorable agency interpretation on this point.

WHG/wrn
4/2/90:1:50 p.m.

JUN 7 1983

4AW-AN

Mr. Steve Smallwood, Chief
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Smallwood:

This is to inform you of Region IV policy concerning applicability of coal conversions to EPA PSD regulations.

Fuel conversions, in general, are considered major modifications for purposes of PSD review providing emission increases are significant. However, Section 52.21(b)(2)(iii)(e) provides an exemption for certain fuel conversions from the major modification definition. Specifically, this section exempts a fuel conversion from PSD review if the source was capable of accommodating the alternate fuel before January 6, 1975 and such a change is not prohibited by any enforceable permit conditions.

The question then, is whether the source, i.e., the entire plant, was capable of accommodating coal before January 6, 1975. For purposes of converting one or more, but not all of the boilers, we interpret this provision as requiring that the plant be capable of receiving, transferring, and preparing coal, and then transferring coal and combusting coal in the units being converted, and disposing of the ash. It is not necessary for the plant to be capable of carrying out all those operations for every unit at the source, but only for for those being converted. On the other hand, if the plant is capable of receiving coal and transferring and combusting it only in some other unit at the plant, but not the one being converted, the plant would not be deemed capable of accommodating coal for purposes of that project.

In order for a plant to be capable of accommodating coal, the company must show not only that the design (i.e., construction specifications) for the source contemplated the equipment, but also that the equipment actually was installed and still remains in existence. Otherwise, it cannot reasonably be concluded that the use of coal was "designed into the source." Thus, a source that had used coal at a particular unit at an earlier time, but later switched to another fuel, would be capable of accommodating coal as long as the coal handling equipment still existed. If coal handling equipment had been removed or was never installed, the source would not be coal accommodative. If a proposed conversion is not eligible for the exemption under 52.21(b)(2)(iii)(e), it is considered a major modification for the purposes of PSD review if the resulting net emission increases are significant. PSD applicability would be based on all emission increases from the conversion, including emission increases from the coal and ash handling and storage facilities as well as from the boilers, since all the increases are caused by the conversion to coal.

ATTACHMENT
EXHIBIT
1

Once PSD applicability has been established, it is then necessary to undertake a BACT analysis as required under 52.21(j). That section, under paragraph 3, requires that a major modification apply "best available control technology for each pollutant subject to regulation under the Act for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit." This section clearly intends that technology review be assessed on an emissions unit rather than on a plant-wide basis.

In the situation where the individual boiler being converted is capable of firing coal with minimal physical changes (for example, change of burners only), BACT analysis would apply to the coal handling and storage equipment as well as any other necessary new equipment. BACT analysis would not apply to the boilers since individually they were designed to accommodate coal and therefore will not be undergoing a physical change or change in the method of operation.

In addition to the BACT analysis, requirements for a source impact analysis (52.21(k)), air quality analysis (52.21(m)), additional impact analyses (52.21(o)), and Class I analysis (52.21(p)) must be satisfied.

Once the source has satisfied these requirements and the notice and public comment provisions, permit approval may proceed.

Region IV is aware that guidance on this question has been somewhat vague, and possibly conflicting, in the past. Therefore, we do not intend for this policy to be applied retroactively where it was not adhered to. However, we do expect each Region IV state to immediately implement this policy for all future applicability determinations.

Sincerely yours,

James T. Wilburn, Chief
Air Management Branch
Air & Waste Management Division

cc: Ed Reich
Darryl Tyler

FOSTER WHEELER ENERGY CORPORATION

PERRYVILLE CORPORATE PARK • CLINTON, NEW JERSEY 08809-4000 • PHONE 201-730-4000

ADDRESS REPLY TO
[illegible] Avenue Suite 400
[illegible] Florida 32789
[illegible] 407-740-0607 Telex 513255

December 13, 1989

Florida Power & Light Co.
P.O. Box 078768
West Palm Beach, Florida 33407-0768

Attention: Mr. D.L. Christian
Project Manager

Subject: Orimulsion Test Burn

Dear Mr. Christian:

The Sanford Units were originally designed to burn #6 fuel oil with provisions for coal firing. Foster Wheeler has previously engineered and proposed firing coal-oil mixture, (COM) coal-water fuel, (CWF) and pulverized coal (P.C.) in these units, indicating the wide range of acceptable fuels.

A review of the specification and description of Orimulsion, reveals that this fuel has properties similar to the fuels cited above, which are within the design capabilities of the unit.

Specifically, the following comparisons can be made:

1) Viscosity - Similar in range and rheology to CWF, this is more burner related than boiler related.

2) Heat Content - The Orimulsion heating value of 12,733 BTU/LB is similar to pulverized coal and higher than CWF. It is lower than COM, and therefore within the range of fuels already demonstrated as useable in the Sanford Units.

3) The input would be similar to that for CWF in that the moisture contents are comparable.

4) The unit efficiency with Orimulsion should be higher than CWF by virtue of the HHV, but lower than P.C. due to the moisture.

5) The ash impact of Orimulsion should be less than the coal based fuels - P.C., COM, and CWF. The elemental analysis for this Bitumin based fuel is analagous to coal. The Vanadium is similar to a high Vanadium crude.

ATTACHMENT
EXHIBIT
2

Orimulsion Test Burn
December 13, 1989

In summary, the Sanford boilers were originally designed with an operational envelope that would accommodate the combustion of a variety of fuels within specific ranges of moisture content, ash constituents, heat content, etc. Since the properties of orimulsion fall within their design envelope, the firing of orimulsion would be expected to require no boiler modifications beyond those minimal changes required for combustion of any fuel of similar characteristics.

Should further information be required, please do not hesitate to contact us.

Very truly yours,
Foster Wheeler Energy Corp.

H.M. Trammell, Jr.
Regional Vice President

HMT/GTN/va

ENVIRONMENTAL PROTECTION AGENCY

BEST AVAILABLE COPY

March 28, 1973

D-3

S. T. Smith, P.E.
Chief Engineer
Burns & McDonnell
Post Office Box 173
Kansas City, Missouri 64141

Dear Sir:

Please be advised that pursuant to 40 CFR §60.5 it is our determination that the installation of soot blowers at the Carl T. Bailey Electric Generating Station at Augusta, Arkansas does not constitute a "modification" as defined in 40 CFR §60.14(a), and, therefore, does not bring you within the scope of applicability of the New Source Performance Standards, 40 CFR §60.

Such determination, however, in no way relieves you of any requirements under State law. You should check with the Arkansas Department of Pollution Control and Ecology for the applicable State requirements and to determine whether the installation of soot blowers, or fuel switching from natural gas to No. 6 oil constitutes a modification within the meaning of State new source review provisions. In those States where EPA has promulgated new source review provisions of the State implementation plans, (this does not include Arkansas), fuel switching does constitute a "modification". The stricter definition in these implementation plans is required in order to meet and maintain the National Ambient Air Quality Standards.

Sincerely yours,

Peter M. Yoell
Attorney-Advisor
DOSE

AGGS:P. Yoell/mas/3/28/73

CONCURRENCES

SYMBOL								
SURNAME								
DATE								

EXHIBIT
Attachment 3

OFFICIAL FILE COPY

Burns & McDonnell / Engineers - Architects - Consultants
POST OFFICE BOX 173
KANSAS CITY, MISSOURI 64141
TEL 816-333-4275 TWX 910 771 3059
4800 EAST 63rd STREET

March 16, 1973

Director
Division of Stationary Source Enforcement
Environmental Protection Agency
WSM - Room 3220
Washington, D.C. 20460

Subject: Determination
Addition Soot Blowers
Carl E. Bailey Generating Station
Arkansas Electric Cooperative Corporation

Dear Sir:

We were referred to your office by the Kansas City Regional Office of the United States Environmental Protection Agency for a determination. Our client, Arkansas Electric Cooperative Corporation, Little Rock, Arkansas, proposes to install soot blowers at their existing Carl E. Bailey Electric Generating Station at Augusta, Arkansas. The question has arisen as to whether the installation of these soot blowers is included within the applicability of Environmental Protection Regulations on Standards of Performance for New Stationary Sources as set forth in 40 CFR 60; 36 FR 2476, issued December 23, 1971, effective August, 1971. The section that applies in this case is as follows:

> Part 60-3 The definition of modification, as it pertains to increases in production rate and changes of fuel, has been clarified. Increases in production rates up to design capacity will not be considered a modification nor will fuel switches if the equipment was originally designed to accommodate such fuels. These provisions will eliminate inequities where equipment had been put into partial operation prior to the proposal of the standards.

The Carl E. Bailey Electric Generating Station, owned and operated by the Arkansas Electric Cooperative Corporation, is a natural gas and No. 6 oil-fired steam electric generating station with a capacity at peak rating of approximately 125 megawatts. The power generating station feeds electric power into transmission systems which serve several states.

The steam generator was designed to burn both natural gas and No. 6 oil. Due to the availability of natural gas, the soot blowers were not installed with the boiler. The boiler was provided with wall boxes, so that when fuel oil was burned on a continuous basis and soot blowers were needed, the pressure parts of the boiler would not have to be disturbed.

2671 S. W. 27th AVENUE, MIAMI, FLORIDA 33133
TWO PENNSYLVANIA PLAZA, NEW YORK, NEW YORK 10001
1500 SOUTHWEST FIRST AVENUE, PORTLAND, OREGON 97201

Additional provisions made for soot blowers were the extra weight of steel required to support the future extended soot blower platforms. Construction was begun at the station site early in 1964, and the station went on the line in January, 1966. Due to curtailment of natural gas over the following years, more No. 6 oil had to be burned each succeeding year. Now it appears it must be burned continuously and soot blowers must be added.

The addition of soot blowers optimizes boiler performance only. There is no increase in production rates nor do they increase the total pollutants going into the air. Further, the equipment was designed to burn No. 6 fuel oil, and also burned it prior to the date any standards became effective. Consequently, it is our feeling the determination should indicate that standards of performance for new stationary sources are not applicable and that the addition of soot blowers is not a modification.

Sincerely,

S. T. Smith

S. T. Smith, P.E.
Chief Engineer
Environmental Division

STS:sf

cc: Arliss Wright

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

M. STERLING
JAN 22 1990

JAN 18 1990

Mr. Morton Sterling, Director
Environmental Protection
Detroit Edison Company
200 Second Avenue, 482 WCB
Detroit, Michigan 48226

Dear Mr. Sterling:

This is a followup to the October 19, 1989 meeting during which Detroit Edison further discussed its position that the addition of natural gas firing capacity to the Greenwood Unit I Power Plant should not be subject to a prevention of significant deterioration (PSD) review. At the meeting, you requested that Environmental Protection Agency (EPA) Headquarters review Region V's previous determination that the proposed fuel conversion was a "major modification" for PSD purposes.

As you are aware, in a letter dated December 20, 1988, EPA Region V concluded that the proposed conversion of the oil-fired Greenwood Unit to dual capacity for oil and gas firing would subject the plant to a PSD review for nitrogen oxides (NO_x). The Region's conclusion was based on a determination that 1) the source was not capable of firing natural gas prior to January 6, 1975 (and therefore was not covered by the PSD exemption for modifications under 40 CFR 52.21(b)(2)(iii)(e)(1)); and 2) there would be a significant net increase of NO_x resulting from the change. As you have requested, we have reevaluated this finding in light of the additional information submitted by Detroit Edison during the October 19 meeting.

The information presented by Detroit Edison indicates that the emissions unit at the source was initially designed and permitted to fire both oil and gas. However, there is no evidence to demonstrate that the source as a whole had, or at any time initiated construction on, the equipment necessary to deliver natural gas to the combustion unit. Without such equipment, it would not be possible for the source to utilize natural gas as an alternate fuel. Consequently, it is our view that the source was not capable of accommodating natural gas prior to January 6, 1975. Therefore, the changes necessary to accommodate the firing of natural gas at the Greenwood Plant would, for PSD purposes, be considered a "physical change" to the source.

As requested, we have also evaluated the net emissions change at the source that would result from the modification. It is Detroit Edison's position that the large decreases in "allowable" emissions of sulfur dioxide, particulate matter, and NO_x when burning natural gas rather than oil as a result of the modification, warrants special consideration. Specifically, Detroit Edison feels that the use of a cleaner fuel at the Greenwood Plant warrants a finding that there is no increase in actual emissions and accordingly no "major modification."

ATTACHMENT
EXHIBIT
4

Under the PSD regulation, a "major modification" occurs when the physical or operational change at the source (in this case the installation of natural gas handling facilities and the firing of natural gas) would result in a significant net emissions increase for any regulated pollutant at the source. Whether the proposed use of natural gas at the Greenwood Plant would result in a "significant net emissions increase" depends on a comparison between the "actual emissions" before and after the physical or operational change. Where, as here, the source has not yet begun operations firing natural gas, "actual emissions" after the change to natural gas firing are deemed to be the source's "potential to emit" for that fuel [see 40 CFR 52.21(b)(21)(iv)]. Potential annual NO_x emissions when firing natural gas at the Greenwood Plant greatly exceed its current actual emissions. Therefore, as a result of the ability to fire natural gas after the change, the emissions of NO_x at the source would experience a "significant net emissions increase," within the meaning of the PSD regulations. The fact that current annual "allowable emissions" for the Greenwood Plant when firing oil may greatly exceed future allowable (or potential) emissions when firing natural gas is not relevant for PSD applicability purposes. See Puerto Rican Cement Co., Inc. v. EPA No.89-1070 (First Circuit) (slip op. October 31, 1989).

In summary, our review indicates that Region V correctly applied the PSD applicability criteria.

The PSD requirements include an air quality and additional impact analysis and the application of best available control technology (BACT). The BACT requirement applies to "each proposed emissions unit at which a net emissions increase would occur as a result of a physical change or change in the method of operation in the unit" [see 52.21(j)(3)]. Consequently, although the addition of gas firing would subject the source as a whole to a PSD review, the requirement to apply BACT is applicable only to those emissions units at the source which undergo both a physical or operational change and a significant net emissions increase. It appears that the only emissions unit at the Greenwood Plant affected by the proposal to fire gas would be the existing boiler. Historically, it has been EPA's policy that where the individual boiler being converted is capable of accommodating the alternate fuel, BACT would not apply.

In this case, in addition to the physical changes at the source necessary to deliver natural gas to the existing boiler, a number of canes capable of burning natural gas would be installed in the existing burner assemblies. Modifications to the unit's overfired air duct are also planned. We also understand that there will be no changes in the present oil burning system, which will be retained.

Our review indicates that, by itself, the addition of gas canes to the burners is not a physical change or change in the method of operation in the unit and, consequently, would not subject the boiler to a BACT review. Therefore, if the sole change to the boiler is the addition of the canes, then, in this case, the only requirements necessary for a PSD permit are an air quality analysis, additional impacts analyses, and (if applicable) a Class I impact analysis--the application of BACT is not required. However,

the information submitted by Detroit Edison indicates that changes to the boiler's overfired air duct are also planned. At this time, without additional information on the nature and scope of the work to be done on the overfired air duct, we cannot determine whether these are physical or operational changes to the boiler that are necessary to make the boiler capable of accommodating natural gas. If the ducting work is necessary for this purpose, then a BACT analysis would likely be required.

In addition, it is unclear from the information submitted whether Detroit Edison plans to undertake further modifications to the boiler which would allow 100 percent load when firing natural gas. Currently, the unit as presently configured has the potential of achieving only 75 percent load when firing natural gas. To achieve a higher load, substantial modifications to the unit apparently would be required. These types of physical changes to the boiler likely would require a full PSD review, including a BACT analysis for the boiler. The BACT analysis would require that the source evaluate the use of all available additional air pollution controls for reducing NO_x emissions. The analysis would consider retrofit costs for add-on controls and the fact that gas is a relatively clean-burning fuel. Consequently, in this case, it is possible that the currently planned use of a low-NO_x burner design may be BACT for gas firing. However, such a conclusion would have to be demonstrated through the requisite BACT analysis. I have asked Region V to work with you should you need assistance in preparing the analysis.

Sincerely,

Gerald A. Emison
Director
Office of Air Quality Planning
and Standards

cc: J. Calcagni, EPA/AQMD
D. Kee, EPA/Region V
G. Foote, EPA/OGC

REGION V

Determination of Applicability of New Source Performance Standards (NSPS)

AUG 5 1975

James O. McDonald, Director
Enforcement Division

Richard D. Wilson, Director
Division of Stationary Source Enforcement

The Escanaba (Michigan) Paper Mill Division of the Mead Corporation received State permits for the installation of oil pre-heating equipment and new nozzles on two boilers which burned natural gas or Number 2 fuel oil prior to August 17, 1971, to make it possible for them to burn Number 6 fuel oil as well.

Does the installation of the Number 6 fuel oil-firing equipment constitute a modification as defined by NSPS, or does the use of Number 6 fuel oil fall within the exemption provided in paragraph H(2)(iii) of Section 60.2?

ORIGINAL SIGNED BY JAMES O. McDONALD

James O. McDonald

EXHIBIT
ATTACHMENT
5

AUG 19 1975

MEMORANDUM

SUBJECT: Determination of Applicability of Subpart D (NSPS) to Escanaba Paper Mill Division of the Mead Corporation

FROM: Director, Division of Stationary Source Enforcement

TO: James O. McDonald, Director
Enforcement Division, Region V

In response to your request of August 5, 1975, we have determined that the proposed change to the existing boilers at the Escanaba Paper Mill does not constitute a modification under NSPS since such change fall within the exemption of §60.2(h)(2)(iii).

D-2

Richard D. Wilson

AGGS:GeorgeStevens:bm:8-18-75

D-2