

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND

UNITED STATES OF AMERICA	*	
Plaintiff	*	
vs.	*	CIVIL ACTION NO. MJG-00-2602
WESTVACO CORPORATION	*	
Defendant	*	
* * * * * * * * *		

MEMORANDUM OF DECISION RE: FIRST PHASE

In this case, the Government seeks to have the Court impose pollution control obligations upon Defendant Westvaco Corporation ("Westvaco"),¹ operator of a kraft pulp and paper production facility that straddles the Maryland-West Virginia border (the Potomac River) in the area of Luke, Maryland ("the Luke Mill"). The case is proceeding to resolution in phases. In the instant first phase trial, the Court has heard evidence relating to certain power boilers and projects undertaken at the Luke Mill during the 1980s.

The Court now issues this Memorandum of Decision as its findings of fact and conclusions of law pursuant to Rule 52(a) of the Federal Rules of Civil Procedure. The Court finds the facts stated herein based upon an evaluation of the evidence,

¹ Reference to "Westvaco" herein is intended to include all predecessors and successors in interest to Westvaco Corporation in regard to the operation of the Luke Mill.

which includes the credibility of witnesses and the inferences that the Court has found reasonable to draw.

I. BACKGROUND

A. Procedural Setting

On April 19, 1999, the Environmental Protection Agency ("EPA") issued Westvaco a Notice of Violation² of the Clean Air Act ("CAA"), 42 U.S.C. §§ 7401-7671q, pertaining to total reduced sulfur ("TRS") and sulfur dioxide ("SO₂") emissions at the Luke Mill. On August 28, 2000, the Government brought this action contending that Westvaco violated the CAA by making "major modifications" to the Luke Mill during two expansion projects without obtaining federal environmental permits or installing the "best available control technology" ("BACT"). Initially, the Government asserted various federal and state law claims, seeking civil penalties and injunctive relief. The case has since been "pruned."³ There remain pending Counts I and II of the Amended Complaint, in which the Government asserts that Westvaco is subject to BACT obligations by virtue of

² Pursuant to 42 U.S.C. § 7413(a).

³ The Court has dismissed the Government's claims for civil penalties [Document 15], the Government's claims pertaining to operating modifications without a permit and state law claims relating to particulate matter violations [Document 71], and the Government's claim that Westvaco failed to apply for or obtain certain pre-construction permits and emissions offsets relating to nitrogen oxide emissions. [Document 100].

modifications to, and/or affecting, two power boilers, as discussed herein.

B. The Clean Air Act

In 1970, Congress amended the CAA to "speed up, expand, and intensify the war against air pollution in the United States with a view to assuring that the air we breathe throughout the Nation is wholesome once again." H.R. REP. NO. 91-1146, at 1 (1970), reprinted in 1970 U.S.C.C.A.N. 5356. The amendments required EPA to establish the National Ambient Air Quality Standards ("NAAQS") for "criteria pollutants,"⁴ 42 U.S.C. § 7409(a), and required states to develop plans to attain those standards. 42 U.S.C. § 7410(a).

As part of the 1970 amendments, Congress also created the New Source Performance Standards ("NSPS") program. See 42 U.S.C. § 7411. The NSPS program required EPA to establish federal performance standards (codified at 40 C.F.R. Pt. 60) for categories of new and modified major stationary sources that cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare.

⁴ The pollutant at issue in this case, SO₂, is a criteria pollutant. The CAA classifies a "criteria pollutant" as is one that "may reasonably be anticipated to endanger public health or welfare." See 40 C.F.R. pt. 50; 42 U.S.C. § 7408(a)(1)(A) and (B); Trial Tr. 1941:4-20.

42 U.S.C. § 7411(a)(1),(b)(1)(A).⁵ The purpose of the NSPS program was to help attain, and thereafter maintain, the NAAQS by ensuring that increased pollution from the construction of new and modified emissions sources was controlled. See United States v. Duke Energy Corp., 411 F.3d 539, 542 (4th Cir. 2005), vacated sub nom. Environmental Defense v. Duke Energy Corp., 549 U.S. 561, 127 S. Ct. 1423 (2007).

Dissatisfied with the results achieved under the 1970 amendments, Congress again amended the CAA in 1977, adding the New Source Review ("NSR") program. Duke Energy, 411 F.3d at 542-43 (noting that "[t]he NSPS program was not entirely successful"); New York v. EPA, 413 F.3d 3, 10 (D.C. Cir. 2005) ("In 1977, Congress amended the Clean Air Act . . . to strengthen the safeguards that protect the nation's air quality.").

The NSR program is composed of the parallel Prevention of Significant Deterioration ("PSD") and Nonattainment New Source Review ("NNSR") programs. The PSD program applies in "attainment areas," where the existing air quality is already meeting the NAAQS, or has not been classified. The NNSR program applies in areas that are not meeting the NAAQS.

⁵ In 1978, the EPA established such performance standards for kraft pulp mills applicable to any facility that commenced construction after September 24, 1976. 40 C.F.R. pt. 60, Subpt. BB.

To ease the initial burden of complying with the CAA, existing sources of pollution (such as the Luke Mill) were excused from compliance with the PSD provisions, sparing the immediate expense of retrofitting these sources with modern pollution controls. See New York, 413 F.3d at 13 ("[Existing sources] faced no NSR obligations-in the common phrase, they were 'grandfathered'. . . ."). Congress required, and fully expected, however, that these sources would either incorporate the required pollution controls as they underwent modifications, or would replace them with new units that met the CAA's pollution control requirements. Wisconsin Elec. Power Co. v. Reilly, 893 F.2d 901, 909 (7th Cir. 1990) (explaining that the modification rule was designed to ensure that pollution control measures would be taken at the time they are most effective - when new sources are constructed or existing sources modified); Alabama Power Co. v. Costle, 636 F.2d 323, 400 (D.C. Cir. 1979) ("[T]he provisions concerning modifications indicate that this is not to constitute a perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit.").

1. Administration of the CAA

Pursuant to the CAA, each state must adopt, and submit to the EPA for approval, a State Implementation Plan ("SIP") to

ensure that attainment areas will continue to maintain NAAQS. 42 U.S.C. § 7410. Before a state's plan is approved, EPA has sole authority for administering the PSD program for sources. (Trial Tr. 38:9-39:2). After receiving EPA approval of its SIP, a State has primary authority for administering its PSD program. See 42 U.S.C. § 7410. However, EPA continues to oversee and enforce the program, if necessary. See 42 U.S.C. § 7413(a), (b); 42 U.S.C. § 7477 (providing that EPA "shall, and a State may, take such measures, including issuance of an order, or seeking injunctive relief, as necessary to prevent the construction or modification of a major emitting facility which does not conform to the requirements of this part."); see also Alaska Dep't of Env'tl. Conservation v. EPA, 540 U.S. 461, 464, 124 S.Ct. 983, 988 (2004) (noting that Congress "vested EPA with explicit and sweeping authority to enforce CAA 'requirements' relating to the construction and modification of sources under the PSD program").

2. PSD Program Requirements

The instant case arises in the context of the CAA's PSD statutory scheme and regulations. 42 U.S.C. § 7070-7492; 40 C.F.R. Pt. 51.166 (1987).⁶ The purpose of the PSD program is to

⁶ All citations to the PSD regulations, 40 C.F.R. Pt. 51.166, are to the PSD regulations promulgated August 7, 1980. These

prevent degradation of air quality in NAAQS attainment areas. 42 U.S.C. § 7470(1). To accomplish this, the PSD program requires existing sources of air pollution, such as the Luke Mill, to meet pre-construction permitting and pollution control regulations before undergoing a "major modification" that "would result in a significant net emissions increase of any pollutant subject to regulation under the Act." Duke Energy, 549 U.S. at 568 (citing 40 CFR § 51.166(b)(2)(i) (1987)).⁷

The PSD permitting process ensures that "emission from the construction or operation of [the existing source] will not cause, or contribute to, air pollution in excess" of the NAAQS. 42 U.S.C. § 7475(a)(3).⁸ Therefore, under the PSD regulations:

regulations were in effect at the time Westvaco began making changes to the Luke Mill. The 1980 regulations, 45 Fed. Reg. 52676, were recodified in the 1987 Code of Federal Regulations.

⁷ As stated in Duke Energy, 549 U.S. at 569: "The PSD regulations defined a 'net emissions increase' as '[a]ny increase in actual emissions from a particular physical change or change in the method of operation,' net of other contemporaneous 'increases and decreases in actual emissions at the source.' § 51.166(b)(3). 'Actual emissions' were defined to 'equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation.' § 51.166(b)(21)(ii)."

⁸ To obtain a PSD permit, sources must undergo ambient air quality analyses to show that they will neither violate NAAQS increments nor adversely affect air quality in national parks or other areas that EPA has identified as needing particularly high-quality air. 42 U.S.C. § 7475; New York, 413 F.3d at 13.

No major emitting facility⁹ on which construction is commenced after August 7, 1977, may be constructed . . . unless the proposed facility is subject to the best available control technology [BACT] for each pollutant subject to regulation under this chapter emitted from, or which results from, such facility

42 U.S.C. § 7475(a)(4).

The statute specifies that "[t]he term 'construction' when used in connection with any source or facility includes the modification . . . of any source or facility." 42 U.S.C. § 7479(2)(C). Accordingly' a "modification" is:

any physical change in, or change in the method of operation of, a stationary source [of pollution] which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.

42 U.S.C. § 7411(a)(4).

However, in 1980 EPA issued PSD regulations limiting PSD review only to instances where a "major modification" occurred.

A "major modification" is:

any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

40 C.F.R. § 51.166(b)(2)(i); Duke Energy, 549 U.S. at 568.

⁹ By statutory definition, kraft pulp mills are major emitting facilities. 42 U.S.C. § 7479(1).

Thereafter, the PSD regulations required any stationary source¹⁰ at which a major modification occurred to:

apply best available control technology for each pollutant subject to regulation [] for which it would be a significant net emissions increase at the source. This requirement applies to each . . . 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.

40 C.F.R. § 51.166(j)(3).

Regulations under 42 U.S.C. § 7411(a)(4) interpret the term "modification" to exclude:

The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is . . . replaced by a system which the [EPA] Administrator determines to be less environmentally beneficial.

40 C.F.R. § 60.14(e)(5).

This regulation, which sets forth the Pollution Control Project Exclusion ("PCPE"), does not directly apply to the PSD regulatory scheme, but, rather, is part of the NSPS program regulations.¹¹ Thus, there was a question of whether the PCPE applied to the PSD program. In its Memorandum and Order on

¹⁰ The term "stationary source" means any building, structure, facility, or installation which emits or may emit any air pollutant. 40 C.F.R. § 51.166(b)(5). The Luke Mill is a "major stationary source." SJ Stip. Fact No. 2.

¹¹ 42 U.S.C. § 7411 was enacted as part of the NSPS regulatory scheme.

Partial Summary Judgment [Document 15], at page 36, the Court answered this question in the affirmative, finding that the PCPE may apply to the Government's claims of PSD violations.

C. Luke Mill Operations

1. The Papermaking Process

The Luke Mill¹² conducts its papermaking activities primarily in Maryland, where the digesters, washers, evaporators, bleach plants, power boilers, and paper machines are located. The rest of the mill, including the wood yard, lime kiln, and recovery areas, is located On the other side of the Potomac, in West Virginia.

The Luke Mill receives logs, which are reduced into wood chips and sent to the pulp mill for processing.¹³ There, chips are conveyed into digesters where they are heated and treated with a mixture of pulping chemicals (called "liquors") to dissolve certain material within the wood. The cooked chips are accelerated into a tank where, under heat and pressure, they become pulp fibers.

¹² The term "the Luke Mill" is used herein both to refer to the operator of the Luke Mill and, at times, to refer to the physical facility itself. The context makes clear the intended usage.

¹³ Often referred to as "kraft pulping."

The pulp fibers are washed to separate out remnants of the heated liquor (called "black liquor" in the cooked state). The black liquor is recovered to be reconverted to the precooking state ("white liquor") and reused. The pulp fibers are bleached and proceed to the paper mill. There, the pulp is heated, pressurized, treated, and made into paper. The resulting paper product is wound into reels and, ultimately, shipped off the site.

In the recovery process, whereby spent black liquor is reconverted into white liquor, the black liquor is heated (to evaporate its water) and aerated, i.e., oxidized, to retain the liquor's sulfur components. The evaporated water is condensed for reuse. The aerated liquor is further heated in a "recovery furnace" (also referred to as a "recovery boiler") to burn away organic matter that had been dissolved from the wood chips in the digester.¹⁴ Through this process, the digesters produce non-condensable gas ("NCG"), including TRS compounds.

What remains is a pulping chemical smelt, which is directed to a tank in which it dissolves in water and cools to form "green liquor." Lime (i.e., calcium oxide) is added to the green liquor to trigger a chemical reaction that produces white

¹⁴ The energy generated by the fire in the recovery furnace heats water, providing steam that supplements the steam provided by the power boilers used to power the Luke Mill.

liquor and lime mud. The white liquor is reused in the pulp mill. The lime mud is heated in a rotating "lime kiln" and is thereby reconverted to lime for reuse.

2. Power Boilers

For power to carry on its pulping and papermaking operations, the Luke Mill relies primarily on steam generated by three power boilers (referred to as Power Boilers 24, 25, and 26), supplemented by steam generated in the recovery furnace.¹⁵ Power Boilers 24 and 25 burn coal particles to heat water and produce steam. The SO₂, nitrogen oxides ("NOx") and particulate matter ("PM") generated when coal is burned in Power Boilers 24 and 25 are emitted into the atmosphere via the Luke Mill's 620-foot "tall stack." (PTO Stip. Fact No. 30.)¹⁶ Power Boiler 26, a standby unit, burns natural gas.

The steam from the power boilers is directed to two turbines that generate electricity and lower the steam pressure to levels usable by mill machinery. High-pressure steam is used by the fans in the lime kiln and by vacuum pumps. Medium-pressure steam is used in the bleaching process and by the

¹⁵ The Government is not asserting any claim pertaining to Power Boiler 24.

¹⁶ All references to stipulated facts incorporated into the Proposed Pretrial Order [Document 174] are cited herein as "PTO Stip. Fact No. ____."

digesters. Low-pressure steam is used for drying in the paper mill.

The flames in the power boilers are used to control the emission of TRS compounds produced by the digesters and evaporators during the papermaking process. However, the incineration of TRS compounds produces SO₂. See John E. Pinkerton, Sulfur Dioxide and Nitrogen Oxides Emissions from U.S. Pulp and Paper Mills, 1980-2005, 57 J. Air & Waste Mgmt. Ass'n 8 (Aug. 2007) at 2.

3. State Regulation of TRS at the Luke Mill

Even prior to EPA approval of Maryland's SIP, a 1968 Maryland statute required Westvaco to control emissions from the Luke Mill's existing digesters and evaporators.¹⁷ (Pl.'s Ex. 359 at WVCO_0021-0224; Trial Tr. 1540:7-24; Pl.'s Ex. 658 at 40:2-5; Pl.'s Ex. 359 at WVCO_0021-0224). While these regulations did not explicitly require control of TRS emissions, they contained a general provision prohibiting "odorous" emissions. This provision was deemed to apply to TRS emissions from the Luke Mill digesters and evaporators. See id.

Independent of Maryland's odor control regulations, an Interstate Air Pollution Abatement Conference held in Keyser,

¹⁷ Although the Luke Mill is situated in both Maryland and West Virginia, the Power Boilers are located in Maryland, so only the emissions standards for Maryland will be discussed.

West Virginia in 1971 also required the Luke Mill to control TRS emissions from the existing digesters and evaporators. (Pl.'s Ex. 359 at WVCO_0021-0224; Def.'s Ex. 296 at WVCO_0004-1889).

Finally, § 111(d) of the CAA required States to develop plans to control existing sources of pollution. These "§ 111(d) plans" were to be developed after EPA published its final guidelines for controlling designated pollutants. (Pl.'s Ex. 13 at WVCO_0009-0544; Pl.'s Ex. 344 at USPCPE 2840-41). Thus, in 1979, after EPA published final guidelines for emissions from kraft pulp mills, Maryland was required to develop a § 111(d) plan for controlling emissions from the Luke Mill. (Pl.'s Ex. 13 at WVCO_0009-0544; Pl.'s Ex. 344 at USPCPE 2840-41).

On April 8, 1981, Maryland promulgated a § 111(d) plan for controlling TRS emissions from kraft pulp mills. (Trial Tr. 44:17-19; Pl.'s Ex. 13 at WVCO_0009-0544; Pl.'s Ex. 299 at USPCPE 1542). EPA approved these regulations on May 11, 1982, which took effect on June 10, 1982. With respect to the Luke Mill's digesters and evaporators, the Maryland regulations provided that the Luke Mill would be in compliance with the TRS emissions limit so long as the gases were incinerated in a power boiler, recovery boiler, or separate incinerator. (Pl.'s Ex. 299 at USPCPE 1542).

4. Emissions Controls

The Luke Mill controls NCG emissions by directing TRS compounds from the digesters and evaporators to a control device (a power boiler or the lime kiln) for incineration. Any NCGs not combusted in a control device are emitted directly into the atmosphere. The lime kiln is capable of combusting SO₂, but the power boilers are not. Thus, when the power boilers, rather than the lime kiln, are used to control NCGs, there is emission of SO₂ into the atmosphere.

The Luke Mill's original NCG control system operated from the 1970s until 1980, when it failed and needed to be replaced. The original control system collected and conveyed digester gases to a primary condenser. The primary condenser removed approximately 90% of the steam in the digester gases, leaving some steam and the NCGs remaining. From the primary condenser, the remaining steam and NCGs were conveyed to a secondary condenser, which removed the remaining steam, leaving only NCGs. The NCGs were then piped to Power Boiler 25 or 26 for incineration.

This original control system functioned until approximately March 1980 when the internal plates in the primary condenser failed. (PTO Stip. Fact No. 6). As a result, steam could not be removed from the gases. Without a functioning condenser, too much moisture remained mixed with the gases, and the Luke Mill

was unable to incinerate NCGs from the evaporators in the power boilers, digesters, or any other incineration device.

5. The Digester Expansion Program

Between about February 1981 and April 1985, Westvaco undertook a series of development projects at the Luke Mill, known as the Digester Expansion Program ("DEP"). The DEP included plans to rebuild and upgrade the NCG control system. During the DEP, the Luke Mill engaged in various projects--some more successful than others--in an effort to control its NCG emissions. (Def.'s Exs. 55, 96, 232). During the DEP period, the Luke Mill temporarily switched from using the power boilers to using a lime kiln to incinerate NCGs. Power Boiler 25 then served as a backup during the lime kiln's downtime. Eventually, the Luke Mill reverted to solely using power boilers to control NCG emissions.

Other DEP projects generally involved the construction of two new wood pulp digesters (numbered 11 and 12), the installation of a new system for conveying wood chips from the wood storage silos to the digesters, new automated controls for digesters 9 and 10, a heating mechanism to heat white liquor prior to its introduction into the digesters, a mechanism which decreased the time it took to fill each digester with white

liquor, the automation of digesters 1-8, and centralized control of all 12 digesters. (SJ Stip. Fact No. 10).¹⁸

6. The Mill-Wide Expansion Program

Between December 1986 and June 1991, the DEP was followed by a second series of improvement projects. The Mill-Wide Expansion Program ("MWE") began in December 11, 1986. The MWE primarily involved the construction of a new bleach plant (the No.3 bleach plant), a complete rebuild of the Luke Mill's two largest paper machines (Paper Machines Nos. 8 and 9), installation of a high speed precision paper cutting system, improvements in the paper finishing process, expansion of paper storage capacity, the upgrade of the No. 11 turbine generator, and rebuilds of the wet-end of the No. 5 and 7 paper machines. (SJ Stip. Fact No. 19).

In sum, from approximately 1973 to March 1980, the Luke Mill used Power Boilers 25 and 26 to control TRS from the digesters and evaporators. (Trial Tr. 1335:5-10; Pl.'s Tr. Ex 655 at 407:5-7; Trial Tr. 77:6-14). From March 1980 until approximately 1985, the Luke Mill did not use control devices to

¹⁸ All stipulated facts referenced in the Statement of Material Facts Not in Dispute in Support of Westvaco Corporation's Motion for Partial Summary Judgment on Counts I and II of the Amended Complaint [Document 102-2] are cited herein as "SJ Stip. Fact No. ____".

limit emissions. From March 1, 1985 until 1987, the Luke Mill used the lime kiln to control TRS emissions.¹⁹ (PTO Stip. Fact No. 8). At some point between November 1985 and the spring of 1986, Power Boiler 25 became fully operational as a backup to the lime kiln to control TRS emissions during scheduled kiln outages. (Pl.'s Ex. 44 at WVMD 01755; Pl.'s Ex. 45 at WVCO 0282-0122; Pl.'s Ex. 47 at WVCO 0375-1101; Def.'s Ex. 250 at WVCO2 0001-7549).

From June 1987 until the present, the Luke Mill has used Power Boiler 25 as the primary incinerator for NCGs from the digesters and evaporators, with Power Boiler 26 as backup. (PTO Stip. Fact No. 11; Trial Tr. 68:1-5). Because the power boilers have no controls for SO₂, the Luke Mill continues to emit SO₂ into the atmosphere from its tall stack. (PTO Stip. Fact No. 30).

II. LEGAL FRAMEWORK

In Count I, the Government alleges that the Westvaco DEP projects resulted in net emissions increases, and thus the Luke Mill underwent a major modification of a major stationary source such that it is subject to BACT requirements. (Am. Compl. ¶¶

¹⁹ TRS and SO₂ from the lime kiln are emitted into the atmosphere from the lime kiln stack, which is approximately 106 feet tall. The scrubber on the lime kiln removes most of the SO₂ before it is emitted from the stack.

96-98). The inquiry now before the Court focuses on whether there was a modification to an "emissions unit," that is, "any part of a stationary source which emits or would have the potential to emit any pollutant subject to regulation." 40 C.F.R. § 51.166(b)(7).

Accordingly, as to Count I, the Court must now address two issues:

1. Was Power Boiler 25 a "control device" for a multi-part "emissions unit" that was modified during the DEP so as to trigger BACT obligations?
2. Were Power Boilers 25 and 26 modified during the DEP so as to trigger BACT obligations?

In Count II, the Government alleges that the Westvaco MWEP projects resulted in net emissions increases, and thus the Luke Mill underwent a major modification of a major stationary source such that it is subject to BACT requirements. As with Count I, because the power boilers are central to the modification issue, the Court must address whether, during the MWEP, changes were made directly to the power boilers 25 and 26.

The Government bears the burden of proving by a preponderance of the evidence that PSD regulations apply to the Luke Mill's expansion projects. Duke Energy, 278 F. Supp. at 639. The requirements of the PSD program are triggered by any physical change or change in the method of operation which

results in an increase in emissions, unless an enumerated exclusion applies. 40 C.F.R. § 51.166(b)(2)(i)-(iii).

III. DISCUSSION

A. Count I (DEP Modifications)

The Luke Mill initiated the DEP in April 28, 1980, with subsequent jobs starting on March 29, 1981 and January 26, 1983. (Def.'s Exs. 55, 96, 232).

In order to resolve Count I, which relates to modifications made during the DEP expansion project, the Court must determine whether Power Boiler 25 and/or 26 was a "control device" for a multi-part emissions unit that was physically changed or had its own method of operation changed during the DEP so as to trigger BACT obligations.

To make this determination the Court must find that:

- A multi-part emissions unit existed;
- Power Boiler 25 was a control device for the unit;
- The unit emitted or had the potential to emit any PSD-regulated pollutant;²⁰ and

²⁰ In its Memorandum and Order [Document 149], the Court found that "there would be a multi-part emissions unit as claimed by the Government if, during the DEP period, either:

1. Power Boiler 25 was actually utilized to burn NCG, and thus control pollutants, on their way from the digesters to the atmosphere, or

- There was a physical change or change in the method of operation of the emissions unit.

In addition, Power Boilers 25 and/or 26 must be considered in and of themselves emissions units. Thus the Court must decide whether there was a physical change to, or change in the method of operation of, Power Boilers 25 and/or 26 during the DEP.

New and modified sources must meet federal NSPS, which include controlling emissions of both TRS and SO₂. 42 U.S.C. 7441(b); 40 C.F.R. 60.1. The NSPS for kraft pulp mills apply to all "affected facilities" that commence construction or modification after September 24, 1976. 40 C.F.R. 60.280.

"Affected facilities" include digester systems, evaporator systems, recovery furnaces, lime kilns and condensers. 40 C.F.R. 60.280(a). The NSPS for TRS emitted from digesters provide in pertinent part:

No owner or operator subject to the provision of this subpart shall cause to be discharged into the atmosphere: (1) from any digester system . . . any gases which contain TRS . . . unless the following conditions are met: . . . (iii) the gases are combusted with other waste gases in an incinerator or other device, or combusted in a lime kiln or recovery furnace

2. Power Boiler 25 had the potential to be utilized to burn NCGs, and thus control pollutants, on their way from the digesters to the atmosphere."

40 C.F.R. 60.283(a). The NSPS for new and modified sources do not allow for any periods of TRS venting. See 40 C.F.R. § 60.283. (Trial Tr. 48:2-16).

The Luke Mill is a major emitting facility, located in a PSD attainment area,²¹ on which construction commenced after 1977. Therefore, in addition to PSD permitting requirements, all of the Luke Mill's digesters were required to meet the TRS emissions requirements set by the NSPS. (SJ Stip. Fact No. 2). The Luke Mill Report from the fall of 1981 indicates that construction related to the DEP commenced²² with the actual installation of the digesters in spring of 1981. (Pl.'s Ex. 617 at WVCO_0593-0133). These improvements continued until the spring of 1986 when the system fully controlled for all TRS venting.

²¹ Allegheny and Garrett Counties in Maryland and Mineral County, West Virginia - counties in which the Luke Mill is located - have been classified as attainment or unclassifiable areas for sulfur dioxide ("SO₂"), nitrogen oxides ("NO_x") and particulate matter with a diameter of 10 micrometers or less ("PM-10"). (Answer to Am. Compl. ¶ 14.) In addition, the Luke Mill is within 100 kilometers of three Class I areas: Dolly Sods Wilderness Area, Otter Creek Wilderness Area, and Shenandoah National Park, which the EPA has declared deserve special protection. See 42 U.S.C. §§ 7472(a) and 7475(d)(2)(B),(C). (Trial Tr. 409:16-19; Trial Tr. 333:13-20).

²² "Commence," as applied to construction of a major stationary source or major modification, means that the owner or operator has all necessary preconstruction approvals or permits and has . . . begun or caused to begin a continuous program of actual on-site construction of the source, to be completed within a reasonable time 40 C.F.R. 51.166(b)(9).

The Government contends that the Court may find that these projects, occurring during the DEP, either constituted major modifications to one multi-part emissions unit, or major modifications to distinct emissions units.

1. The Multi-Part Emissions Unit

In the Memorandum and Order on Partial Summary Judgment, [Document 149] at 14-16, the Court accepted EPA's regulatory interpretation of the term "emissions unit" which includes control devices. The Court held that EPA's interpretation "was not unreasoned, plainly erroneous or inconsistent with the regulation and thus deserved deference." (Id. at 18; Mem. and Order [Document 167] at 13-14.)

Because an "emissions unit" is not limited to one piece of equipment, i.e., only a power boiler, and may include a combination of components of which many pieces of equipment are a part, the Court held that:

. . . emission units may be viewed as including: 1) a segment that produces pollutants and 2) a segment that controls (i.e. transforms, reduces, modifies etc.) pollutants on their way to the atmosphere.

. . . And, most certainly, the fact that a power boiler would, in and of itself, be an "emissions unit" does not mean that it cannot also be part of a multi-part "emissions unit" where, as in the case at Bar, it would provide an essential part of

the operational flow of a pollutant from another item of equipment to the atmosphere.

A single power boiler could be part of more than one emissions unit if it were a control device within each such emissions unit. Accordingly, it is necessary to determine whether the power boiler is a "control device" with respect to "emissions units" including the digesters and/or evaporators.

(Mem. and Order [Document 149] at 23-24, 26-27).

The Luke Mill designed the multi-part emissions unit at issue to comprise a segment that produces pollutants and a segment that controls those pollutants. Even before the DEP's inception, the CAA required the Luke Mill to provide controls for TRS and SO₂ emissions. (PTO Stip. Fact Nos. 4, 5). Therefore, the Luke Mill planned to couple the two new digesters constructed during the DEP with the existing system, Power Boilers 25 and 26, so that the Luke Mill would remain in compliance with federal and state law.

The Luke Mill submitted an application for a non-PSD permit to construct the new digesters on May 9, 1980 to the Maryland Department of Health and Human Hygiene that represented the details of the planned emissions unit.²³ (Pl.'s Exs. 3 and 4). The application included a flow chart of all major components of the emissions unit, which indicated how material would move through the system and all places where emissions would

²³ Westvaco never went through the PSD pre-construction approval process.

discharge into the atmosphere. The diagram indicated that the NCGs produced by the two new digesters and evaporators would be blown into the power boilers for incineration. (Pl.'s Ex. 4 at WVMD 00670; Pl.'s Ex. 4 at WVMD 00672).

Initially, the design of the new digester system allowed for the digester gases to be routed to Power Boilers 25 and 26. (Pl.'s Ex. 4 and 384; Pl.'s Ex 658 at 99:22-100:3; Trial Tr. 1581:13-20).

On March 2, 1983, however, the Luke Mill submitted another permit application to the State of Maryland changing the original design to include the use of a lime kiln as a primary control for NCGs from the digesters and evaporators, with Power Boiler 25 as a backup. (Pl.'s Ex. 29; Pl.'s Ex. 305). In a 1984 meeting with the Maryland Air Programs Administration, Westvaco stated "that [its] intent [was] to move the location of incineration of digester/evaporator gases during kiln outages from West Virginia (lime kiln) to Maryland to preclude the necessity of obtaining a PSD permit from West Virginia." (Pl.'s Ex. 28).

The Luke Mill followed through with this plan and, on March 1, 1985, the lime kiln became operational as the primary control for the emissions unit. (PTO Stip. Fact No. 8). The lime kiln experienced 20 days of scheduled yearly shutdowns for maintenance. This meant that in order to comply with the NSPS

"no venting" requirement, the Luke Mill needed a backup control device in place to incinerate the NCGs during those shutdown periods. To satisfy this requirement, in November 1985, the Luke Mill completed the connection of Power Boiler 25 to the system as the backup. (Pl.'s Ex. 44 at WVMD 01755; Pl.'s Ex. 45 at WVCO_0282-0122).

Thereafter, Power Boiler 25 was actually used during the scheduled kiln shutdowns in spring 1986, fall 1986, and spring 1987. (Def.'s Ex. 250 at WVCO2_0001-7549; Trial Tr. 1354:8-11, 1370:18-1371:11; Pl.'s Ex. 52). Thus, in the spring of 1986, when the Luke Mill demonstrated the system was fully operational, construction of the emissions unit was complete.

While the plan for the structure of the multi-part emissions unit was altered over the years, it did not materially deviate from the original plan, which included a segment that produces pollutants (digesters) coupled with one that controls the emissions of those pollutants (power boiler or lime kiln). The Luke Mill approached this large-scale project in phases, but the emissions unit was ultimately constructed in accordance with an overall plan that was put in motion in the spring of 1980.

The Court finds that, during the relevant time period, there existed a multi-part emissions unit at the Luke Mill consisting primarily of the digesters, the evaporators, the lime kiln and Power Boiler 25.

2. Power Boilers as Control Device

The current NSPS regulations, effective October 22, 1997, provide guidance for what EPA considers a "control device." The regulations define "control device" as "equipment, other than inherent process equipment, that is used to destroy or remove air pollutant(s) prior to discharge to the atmosphere." 40 C.F.R. § 64.1 (1997). Further, the regulations provide the following examples of control devices:

The types of equipment that may commonly be used as control devices include, but are not limited to, . . . condensers, scrubbers . . . combustion devices independent of the particular process being conducted at an emissions unit (e.g., the destruction of emissions achieved by venting process emission streams to flares, boilers or process heaters). . . .

Id. (emphasis added).

The Luke Mill's original design planned for the NCGs produced by the new digesters to be incinerated in existing Power Boilers 25 and 26. (Pl.'s Ex. 4 at WVMD 00670). When the Luke Mill changed its plans to use the lime kiln as the primary control device, Power Boiler 25 remained in the design, but shifted to a secondary role. (Pl.'s Ex. 305 at USPCPE 1865).

The power boilers, in addition to controlling pollutants by incineration, also provide steam power to carry out the Luke

Mill's many processes. The dual function performed by Power Boiler 25 does not preclude the equipment from also being considered a control device. The Court finds that because the Luke Mill designed and used Power Boiler 25 to incinerate TRS, it is a control device.

3. Actual and Potential Emission

In order to determine whether Power Boiler 25 is a control device for the existing multi-part emissions unit, this Court must find that Power Boiler 25 actually emitted, or had the potential to emit, pollutants during the DEP period.

From the DEP's inception, the Luke Mill intended to, and represented to State agencies that it would incinerate NCGs produced by the newly-added digesters in the power boilers. Furthermore, the Luke Mill represented that it would have had the capability to use the power boilers for such a purpose, but for the condenser failure that occurred in 1980. (Pl.'s Ex. 4 at WVMD 00670 and 00672).

On June 24, 1982, the Luke Mill began using one of the new digesters without controlling for the emission of NCGs, because the Luke Mill had not yet completed its work on the NCG system. (PTO Stip. Fact No. 7; Trial Tr. 1541:9-13; Pl's. Ex. 240 at USPCPE 0049; Def.'s Ex. 357 at WVAC_0008-1151). Although the

Luke Mill initiated a "Blow Heat Accumulator Rehabilitation" job on March 29, 1981, it had yet to be completed.²⁴

In conjunction with the rehabilitation job, the Luke Mill engaged in an engineering study on "Digester and Evaporator Odorous Gas Removal." (Pl.'s Ex. 18 at WVCO_0223-0759-791).

The study indicated that by January 26, 1983,

the piping from the blow heat accumulator to No. 25 and 26 Power Boilers is in place. A new line will be installed from the Power Boilers to a water seal at the Smelter Building [housing the lime kiln] to carry the non-condensable gases from the blow heat accumulator. Another separate line will run from the evaporators to the same water seal
. . .

(Pl.'s Ex. 18 at WVCO_0223-0759-764).

The engineering study recommended the installation of piping to the power boilers and a new line. The study was coupled with a job which entailed the installation of a series of devices (including new condensers) and lines which allowed the NCGs from the digesters and evaporators to be disposed of in the lime kiln.

²⁴ The purpose of the job was to address the fact that "[t]he major equipment in the existing blow heat accumulator system has deteriorated The existing primary condenser has failed along with badly corroded [] valves" and the scope was "to completely rehabilitate the blow heat system by replacing or repairing faulty equipment . . . and by revising the control strategy for more efficient operation." (Def.'s Ex. 55 at 1).

On June 12, 1984, the second new digester became operational, but the Luke Mill still had not finalized the NCG control system. (Def.'s Ex. 357 at WVAC_0008-1179). While connections were in place for both Power Boilers 25 and 26 from at least January 1983, in October 1985, when the Luke Mill attempted to use Power Boiler 25 as a backup for the lime kiln, engineers discovered additional work needed to be completed in order to actually connect Power Boiler 25 to the system.

An internal "authorization for change in expenditure" was produced which requested additional funds to connect Power Boiler 25. The reason cited for the additional funds was that "existing structures were found to differ from drawings which caused construction delays and required additional engineering." (Def. Ex. 50 at 1).

Therefore, according to the Luke Mill's designs and actual installations, only Power Boiler 25 had the "potential to emit," as that term is defined in 40 C.F.R. § 51.166(b)(4), as:

[T]he maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

Presumably, if a putative "emissions unit" could not emit any pollutants at all, it would have no "potential to emit."

There is no question that Power Boiler 25 actually emitted pollutants during scheduled kiln outages and that Power Boiler 26 was designed and proffered to regulators as a control device. However, the operational and engineering changes needed to make Power Boiler 25 operational were significant, costing the Luke Mill approximately \$747,000.

While preliminary designs designated Power Boiler 26 as a control device, it has not been used as a control device since 1980. Thus, because Power Boiler 26 was not actually used as a control device, and did not undergo the subsequent engineering analysis performed after the substantial construction that occurred at the Luke Mill, the Court does not find that Power Boiler 26 had the "potential to emit" in the context of the multi-part emissions unit at issue.

Power Boiler 25 was the only boiler which allowed for emissions under its physical and operational design, and was the only boiler actually used to incinerate NGCs during kiln outages. (Pl.'s Ex. 44 at WVMD 01755; Pl.'s Ex. 45 at WVCO_0282-0122; Def.'s Ex. 250 at WVCO2_0001-7549; Trial Tr. 1370:18-1371:11).

4. DEP Modifications

In sum, the Court finds that the DEP included changes to both the digesters and Power Boiler 25. The digesters underwent the following changes during the DEP period:

1. The installation of a new system to convey wood chips from storage silos to the digesters;
2. The automation of existing digesters (numbered 1-10);
3. The installation of two new, automated digesters (numbered 11-12);
4. The centralization of control of all twelve digesters;
5. The introduction of technology making pulping more efficient by heating white liquor before it enters the digesters;
6. The introduction of technology enabling digesters to be filled with white liquor more quickly.

(Trial Tr. at 900; Decl. of Richard J. Watro ¶¶ 10-11).

In addition, in order to configure Power Boiler 25 as a backup incinerator for the lime kiln, the Luke Mill installed new pipelines (from the new digesters and to the lime kiln), a new flame arrester, piping from the flame arrester to the boiler, a flame safety system for the boiler, and a burner for the boiler. (Trial Tr. 1360).

In November 1985, a new NCG burner was connected to Power Boiler 25. (Trial Tr. at 1363). An air purge system was put in

place to cool and protect the burner. (Trial Tr. at 1366-67).

A blower was installed in fall of 1986. (Trial Tr. at 1373).

The Court finds that each of these projects either physically changed or caused a change in the method of operation of the multi-part emissions unit. Therefore, BACT may apply to Power Boiler 25 if the changes to the multi-part emissions unit of which it was a part produced a significant change in emissions.

5. Modifications to Power Boilers 25 and 26

Of course, each power boiler is, in and of itself, an emission unit. (SJ Stip. Fact No. 8.) Therefore, it would be possible for Power Boiler 26, to be subject to BACT requirements even though it was not (as was Power Boiler 25) a control device in a multi-part emissions unit. In addition, it would be possible for Power Boiler 25 to be subject to BACT requirements on two grounds - its inclusion in the above discussed multi-part emission group and by virtue of its being a one-part emissions unit.

To be entitled to impose a BACT requirement with regard to the power boilers, the Government must demonstrate that the power boilers themselves were modified. If so, Westvaco would bear the burden of proving that an exemption or exception applied to avoid BACT requirements. See NLRB v. Kentucky River

Cnty. Care, Inc., 532 U.S. 706, 711, 121 S.Ct. 1861, 1866
(2001).

6. Physical Changes to the Power Boilers

No later than 1987, i.e., before the MWEF, physical changes were made to Power Boiler 25 and backup Power Boiler 26. The parties agree that the following physical changes were made in and/or around the power boilers:²⁵

<u>Power Boiler 25</u>	Piping to the boiler, nozzles, and interlocks were changed.
	Gas burners were installed.
	At least some controls (a start-stop button for a fan) were installed or changed.
	A device to remove condensate from piping before incineration was installed.
	A gas flare was installed to ignite vented NCG (if, e.g., the boiler was not running).
<u>Power Boiler 26</u>	An incineration nozzle was installed.
	High temperature piping was installed.

Thus, this Court finds that Power Boilers 25 and 26 were physically changed during the DEP. For this reason, BACT requirements may apply to Power Boilers 25 and 26 if the changes made produced a significant change in emissions.

7. Exemptions

²⁵ Westvaco's Resp. to Statement of Material Facts in Supp. of the Government Motion at 6-7; See also Pl.'s Exs. 11, 21-24.

a. NSPS Pollution Control Project Exception

Westvaco argues that the physical changes to the power boilers are excluded from the scope of the term "modification" as defined in the NSPS regulations such that BACT is not applicable.²⁶

The NSPS definition of "modification" includes an exclusion for "[t]he addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is . . . replaced by a system which the [EPA] Administrator determines to be less environmentally beneficial." 40 C.F.R. § 60.14(e)(5).²⁷

²⁶ In its Memorandum and Order on the parties' motions for summary judgment [Document 149], the Court concluded that the PCPE may apply in the PSD context. After the issuance of that Memorandum and Order, two Courts of Appeal weighed in on the issue of whether the PCPE applies in the PSD regulatory scheme. See Duke Energy, 411 F.3d 539 (finding that identical terms in the PSD statute and the NSPS statute should be construed in the same manner); New York, 413 F.3d 3 (finding that pollution control projects were not exempt from NSR requirements because same language in NSPS and PSD did not require that the definition of modification be the same in each statute). In 2007, the Supreme Court resolved the split and held that EPA is not required to interpret the term "modification" congruently in its regulations governing PSD and its regulations governing NSPS. Duke Energy, 549 U.S. at 561.

²⁷ Westvaco also argues that the following NSPS exception effective December 16, 1987 applies to the DEP changes: "any change to an existing steam generating unit for the sole purpose of combusting gases containing TRS . . . is not considered a modification under § 60.14 and the steam generating unit is not subject to this subpart." See 52 Fed. Reg. 47826, 47843. The DEP ended in 1986; therefore, this exception, effective in 1987, does not apply.

Specifically, Westvaco contends that the NSPS PCPE applies to the modifications at issue because controlling NCGs through the power boilers was more environmentally beneficial than controlling the NCGs through the lime kiln. Westvaco contends that the switch from the lime kiln to the power boilers for incineration of NCGs falls under the PCPE. For multiple reasons, the NSPS PCPE does not apply to the modifications that occurred at the Luke Mill during the DEP period.

First, while the NSPS do apply to the Luke Mill, the regulatory scheme that applies to the modifications at issue is the PSD program. Therefore, this Court must use the PSD definition of modification and any exceptions thereto. In Duke Energy, the Supreme Court held that EPA need not interpret the term "modification" to reconcile the distinct regulatory schemes of the NSPS and the PSD program. Duke Energy, 549 U.S. at 576. In fact, such an interpretation would effectively invalidate the PSD regulations. Id. at 573. The NSPS and PSD regulations are not related as set to subset; they are complementary. Id. at 573 n.8. Because the PCPE cited is part of the NSPS regulatory scheme, and the DEP modifications are regulated by PSD, Westvaco's reliance on this exemption is misplaced.

Finally, even if the NSPS PCPE applied to these PSD-regulated modifications, the PCPE would not apply to the modifications made during the DEP because the primary purpose of

adding two new digesters and using Power Boiler 25 as a backup incinerator for NCGs was not the reduction of air pollutants. Simply put, the DEP was not a pollution control project, and would not qualify for a PCPE exemption.

b. PSD Exceptions

The 1980 PSD regime includes a PCPE which provides that "a physical change or change in the method of operation shall not include: . . . (f) an increase in the hours of operation or in the production rate" 40 C.F.R. § 51.166(b)(2)(iii)(f). However, the Supreme Court has held that this exemption does not apply when a physical change or change in the method of operation is caused by construction. Duke Energy, 549 U.S. at 578-79. An emissions increase due to an increase in hours or production rate, which is caused by construction, is not excluded from PSD review. Id. at 579.

The construction that occurred during the DEP directly caused an increase in production at the Luke Mill. The purpose of the DEP was to increase production through adding new digesters and modernizing mill processes. Therefore, the PSD PCPE does not apply.

Furthermore, in 2002, EPA extended a 1992 PSD PCPE for qualifying projects undertaken by electric utilities,²⁸ to all "environmentally beneficial" pollution control projects.²⁹ Under the 2002 PSD PCPE, a project that reduced the emission of a "primary" pollutant, but increased emissions of a "collateral" pollutant was not deemed a physical or operational change subject to New Source Review ("NSR") if its net effect was "environmentally beneficial." 67 Fed. Reg. 80274.

In 2005, the D.C. Circuit held that EPA lacked authority to create PCPEs from NSR. New York, 413 F.3d at 41. As a result, the court vacated both the 1992 and 2002 PSD PCPE rules. The Fourth Circuit has yet to address whether EPA has such authority. However, neither the 1992 nor 2002 PCPEs apply to Westvaco's changes because these exemptions were not in effect during the period when changes were made to the Luke Mill.

B. Count II (MWEP Modifications)

It appears that the physical changes to Power Boilers 25 and 26 occurred during the DEP, and were not part of the MWEP. Therefore, the Court cannot base a BACT requirement on the Power

²⁸ See 57 Fed. Reg. 32336 (codified at 40 C.F.R. §§ 52.21(b)(2)(iii)(h), 52.21(b)(32)).

²⁹ 67 Fed. Reg. 80274 (codified at 40 C.F.R. §§ 52.21(b)(2)(iii)(h), 52.21(b)(32), 52.21(z)).

Boilers 25 and 26 by virtue of the MWEF. (SJ Stip. Fact Nos. 20, 25.)

IV. CONCLUSION

For the foregoing reasons:

1. The Court finds that the digesters and power boilers are parts of a multi-part emissions unit that was physically changed and had its method of operation changed during the DEP.
2. The Court finds that Power Boilers 25 and 26 were physically changed during the DEP.
3. The Court finds that it cannot impose BACT requirements with regard to Power Boilers 25 and 26 by virtue of the MWEF.
4. The Government shall arrange a telephone conference to discuss further proceedings herein as promptly as feasible.

SO ORDERED, on Thursday, December 3, 2009.

/s/_____

Marvin J. Garbis
United States District Judge