ILLINOIS POLLUTION CONTROL BOARD
January 21, 1999

PANHANDLE EASTERN PIPE LINE COMPANY,	)	
Petitioner,	)	
v.	)	PCB 98-102
	)	(Permit Appeal - Air)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent.	)	

ERIC E. BOYD AND SUSANNAH E. SMETANA, OF SEYFARTH, SHAW, FAIRWEATHER, AND GERALDSON, AND PHILLIP S. DEISCH, OF PANHANDLE EASTERN PIPELINE COMPANY, APPEARED ON BEHALF OF PETITIONER; and

ROBB LAYMAN AND DENNIS BROWN, OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD (by K.M. Hennessey):

Petitioner Panhandle Eastern Pipeline Company (Panhandle) is a natural gas pipe line transmission company. It operates a compressor station in Glenarm, Sangamon County, Illinois. At the Glenarm Station, Panhandle recompresses natural gas to ensure that it continues to move along the pipeline. Panhandle uses a series of compressor engines to recompress the natural gas. These engines emit nitrogen oxides (NO_x). Panhandle has a permit from the Illinois Environmental Protection Agency (Agency) to emit 461.3 tons of NO_x per year .

In 1997, Panhandle filed a permit application with the Agency to revise the permit. In that permit application, Panhandle sought to increase the emission limit in its permit and to add emission controls to two compressor engines. The Agency denied the permit. Panhandle now asks the Board to order the Agency to issue the requested permit.

The Board affirms the Agency's denial of the permit. The Board finds that Panhandle did not prove that its operations would not violate the Environmental Protection Act (Act), 415 ILCS 5/1 *et seq*. (1996), if the Agency issued the requested permit. Accordingly, the Board finds that the Agency properly denied the permit.

PROCEDURAL MATTERS

On January 28, 1998, Panhandle filed a petition for review of the Agency's December 24, 1997 denial of Panhandle's permit application. On February 5, 1998, the Board accepted this matter for hearing. The Agency filed the administrative record of the permit application on February 23, 1998.[1]

Hearing Officer Kathleen Crowley held a hearing in this matter on October 21 and 22, 1998.[2] At hearing, the hearing officer granted two agreed motions to supplement the administrative record.[3] Panhandle presented three witnesses and the Agency presented two witnesses. Panhandle offered ten exhibits, nine of which were admitted (Pet. Exh. 1-8, 12). The hearing officer accepted the other Panhandle exhibit (Pet. Exh. 9) as part of an offer of proof. The Agency offered two exhibits, neither of which were admitted (Resp. Exh. 1-2). The hearing officer accepted these two Agency exhibits as part of an offer of proof.

The Board rejects both Panhandle's and the Agency's offer of proof because each of the exhibits (Pet. Exh. 9 and Resp. Exh. 1-2) was prepared after the date of the Agency's permit denial and thus the Agency could not have considered them when it made its permit determination. See Alton Packaging Corp. v. Illinois Pollution Control Board, 162 Ill. App. 3d 731, 738, 516 N.E.2d 275, 280 (5th Dist. 1987); American Waste Processing v. Illinois Environmental Protection Agency (October 1, 1992), PCB 91-38, slip op. at 2 (refusing to supplement the record with documents not available at the time of the Agency's permitting determination).

Panhandle filed a posthearing brief on November 5, 1998. On November 13, 1998, the Agency filed a response brief, along with a motion to file the brief *instanter*. Panhandle did not object to the motion, and the Board grants the motion. On November 17, 1998, Panhandle filed a reply brief.[4]

REGULATORY FRAMEWORK

Central to this permit appeal is whether Panhandle is subject to the regulations for the Prevention of Significant Deterioration (PSD) of air quality and if so, whether it has complied with those regulations. The Board briefly outlines the PSD program before turning to its findings of fact.

The federal Clean Air Act established the PSD program to prevent significant deterioration of air quality in areas with air quality that meets or exceeds the National Ambient

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[1] The administrative record is cited as "R. at _."
[2] The transcript of the hearing is cited as "Tr. at _." Panhandle's hearing exhibits are cited as "Pet. Exh. _;" the Agency's hearing exhibits are cited as "Resp. Exh. _."
[3] The supplement to the administrative record is cited as "Supp. at _."
[4] Panhandle's first brief is cited as "Pet. Br. at _;" the Agency's response brief is cited as "Resp. Br. at _;" Panhandle's reply brief is cited as "Reply Br. at _."

Air Quality Standards (*i.e.*, "attainment areas"). See 42 U.S.C. §§ 7470-7492. Under Section 165 of the Clean Air Act, 42 U.S.C. § 7475, the United States Environmental Protection Agency (USEPA) promulgated regulations at 42 C.F.R. § 52.21 to implement the PSD program. The Agency administers the federal PSD program under a delegation agreement with USEPA. See 46 Fed. Reg. 9580, 9582, 9584 (January 29, 1981).

The PSD rules protect against the degradation of air quality in attainment areas by imposing various requirements on new and modified major stationary sources of regulated pollutants. Generally, these requirements are imposed upon projects that, based on their potential emissions, constitute the construction of a new "major stationary source" or a "major modification" of an existing major stationary source.[5] 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. § 52.21(b)(2)(i).

The pollutant at issue in this case is NO_x. As explained below, a net emissions increase for NO_x is "significant" if it equals or exceeds 40 tons per year (TPY). 40 C.F.R. § 52.21(b)(23)(i). Therefore, a major source that undertakes a major modification with a net emissions increase of NO_x of 40 TPY or more is subject to the PSD rules.

Among other things, the PSD rules require a source to demonstrate that it will use the best available control technology (BACT) to control emissions. See 40 C.F.R. 52.21(j). BACT means:

> an emissions limitation . . . based on the maximum degree of reduction for each pollutant . . . which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. 40 C.F.R. § 52.21(b)(12).

[5] The parties do not dispute that Panhandle's Glenarm Station is a major stationary source for NO_x or that the facility is in an attainment area for NO_x. See 40 C.F.R. § 52.21(b)(1)(i) (definition of major stationary source).

FINDINGS OF FACT

Background on Panhandle

Panhandle is a natural gas pipe line transmission company. Panhandle transports natural gas on a pipeline system from Kansas, Oklahoma, and Texas to users in the Midwest. Tr. at 25-28, 31-32; Pet. Exh. 2.

Panhandle operates a compressor station in Glenarm, Sangamon County, Illinois (Glenarm Station). The Glenarm Station began operating in 1931. Tr. at 30-32; R. at 120. At the Glenarm Station, Panhandle recompresses natural gas to ensure that it moves along the pipeline. Panhandle uses compressor engines at the Glenarm Station to recompress the natural gas. Tr. at 31, 38; Pet. Exh. 2. Those engines emit NO_x. Tr. at 37.

Panhandle's 1988 Construction Permit

In 1987, Panhandle operated 15 compressor engines at the Glenarm Station (engines 1101 through 1115). In September of that year, Panhandle filed an application with the Agency for a permit to replace 12 of the 15 compressor engines (engines 1101 through 1112) with four new compressor engines (engines 1116 through 1119).[6] Tr. at 83-85; Pet. Exh. 12; Supp. at 1-26. Engines 1116 and 1117 had no emission controls for NO_x. Engines 1118 and 1119 had pre-combustion chamber technology or "Clean Burn" technology to control NO_x emissions. Tr. at 86; R. at 178, 183. In January 1988 Panhandle submitted to the Agency's Permit Section information on the retired engines' fuel usage and hours of operation for 1987. Supp. at 37-38.

On February 10, 1988, the Agency issued Panhandle a permit for the construction project. Supp. at 39-41. The construction permit allowed Panhandle to replace engines 1101 through 1112 with engines 1116 through 1119. Special conditions No. 1 and 2 of the construction permit limited NO_x emissions from the four new compressor engines (engines 1116 through 1119) as follows:

> 1. This permit is issued based upon the replacement of ten Cooper Compressors and two Clark Compressors with four new Cooper Compressors. The overall increase in NO_x emissions from the replacement will not exceed 39.9 tons per year. This condition is necessary to avoid applicability of 40 CFR 52.21, Rules for Prevention of Significant Deterioration (PSD).
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> 2. NO_x emissions from the four new compressors shall not exceed 461.3 tons per year. This limit is based upon [emission] rates calculated from

[6] The parties and the Board refer to these four engines as "new" because they were new to the Glenarm Station. Panhandle purchased engines 1116 and 1117 used and brought engines 1118 and 1119 to the Glenarm Station from another Panhandle facility. Tr. at 84-85.

standard emission factors,[7] the gas usage from the most recent one year period and the allowed increase of 39.9 tons per year. Supp. at 39.

Special condition No. 3 of the permit required Panhandle to keep records of the hours of operation and the gas usage for each of the new compressor engines. Supp. at 39.

The Agency set the 461.3 TPY limit to ensure that replacing engines 1101 through 1112 with engines 1116 through 1119 would not result in a net increase in NO_x emissions of 40 TPY or more from the Glenarm Station. In this way, the project would not be a "major modification" under the PSD rules, thereby allowing Panhandle to avoid PSD requirements. Supp. at 39, 69.

The Agency established the PSD avoidance limit of 461.3 TPY by adding two figures: (1) 39.9 tons, which represented a less than "significant" increase in NO_x emissions, *i.e.*, a non-major modification; and (2) 421.4 tons, which reflected the decrease in NO_x emissions from retiring engines 1101 through 1112. Supp. at 39, 69.

The Agency estimated that the retired engines emitted NO_x at a rate of 421.4 TPY. To calculate this figure, the Agency considered the retired engines' 1987 fuel usage data that Panhandle provided. The Agency also relied on emission factors in USEPA's September 1985 edition of AP-42, "Compilation of Air Pollutant Emission Factors for Stationary Sources." Tr. at 93-95; Supp. at 39, 69.

Four subsequent operating permits for the Glenarm Station contained special conditions No. 1 through 3 from the construction permit. Panhandle did not appeal any of these conditions after the Agency issued the construction permit or any of the subsequent operating permits. The Agency issued Panhandle an operating permit on August 30, 1988, September 14, 1989, June 5, 1990, and July 26, 1991. Supp. at 59-68.

Panhandle's Application for a Revised Permit

In August 1996, an Agency field inspector inspected the Glenarm Station and discovered that Panhandle apparently was exceeding the 461.3 TPY NO_x limit established in the February 1988 construction permit. Tr. at 39, 87-88. The Agency issued a formal violation notice to Panhandle on March 20, 1997. The violation notice stated that Panhandle "caused emissions in excess of the limits [set forth in special conditions No. 1 and 2 of the permit] necessary to avoid applicability of the federal rule pertaining to PSD." In addition, the violation notice called for Panhandle to "submit to the Illinois EPA the appropriate

[7] An "emission factor" is the "relationship between the amount of pollution produced and the amount of raw material processed. For example, an emission factor for a blast furnace making iron would be the number of pounds of particulates per ton of raw materials." United States Environmental Protection Agency, Terms of Environment (last modified May 13, 1998) < http://www.epa.gov/OCEPAterms/eterms.html > .

Prevention of Significant Deterioration (PSD) application addressing the emissions of NO_x." Pet. Exh. 5.

On May 19, 1997, the Agency received Panhandle's proposed compliance commitment agreement. Tr. at 110; R. at 175-218. Panhandle attached to the compliance commitment agreement a construction permit application. R. at 191. Panhandle sought to increase the PSD avoidance limit established in the February 1988 construction permit. Panhandle proposed a new PSD avoidance limit based on emissions in 1985 and 1986 rather than 1987, the period that the Agency used to establish the limit in the 1988 permit. Panhandle argued that 1985 and 1986 were more representative of how the retired engines operated normally. Panhandle stated that 1987 was not representative because warmer weather in 1986 and 1987 limited natural gas use in 1987.[8] Tr. at 40, 46-47, 99-102, 113-118; R. at 175-178, 186-188.

Panhandle also sought the permit so that it could add pre-combustion chamber technology or Clean Burn technology to engines 1116 and 1117 to control NO_x emissions. Panhandle wanted to add the controls so that it could fully use engines 1116 through 1119 (*i.e.*, 365 days per year, 24 hours per day) under the proposed NO_x emission limit. R. at 175, 178, 183.

After reviewing Panhandle's submittal, the Agency issued a notice of incompleteness to Panhandle on June 18, 1997. The notice of incompleteness stated that the construction permit application did not demonstrate that engines 1116 through 1119 complied with PSD requirements for BACT. R. at 172-173. In addition, the notice of incompleteness stated that information in the proposed compliance commitment agreement "indicates that the construction and historic operation of the four new engines (1116 through 1119) represent a major modification subject to PSD (40 CFR 52.21)." R. at 172, 182.

On September 30, 1997, Panhandle submitted information to the Agency to respond to the notice of incompleteness. R. at 30-171. In this submittal, Panhandle provided, among other things, information on past emissions from engines 1116 through 1119, revised emission factors, and a BACT analysis.

The information that Panhandle provided on past emissions showed that NO_x emissions from engines 1116 through 1119 exceeded the PSD avoidance limit of 461.3 TPY each year from 1989 through 1996. R. at 90. Panhandle used emission factors from the September 1985 edition of AP-42 to estimate these NO_x emissions:

1989	620.8 TPY
1990	712.99 TPY
1991	621.38 TPY
1992	753.02 TPY

[8] In November 1987, Panhandle submitted to the Agency an annual emission report for the Glenarm Station that showed a 21.6% decrease in emissions. The report covered the time period of November 1, 1986, to October 31, 1987. Pet. Exh. 1.

1993	654.22 TPY
1994	716.42 TPY
1995	924.99 TPY
1996	1,056.91 TPY

R. at 90. Panhandle used other emission factors as well to calculate past NO_x emissions from engines 1116 through 1119. These included emission factors from subsequent editions of AP-42 (July 1993 and January 1995) and from the original manufacturer of the four engines. Each method showed an exceedence of the 461.3 TPY NO_x limit in each year from 1989 through 1996. R. at 90.

For purposes of determining the emissions baseline for the retired engines, Panhandle proposed to use emission factors from the January 1995 edition of AP-42 rather than the September 1985 edition of AP-42. Panhandle asserted that the January 1995 emission factors were more accurate. Tr. 164; R. at 43-44.

With respect to its BACT analysis, Panhandle proposed a NO_x emission limit of four grams per horsepower hour (g/hp-hr) for engines 1116 and 1117. Tr. at 268; R. at 100, 149. Based on information from the manufacturer of the engines, a NO_x emission limit of two g/hp-hr may be achieved. Tr. at 369-371; R. at 62. Data on PSD BACT determinations for other facilities that use Clean Burn or pre-combustion chamber technology also indicated that more stringent emission limits (1.5 to 3 g/hp-hr) may be achieved. R. at 100, 111.

Panhandle proposed a NO_x limit of six g/hp-hr for engines 1118 and 1119. R. at 149. Based on manufacturer information, a NO_x emission limit of four to five g/hp-hr may be achieved. Tr. at 370, 372; R. at 64-65, 101. Engines 1118 and 1119 have had pre-combustion chamber technology to control emissions since installation of the engines in 1988. Tr. at 86; R. at 101. Panhandle did not evaluate whether there are later, more effective versions of the pre-combustion chamber technology. Tr. at 368-370, 377-380. In this regard, the difference between the manufacturer's performance level for engines 1116 and 1117 (two g/hp-hr) and the manufacturer's performance level for engines 1118 and 1119 (four to five g/hp-hr) indicated that there may be a difference between the emission control technology installed in 1988 and the pre-combustion chamber technology proposed for engines 1116 and 1117. Tr. at 380; R. at 62, 64-65.

In its September submittal, Panhandle stated that it would be difficult for it to achieve more stringent emission levels. R. at 100. However, Panhandle did not provide supporting documentation to substantiate this claim. Tr. at 369-372. Panhandle concedes that it did not demonstrate that its proposed performance levels are BACT. Tr. at 106, 392. Panhandle proposed its performance levels not to comply with PSD requirements for BACT, but rather to meet the revised NO_x permit limit that it requested (discussed below). Tr. at 269, 381-382; R. at 12, 22.

On December 12, 1997, Panhandle submitted additional information to the Agency. R. at 3-38. Panhandle, as it had in its May and September submittals to the Agency, stated that

1985 and 1986 should have been used as the emission baseline years for the retired engines instead of 1987. Tr. at 101-102, 113-118; R. at 6-7, 16-17, 42-43, 51-56.

In addition, Panhandle again proposed to use emission factors other than those in the September 1985 edition of AP-42 for the retired engines. However, Panhandle argued that NO_x emissions from the retired engines could be more accurately estimated if the Agency were to use data that Panhandle obtained from the manufacturer of the engines and the January 1995 edition of AP-42. Tr. at 59-60, 165-167, 226-228, 246-247; R. at 3, 7-11.

First, the manufacturer of the 4-stroke rich burn engines (retired engines 1101-1110) stated that NO_x emissions from the engines is expected to be 15 g/hp-hr. R. at 27. The manufacturer had not tested for emissions from the same type of engines as the retired engines. Instead, the manufacturer provided an estimate of NO_x emissions. To arrive at this estimate, the manufacturer used emissions data from a different type of engine (medium speed 2-cycle and 4-cycle turbocharged engines) that the manufacturer makes. The manufacturer adjusted this data for the slow speed, rich burn combustion cycle of the retired engines. Tr. at 284-285; R. at 27. Before the December 24, 1997 permit denial (discussed below), Panhandle did not document how the manufacturer calculated or adjusted the turbocharged engine data to arrive at its estimate of NO_x emissions for the retired engines. Tr. at 285-287.

Second, the January 1995 edition of AP-42 showed that the applicable emission factor for retired engines 1111 and 1112, which were 2-stroke lean burn engines, is 11 g/hp-hr. Tr. at 226-228; R. at 8, 18. Panhandle had proposed this emission factor in its September submittal to the Agency. Tr. at 243; R. at 43-44.

According to Panhandle's December submittal, if the baseline is 1985 and 1986, instead of 1987, and the emission factors are from the manufacturer (for engines 1101 through 1110) and the January 1995 edition of AP-42 (for engines 1111 and 1112), instead of the September 1985 edition of AP-42, the actual NO_x emissions from the retired engines would be 689.2 TPY instead of 421.4 TPY. Based on this, Panhandle proposed a new PSD avoidance limit of 729.1 TPY of NO_x, reflecting a revised emissions baseline of 689.2 TPY for retired engines 1101 through 1112 plus a non-major modification of 39.9 TPY. R. at 6-8, 10-12, 16-18, 20, 22, 24-25.

The Agency's Permit Denial

On December 24, 1997, the Agency denied Panhandle's permit application and stated that the Agency would review a reapplication for a PSD permit. R. at 1-2. The denial letter stated that the Agency denied the permit because the requested permit may violate Section 9.1(d) of the Act and 40 C.F.R. § 52.21. R. at 1. The letter set forth two grounds for the Agency's determination.

First, the Agency's denial letter stated that Panhandle did not comply with the PSD program's BACT requirements. R. at 1. The Agency determined that Panhandle must submit information to satisfy PSD major modification requirements, including a BACT

demonstration, because Panhandle's past NO_x emissions from engines 1116 through 1119 had exceeded its PSD avoidance limit. The Agency determined that Panhandle did not demonstrate, using USEPA's "Top-Down" methodology, that the performance levels for new or existing emission control equipment on engines 1116 through 1119 were BACT for NO_x emissions. The Agency determined that Panhandle did not demonstrate that lower NO_x emission levels than Panhandle had proposed cannot be achieved. Tr. at 144-145, 185-186, 242-243, 368-372, 377; Pet. Exh. 5; R. at 1.

Second, the Agency's denial letter stated that Panhandle did not sufficiently support the emission factor (*i.e.*, the manufacturer's statement) that Panhandle used to determine past emissions from retired engines 1101 through 1110. Accordingly, the Agency determined that it could not rely upon that information. Tr. at 316-317; R. at 1.

DISCUSSION

The Board will first discuss the legal framework for the Agency's permit review and Panhandle's permit appeal. Then the Board will discuss each of the two grounds upon which the Agency denied Panhandle's application for a revised permit. Lastly, the Board will address Panhandle's argument that the Agency should be estopped from requiring Panhandle to obtain a PSD permit.

Legal Framework

Section 39(a) of the Act sets the standard by which the Agency must determine whether to issue a permit, whether an initial permit or a revised permit.[9] Section 39(a) provides as follows:

> When the Board has by regulation required a permit for the construction, installation, or operation of any type of facility [or] equipment,[10] . . . the applicant shall apply to the Agency for such permit and it shall be the duty of the Agency to issue such a permit upon proof by the applicant that the facility [or] equipment . . . will not cause a violation of this Act or of regulations hereunder.[11] 415 ILCS 5/39(a).

Thus, Panhandle had the burden to prove to the Agency that Panhandle's operations would not violate the Act or rules under the Act if the Agency granted the requested permit. If Panhandle failed to prove that its operations would comply, it was proper for the Agency to

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[9] Section 201.167(a) of the Board's regulations provides that "the Agency may revise any permit issued . . . or any condition contained in such permit . . . [u]pon reapplication by the permittee." 35 Ill. Adm. Code 201.167(a).

[10] The Board's regulations prohibit the construction or operation of an emission source without first obtaining a permit from the Agency. See 35 Ill. Adm. Code 201.142 and 201.143.

[11] The Board codified this standard for permit issuance at 35 Ill. Adm. Code 201.155(a) and 201.160(a).

deny the permit. See John C. Justice, d/b/a Microcosm v. Illinois Environmental Protection Agency (March 21, 1996), PCB 95-112, slip op. at 8, *aff'd* John C. Justice, d/b/a Microcosm v. Illinois Pollution Control Board and Illinois Environmental Protection Agency, No. 1-96-1491 (1st Dist. January 28, 1998) (unpublished order under Illinois Supreme Court Rule 23).

Section 40(a)(1) of the Act provides that:

> [I]f the Agency refuses to grant or grants with conditions a permit under Section 39 of this Act, the applicant may, within 35 days, petition for a hearing before the Board to contest the decision of the Agency. 415 ILCS 5/40(a)(1) (1996).

Panhandle timely appealed the Agency's denial under Section 40(a)(1). That section also provides that petitioner has the burden of proof on appeal. See 415 ILCS 5/40(a)(1) (1996). On appeal,

> the sole question before the Board is whether the applicant proves that the application, as submitted to the Agency, demonstrated that no violation of the Act would occur if the permit was granted. Centralia Environmental Services, Inc. v. Illinois Environmental Protection Agency (October 25, 1990), PCB 89-170, slip op. at 9; see also Browning-Ferris Industries of Illinois, Inc. v. Illinois Pollution Control Board, 179 Ill. App. 3d 598, 601-602, 534 N.E.2d 616, 619 (2d Dist 1989).

Section 39(a) of the Act requires that the Agency identify, in its permit denial statement, the provisions of the Act or regulations under the Act that may be violated if it granted the permit. See 415 ILCS 5/39(a) (1996). The Agency stated that it denied Panhandle's permit application because Section 9.1(d) of the Act and 40 C.F.R. § 52.21 might be violated. Section 9.1(d) of the Act states in pertinent part that no person shall:

> 1. Violate any provisions of Sections 111, 112, 165 or 173 of the Clean Air Act, as now or hereafter amended, or federal regulations adopted pursuant thereto; or
>
> 2. Construct, install, modify or operate any equipment, building, facility, source or installation which is subject to regulation under Sections 111, 112, 165 or 173 of the Clean Air Act, as now or hereafter amended, except in compliance with the requirements of such Sections and federal regulations adopted pursuant thereto . . . . 415 ILCS 5/9.1(d) (1996).

As noted above, under Section 165 of the Clean Air Act, USEPA promulgated regulations at 42 C.F.R. § 52.21 to implement the PSD program. The PSD regulations require sources that make major modifications to demonstrate that they will use BACT. See 40 C.F.R. § 52.21(j).

The Agency's Grounds for Denying the Permit

The Agency's denial letter frames the issues on appeal. See Centralia, PCB 89-170, slip op. at 8; Pulitzer Community Newspapers, Inc. v. Illinois Environmental Protection Agency (December 20, 1990), PCB 90-142, slip op. at 6. As discussed below, the Agency's denial letter set forth two grounds upon which the Agency denied Panhandle's permit application.

Panhandle Failed to Satisfy PSD Requirements for BACT

The Agency's Denial. As noted above, the first ground upon which the Agency denied the permit was that Panhandle's application failed to satisfy PSD requirements. The Agency determined that Panhandle's permit application must satisfy PSD requirements for major modifications because Panhandle had exceeded the PSD avoidance limit (the NO_x limit of 461.3 TPY) in its permit. Panhandle used several methods, including the emission factor from the September 1985 edition of AP-42, to calculate past NO_x emissions from engines 1116 through 1119. Each method showed an exceedence of the 461.3 TPY NO_x limit in each year from 1989 through 1996.

The Agency asserts that because Panhandle exceeded this limit, the changes Panhandle made in 1988 constituted a major modification. The Agency therefore argues that Panhandle had to satisfy PSD requirements for a major modification, including the requirement to demonstrate BACT for the engines using Clean Burn technology. Resp. Br. at 9-17.

The Agency then determined that Panhandle failed to demonstrate, using USEPA's Top-Down methodology, that the performance levels of the new or existing control equipment for engines 1116 through 1119 were BACT for NO_x emissions. Accordingly, the Agency denied the permit application. R. at 1; Resp. Br. at 10, 31-35.

In response, Panhandle first argues that the PSD requirements do not apply because: (1) the 1988 permit was invalid because it relied on 1987 data and did not have an enforceable limit (Pet. Br. at 22-23, 25-29; Reply Br. at 5-10); (2) requiring Panhandle to meet the PSD requirements is contrary to USEPA guidance and regulations (Pet. Br. at 38, 40-41; Reply Br. at 3-4); and (3) the Agency has improperly denied the permit as a substitute for enforcement (Pet. Br. at 38-40; Reply Br. at 5-6). The Board first outlines the PSD regulations and then addresses the issues that Panhandle raises.

PSD Regulations. A person who proposes a "major modification" must satisfy PSD requirements, including the requirement to demonstrate BACT. See 40 C.F.R. § 52.21(j). As noted above, a "major modification" includes a physical change at a major stationary source that would result in a net emissions increase of NO_x of 40 TPY or more. See 40 C.F.R. §§ 52.21(b)(2)(i) and (23)(i).

A "net emissions increase" is the sum of (1) any increase in actual emissions from the physical change or change in the method of operation and (2) any other increases and

decreases in actual emissions that are contemporaneous with the increase from the change. See 40 C.F.R. § 52.21(b)(3)(i).

For an emissions unit that has been in operation, "actual emissions" generally equal the average rate of emissions, in tons per year, at which the unit actually emitted the pollutant during a two-year period that precedes the date of the physical change or change in method of operation and that is representative of normal source operation. A different time period may be used if the Administrator or delegated authority determines that the time period is more representative of normal operating conditions. See 40 C.F.R. § 52.21(b)(21)(ii). For an emissions unit that has not begun normal operations, "actual emissions" equal the unit's potential to emit. See 40 C.F.R. §§ 52.21(b)(4) and (21)(iv).

The Agency's 1988 Permit Determination. Panhandle argues that the Agency incorrectly calculated the 461.3 TPY NO_x limit in the 1988 construction permit. Panhandle further argues that the 1988 permit did not have an enforceable limit. For these reasons, Panhandle argues that the 1988 permit was invalid and Panhandle cannot be deemed to have violated it.

Panhandle states that the Agency did not select the correct timeframe to calculate actual NO_x emissions from the retired engines (engines 1101 through 1112) and that, because of this error, the Agency underestimated actual emissions of NO_x from the retired engines. Thus, Panhandle received a smaller credit for the retired engines than it should have, according to Panhandle.

Specifically, Panhandle argues that 40 C.F.R. § 52.21(b)(21) of the PSD regulations requires that actual emissions be determined by looking at average emissions, in tons per year, during the two years preceding construction or a different time period if the period is more representative of normal operations. Actual NO_x emissions from the retired engines should have been based on emissions during 1985 and 1986, which represented normal operations, according to Panhandle. Panhandle argues that 1987, the year that the Agency used to establish the limit in the February 1988 construction permit, was not representative because warmer weather limited natural gas use. Panhandle states that it did not know how the Agency would use the retired engines' 1987 data that Panhandle submitted to the Agency's Permits Section during the permit review process. According to Panhandle, the Agency should have known that 1987 was not representative because Panhandle's annual emission report showed a 21.6% emissions decrease for the time period of November 1, 1986, to October 31, 1987.

In addition, Panhandle cites United States v. Louisiana-Pacific Corp., 682 F. Supp 1122 (D. Colo. 1987) for the proposition that because the Agency failed to impose permit conditions to restrict Panhandle's hours of operation or materials combusted, it was "virtually impossible to verify compliance" with the permit's annual NO_x limit. Panhandle argues that the Agency should have adhered to the following language from the Louisiana-Pacific decision when it issued the permit in 1988:

> not all federally enforceable restrictions are properly considered in the calculation of a source's potential to emit. While restrictions on hours of operation and on the amounts of material combusted or produced are properly included, blanket restrictions on actual emissions are not. Louisiana-Pacific, 682 F. Supp. at 1133.

The Board finds that the 1988 permit established an emission limit for NO_x that was designed to ensure that Panhandle's replacement of 12 compressor engines with four new compressor engines would not constitute a major modification. This PSD avoidance limit of 461.3 TPY was based on an emissions baseline credit for the retired engines 1101 through 1112 (421.4 TPY for 1987) plus a less than significant increase in emissions (39.9 TPY).

Special condition No. 1 of the construction permit states that the "overall increase in NO_x emissions from the replacement [of compressor engines] will not exceed 39.9 tons per year" and that this "condition is necessary to avoid applicability of 40 CFR 52.21, Rules for Prevention of Significant Deterioration (PSD)." Special condition No. 2 of the construction permit states that the 461.3 TPY "limit is based upon [emission] rates calculated from standard emission factors, the gas usage from the most recent one year period and the allowed increase of 39.9 tons per year." Supp. at 39 (emphasis added). Thus, the permit itself stated that the Agency imposed an emission limit to avoid PSD and that it based the limit on 1987 data. It also clearly set forth the emission limit that Panhandle now claims is unenforceable.

Panhandle did not appeal these conditions under Section 40(a)(1) when the Agency issued the construction permit or when the Agency, on four subsequent occasions, issued operating permits with the same special conditions. The Board cannot now review the Agency's 1988 permit determination.

The Board's decision is consistent with the court's reasoning in Hawaiian Electric Co. v. United States Environmental Protection Agency, 723 F.2d 1440 (9th Cir. 1984). In that case, Hawaiian Electric requested that USEPA modify Hawaiian Electric's PSD permit. USEPA determined that modifying the permit to allow for higher sulfur content in its fuel would constitute a major modification that necessitated a BACT analysis. Hawaiian Electric appealed USEPA's decision and argued that the original PSD permit was not properly issued because it was premised on an inadequate wind tunnel dispersion model. *Id*. at 1441-1442. The time period for Hawaiian Electric to appeal the original PSD permit had expired. *Id*. at 1445. The court noted the legislative intent to "avoid excessive bureaucratic contention" by requiring USEPA to make permit decisions within a prescribed time period would be frustrated if past determinations could be routinely challenged *de novo*. *Id*. at 1446. The court stated:

> [Hawaiian Electric] argues that it is challenging the premises under which the permit was originally granted and that therefore the application of the major modification definition in particular and PSD review in general is incorrect. The policy of finality, which is critical to the administration of a complex technocratic program, dictates that [Hawaiian Electric's] argument must fail. Finality is a particularly important value in air pollution control because of the

> simultaneous existence of substantial risk and substantial technical uncertainty. *Id*. at 1445.

The Board is not holding that the Agency lacks authority to revise a permit upon the permittee's reapplication. Section 39(a) of the Act and 35 Ill. Adm. Code 201.167(a) grant the Agency the power to do so. However, in Panhandle's application for a revised permit, Panhandle asks the Agency to not apply PSD requirements even though Panhandle has exceeded the PSD avoidance limit for NO_x in its permit. Thus, Panhandle not only seeks to revise its permit, but asks the Agency to ignore the Agency's 1988 permit determination. The Agency may not do so. See Reichhold Chemicals, Inc. v. Illinois Pollution Control Board, 204 Ill. App. 3d 674, 677-678, 561 N.E.2d 1343, 1345-1346 (3d Dist. 1990) (the Agency lacks statutory authority to reconsider its final permit determinations).

USEPA Regulations and Guidance. Panhandle then argues that under USEPA regulations and guidance, the Agency should have revised its permit without subjecting Panhandle to PSD requirements. The Board disagrees. USEPA has stated that the administering agency may use 40 C.F.R. § 52.21(r)(4), the "source obligation" regulation, to require a source to go through the PSD permitting process once it exceeds its PSD avoidance permit limit. Section 52.21(r)(4) states that:

> At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation . . . on the capacity of the source or modification otherwise to emit a pollutant, . . . then the requirements of paragraphs (j) through (s) of this section shall apply to the source or modification as though construction had not yet commenced on the source or modification. 40 C.F.R. § 52.21(r)(4).

USEPA discussed the options available to the administering agency when a source exceeds the limit of its PSD avoidance permit, including the applicability of 40 C.F.R. § 52.21(r)(4):

> One option is simply to enforce . . . the limitations in the permit . . . with the result that the source retains its minor status. This is appropriate where, despite the permit violations, it appears that the source intends to adhere to the emissions limitations in the future. However, EPA retains the right to enforce the PSD . . . violation as well.
>
> The second option is to invoke the "source obligation" regulations, e.g., 40 CFR 52.21(r)(4), and treat the source as major by requiring it to obtain a PSD . . . permit. This course is appropriate where the source, through a change in business plans, or a belated realization that its original plans cannot accommodate the design or operational limitations in that permit, and so exceeds them. . . . EPA treats the source "as though construction had not yet commenced" for PSD . . . permitting purposes." 54 Fed. Reg. 27274, 27280 (June 28, 1989).

The Board finds that the facts of this case are closer to the second scenario than the first scenario described in the USEPA guidance. Panhandle does not wish to adhere to the NO_x emission limit in its permit. Instead, Panhandle proposes to increase its NO_x limit after "a belated realization that its original plans cannot accommodate" the original permit limit. See 54 Fed. Reg. at 27280. Thus, the Agency properly subjected Panhandle to the PSD permitting requirements "as though construction had not yet commenced on the source or modification." 40 C.F.R. § 52.21(r)(4).

Permit Denial Based on Alleged Violations. Panhandle also argues that the Agency improperly denied the revised permit because Panhandle has allegedly violated its permit limit for NO_x. Panhandle asserts that this is an improper use of the permitting process as a substitute for enforcement.

The Board agrees with Panhandle that the Agency cannot deny a permit based on an applicant's violations of a permit or the Act that have already occurred. The Board also agrees with Panhandle that the Agency may not substitute permit denial for enforcement of the Act and regulations. See Illinois Environmental Protection Agency v. Illinois Pollution Control Board, 252 Ill. App. 3d 828, 830, 624 N.E.2d 402, 404 (3d Dist. 1993) (concluding that the Board properly ordered the Agency to issue permits after finding that the Agency denied the permits because the permit applicant had allegedly violated the Act); Centralia, PCB 89-170, slip op. at 10-13 (holding that the Agency's denial of permits because of alleged permit and regulatory violations was improper).

However, the Board disagrees with Panhandle's assertion that the Agency denied Panhandle's permit application because Panhandle had allegedly violated its permit by exceeding its NO_x limit. The Agency did not deny the permit because of past violations. Rather, because of the evidence of exceedences of the permit's PSD avoidance limit, the Agency determined that Panhandle had triggered the PSD requirements for major modifications. The cases that Panhandle cites are distinguishable because they both involve instances where the Agency's permit denial letter listed past violations as reasons for the denial. See Illinois Environmental Protection Agency, 252 Ill. App. 3d at 829-830, 624 N.E.2d at 403-404 (3d Dist. 1993); Centralia, PCB 89-170, slip op. at 10-13.

PSD Requirements for BACT. Because Panhandle is subject to PSD requirements, it must demonstrate BACT for its emission controls. See 40 C.F.R. § 52.21(j). As noted above, BACT means:

> an emissions limitation . . . based on the maximum degree of reduction for each pollutant . . . which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and

techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. 40 C.F.R. § 52.21(b)(12).

USEPA and the Agency require sources to use USEPA's Top-Down BACT methodology[12] when demonstrating BACT. It is a standardized methodology for determining BACT. The Board has acknowledged the use of this methodology. See Emissions Reduction Market System Adoption of 35 Ill. Adm. Code 205 (October 2, 1997), R97-13, slip op. at 44.

The Top-Down BACT methodology assesses not only the best emission control technologies that are available, but also the level of performance for those control technologies. Tr. at 364-365; see USEPA's draft "New Source Review Workshop Manual" at B.23 (October 1990). The Agency determined that Panhandle failed to demonstrate that its proposed performance levels for its emission controls are BACT.

Manufacturer information showed that a level of control two g/hp-hr more stringent than Panhandle proposed may be achieved with the proposed control technology for engines 1116 and 1117. Data on PSD BACT determinations for other facilities also indicated that more stringent emission limits may be achieved. Manufacturer information showed that a level of control one to two g/hp-hr more stringent than Panhandle proposed may be achieved with the existing control technology for engines 1118 and 1119. The evidence also indicated that pre-combustion chamber technology proposed for engines 1116 and 1117 may achieve more stringent emission limits than the existing control technology for engines 1118 and 1119.

Panhandle did not adequately document why it cannot achieve more stringent performance levels. Panhandle concedes that it did not demonstrate that its proposed performance levels are BACT. Panhandle proposed performance levels to meet the revised NO_x permit limit that it requested, not to demonstrate BACT. Tr. at 106, 269, 392; R. at 12, 22; Pet. Br. at 34, 36-38. The Board finds that Panhandle failed to satisfy PSD requirements for BACT.

Accordingly, Panhandle did not prove that it would not violate the requirements of 40 C.F.R. § 52.21, and thus Section 9.1(d) of the Act, if the Agency granted the requested permit. The Agency properly denied the permit on this ground under Section 39(a) of the Act.

[12] The methodology is described in USEPA's draft "New Source Review Workshop Manual," dated October 1990, at pages B.5 through B.55.

Panhandle Failed to Adequately Support its Proposed Emission Factor

The second of the two grounds upon which the Agency denied the permit was that Panhandle's application lacked adequate information to support the revised emission factor that Panhandle proposed for retired engines 1101 through 1110.

The Board agrees with the Agency. Panhandle provided the manufacturer's estimate of that emission factor, but that estimate is based on data from a different type of engine, adjusted for the slow speed, rich burn combustion cycle of the retired engines. Before the permit denial, Panhandle provided no information on how the manufacturer calculated or adjusted the data from the different type of engine to arrive at the estimate of the retired engines' NO_x emissions.

The Board finds that the Agency properly found this information inadequate. Accordingly, Panhandle failed to prove that it would not violate PSD requirements, and thus Section 9.1(d) of the Act, if the Agency were to issue the requested permit. The Agency properly denied the permit on this ground under Section 39(a) of the Act.

Estoppel

Panhandle argues that the Agency should be estopped from requiring that Panhandle obtain a PSD permit because the Agency allegedly encouraged Panhandle to revise its PSD avoidance permit. Reply Br. at 11-13. Panhandle states:

> For over a year, the IEPA's staff encouraged Panhandle to submit information to support a revision of its [PSD avoidance] permit, even after the Violation Notice stated that Panhandle should submit a PSD application. Reply Br. at 11.

Under the doctrine of equitable estoppel, an obligation may not be enforced against a party that reasonably and detrimentally relied on the words or conduct of the party seeking to enforce the obligation. See Brown's Furniture, Inc. v. Wagner, 171 Ill. 2d 410, 431, 665 N.E.2d 795, 806 (1996). However, the doctrine "should not be invoked against a public body except under compelling circumstances, where such invocation would not defeat the operation of public policy." Gorgees v. Daley, 256 Ill. App. 3d 143, 147, 628 N.E.2d 721, 725 (1st Dist. 1993). As the Illinois Supreme Court has explained, "[t]his court's reluctance to apply the doctrine of estoppel against the State has been motivated by the concern that doing so 'may impair the functioning of the State in the discharge of its government functions, and that valuable public interests may be jeopardized or lost by the negligence, mistakes or inattention of public officials.'" Brown's Furniture, 171 Ill. 2d at 431-432, 665 N.E.2d at 806 (quoting Hickey v. Illinois Central R.R. Co., 35 Ill. 2d 427, 447-448, 220 N.E.2d 415, 426 (1966); see also Tri-County Landfill Co. v. Illinois Pollution Control Board, 41 Ill. App. 3d 249, 353 N.E.2d 316 (2d Dist. 1976) (refusing to estop the Agency from enforcing the Act against various landfills that it had previously approved on the grounds that to do so would violate public policy).

Consistent with this reluctance, the courts have established several hurdles for those seeking to estop the government. Like all parties seeking to rely on estoppel, those seeking to estop the government must demonstrate that their reliance was reasonable and that they incurred some detriment as a result of the reliance. A party seeking to estop the government also must show that the government made a misrepresentation with knowledge that the misrepresentation was untrue. See Medical Disposal Services, Inc. v. Illinois Environmental Protection Agency, 286 Ill. App. 3d 562, 677 N.E.2d 428 (1st Dist. 1997). Finally, before estopping the government, the courts require that the governmental body must have taken some affirmative act; the unauthorized or mistaken act of a ministerial officer will not estop the government. "Generally, a public body cannot be estopped by an act of its agent beyond the authority expressly conferred upon that official, or made in derogation of a statutory provision." Gorgees, 256 Ill. App. 3d at 147, 628 N.E.2d at 725; see also Brown's Furniture, 171 Ill. 2d at 431, 665 N.E.2d at 806 ("The State is not estopped by the mistakes made or misinformation given by the Department's [of Revenue] employees with respect to tax liabilities.").

Thus, to estop a government agency, the Board requires, among other things, that the party asserting estoppel has reasonably relied on the alleged misrepresentation of the government. In this case, Panhandle alleges that it reasonably relied on Agency staff representations during meetings and teleconferences that Panhandle could revise its PSD avoidance permit. Panhandle also argues that when the Agency requested further information in support of Panhandle's proposal, the Agency led Panhandle to believe that Panhandle could revise its PSD avoidance permit. Before the permit denial, however, the Agency sent Panhandle formal letters (March 20, 1997 violation notice and June 18, 1997 notice of incompleteness) that stated that Panhandle had exceeded the PSD major modification threshold for NO_x and needed to satisfy PSD permit application requirements.

In light of these Agency letters, it was unreasonable for Panhandle to rely on the Agency's express or implied statements that Panhandle did not need to undergo PSD review. See People v. Chemetco, Inc. (February 19, 1998), PCB 96-76, slip op. at 11-12 (party unreasonably relied on an Agency employee's alleged statements about not having to meet certain monitoring requirements in part because the party received a letter from the Agency stating that the party must meet the monitoring requirements). Accordingly, the Board will not estop the Agency from requiring Panhandle to submit a PSD permit application.

CONCLUSION

The Board finds that the Agency properly determined that Panhandle failed to satisfy PSD requirements and failed to provide adequate information to support its proposed emission factor for the retired engines. Because of these shortcomings in it permit application, Panhandle failed to prove that it would not violate the Act if the Agency granted the requested permit. Accordingly, the Board affirms the Agency's permit denial on both grounds.

ORDER

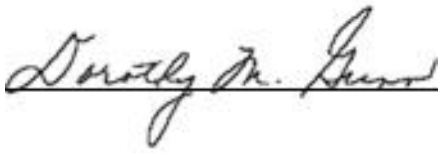
1. The Board affirms the Agency's determination to deny the permit because Panhandle did not satisfy PSD requirements for BACT and thus failed to prove that it would not violate Section 9.1(d) of the Act.

2. The Board affirms the Agency's determination to deny the permit because Panhandle did not adequately support its proposed emission factor for retired engines 1101 and 1110 and thus failed to prove that it would not violate Section 9.1(d) of the Act.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1996)) provides for the appeal of final Board orders to the Illinois Appellate Court within 35 days of service of this order. Illinois Supreme Court Rule 335 establishes such filing requirements. See 172 Ill. 2d R. 335; see also 35 Ill. Adm. Code 101.246, Motions for Reconsideration.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 21st day of January 1999 by a vote of 7-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board