

Defining and Redefining the “Source” for the PSD BACT Analysis

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Goals of Presentation

- **To highlight relevant**
 - Provisions of the Clean Air Act and EPA regulations.
 - Court decisions interpreting those provisions.
 - Statements by EPA applying those provisions in various contexts.
- **To assist the workgroup in identifying**
 - Scope of permitting authority discretion.
 - Procedural steps that may be warranted to implement specific recommendations.

Two Questions Relating to the “Definition” of the Source

- **What is the “source” to which a BACT analysis applies?**
 - The entire facility or
 - Individual emissions units at a facility
- **When do potentially “available” options for BACT “redefine the source”?**
 - EPA has not considered options that fundamentally redefine a source to be “available” at Step 1.
 - EPA has acknowledged permitting authority discretion to consider options that “redefine.”

Step 1: Top-Down Process

“The first step in the BACT selection process involves identifying and listing all ‘available’ control options. NSR Manual at B.5. The term available is used in its broadest sense under the first step and refers to control options with a ‘practical *potential* for application to the emissions unit’ under evaluation. *Id.* (emphasis added). The goal of this step is to develop a comprehensive list of control options.”

In Re Knauf Fiber Glass, GMBH, 8 EAD 121, 129-30 (EAB 1999)

Clean Air Act

“No major emitting facility ... may be constructed in any area to which this part applies unless – ... (4) the proposed facility is subject to best available control technology for each pollutant subject to regulation under this chapter emitted from, or which results from, such facility.”

§ 165(a) (emphasis added)

Clean Air Act

“The term ‘best available control technology’ means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of such pollutant.”

§ 169(3) (emphasis added)

Definition of the Source

- **BACT provisions in CAA and EPA regulations often use the term “facility” or “source,” but regulations use “emissions unit” in some contexts.**
- **In policy and interpretive documents, EPA has generally called for a separate BACT analysis for each emissions unit at a facility.**
- **EPA has supported a logical grouping of emissions units and considered controls available for individual pollutants when evaluating the merits of grouping.**

EPA Regulations

“Best available control technology means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act 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) (emphasis added)

EPA Regulations

“... If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. ...”

40 C.F.R. § 52.21(b)(12) (emphasis added)

EPA Regulations

“(2) A new major stationary source shall apply best available control technology for each regulated NSR pollutant that it would have the potential to emit in significant amounts.”

“(3) A major modification shall apply best available control technology to each regulated NSR pollutant for which it would result in a significant net emissions increase at the source. The requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation of the unit.”

40 C.F.R. § 52.21(j) (emphasis added)

EPA Regulations

“(5) *Stationary source* means any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant.”

“(7) *Emissions unit* means any part of a stationary source that emits or would have the potential to emit any regulated NSR pollutant and includes an electric utility steam generating unit as defined in paragraph (b)(31) of this section. ...”

40 C.F.R. § 52.21(b)

EPA Guidance

“The BACT requirement applies to each individual new or modified affected emission unit and pollutant emitting activity at which a net emissions increase would occur. Individual BACT determinations are performed for each pollutant subject to a PSD review emitted from the same emissions unit. Consequently, the BACT determination must separately address, for each regulated pollutant with a significant emissions increase at the source, air pollution controls for each emissions unit or pollutant emitting activity subject to review.”

Draft NSR Workshop Manual at B.4. (1990)

EAB Decisions

“As reflected by Draft NSR Manual, the current EPA policy is that ‘each new or modified emission unit (or logical grouping of new or modified emissions units) subject to PSD is required to undergo BACT review.’ Draft NSR Manual at B.10. Permitting authorities are encouraged by the Draft Manual to evaluate ‘logical grouping’ of emission units in each industry on a reasonable case-by-case basis, focused on analysis of technical feasibility and control effectiveness. See *id.*”

In re: General Motors, Inc., 10 EAD 360, 382 (EAB 2002)

EAB Decisions

“In a BACT determination, the Region must give consideration to each individual emissions unit or pollutant emitting activity subject to review. New Source Review Workshop Manual at B.4. We agree with the Region that the Grain Line and the Press Line are properly treated as separate pollutant-emitting activities. As noted above, the Press Line emits PM10, but the Grain Line does not, and this difference means that some technologies available for controlling emissions from the Grain Line will not be available for controlling emissions from the Press Line. Moreover, even though both lines emit VOCs, the technologies for controlling VOC emissions from the Grain Line are not necessarily available for controlling VOC emissions from the Press Line. Because the two lines are separate pollutant emitting activities for which the available control technologies are different, the Region's decision to perform separate BACT analyses for the two lines does not strike us as clearly erroneous.”

In Re Masonite Corporation, 5 EAD 551, 557-8 (EAB 1994) (footnote omitted)

EPA Legal Briefs

- EPA has argued that BACT for a new electric-generating unit at a larger facility cannot be less stringent based on improved control at other EGUs at the same site (a zinc mine) that were not subject BACT.
- “The plain terms of the Clean Air Act require that a State determine and apply the best available control technology for each ‘major emitting facility’ that is ‘constructed,’ 42 U.S.C. 7475(a)(1). Neither a facility owner nor a State may avoid the BACT requirement for a new facility by arguing that some other control technology will be used on some other facility.”

EPA Brief in Alaska DEC v. EPA, 124 S.Ct 983 (2004)

Redefining the Source

- **Since 1988, EPA has recognized that BACT options that fundamentally redefine the proposed source may be excluded at Step 1 of the analysis.**
- **EPA has also said that redefinition is not wholly prohibited, so it has been a question of degree within the discretion of the permitting authority.**
- **Recent EAB decisions emphasize the need for a strong record showing that the excluded option would disrupt the applicant's basic business purpose for the proposed facility.**
- **One U.S. Court of Appeals has upheld EPA's discretion to exclude options that "redefine the source" while identifying some limitations.**

Step 1: Available Control Options

- Three types of options that should be considered
 - Inherently Lower-Emitting Processes/Practices
 - Add-on Controls
 - Combinations of Inherently Lower Emitting Processes and Add-on Controls

NSR Workshop Manual at B.10 (emphasis in the original).

- The “redefining the source” rationale is only appropriate for excluding inherently lower-emitting processes, not add-on controls.

In re: Prairie State Generating Company, PSD Appeal No. 05-05, Slip. Op. at 33 (EAB 2006).

Origin of “Redefining the Source”

“The permit conditions that define these [control] systems are imposed on the source as the applicant has defined it. Although imposition of the conditions may, among other things, have a profound effect on the viability of the proposed facility as conceived by the applicant, the conditions themselves are not intended to redefine the source.”

In re Pennsauken, 2 E.A.D. 667 (1988) [Administrator]

NSR Workshop Manual

“Historically, EPA has not considered the BACT requirement as a means to redefine the design of the source when considering available control alternatives. ... However, this is an aspect of the PSD permitting process in which states have the discretion to engage in a broader analysis if they so desire.”

NSR Workshop Manual at B.13.

EAB's Current Approach

Does the option “so substantially alter the purpose or basic design of [the] proposed facility that it should be considered a redefinition of the source?”

In re: Desert Rock Energy Company, LLC, PSD Appeal No. 08-03 et al., Slip. Op. at 64 (EAB Sept. 24, 2009).

EAB's Current Approach

“[T]he permit applicant initially defines the proposed facility's end, object, aim, or purpose — that is the facility's basic design, although the applicant's definition must be for reasons independent of air permitting.”

“The permit issuer ... should take a ‘hard look’ at the applicant's determination in order to discern which design elements are inherent for the applicant's purpose and which design elements may be changed to achieve pollutant emissions reductions without disrupting the applicant's basic business purpose for the proposed facility, while keeping in mind that BACT, in most cases, should not be applied to regulate the applicant's purpose or objective for the proposed facility.”

Desert Rock at 64 (internal quotations from Prairie State opinion omitted)

EAB Emphasis on the Record

“[T]he Board first looks at the administrative record to see how the applicant defined its ‘goal, objectives, purpose, or basic design’ for the proposed Facility in its application. “

Desert Rock at 65.

“The Board's analysis in *Prairie State, NMU*, and today's decision emphasize that such an analysis of the underlying administrative record is an essential component of a supportable BACT decision that a proposed control technology redefines the source.”

Desert Rock at 76.

EAB Criteria

“[W]hen evaluating an applicant's assertion that a design element is fundamental, the permit issuer should consider whether the facts underlying that assertion are better considered within the framework of steps 2 through 5 of the top-down method, rather than grounds for excluding redesign at step 1.”

- Cost savings is not a basic or fundamental design element (considered at Step 4)**
- Avoiding risk of new or innovative technology is not a basic design element (considered at Step 2).**

In re: Prairie State Generating Company, PSD Appeal No. 05-05, Slip. Op. at 30 n. 23 (EAB Aug. 24, 2006).

U.S. Courts

“ EPA ... distinguishes between ‘control technology’ as a means of reducing emissions from a power plant or other source of pollution and redesigning the ‘proposed facility’ (the plant or other source) - changing its ‘fundamental scope.’ The agency consigns the latter possibility to the ‘alternatives’ section of the Clean Air Act, which as we said is not involved in this case. Refining the statutory definition of ‘control technology’ - ‘production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment of innovative fuel combustion techniques’-to exclude redesign is the kind of judgment by an administrative agency to which a reviewing court should defer.”

Sierra Club v. EPA, 499 F.3d 653, 655-6 (7th Cir. 2007) (on appeal of EAB’s Prairie State decision)

U.S. Courts

- An interpretation that would completely read a statutory term, such as “clean fuels,” out of the BACT definition would be questionable.

See, Sierra Club, 499 F.3d at 656.

- EAB has acknowledged this potential limitation on the redefining the source policy.
 - Northern Michigan University (“clean fuels” and low sulfur coal)
 - Desert Rock Energy Company (“innovative fuel combustion techniques” and coal gasification)

Coal-Fired Power Plants

- Desert Rock Energy Company, PSD Appeal No. 08-03 et al. (EAB Sept. 24, 2009).
 - Remanded permit that excluded coal gasification (IGCC) option from BACT analysis for proposed coal-fired boilers.
 - Application listed IGCC as one of four potential technologies for a new large coal-fired power plant.
 - No distinction of this permit from two previous federal PSD permits where IGCC was considered an available option.
 - In footnote, EAB observed that discretion to exclude IGCC may be limited because “innovative fuel combustion techniques” language in Act appears intended to generally call for consideration of coal gasification (citing legislative history and 7th Circuit).

Coal-Fired Power Plants

- **Northern Michigan University, PSD Appeal No. 08—02** (EAB Feb. 18, 2009).
 - Remanded permit for small coal and wood-fired boiler due to insufficient record to support exclusion of low-sulfur coal on redefining the source grounds.
 - Permit application said design allows burning of bituminous and subbituminous Powder River Basin coal.
 - “Clean fuels may not be ‘read out’ of the Act merely because their use requires ‘some adjustment’ to the proposed technology. ... If the only required adjustment were that a dirtier fuel be “switched” to a cleaner fuel, ... then low sulfur coal should be the BACT choice over high sulfur coal.” Slip. Op. at 27 (citing 7th Circuit).

Coal-Fired Power Plants

- Prairie State Generating Company, PSD Appeal No. 05-05 (EAB Aug. 24, 2006).
 - No error in excluding low-sulfur coal option where applicant proposed to build a mine-mouth power plant for the purpose of utilizing a dedicated 30-year supply of coal.
 - Rejected argument that purpose of power plant must be viewed as broadly as the production of electricity from coal.
 - May consider how the function of a unit as a baseload or peaking unit affects the design and available controls.
 - Some fuel choices may be integral to design.
 - Rejected argument that the coal type inherently defines the design of a power plant.

Coal-Fired Power Plants

- **NSR Workshop Manual (page B.13)**
 - “[A]pplicants proposing to construct a coal-fired electric generator, have not been required by EPA as part of a BACT analysis to consider building a natural gas-fired electric turbine although the turbine may be inherently less polluting per unit product (in this case electricity). ...”
 - “Thus, a gas turbine normally would not be included in the list of control alternatives for a coal-fired boiler.”

Coal-Fired Power Plants

- **Old Dominion, 3 E.A.D. 779 (1992) [Administrator]**
 - No error in state determination that it could not require new coal-fired steam electric generating station to fire natural gas.
 - “Traditionally, EPA does not require a PSD applicant to change the fundamental scope of the project.”
 - But also said “the BACT analysis should include consideration of cleaner forms of the fuel proposed by the source.”

Coal-Fired Power Plants

- **Hawaiian Commercial & Sugar Co., 4 E.A.D. 95 (1992).**
 - No error in permitting new coal-fired, circulating fluidized bed boiler at sugar mill instead of combined cycle facility fired with low sulfur distillate oil.
 - “EPA’s PSD permit conditions regulations do not mandate that the permitting authority redefine the source in order to reduce emissions. . . . Petitioner’s preference as to the type of boiler and fuel to be used in this instance would in effect redefine the source.”

Coal-Fired Power Plants

- **SEI Birchwood Inc., 5 E.A.D. 25 (1994).**
 - No error in permitting new coal-fired plant rather than natural gas facility.
 - “It is clear that permits issued by delegated states under federal PSD permitting regulations are not subject to challenge because the permit issuer refused to redefine the source.”

Waste Incinerators

- **In re Pennsauken, 2 E.A.D. 667 (1988) [Administrator]**
 - No error in permitting new municipal waste incinerator despite availability of power plants in area that could burn waste.
 - “The permit conditions that define these [control] systems are imposed on the source as the applicant has defined it. Although imposition of the conditions may, among other things, have a profound effect on the viability of the proposed facility as conceived by the applicant, the conditions themselves are not intended to redefine the source.”

Waste Incinerators

- **Spokane Regional Waste-to-Energy Facility, PSD Appeal No. 88-12 (June 9, 1989) [Administrator]**
 - No error in permitting new municipal waste incinerator at landfill without fuel cleaning and source separation because evidence did not show these options resulted in better emissions reductions.
 - Technology is not “available” in any meaningful sense if knowledge about its effect on emissions, in the particular configuration in which it would be employed, is so incomplete as to be unusable.

Waste Incinerators

- Brooklyn Navy Yard Resource Recovery Facility,
3 E.A.D. 867 (1992) [Administrator]
 - Remanded permit for new municipal waste incinerator in order to consider viability of a source separation program for nitrogen-containing materials.
 - Contrary to Spokane, information now showed that fuel cleaning and separation in combination with pollution control equipment could reduce emissions and were thus available technologies for purposes of a BACT determination.

Waste Incinerators

- **Hillman Power Co., 2002 EPA App. LEXIS 15 (July 31, 2002).**
 - No error in permitting modification of existing waste-fired (tire and wood) electric generating facility to increase the amount of tire-derived fuel (TDF) burned.
 - “In this case, limiting TDF burning to the amount authorized under Hillman Power’s existing permit, as advocated by MEC, would necessarily operate to the exclusion of the process modification Hillman Power seeks.”

Other Facilities

- **Hibbing Taconite Co., 2 E.A.D. 838 (1989) [Administr.]**
 - Remanded permit to modify taconite ore pellet facility to burn petroleum coke in place of natural gas and fuel oil because natural gas fuel not considered in BACT analysis.
 - “Hibbing will continue to manufacture the same product (i.e. taconite pellets) regardless of whether it burns natural gas or petroleum coke.”
 - “... because Hibbing is already equipped to burn natural gas, this alternative would not require a fundamental change to the facility.”

Other Facilities

- **Knauf Fiber Glass, 8 E.A.D 121 (1998).**
 - Remanded permit for new rotary spin fiberglass manufacturing facility because of failure to consider alternative rotary spin manufacturing process employed by competitor who achieved lower PM10 emissions.
 - “Although it is not EPA’s policy to require a source to employ a different design, redefinition of the source is not always prohibited. This is a matter for the permitting authority’s discretion. The permitting authority may require consideration of alternative production processes in the BACT analysis when appropriate.”