

BEFORE THE ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY

In the Matter of the Title V Air Operating Permit
and Prevention of Significant Deterioration Permit
for Little Gypsy Unit 3
Solid Fuel Repowering Project
Montz, La.

Activity Nos.: PER20020006; PER20060003
Permit Nos: 2520-00009-V1; PSD-LA-720
LDEQ Agency Interest No.: 687

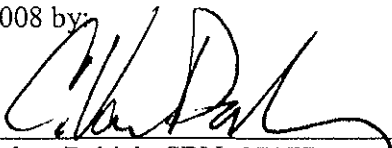
Issued to Entergy Louisiana, LLC
By the Louisiana Department of
Environmental Quality on November
30, 2007.

**PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT
TO THE TITLE V OPERATING AND PREVENTION OF SIGNIFICANT
DETERIORATION PERMITS ISSUED TO ENTERGY, LOUISIANA, LLC FOR THE
LITTLE GYPSY UNIT 3 SOLID FUEL REPOWERING PROJECT IN MONTZ, LA.**

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CAA].”); 40 C.F.R. § 70.8(d); *N.Y. Pub. Interest Group v. Whitman*, 321 F.3d 316, 333 n.11 (2d Cir. 2002).

LEGAL FRAMEWORK

“The Title V operating permits program is a vehicle for ensuring that existing air quality control requirements are appropriately applied to facility emission units in a single document....Such applicable requirements include the requirement to obtain preconstruction permits that comply with applicable new source review requirements.” *In re Monroe Elec. Generating Plant*, Petition No. 6-99-2 at 2 (EPA Adm’r 1999). Therefore the Administrator must look at whether an emission unit has gone through the proper New Source Review or PSD permitting process, complies with the Louisiana State Implementation Plan (“SIP”), and whether the Title V permit contains accurate “applicable requirements,” including best available control technology (“BACT”) limits. 40 C.F.R. § 70.2; *In re Chevron Prod. Co., Richmond, Cal.*, Petition No. IX-2004-08 at 11-12 n.13 (EPA Adm’r 2005). If the Administrator objects to the Permits, “the Administrator *shall modify, terminate, or revoke*” the Permits. 42 U.S.C. § 7661d(b)(3).

Best Available Control Technology

The CAA forbids the construction of, or modifications to, a major emitting facility unless the facility uses BACT. 42 U.S.C. § 7475(a)(4). The Louisiana SIP specifically requires that major modifications “shall apply best available control technology for each regulated NSR pollutant.” La. Admin. Code tit. 33, § III:509(J)(3).¹ At its core, BACT is an emissions limitation based on an “application of production processes or available methods, systems, and techniques.” La. Admin. Code tit. 33, § III:509(B); *In re Three Mountain Power, LLC*, 10

¹ Louisiana’s EPA approved state implementation plan for PSD is codified at La. Admin. Code tit. 33, § III:509. 40 C.F.R. § 52.986.

7479(3). These impacts are evaluated in Step 4 of the top-down analysis. If the applicant rejects the most stringent alternative, the burden is on the applicant to justify the rejection. *NSR Manual* at B.26-29.² The NSR Manual further clarifies the control alternative rejection process as involving “a demonstration that circumstances exist at the source which distinguish it from other sources where the control alternative may have been required previously, or that argue against the transfer of technology or application of new technology.” *Id.* at B.29.

PROCEDURAL FACTS

Entergy submitted a revised permit application on September 5, 2006, replacing its application submitted on August 22, 2002, for a Title V air operating permit and PSD permit for Little Gypsy Unit 3. LDEQ published draft Title V and PSD permits in early May 2007 and invited public comments on the proposed permits through June 18, 2007.³ During the public comment period, EPA Region 6 and U.S. Fish and Wildlife Service Branch of Air Quality submitted comments on the proposed permits to LDEQ.⁴ *See* U.S. F&WLS comments attached as Exh. A. LDEQ responded to EPA’s public comments on November 30, 2007. Also on November 30, 2007, LDEQ issued the final Title V and PSD permits to Entergy. Entergy’s application, EPA Region 6 and U.S. Fish and Wildlife’s comments submitted during the public

² “The applicant is responsible for presenting an evaluation of each impact along with appropriate supporting information....Step 4 validates the suitability of the top control option in the listing for selection as BACT, or provides clear justification why the top candidate is inappropriate as BACT....In the event that the top candidate is shown to be inappropriate, due to energy, environmental, or economic impacts, the rationale for this finding needs to be fully documented for the public record.” *Id.*

³ The proposed Title V and PSD permits and Entergy’s application materials are available on the LDEQ website at <http://www.deq.louisiana.gov/apps/pubNotice/show.asp?qPostID=3759&SearchText=gypsy&startDate=1/1/2005&endDate=12/10/2007&category=>. Entergy supplemented its application on 9-20-07 after the public comment period expired. This addendum, which is attached as Exh. B, changed the annual NOx emission rate for the project.

⁴ In addition, EPA Region 6 submitted supplemental comments to LDEQ on the proposed Title V and PSD permits on 10-12-07.

The PSD permit also has an SO₂ emission rate for the boilers of 0.08 lb/MMBtu when burning “100% Powder River Basin (“PRB”), western bituminous, western subbituminous and international subbituminous coals, or any combination of these coals with less than 1.5 lb/MMBtu (higher heating value) inlet sulfur concentration.” *Id.*

The purpose of BACT is not to apply limits lenient enough to cover the worst case scenario. LDEQ is required to apply the most stringent controls unless Entergy demonstrates that it is not technologically feasible or cost effective, or that the control causes unique adverse energy or environmental collateral impacts. NSR Manual at B.24; *Newmont* at 16. Neither LDEQ nor Entergy demonstrates that the lower limits are not feasible for Little Gypsy Unit 3. Therefore, the Administrator must object to the PSD Permit because it contains deficient SO₂ limits for the CFB boilers.

- a. The SO₂ BACT limits of 0.15 lb/MMBtu for petroleum coke and 0.08 lb/MMBtu for PRB coal are not BACT.

There are at least three other CFB boiler permits that contain much lower SO₂ BACT limits. *See e.g.*, Entergy’s Title V/PSD Permit Application at 4-17. BACT is an emission limit based on the maximum degree of reduction that is achievable. Therefore, the SO₂ BACT limit of 0.15 lb/MMBtu for petroleum coke and 0.08 lb/MMBtu for PRB coal are not BACT because lower limits can be achieved at Little Gypsy. The lower SO₂ limits in other CFB permits, AES Puerto Rico, for example, can be achieved at Little Gypsy using either low sulfur fuel and a more efficient scrubber, up to 98% SO₂ control for PRB coal, or using petroleum coke and a more effective SO₂ scrubber, up to 99.9% SO₂ control. The record contains no demonstration that either 0.15 lb/MMBtu or 0.08 lb/MMBtu represent the maximum degree of SO₂ reduction that is achievable, and LDEQ fails to address this fact in its response to EPA Region 6 comments. *See* 11/30/07 LDEQ Ltr, Resp. to Cmmt. 1.

distinguishable as the CFB is not tethered to any particular source of fuel. The record here contains no evidence that there is a common ownership and control issue related to Little Gypsy fuel. Entergy can buy any fuel that allows it to comply with its permit limits, including cleaner petroleum coke and lower sulfur coals. Having offered no valid justification for its decision to eliminate clean fuels based on design, LDEQ must consider clean fuels in the BACT analysis, as plainly stated in the definition of BACT.

The EPA, in fact, remanded a Title V permit to the state agency to show that lower sulfur coal was not an achievable option to limit SO₂ from coal fired CFB boilers. *Spurlock* Order at 29 (granting petition to object in part based on permitting agency's failure to provide adequate explanation for determining that design basis fuel is BACT).⁷ The EPA said: "While permitting authorities have discretion in making the case-by-case technical assessments necessary to determine BACT for a specific source, in exercising that discretion, they must provide a reason for rejecting a specific control technology as BACT based on the applicable criteria in the Clean Air Act and its relevant implementing regulations. *Id.* at 30.

c. Requiring Low Sulfur Fuel Does Not Require a Change in Little Gypsy's Project Design or Purpose.

The amount of sulfur contained in the fuel dictates, to a degree, the amount of SO₂ that the fuel will emit when burned, as Entergy itself noted. Entergy Title V/PSD Permit Application at 4-24. Appropriately, Entergy identified the use of lower sulfur fuel as a control option in its BACT analysis. Entergy, then, summarily dismissed the lower sulfur fuel option from further BACT analysis asserting that limiting the CFB boilers' ability to burn a variety of fuels would

⁷ "In particular, EPA finds that KYDAQ and EKPC have failed to provide a complete justification for excluding low sulfur eastern bituminous coal as BACT for limiting SO₂ emissions from this project. Accordingly, the Administrator grants the petition on the narrow issue of the selection of SO₂ BACT, limits and directs KYDAQ and EKPC to provide a complete analysis to support the selection of the design coal as BACT." *Id.*

Commission, Jeffery Heidingsfelder, Entergy's Director of Engineering and Construction-Fossil testified:

[P]etroleum coke has a lot of variability in the industry. We are in an excellent location to receive petroleum coke for various refineries up and down the Mississippi River and the intracostal waterway, as well as from overseas. We have a good location for overseas shipping of fuels into the site. So the variety opens up to the world, basically within the sulfur contents and other constituents in a range that we designed this facility to burn.⁸

Entergy's preference to use high sulfur petroleum coke from unidentified "local sources" does not dictate the project design. If a permittee's preference for high sulfur fuel—or for the flexibility to burn less-expensive fuel—were a valid exception to Congress' definition of BACT to include use of clean fuels, this exception would swallow the rule. In other words, LDEQ's deference to Entergy's choice of fuel unlawfully allows a preference for dirty fuels to trump CAA § 169(3)'s requirement that BACT take into account techniques that include use of "clean fuels." 42 U.S.C. § 7479(3).

Indeed, when reviewing the EAB's decision in *Prairie State*, the Seventh Circuit Court of Appeals said: "The Act is explicit that "clean fuels" is one of the control methods that EPA has to consider." *Sierra Club v. EPA*, 499 F.3d 653, 654 (7th Cir. 2007).⁹ The Seventh Circuit noted that *Prairie State* presents "a borderline case" as to where to draw the line between requiring available control technology and forcing a redesign of the proposed facility. Little Gypsy, on the other hand, is not "a borderline case." It would not be reasonable for EPA to defer to LDEQ's desire to allow Entergy's preference for an unspecified "local" (and comparatively

⁸ In re: Application of Entergy Louisiana, LLC for Approval to Repower Little Gypsy Unit 3 Electric Generating Facility, LPSC Docket No. U-30192, 10-19-7, Cross Examination J. Heidingsfelder, 139; 140:1-5, excerpt attached as Exh. C.

⁹ The statutory definition of BACT, found in section 169 of the CAA, requires consideration of clean fuels. 42 U.S.C. § 7479(3) (defining best available control technology). "In deciding what constitutes BACT, the Agency must consider both the cleanliness of the fuel and the use of add-on pollution control devices." *In re: Inter-Power of N.Y.*, 5 E.A.B. 130, 134 (E.A.B. 1994).

restriction, such as coal with a maximum fuel sulfur content of 1%. Entergy's Title V/PSD Permit App. at 4-18.

- d. LDEQ's Cost Analysis Is Wrong: Corrected Analysis Shows Low Sulfur Coal is Cost Effective and LDEQ Cannot Eliminate it on Economic Grounds.

LDEQ further argues that even if lower sulfur fuels were considered as a potential BACT control technology, this option is not economically feasible. 11/30/07 LDEQ Ltr to EPA Region 6 at 3. Entergy calculated cost effectiveness in dollars per ton of SO₂ removed (“\$/ton”) using 2006 as-delivered fuel-cost data, adjusted for differences in the amount of limestone that would be required to control SO₂ emissions from each fuel. *Id.* at 4. LDEQ calculated the ratio of the difference in adjusted fuel costs in dollars per million Btus (“\$/MMBtu”) as such:

[Adjusted Fuel Cost for Fuel #1 – Adjusted Fuel Cost for Petroleum Coke] (1)

to the difference in outlet SO₂ emission rates in pounds per million Btus (“lb/MMBtu”)

[Outlet SO₂ Emissions for Petroleum Coke – Outlet SO₂ Emissions for Fuel #1] (2)

According to the LDEQ table, this ratio yields cost effectiveness in dollar per pound SO₂ removed. This value was then converted to dollars per ton by multiplying by 2000 pounds in a ton. A sample calculation of cost effectiveness for switching from petroleum coke to Powder River Basin coal using the Entergy method:

$$\text{Cost effectiveness} = [1.62 - 1.31]/[0.15-0.08] \times 2000 = \$8,857/\text{ton} \quad (3)$$

The results of calculations based on Equations (1) and (2) above are reported as “cost-effectiveness (\$/ton SO₂ removed)” in the first inset table on page 4 of LDEQ's 11/30/07 letter responding to EPA Region 6's comments. LDEQ then goes on to argue that these cost effectiveness values, ranging from \$8,855 to \$117,526/ton, are higher than costs being borne by other similar sources, based on SO₂ cost effectiveness values for other similar facilities. *Id.* at 4-5. This argument is not correct.

Third, the cost calculations adjust the delivered fuel cost for changes in the variable O&M (neglecting similar changes in capital costs as noted above), but base the adjustment solely on limestone. Limestone will be used in the fluidized bed and lime will be used in the spray dryer absorber selected to control SO₂ emissions from the boiler. Lime costs were apparently omitted. Lime costs considerably more than limestone. Thus, adjusted fuel costs of all of the alternate fuels would be lower than shown if lime costs were included and cost effectiveness values would be even lower than revised above.

Fourth, LDEQ compares the cost effectiveness of SO₂ control by fuel switching to costs for post combustion controls—various types of dry scrubbers and sorbent injection. 11/30/07 LDEQ Ltr at 4-5. This approach is like comparing apples to oranges. The NSR Manual explains that “where a *control technology* has been successfully applied to similar sources in a source category, an applicant should concentrate on documenting significant cost differences, if **any**, between the application of the *control technology* on those sources and the particular source under review.” NSR Manual, p. 31 (emphasis added). The comparison, then, must be on a “control technology” basis, not on a pollutant basis, as incorrectly proffered by LDEQ. Thus, to determine cost effectiveness of fuel switching, the applicant must compare the cost of fuel switching borne by other applicants with the cost of fuel switching in this instance, not with the cost of scrubbing and sorbent injection, which are separate SO₂ control technologies. The record contains no comparative cost data for fuel switching alone.

Finally, LDEQ fails to provide *any* analysis of the cost of using lower sulfur petroleum coke. The St. John River Power Park fuel analysis done for EPA in 2005 shows the highest concentration of SO₂ in petroleum coke available nationwide did not exceed 6.28 percent, with

on the maximum degree of reduction for the full range of operating conditions. NSR Manual, p. B.56.

EPA has provided comments to this effect on many other facilities across the U.S. These include permits issued for Springfield, MO (EPA pointed out that BACT cannot assume worst-case PRB coal, especially when such coal is not representative of the PRB coal being burned at power plants in the region);¹¹ Iatan, MO;¹² Longleaf, GA;¹³ Nebraska City Station¹⁴; Holcomb Units 2-4 in Kansas¹⁵ (BACT must assume a typical PRB coal-- not the worst case PRB coal); Hastings Nebraska;¹⁶ Roundup, Montana;¹⁷ and Comanche, Colorado,¹⁸ among others. Therefore, EPA has repeatedly made the same comment--BACT for SO₂ must assume a coal sulfur content and a control efficiency to assure the applicant achieves the maximum degree of reduction over the full range of fuels proposed. This can be accomplished in two ways, first by requiring a control efficiency in the permit and second by setting tiered SO₂ limits that address the full range of fuels.

Permits have been issued addressing these comments. The Longleaf PSD permit, issued by Georgia Department of Environmental Quality, required separate SO₂ limits for two separate

¹¹ Letter from JoAnn Heiman, Acting Chief, Air Permitting and Compliance Branch, U.S. EPA Region 7, to Leann Tippett Mosby, Staff Director, Missouri Department of Natural Resources, June 30, 2004.

¹² Letter from JoAnn Heiman, Chief, Air Permitting and Compliance, U.S. EPA Region 7, to Jim Kavanaugh, Director, Missouri Department of Natural Resources, December 5, 2005

¹³ Letter from Greg M. Worley, Chief, Air Permits Section, Heather Abrams, Chief, Air Protection Branch, Georgia Department of Environmental Protection Division, November 16, 2006.

¹⁴ Letter from JoAnn M. Heiman, U.S. EPA Region 7, to W. Clark Smith, Nebraska Department of Environmental Quality, Re: Nebraska City Station, January 26, 2005.

¹⁵ Letter from JoAnn M. Heiman, U.S. EPA Region 7, to Clark Duffy, Kansas Department of Health & Environment, Re: Holcomb Units 2-4, November 9, 2006.

¹⁶ Letter from JoAnn M. Heiman, Air Permitting and Compliance Branch, U.S. EPA Region 7, to W. Clark Smith, Nebraska Department of Environmental Quality, Re: Hastings, Nebraska, August 4, 2006.

¹⁷ E-mail from Hans Buenning, U.S. EPA Region 8, to Sam Portanova, U.S. EPA Region 5, Re: Roundup, October 1, 2004.

¹⁸ Letter from Richard R. Long, U.S. EPA Region 8, to Douglas H. Benevento, Colorado Department of Public Health, May 12, 2005.

standards. Specific Requirements 131²¹ and 130²² of the Title V permit allow noncompliance with federal particulate matter and NO_x standards during periods of SSM. Specific Requirement 184 establishes an opacity limit, “except during the cleaning of a fire box or building of a new fire, soot blowing or lancing, charging of an incinerator, equipment changes, ash removal or rapping of precipitators.” The effect of excluding these conditions from the compliance calculations is to allow unlimited emissions of NO_x and particulate matter during SSM periods. Without additional limitations during periods of SSM, Specific Requirements 130, 131, 136, 137 and 184 constitute unlawful blanket exemptions to BACT requirements.

3. **PSD Analysis Fails to Consider Effect of SO₂ Emissions on Breton National Wildlife Refuge.**

The regulations state that the “owner or operator shall provide an analysis of the air quality impact projected for the area.” *Id.* § III:509(O)(2). No pollutant concentration may exceed the lesser of the primary and secondary national ambient air quality standards (“NAAQS”) for the period of exposure. *Id.* § III:509(D). Entergy used CALPUFF modeling to determine the impact of its SO₂ emissions on the Class I Breton National Wildlife Refuge, using assumed SO₂ emissions of 424.2 lb/hr for each of the boilers, or 848.4 lb/hr for both boilers. *Permit Application* PSD Class I Modeling Analysis Report at 2-5. However, the PSD Permit allows a maximum of 2279 lb/hr of SO₂ for each boiler during startup and shutdown conditions, allowing a total of 4558.24 lb/hr for both boilers during a startup or shutdown. PSD Permit, Specific Conditions, Max Allowable Emissions Rates. The maximum limit in the PSD Permit is

²⁰ “Determine compliance with particulate matter emission limitations by calculating the arithmetic average of all hourly emission rates for particulate matter each boiler operating day, except for data obtained during startup, shutdown, and malfunction.”

²¹ “Comply with the particulate matter emission standards under 40 CFR 60.42Da at all times except during periods of startup, shutdown, or malfunction.”

²² “Comply with the nitrogen oxides emission standards under 40 CFR 60.44Da at all times except during periods of startup, shutdown, or malfunction.”

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CERTIFICATE OF SERVICE

I hereby certify that I have this 9th day of January, 2008, served a copy of this Petition to those listed below.


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