

BEFORE THE ENVIRONMENTAL APPEALS BOARD  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC

RECEIVED  
U.S. E.P.A.  
*Oct 1 ed*  
2007 SEP 27 PM 3:54

ENVIR. APPEALS BOARD

\_\_\_\_\_)  
In Re Deseret Power Electric Cooperative)  
PSD Permit Number OU-0002-04.00 )

PSD Appeal No. \_\_\_\_\_

**PETITION FOR REVIEW AND REQUEST FOR ORAL ARGUMENT**

**INTRODUCTION**

Pursuant to 40 C.F.R. § 124.19(a), Sierra Club petitions for review of the Prevention of Significant Deterioration ("PSD") Permit Number PSD-OU-0002-04.00 (the "Bonanza PSD Permit") issued by EPA Region 8 to Deseret Power Electric Cooperative ("Deseret") on August 30, 2007. A copy of the Bonanza PSD Permit is attached as Exhibit 1. Because the plant is located within the Uintah and Ourah Indian Reservation and these tribes do not have an EPA-approved tribal permitting program under the Clean Air Act, EPA is the responsible permitting authority.

The Bonanza PSD Permit authorizes construction of a new waste-coal-fired electric utility generating unit at the existing Bonanza power plant near Bonanza, Utah. Sierra Club contends that EPA erred by (a) not requiring, pursuant to Section 165(a)(4) of the Act, a BACT emission limit for carbon dioxide ("CO<sub>2</sub>") emissions from the new Bonanza coal-fired unit, and (b) taking positions in this matter that are contrary to positions taken by the agency in another coal-fired power plant proceeding.

Sierra Club also requests oral argument in this matter. Oral argument would assist the Board in its deliberations on the issues presented by the case because the issues raised herein are issues of first impression for the Board and the EPA, are generally a source of significant public interest, and are of a nature such that oral argument would materially assist in their resolution.

### **THRESHOLD PROCEDURAL REQUIREMENTS**

Sierra Club satisfies the threshold requirements for filing a petition for review under Part 124. Sierra Club has standing to petition for review of the permit decision because its members participated in the public comment period on the draft permit. 40 CFR §124.19(a). See comments filed by Tim Wagner on behalf of the Sierra Club, attached as Exhibit 2. The issues raised by Sierra Club here were either raised with EPA during the public comment period or are new issues resulting from the Supreme Court's decision in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007), which was decided after the comment period closed and was therefore not reasonably ascertainable at the close of the public comment period. (EPA did acknowledge the *Massachusetts* decision in its permitting decision.) Consequently, the Board has jurisdiction to hear Sierra Club's timely request for review. 40 C.F.R. § 71.11(g).

### **ISSUE PRESENTED FOR REVIEW**

Because carbon dioxide is a "pollutant subject to regulation" under the Clean Air Act, was EPA's failure to include in the Bonanza PSD Permit a best available control technology ("BACT") emission limit for carbon

dioxide a clearly erroneous conclusion of law or an important policy consideration that the Board should review and reverse?

### STATEMENT OF FACTS

Deseret proposes to construct a "major modification" to its existing Bonanza plant, as defined in PSD rules. See 40 CFR 52.21(b2). The proposed unit would include a circulating fluidized bed boiler, consisting of primary and secondary air fans, a combustor, a cyclone/solids separator, a superheater, an economizer, an air heater and an induced draft fan. EPA Statement of Basis at 7. The proposed unit would additionally require combustion and generating systems, an emergency generator, exhaust systems and pollution control equipment, coal and limestone material handling and storage systems, cooling water systems, and ash disposal systems. Id. The proposed unit would have a power output of up to 110 megawatts, bringing the overall Bonanza plant's total to approximately 610 megawatts. Id. at 6.

EPA issued a draft PSD permit on or about June 22, 2006. The comment period closed on July 29, 2006. On April 2, 2007, the U.S. Supreme Court handed down *Massachusetts v. EPA*, 127 S.Ct. 1438, where the Court held that "greenhouse gases fit well within the Clean Air Act's capacious definition of 'air pollutant.'" Id. at 1462. EPA subsequently issued the final Bonanza PSD Permit on August 30, 2007, without reopening the permit for public comment. EPA also released its Response to Comments on the same date. (Relevant excerpts from the Response to Comments are attached as Exhibit 3.) Sierra Club now petitions the Board for review of this permit and urges a remand because EPA failed to establish a BACT emission limit for CO<sub>2</sub>, and acted arbitrarily and capriciously by

taking positions in this matter that are contrary to positions taken by the agency in another coal-fired power plant proceeding.

## ARGUMENT

### I. THE BONANZA PSD PERMIT SHOULD BE REMANDED BECAUSE IT LACKS A CO<sub>2</sub> BACT EMISSION LIMIT.

The Clean Air Act prohibits the construction of a new major stationary source of air pollutants in areas designated as in attainment of the National Ambient Air Quality Standards except in accordance with a prevention of significant deterioration (PSD) construction permit. 42 U.S.C. § 7475(a); 40 C.F.R. §52.21(a)(2)(iii). Of relevance here is §165 of the Act, which requires that a PSD permit must include a BACT emission limit “for each pollutant subject to regulation under this chapter emitted from, or which results from” the facility (42 U.S.C. § 7475(a)(4)), language that EPA repeated in its implementing regulations: BACT is required for “any pollutant that otherwise is subject to regulation under the Act.” 40 C.F.R. § 52.21(b)(50)(iv).

As described further below, carbon dioxide has been *regulated* under the Clean Air Act since 1993. And, on April 2, 2007, the Supreme Court held that carbon dioxide and other greenhouse gases are “pollutants” under the Clean Air Act. *Massachusetts v. EPA*, 127 S.Ct. at 1460.

Now having been definitively ruled a *pollutant*, CO<sub>2</sub> is accordingly a *regulated pollutant* under the Act, and EPA is required to impose a CO<sub>2</sub> BACT emission limit in the Bonanza PSD permit. The relevant provisions of the Act are plain and unambiguous on their face and leave no room for EPA to pick and choose which pollutants it prefers to deal with under Section 165.

**A. Carbon Dioxide is a “Pollutant Subject to Regulation” Under the Act Because It Is Regulated Under Section 821 of the Clean Air Act.**

. Section 821(a) of the Act (42 U.S.C. 7651k note; Pub.L. 101-549; 104 Stat. 2699; emphasis added) provides:

Monitoring. – The Administrator of the Environmental Protection Agency **shall promulgate regulations** within 18 months after the enactment of the Clean Air Act Amendments of 1990 **to require that all affected sources subject to the Title V of the Clean Air Act shall also monitor carbon dioxide emissions** according to the same timetable as in Sections 511(b) and (c). **The regulations shall require that such data shall be reported to the Administrator.** The provisions of Section 511(e) of Title V of the Clean Air Act shall apply for purposes of this section in the same manner and to the same extent as such provision applies to the monitoring and data referred to in Section 511.<sup>1</sup>

The language could not be clearer: In § 821 Congress ordered EPA “to promulgate regulations” requiring that hundreds of facilities covered by Title IV monitor and report their CO<sub>2</sub> emissions, and in §165, Congress required a BACT limit for “any pollutant subject to regulation” under the Act. The only possible reading of these two statutory mandates is that Congress intended that EPA apply BACT limits to CO<sub>2</sub> pursuant to §165.<sup>2</sup>

**B. EPA’s Interpretation of Section 165 is Completely Wrong and Entitled to no Deference**

---

<sup>1</sup> According to the Reporter’s notes, these references to Title V are meant to refer to Title IV, and the references to Section 511, are meant to refer to Section 412.

<sup>2</sup> EPA’s §821 regulations, which were finalized on January 11, 1993, require CO<sub>2</sub> emissions monitoring (40 CFR §§75.1(b), 75.10(a)(3)); preparing and maintaining monitoring plans (40 CFR §75.33); maintaining records (40 CFR §75.57); and reporting such information to EPA, (40 CFR §§75.60 – 64). 40 CFR §75.5 prohibits operation in violation of these requirements and provides that a violation of any Part 75 requirement is a violation of the Act.

Obviously unhappy with the notion that these words mean what they plainly say, in refusing to impose a CO<sub>2</sub> BACT limit EPA insists that they must mean something completely different (Exhibit 3, p. 6; emphasis added):

EPA continues to interpret the phrase 'subject to regulation under the Act' to refer to pollutants that are subject to **a statutory or regulatory provision that requires actual control of emissions of that pollutant**. Because EPA has not established a NAAQS or NSPS for CO<sub>2</sub>, classified CO<sub>2</sub> as a Title VI substance, or otherwise regulated CO<sub>2</sub> under any other provision of the Act, CO<sub>2</sub> is not currently a "regulated NSR pollutant" as defined by EPA regulations.

In other words, EPA believes that in §165 Congress intended "regulation" to mean "a statutory or regulatory provision that requires actual control of emissions." Unfortunately, EPA provides neither a rationale nor any basis whatsoever for its novel interpretation of the word "regulation", and any rationale it eventually manages to conjure up to defend this position will run into some serious difficulty.

First, the most basic canon of statutory interpretation is that words should be given their plain meaning, and Webster's defines "regulation" as "an authoritative rule dealing with details or procedure; (b) a rule or order issued by an executive authority or regulatory agency of a government and having the force of law."

That should be the end of the matter: "It is well established that 'when the statute's language is plain, the sole function of the courts--at least where the disposition required by the text is not absurd--is to enforce it according to its terms.'" *Lamie v. United States Tr.*, 540 U.S. 526, 534 (2004). And, of course, the Supreme Court has already pointed out that information gathering, record

keeping, and data publication rules are indisputably within the conventional understanding of “regulation.” *Buckley v. Valeo*, 424 U.S. 1, 66-67 (1976)(record keeping and reporting requirements are regulation of political speech).

Given the plain language that Congress used, EPA can point to no ambiguity in the statute that would allow it to gloss the statutory text: “If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.” *Chevron v. NRDC*, 467 U.S. 837, 842-843 (1984). To the extent that EPA tries to claim that it is interpreting its own regulation, as opposed to the statutory mandate, it would fare no better:

[T]he existence of a parroting regulation does not change the fact that the question here is . . . the meaning of the statute. An agency does not acquire special authority to interpret its own words when, instead of using its expertise and experience to formulate a regulation, it has elected merely to paraphrase the statutory language.”

*Gonzales v. Oregon*, 546 U.S. 243, 257 (2006).

Second, as the Supreme Court has repeatedly held, “generally, identical words used in different parts of the same statute are . . . presumed to have the same meaning.” *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Dabit*, 547 U.S. 71, 86 (2006) (quoting *IBP, Inc. v. Alvarez*, 546 U.S. 21, 33-34 (2005)). EPA has not – and could not -- offer any rationale to explain why “regulation” in § 821 means “regulation”, but that “regulation” in §165 means “actual control of emissions”. Indeed, the Act contains numerous other examples of Congress requiring regulations for many reasons aside from “actual control of emissions”, including right in §165: “The review provided for in subsection (a) of this section shall be

preceded by an analysis in accordance with regulations of the Administrator, promulgated under this subsection, . . . of the ambient air quality at the proposed site . . .” 42 U.S.C. §7475(e)(1). See also 42 U.S.C. §7619(a)(“the Administrator shall promulgate regulations establishing an air quality monitoring system throughout the United States . . . .”)

Third, in drafting the Clean Air Act Congress knew how to refer to “actual control of emissions” when it wanted to, and in fact created two separate terms of art for just such occasions, “emissions limitation” and “emissions standard”: “The terms ‘emission limitation’ and ‘emission standard’ mean a requirement established by the State or the Administrator **which limits the quantity, rate or concentration of emissions of air pollutants . . .**” 42 U.S.C. § 7602(k)(emphasis added). Congress then used the terms “emission limitation” and “emission standard” throughout the Act (see, e.g., 42 U.S.C. § 7651d(a)(1)(“Each utility unit subject to an annual sulfur dioxide tonnage emission limitation under this section . . . .”); 42 U.S.C. § 7412(f)(5)(“The Administrator shall not be required to conduct any review under this subsection or promulgate emission limitations under this subsection . . . .”); 42 U.S.C. § 7521(f)(2)(“This percentage reduction shall be determined by comparing any proposed high altitude emission standards to high altitude emissions . . . .”); 42 U.S.C. § 7617(a)(7)(“any aircraft emission standard under section 7571 of this title.”) Thus if Congress wanted to limit the applicability of §165 to those pollutants that were subject to such a standard or limitation, it certainly knew how to do so. But it did not do so in Section 165.



Finally, EPA's interpretation runs afoul of the holding in *Alabama Power Co. v. Costle*, 636 F.2d 323, 403 (D.C. Cir. 1979), which foreclosed such creative readings of the term "each pollutant subject to regulation" under the Act:

The only administrative task apparently reserved to the Agency . . . is to identify those . . . pollutants subject to regulation under the Act which are thereby comprehended by the statute. The language of the Act does not limit the applicability of PSD only to one or several of the pollutants regulated under the Act,

. . . the plain language of section 165 . . . in a litany of repetition, provides without qualification that each of its major substantive provisions shall be effective after 7 August 1977 with regard to each pollutant subject to regulation under the Act, or with regard to any "applicable emission standard or standard of performance under" the Act. As if to make the point even more clear, the definition of BACT itself in section 169 applies to each such pollutant. ***The statutory language leaves no room for limiting the phrase "each pollutant subject to regulation" . . .***

In sum, there is simply no basis in law for EPA to refuse to include a CO2 BACT emissions limit in the Bonanza PSD Permit.

**II. EPA'S DECISION IS ARBITRARY AND CAPRICIOUS BECAUSE IT FAILS TO TAKE INTO ACCOUNT CONTRARY POSITIONS IT IS TAKING IN ANOTHER CASE.**

The Bonanza PSD Permit should also be remanded because in it, EPA has taken positions contrary to those it has recently taken in another coal-fired power plant permitting matter. On June 22, 2007, in fulfillment of its responsibility under § 309 of the Clean Air Act to review and comment on major federal agency actions, EPA submitted comments on a Draft Environmental Impact Statement for Nevada's White Pine Energy Station Project.<sup>3</sup>

---

<sup>3</sup> This issue is also properly before the EAB; see *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 250 n.8 (EAB 1999) ("a petitioner may demonstrate that an issue was not reasonably ascertainable during the public comment period.")

Section 165(a)(2) directs the permitting authority to fully consider all written and oral presentations “on the air quality impact of such source, alternatives thereto, control technology requirements and other considerations.” (Emphasis added.) The PSD program is designed “to assure that any decision to permit increased air pollution in any area to which this section applies is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process.” CAA § 160(5).

In EPA’s White Pine DEIS Comments the agency made specific findings that are directly relevant to the Bonanza project, and has erred here by failing to take account of its own findings in considering “alternatives” to the Bonanza project. For example, in its White Pine Comments EPA expressed concern that the “density of new coal-burning plants in Nevada is in excess of the demonstrated need for energy throughout the Western States.” EPA Letter p. 2. EPA also found that BLM had erred in failing to consider alternatives to the proposed project such as energy efficiency, staged development, design for future carbon capture and storage, the potential for development of geothermal resources, and various other options. EPA Letter pp. 3-5, 14.

EPA must follow its own recommendations and findings in considering “alternatives” to Bonanza and assuring that all of the consequences of the permitting decision are thoroughly considered and fully informed. By failing to explain why energy efficiency, design for carbon capture and storage, and the potential for renewables are relevant in evaluating a proposed coal plant in Nevada but not in Utah, EPA’s decisions in this proceeding are arbitrary and

capricious. See *Kent County v. EPA*, 963 F.2d 391, 396 (D.C. Cir. 1992)(EPA decision to list a site on the National Priorities List was arbitrary and capricious because it failed to include in the administrative record relevant statements by agency experts.)

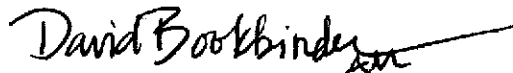
Lastly, in the event that EPA tries to justify its failure to impose a BACT emissions limit for CO2 in the Bonanza PSD permit on the grounds that there is no appropriate CO2 emissions technology, it is important to note that in its White Pine Comments EPA directed the BLM to "discuss carbon capture and sequestration and other means of capturing and storing carbon dioxide as a component of the proposed alternatives." Thus, EPA has elsewhere determined that CCS is an available technology that should be considered for the control of carbon dioxide emissions.

### CONCLUSION

For the foregoing reasons the Board should review and remand the Bonanza PSD Permit to EPA.

Dated: October 1, 2007

Respectfully submitted,



David Bookbinder  
Sierra Club  
408 C Street, NE  
Washington, DC 20002  
202-548-4598  
fax: 202-547-6009  
[david.bookbinder@sierraclub.org](mailto:david.bookbinder@sierraclub.org)

# Exhibit 1

**United States Environmental Protection Agency  
Region 8  
Air and Radiation Program  
1595 Wynkoop Street  
Denver, Colorado 80202-1129  
August 30, 2007**



**Final  
Air Pollution Control  
Prevention of Significant Deterioration (PSD)  
Permit to Construct**

PSD-OU-0002-04.00

Permittee:

Deseret Power Electric Cooperative  
10714 South Jordan Gateway  
South Jordan, Utah 84095

Permitted Facility:

110-Megawatt Waste Coal Fired Unit  
at Bonanza Power Plant  
Uintah County, Utah

## Table of Contents

I.	Introduction.....	1
II.	Findings .....	3
III.	Conditional Permit to Construct .....	4
	A. General Information .....	4
	B. Process Description.....	4
	C. Approved Installation.....	5
	D. PSD BACT and Other Emission Limits.....	7
	1. CFB boiler.....	7
	a. Particulate matter.....	7
	b. Sulfur dioxide (SO <sub>2</sub> ).....	7
	c. Nitrogen oxides (NO <sub>x</sub> ).....	8
	d. Carbon monoxide (CO).....	9
	e. Sulfuric acid (H <sub>2</sub> SO <sub>4</sub> ).....	9
	2. Emergency generator.....	9
	3. Materials handling system.....	9
	4. Cooling tower.....	10
	E. PSD BACT Operating Requirements and Fuel Restrictions.....	10
	1. General requirements.....	10
	a. CFB boiler.....	10
	b. Coal, ash and limestone handling.....	10
	3. Fuel restrictions at CFB boiler.....	10
	a. Fuel during startup.....	10
	b. Fuel during emergencies when waste coal is not available..	10
	c. Fuel other than during startup or emergencies.....	11
	4. Requirements at emergency generator.....	11
	F. PSD BACT Fugitive Emission Control Requirements.....	11
	G. Modeling Limits.....	12
	H. Initial Performance Tests.....	12
	1. General requirement.....	12
	a. Exception for emergency generator.....	12
	b. Exception for materials handling baghouses.....	13

2.	Test deadlines.....	13
	a. CFB boiler.....	13
	b. Materials handling baghouses.....	13
3.	Test protocol.....	13
4.	Test notification.....	13
5.	Representative conditions for testing.....	14
	a. CFB boiler.....	14
	b. Materials handling baghouses.....	14
6.	Test methods .....	14
	a. Particulate matter.....	14
	b. Sulfur dioxide (SO <sub>2</sub> ).....	14
	c. Nitrogen oxides (NO <sub>x</sub> ).....	15
	d. Carbon monoxide (CO) .....	15
	e. Diluent (CO <sub>2</sub> or O <sub>2</sub> ).....	15
	f. Sulfuric acid (H <sub>2</sub> SO <sub>4</sub> ).....	15
	g. Sulfur content of coal.....	15
	h. Heat content (gross calorific or Btu content) of coal.....	15
	i. Sulfur content of diesel fuel.....	16
	j. Visible emissions.....	16
I.	Compliance Provisions.....	16
1.	PSD BACT emission limits and modeling limits apply at all times.....	16
2.	NSPS exemptions not applicable to emission limits in this permit.....	16
3.	NSPS Subpart A excess emission reporting and recordkeeping requirements not applicable to emission limits in this permit.....	16
4.	Continuous compliance demonstrations .....	16
5.	Compliance demonstrations by annual stack test .....	18
6.	Compliance demonstrations for opacity.....	18
7.	Compliance demonstrations for emission limits in pounds per hour.....	19
	a. Sulfur dioxide (SO <sub>2</sub> ).....	19
	b. Total PM <sub>10</sub> (filterable plus condensable).....	19
8.	Compliance demonstrations by recordkeeping.....	19
	a. Fuel restrictions at CFB boiler.....	19
	(i) Fuel during startup.....	20
	(ii) Fuel during emergencies when waste coal is not available.....	20
	(iii) Fuel other than during startup and emergencies....	20
	b. Emergency generator.....	20
	c. Fugitive dust control.....	21
	d. Cooling tower .....	21

J.	Compliance Monitoring Requirements.....	21
1.	Continuous monitoring systems .....	21
a.	General requirement.....	21
b.	Performance specifications and accuracy.....	22
c.	Quality assurance project plan .....	22
d.	Installation .....	22
e.	Operation and availability.....	22
f.	Data averaging.....	22
g.	Calculation of emission rates in lb/MMBtu.....	23
2.	Coal sulfur content and heat content monitoring.....	23
K.	Additional Recordkeeping Requirements.....	23
L.	Reporting Requirements.....	24
1.	Initial performance test reports.....	24
2.	Continuous emission compliance reports .....	24
a.	Reports for demonstrating compliance with PSD BACT emission limits on 30-day rolling averages and 24-hour block averages.....	24
b.	Reports for demonstrating compliance with modeling limits in pounds per hour.....	26
3.	Continuous monitoring system performance reports .....	27
4.	Stack test reports.....	28
5.	Emergency generator compliance reports.....	29
6.	Baghouse and vent filter compliance reports.....	29
7.	Fugitive dust control compliance reports.....	29
8.	CFB boiler fuel restriction compliance reports.....	30
9.	Notification of commencement of construction.....	30
10.	Addresses.....	30
M.	New Source Performance Standards.....	30
N.	Title V Permitting Requirements.....	30
O.	Acid Rain Program Requirements.....	31
1.	Permitting.....	31
2.	Sulfur dioxide allowances.....	31
3.	Continuous emission monitoring requirements.....	31
IV.	General Conditions.....	31
A.	Binding Application.....	31
B.	Permit Effective Date .....	32



C.	Enforceability of Permit .....	32
D.	Emissions During Construction .....	32
E.	Initial Notifications.....	32
F.	Applicability of Other Requirements .....	32
G.	Transfer of Ownership.....	32
H.	Permit Expiration.....	32
I.	Treatment of Emissions .....	33
J.	Right of Entry.....	33

## I. Introduction

This Federal PSD permit is being issued under authority of 40 CFR 52.21. Deseret Power Electric Cooperative (hereinafter the "Permittee") proposes to construct a new 110-megawatt waste-coal-fired steam electrical generating unit ("WCFU") at the Permittee's existing Bonanza power plant near Bonanza, Utah, on the Uintah & Ouray Indian Reservation. Steam for the new unit will be supplied by a Circulating Fluidized Bed (CFB) boiler, with a maximum heat input capacity not to exceed 1,445 million Btu per hour (MMBtu/hr), and designed to combust waste coal from the Permittee's existing Deserado mine. The waste coal is generated from the coal washing process at the mine. Washed coal is supplied to the existing Bonanza Unit 1. Waste coal, which is presently landfilled in refuse pits at the Deserado mine will be reclaimed and/or diverted from the landfill for use in the new unit.

Proposed emission control equipment for the WCFU will consist of a baghouse for particulate control, a combination of limestone injection into the combustion zone and a dry scrubber downstream of the CFB boiler for control of sulfur oxides, sulfuric acid and condensible particulate matter, and Selective Non-Catalytic Reduction (SNCR) for control of nitrogen oxides. Dust from coal and limestone handling will be controlled by use of enclosed conveyors and by venting of dust to fabric filter dust collectors at conveyor transfer points. Dust from the coal and limestone stockpiles will be controlled by compaction and by spraying of surfactant sealant and/or water, where required by this permit. Dust from ash handling will be controlled by venting of dust to fabric filter dust collectors and by hydrating the ash prior to transfer for disposal.

Potential controlled emissions from the WCFU are estimated as the following:

<u>Pollutant</u>	<u>Estimate</u>	<u>Basis of emission estimate</u>
Particulate matter at CFB boiler stack	190 tons/yr	0.03 lb/MMBtu allowable emission rate, including condensible particulate
Particulate matter from coal, ash and limestone handling	18 tons/yr	AP-42 emission factors for coal, ash and limestone handling; emission limits in this permit for baghouses
Sulfur Dioxide	348 tons/yr	0.055 lb/MMBtu allowable emission rate
Nitrogen Oxide	557 tons/yr	0.088 lb/MMBtu allowable emission rate
Carbon Monoxide	949 tons/yr	0.15 lb/MMBtu allowable emission rate
Sulfuric acid	22 tons/yr	0.0035 lb/MMBtu allowable emission rate
Volatile Organic Compounds	32 tons/yr	0.005 lb/MMBtu emission rate by boiler design

The existing Bonanza power plant consists of a single bituminous coal-fired unit, rated at approximately 500 megawatts electrical output. It was constructed in the early 1980's and is operating under a Federal PSD permit originally issued on February 4, 1981, then updated and reissued on February 7, 2001. The existing power plant is a "major stationary source" as defined in Federal PSD rules at 40 CFR 52.21(b)(1)(i). The EPA has determined that the addition of the WCFU will constitute a "major modification" as defined in §52.21(b)(2)(i), and will therefore require a PSD permit. The WCFU is expected to result in significant emission increases of particulate matter, sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) from the power plant. Application of Best Available Control Technology (BACT) is required for these pollutants under §52.21(j)(3).

The initial PSD permit application for the WCFU was submitted on April 14, 2004. The application was revised and resubmitted on November 1, 2004. A modeling protocol was initially submitted on August 14, 2001, then revised and resubmitted on March 9, 2004. The permit application included an air quality modeling analysis, additional impacts analysis (regional haze, plume blight and deposition) and visibility analysis for Federal Class I areas under 40 CFR 52.21(k), (l), (m), (o) and (p), as well as proposed emission limits for the WCFU. Emissions from existing Bonanza Unit 1 were included in the modeling analysis. No violations of PSD Class I or Class II ambient air increments, or of National Ambient Air Quality Standards, were predicted.

Subsequent discussions between the Permittee and EPA led to further revisions to the permit application, principally:

- a proposal for a dry scrubber for additional SO<sub>2</sub> control,
- a proposal for lower BACT emission limits than originally proposed for particulate matter, SO<sub>2</sub> and NO<sub>x</sub>,
- a proposal for alternative BACT emission restrictions applicable during boiler startup and shutdown events,
- a proposal for BACT emission limits for the materials handling baghouses and cooling tower,
- a revised proposal for BACT emission limits for the emergency generator,
- a top-down BACT analysis for control of condensible particulate matter, and
- a request for operational flexibility to blend run-of-mine with the waste coal at any time, if needed, at up to a 50/50 ratio by weight, equivalent to approximately 6,500 Btu/lb coal.

Correspondence between the Permittee and EPA pertaining to these application revisions and other topics is included in the Administrative Record for issuance of this permit. A chronology and description of that correspondence is included in the Statement of Basis for issuance of this permit.

## **II. Findings**

On the basis of the information in the administrative record, EPA has determined that:

- A. The Permittee will meet all of the applicable requirements of the PSD regulations (40 CFR 52.21);
- B. No applicable emission standard, PSD increment, or national ambient air quality standard will be violated by the emissions from the permitted facility; and
- C. The Permittee can comply with the conditions of this permit.

In issuing this permit EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, if the conditions of this permit are not met by the Permittee.

### III. Conditional Permit to Construct

#### A. General Information

Permit number: PSD-OU-0002-04.00  
AFS number: 049-047-00001  
SIC Code and SIC Description: 4911 – Electric services

#### Site Location

Bonanza Power Plant  
12500 East 25500 South  
Vernal, Utah 84078

#### Corporate Office Location

Deseret Power Electric Cooperative  
10714 South Jordan Gateway  
South Jordan, Utah 84095

The equipment listed in this permit shall be constructed by Deseret Power at the following location:

Bonanza Power Plant  
Latitude 40° 05' 11" N, Longitude 109° 16' 48" W  
35 miles southeast of Vernal, Utah

- B. Process Description: The Waste Coal Fired Unit (WCFU) will consist of a circulating fluidized bed (CFB) boiler and associated equipment at the existing Bonanza power plant. The WCFU will have a nominal capacity of up to 110 megawatts gross electrical output. The CFB boiler will supply superheated steam to the extracting/condensing turbine, to drive an electrical generator and supply cycle and plant auxiliary steam through uncontrolled extraction from the turbine.

The CFB boiler will be fired on western bituminous coal from the Deserado mine. Deseret Power has designed the project to be fired on waste coal alone, but has also requested operational flexibility in the permit to use a blend of waste coal and run-of-mine coal at any time, as needed, at up to a 50/50 ratio by weight (equivalent to coal with heat content of approximately 6,500 Btu/lb). Run-of-mine coal is raw coal from the mine that has not been washed in the coal washing plant at the mine. During emergencies that would prevent the waste coal from being delivered and placed into the WCFU, Deseret Power has requested permit flexibility to use either run-of-mine coal or washed coal from the Deserado mine.

The waste coal is produced as an unavoidable byproduct of the coal washing process at the Deserado mine. The waste coal has a nominal heating value range of approximately 3,000 to 5,400 Btu/lb, with an average heating value of approximately 4,000 Btu/lb. The waste coal will be delivered via an existing electric train line from the Deserado mine, approximately 35 miles east of the Bonanza power plant. The run-of-mine coal has a heating value ranging from 8,500 to 10,000 Btu/lb.

Emission controls for the CFB boiler shall consist of:

- a pulse-jet fabric filter baghouse for particulate control,
- limestone injection into the CFB combustion zone, along with a dry scrubber downstream for SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> control,
- Selective Non-Catalytic Reduction (SNCR) for NO<sub>x</sub> control, and
- proper combustion practices for CO control.

Emission controls for particulate emissions from coal, limestone and ash handling shall consist of enclosed conveyors and venting of dust to fabric filter dust collectors at conveyor transfer points. This permit includes BACT emission limits for the CFB boiler and for the fabric filter dust collectors at the materials handling system, as required by 40 CFR 52.21(j)(3).

An emergency generator will also be installed, with potential emissions below 1 ton/yr for all pollutants, based on maximum expected operation of 100 hours per year. This permit includes BACT emission limits for the emergency generator, as required by §52.21(j)(3).

Emission controls for fugitive particulate emissions from coal, limestone and ash/sludge stockpiles shall consist of compaction and periodic spraying of surfactant sealant. This permit includes operational requirements as BACT for fugitive emission control.

The WCFU will utilize portions of the existing Bonanza power plant facilities, including: control room, administration building, raw water supply system, fuel oil system, plant drains, storm drains, sanitary and corrosive drain systems, ash conveyors, delivery of waste coal via existing electric train from the Deserado mine, coal rail car receiving hopper and transfer building, demineralized water system, fire protection/ service water, potable water, auxiliary steam, grounding and cathodic protection systems.

C. Approved Installation

The approved WCFU installation shall consist of the following equipment:

One circulating fluidized bed boiler, maximum heat input capacity not to exceed 1,445 MMBtu/hr, designed for firing on waste coal.

Emission controls for CFB boiler: pulse-jet fabric filter baghouse, limestone injection system, dry SO<sub>2</sub> scrubber (spray dry absorber), Selective Non-Catalytic Reduction.

Emergency generator (diesel-fired internal combustion engine, not to exceed 750 kilowatt estimated capacity, equivalent to 1,005 estimated horsepower).

Coal handling system: enclosed coal conveyors, coal storage pile, coal bunkers, dust collection systems (baghouses and vent filters) at coal transfer points:

<u>Emission Point ID</u>	<u>Estimated Air Flow</u>	<u>Location</u>
Baghouse OCH/DC-1	15,000 dscfm	existing terminal building
Baghouse EP-W-MH-01	8,500 dscfm	crusher building
Baghouse EP-W-MH-02	8,500 dscfm	coal day silo headhouse

Limestone handling system: storage pile, reclaim hopper, limestone silo with dust collection system (baghouses and vent filter):

<u>Emission Point ID</u>	<u>Estimated Air Flow</u>	<u>Location</u>
Baghouse EP-W-MH-03	1,000 dscfm	Limestone crushers
Vent filter EP-W-MH-04	1,000 dscfm	Surge bin
Baghouse EP-W-MH-05	4,000 dscfm	Limestone storage silo

Ash handling system: ash hydration for dust control, ash transfer system to landfill, with dust collection system (baghouses and vent filters):

<u>Emission Point ID</u>	<u>Estimated Air Flow</u>	<u>Location</u>
Vent filter EP-W-MH-06	1,000 dscfm	Bed ash recirculation bin
Vent filter EP-W-MH-07	1,000 dscfm	Bed ash disposal surge bin
Baghouse EP-W-MH-08	3,600 dscfm	Fly ash silo
Baghouse EP-W-MH-09	3,600 dscfm	Bed ash silo

Lime material handling with dust collection (vent filter):

<u>Emission Point ID</u>	<u>Estimated Air Flow</u>	<u>Location</u>
Vent filter EP-W-MH-10	2,000 dscfm	Lime storage silo

Inert material handling with dust collection (vent filter):

<u>Emission Point ID</u>	<u>Estimated Air Flow</u>	<u>Location</u>
Vent filter EP-W-MH-11	2,000 dscfm	Inert bed day bin

Cooling tower with cellular-type mist eliminators

D. PSD BACT and Other Emission Limits

The term "30-day rolling average," as used in this permit, shall mean the average of 30 successive boiler operating days.

The term "boiler operating day," as used in this permit, shall have the meaning given in the revised 40 CFR 60 Subpart Da, published in the Federal Register on February 27, 2006 (71 FR 9866), as it applies to new units: "*Boiler operating day*" ... means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted for the entire 24-hour period.

1. CFB boiler

- a. Particulate matter (PM): The Permittee shall not discharge or cause the discharge of total particulate matter (including condensible particulate matter) from the CFB boiler to the atmosphere in excess of 0.03 lb/MMBtu heat input, on a 24-hour block average (midnight to midnight), of which the filterable (non-condensable) portion shall not exceed 0.012 lb/MMBtu heat input on a 24-hour block average. The same emission limits shall apply for PM<sub>10</sub>.

Because condensible particulate matter emissions from CFB boilers have not been widely quantified, there is a possibility that the actual condensible portion of particulate matter would cause the emission limit of 0.03 lb/MMBtu for total PM/PM<sub>10</sub> to be exceeded. In the event the Permittee cannot meet that limit because of condensible particulate matter, EPA may adjust the emission limit to a level not to exceed 0.045 lb/MMBtu, pending EPA's review of stack test results at the CFB boiler.

- b. Sulfur dioxide (SO<sub>2</sub>): The Permittee shall not discharge or cause the discharge of SO<sub>2</sub> from the CFB boiler to the atmosphere in excess of the following:
- (i) Prior to the date which is 12 months after completion of initial performance testing: 0.055 lb/MMBtu heat input, on a 30-day rolling average.
  - (ii) Beginning on the date which is 12 months after completion of initial performance testing, and thereafter:
    - (a) 0.055 lb/MMBtu heat input, on a 30-day rolling average, for any boiler operating day when the uncontrolled SO<sub>2</sub>



emission potential of the combusted coal is 2.2 lb/MMBtu or greater, on a 30-day rolling average.

- (b) a calculated emission limit, on a 30-day rolling average, as set forth below, for any boiler operating day when the uncontrolled SO<sub>2</sub> emission potential of the combusted coal is less than 2.2 lb/MMBtu, on a 30-day rolling average:

$$\frac{0.055A + 0.040B}{30} \text{ lb/MMBtu heat input}$$

Where:

- A = Number of BOD, during 30 successive BODs prior to the calculation, when the uncontrolled SO<sub>2</sub> emission potential of the combusted coal was 1.9 lb/MMBtu or greater, on a 30-day rolling average
- B = Number of BOD, during 30 successive BODs prior to the calculation, when the uncontrolled SO<sub>2</sub> emission potential of the combusted coal was less than 1.9 lb/MMBtu, on a 30-day rolling average

BOD = Boiler Operating Day

For purposes of determining the applicable SO<sub>2</sub> emission limit in either (a) or (b) above, the uncontrolled SO<sub>2</sub> emission potential of the coal, on a 30-day rolling average, shall be based on coal samples obtained during a period of 30 successive BODs which ends five BODs prior to the day on which the emission limit applies.

- c. Nitrogen oxides (NO<sub>x</sub>): The Permittee shall not discharge or cause the discharge of NO<sub>x</sub> from the CFB boiler to the atmosphere in excess of the following:
- (i) Prior to the date which is 12 months after completion of initial performance testing: 0.088 lb/MMBtu heat input, on a 30-day rolling average.
  - (ii) Beginning on the date which is 12 months after completion of initial performance testing; and thereafter: 0.080 lb/MMBtu heat input, on a 30-day rolling average.

- d. Carbon monoxide (CO): The Permittee shall not discharge or cause the discharge of CO from the CFB boiler to the atmosphere in excess of 0.15 lb/MMBtu heat input, on a 30-day rolling average.
  - e. Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>): The Permittee shall not discharge or cause the discharge of sulfuric acid from the CFB boiler to the atmosphere in excess of 0.0035 lb/MMBtu heat input, average of three EPA Method 8 or NCASI Method 8A test runs.
2. Emergency generator: The Permittee shall only use an Emergency Generator engine that is certified by the engine manufacturer, via "certification of conformity" from EPA as defined in 40 CFR part 89, to be compliant with the following engine emission standards, for non-road compression-ignition engines with rated power more than 560 kilowatts, as codified at 40 CFR 89.112, Table 1:
- a. For NO<sub>x</sub> plus nonmethane hydrocarbons, the "Tier 2" emission standard of 6.4 grams per kilowatt-hour.
  - b. For CO, the "Tier 2" emission standard of 3.5 grams per kilowatt-hour.
  - c. For particulate matter, the "Tier 2" emission standard of 0.20 grams per kilowatt-hour.
3. Materials handling system. The Permittee shall not discharge, or cause the discharge, of particulate matter from the materials handling system baghouses or vent filters in excess 10 percent opacity on a six-minute average<sup>1</sup>, nor at the baghouses in excess of the following emission limits, in grains per dry standard cubic foot (gr/dscf), average of three EPA Method 5 or 5D test runs:

<u>Emission Point</u>	<u>Location</u>	<u>Emission Limit</u>
OCH/DC-1	Existing terminal building	0.005 gr/dscf
EP-W-MH-01	Crusher building	0.005 gr/dscf
EP-W-MH-02	Coal day silo headhouse	0.005 gr/dscf
EP-W-MH-03	Limestone crushers	0.01 gr/dscf
EP-W-MH-05	Limestone storage silo	0.01 gr/dscf
EP-W-MH-08	Fly ash silo	0.01 gr/dscf
EP-W-MH-09	Bed ash silo	0.01 gr/dscf

<sup>1</sup> The ten percent visible opacity limit is included for the purpose of monitoring performance of the material handling baghouses but is not a BACT requirement.

4. Cooling tower: For purposes of limiting emissions of particulate matter, the cooling tower shall be equipped with cellular-type mist eliminators designed to limit circulating water drift loss to no more than 0.001 percent.

E. PSD BACT Operating Requirements and Fuel Restrictions

1. General requirements. At all times, including periods of startup, shutdown, and malfunction, all equipment, facilities and air pollution control systems installed or used to achieve compliance with this permit shall be maintained and operated in a manner consistent with good air pollution control practices for minimizing emissions. Air pollution control systems subject to this permit condition shall include the following:
  - a. CFB boiler: Pulse-jet fabric filter baghouse for control of particulate emissions, limestone injection system and dry SO<sub>2</sub> scrubber for control of sulfur dioxide, sulfuric acid and condensable particulate emissions, and a Selective Non-Catalytic Reduction system for control of nitrogen oxide emissions.
  - b. Coal, ash and limestone handling: Baghouses and vent filters as listed in condition III.C of this permit, and emission control equipment and techniques as listed in condition III.F of this permit, for control of particulate emissions.
2. Fuel restrictions at CFB boiler.
  - a. Fuel during startup. The Permittee shall not combust, in the CFB boiler, any startup fuel other than diesel fuel (#2 grade fuel oil or better) or natural gas. The diesel fuel shall have a sulfur content of no more than 0.05 percent (500 parts per million) by weight.
  - b. Fuel during emergencies when waste coal is not available. During any emergency that prevents waste coal from being delivered from the Deserado mine and placed into the WCFU, the Permittee is permitted to combust, in the CFB boiler, any other coal originating from the Deserado mine, including run-of-mine coal or washed coal.

For purposes of this permit condition, an emergency shall mean any situation arising from sudden and reasonably unforeseeable events beyond the control of the Permittee. Depletion of the waste coal stockpile at the Deserado mine is not an emergency. Run-of-mine coal shall mean raw mined coal that has not been processed through the coal washing plant at the Deserado mine. Washed coal shall mean coal that has been processed

through the wash plant.

- c. Fuel other than during startup or emergencies. Other than during startup or emergencies specified in conditions 3.a and 3.b above, the Permittee is permitted to combust, in the CFB boiler, coal from the Deserado mine consisting of either waste coal alone, or else a blend of waste coal and run-of-mine coal in any ratio yielding up to 6,500 Btu/lb heat content on a 30-day rolling average.

3. Requirements at emergency generator

- a. The Permittee shall not combust, in the emergency generator, any fuel other than diesel fuel (#2 grade fuel oil or better). The diesel fuel shall have a sulfur content of no more than 0.05 percent (500 parts per million) by weight.
- b. The emergency generator shall be installed, maintained and operated in accordance with the engine manufacturer's instructions and recommendations for ensuring compliance with the "Tier 2" emission standards listed in 40 CFR 89.112, Table 1, and as PSD BACT limits in condition III.D.2 of this permit.
- c. The Permittee shall only use the emergency generator:
  - (i) when routine electrical power to the permitted facility is unavoidably interrupted, and
  - (ii) for maintenance checks and readiness testing on the generator engine.

Usage shall not exceed 100 hours per 12-month period. Usage for maintenance checks and readiness testing may be excluded from the calculation of 12-month usage, provided that the checks and testing are recommended by the manufacturer, the vendor, or the insurance company associated with the engine.

F. PSD BACT Fugitive Emission Control Requirements

1. All coal, limestone and ash conveyors serving the WCFU shall be fully enclosed.
2. All fugitive emissions generated at coal, limestone and ash conveyor transfer points serving the WCFU, as well as at coal, limestone, ash, lime and inert material storage silos and storage bins serving the WCFU, shall be routed to fabric

filter dust collectors (baghouses or vent filters).

3. All fugitive emissions from unenclosed coal and limestone stockpiles serving the WCFU shall be controlled by compaction of the surface and by application of water sprays and surfactant when warranted. Conditions which warrant application of surfactant or water sprays are defined in this permit as any time a ten percent opacity level is exceeded.

The Permittee shall conduct weekly Method 22 observations of the coal and limestone stockpiles for visible emissions. If any visible emissions are observed, the Permittee shall conduct a Method 9 visible emission observation within 24 hours, by an observer who is certified in the use of Method 9. If opacity in excess of ten percent is observed by Method 9, the Permittee shall immediately apply dust suppression (water spray and/or surfactant).

4. The coal stockpile loadout shall be equipped with a telescoping chute to enclose the free fall of material during loadout operation and limit the exposure of the material flow stream to the wind.
5. All ash generated by the CFB boiler shall be hydrated, via a pugmill mixer, prior to transfer for disposal.

G. Modeling Limits: The Permittee shall not discharge or cause the discharge of emissions from the CFB boiler to the atmosphere in excess of the following rates used in modeling ambient impacts of the WCFU:

1. 872 pounds per hour of sulfur dioxide, averaged over a 3-hour block period.
2. 202 pounds per hour of sulfur dioxide, averaged over a 24-hour block period.
3. 75.4 pounds per hour of total PM<sub>10</sub> (filterable plus condensable), averaged over a 24-hour block period.

H. Initial Performance Tests:

1. General requirement. Initial performance tests are required for demonstrating compliance with all PSD BACT emission limits and modeling limits listed in this permit, except as follows:
  - a. Exception for emergency generator. Compliance with the operating restrictions and other requirements in conditions III.D.2 and III.E.3 of this permit shall serve as demonstration of compliance with the PSD BACT emission limits in III.D.2.

- b. Exception for materials handling baghouses. Initial performance stack tests shall be required only at baghouses OCH/DC-1, EP-W-MH-01 and EP-W-MH-05, but with the following conditions:

If results of the initial performance stack test at EP-W-MH-01 are in excess of the applicable emission limit in this permit, then baghouse EP-W-MH-02 shall also be initially stack tested, within 90 calendar days after initial performance stack test results at EP-W-MH-01 are required under this permit to be submitted to EPA.

If results of the initial performance stack test at EP-W-MH-05 are in excess of the applicable emission limit in this permit, then baghouses EP-W-MH-03, EP-W-MH-08 and EP-W-MH-09 shall also be initially stack tested, within 90 calendar days after initial performance stack test results at EP-W-MH-05 are required under this permit to be submitted to EPA.

2. Test deadlines.

- a. CFB boiler. Initial performance testing shall be completed within 60 calendar days after achieving the maximum heat input rate at which the CFB boiler will be operated, but not later than 180 calendar days after the date of initial startup of the boiler, unless a longer timeframe is requested by the Permittee and agreed to by EPA.
- b. Materials handling baghouses. Initial performance stack testing at baghouses OCH/DC-1, EP-W-MH-01 and EP-W-MH-05 shall be completed within 60 calendar days after initial startup of each baghouse.

The deadline for submittal of test reports may be found in condition III.L.1.

3. Test protocol. Within 90 calendar days after the date of initial startup of the CFB boiler, and at least 30 calendar days prior to initial performance testing, the Permittee shall submit a test protocol to EPA for all initial performance tests that are required to be conducted under this permit. The test protocol shall outline the proposed test methodologies and procedures to be used. Performance tests shall be conducted in accordance with the test protocol and the test methods specified in this permit, and any changes required by EPA.
4. Test notification: The Permittee shall submit written notification to EPA of the anticipated date of initial performance tests, no less than 30 days prior to commencement of each such test, to provide EPA an opportunity to have an observer present. EPA shall also be notified promptly of any change in the

anticipated date.

5. Representative conditions for testing. Initial performance tests shall be conducted under representative conditions, defined as follows:

- a. CFB boiler. "Representative conditions" shall mean coal is being fed to the boiler during the test which is representative of "average" coal quality in terms of sulfur content ( $0.34\% \pm 0.10\%$ ) and heat content (4,000 Btu/lb  $\pm 500$  Btu/lb), and the boiler is operating at no less than 90% of the installed boiler maximum heat input capacity.
- b. Materials handling baghouses. "Representative conditions" shall mean the materials throughput is at no less than 90% of the maximum design throughput, at the materials transfer location where the emissions are controlled by that baghouse, and volumetric flow rate through the baghouse is at no less than 90% of the installed baghouse design flow rate.

6. Test methods:

- a. Particulate matter: For measurement of total filterable particulate matter at the CFB boiler exhaust stack, a particulate matter continuous emission monitoring system (PM CEMS) shall be used. 40 CFR 60, Appendix A, Method 5 or 5D test shall be conducted, in conjunction with 40 CFR 60, Appendix B, Performance Specification 11, to verify CEMS accuracy.

For measurement of condensible particulate matter at the CFB boiler exhaust stack, 40 CFR 51, Appendix M, Method 202 shall be used. In lieu of Method 202, the Permittee shall be allowed to use Conditional Test Method (CTM) 039. CTM-039 may be found on EPA website at: <http://www.epa.gov/ttn/emc/ctm/ctm-039.pdf>.

All particulate matter measured at the CFB boiler exhaust stack (including condensible particulate matter) shall be considered PM<sub>10</sub>. Separate testing for PM<sub>10</sub> via Methods 201 or 201A shall not be required unless requested by EPA.

For measurement of particulate matter at the exhaust stacks of the materials handling system baghouses, Method 5 or 5D shall be used.

- b. Sulfur dioxide (SO<sub>2</sub>): For measurement of SO<sub>2</sub> at the CFB boiler exhaust stack, a continuous emission monitoring system (CEMS) shall be used. 40 CFR 60, Appendix A, Method 6, 6A, 6B or 6C test shall be conducted, in conjunction with 40 CFR 60, Appendix B, Performance Specification 2, to

verify CEMS accuracy.

- c. Nitrogen oxides (NO<sub>x</sub>): For measurement of NO<sub>x</sub> at the CFB boiler exhaust stack, a continuous emission monitoring system (CEMS) shall be used. 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E test shall be conducted, in conjunction with 40 CFR 60, Appendix B, Performance Specification 2, to verify CEMS accuracy.
- d. Carbon monoxide (CO): For measurement of CO at the CFB boiler exhaust stack, a continuous emission monitoring system (CEMS) shall be used. 40 CFR 60, Appendix A, Method 10 test shall be conducted, in conjunction with 40 CFR 60, Appendix B, Performance Specification 4, 4A or 4B, to verify CEMS accuracy.
- e. Diluent (CO<sub>2</sub> or O<sub>2</sub>): For measurement of diluent at the CFB boiler exhaust stack, a continuous monitoring system shall be used. 40 CFR 60, Appendix A, Method 3A or 3C test shall be conducted, in conjunction with 40 CFR 60, Appendix B, Performance Specification 3, to verify accuracy of the diluent Continuous Monitoring System.

For purposes of demonstrating continuous SO<sub>2</sub>, NO<sub>x</sub> and CO emission compliance under this permit for any period of operation with use of CEMS data, as well as for total filterable particulate matter with use of PM CEMS data, the Permittee may adjust to five percent any measured carbon dioxide (CO<sub>2</sub>) diluent values that are below five percent, and may adjust to fourteen percent any measured oxygen (O<sub>2</sub>) diluent values that are above fourteen percent, as currently allowed at Acid Rain Units by 40 CFR 72.2 (definition of "diluent cap value"), 40 CFR 75 Appendix A, section 2.1.2.1(b), and 40 CFR 75 Appendix F, section 3.3.4.

- f. Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>): For measurement of H<sub>2</sub>SO<sub>4</sub> at the CFB boiler exhaust stack, 40 CFR 60, Appendix A, Method 8 shall be used. In lieu of Method 8, the Permittee shall be allowed to use NCASI Method 8A, published by the National Council for Air and Stream Improvement, Inc. (NCASI), December 1996, available at: <http://www.ncasi.org>.
- g. Sulfur content of coal: ASTM Method D4239, most recent version designated "active" on ASTM website, shall be used.
- h. Heat content (gross calorific or Btu content) of coal: ASTM Method D5865, most recent version designated "active" on ASTM website, shall be used.