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Air Quality

December 9, 1994

Russell A. Roberts, Executive Secretary
UTAH AIR QUALITY BOARD
150 North 1950 West
P.O. Box 144820
Salt Lake City, UT 84114-4820

Re: Response to Utah Division of Air Quality's PSD Applicability/Major Modification Determination.

Dear Russell:

I. Introduction.

Representatives of Deseret Generation and Transmission ("DG&T") have met with the Utah Division of Air Quality ("DAQ") on several occasions to discuss whether the Notice of Intent for Bonanza I dated September 27, 1993 ("Bonanza I NOI") constitutes a "major modification" under the State of Utah's Prevention of Significant Deterioration ("PSD") rules. To err on the side of caution, DG&T prepared the NOI to satisfy all substantive PSD requirements in case the DAQ made a major modification determination. As a result, DG&T believes that the DAQ's final determination as to whether or not the NOI is a major modification is essentially a procedural matter.

During the initial public comment period on the NOI, certain comments were received alleging that the NOI constituted a PSD major modification. DG&T submitted written responses to the DAQ addressing these comments on June 2, 1994. See Letter to Russell A. Roberts, DAQ, from Lynn W. Mitton, DG&T, Re: Response to Comments on Bonanza I Notice of Intent ("NOI") - PSD Applicability (June 2, 1994) ["DG&T's June 2, 1994 Letter"], see also Letter to J. Tim Blanchard, DAQ, from Lynn W. Mitton, DG&T, Re: Bonanza I Notice of Intent ("NOI") (July 13, 1994) [hereinafter "DG&T's July 13, 1994 Letter"]. While DG&T continues to believe that the NOI is not a major modification, we have cooperated with the DAQ to ensure that the NOI satisfies all substantive and procedural PSD requirements pending the DAQ's final determination of PSD applicability.

At DG&T's request, the DAQ agreed to provide a formal written finding setting forth its final PSD applicability determination and the basis for such determination. The DAQ submitted a letter to DG&T on November 7, 1994 concluding that the NOI is a PSD major modification. See Letter to Lynn W. Mitton, DG&T, from Russell A.

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Roberts, Executive Secretary, Utah Air Quality Board, Re: Major Modification Status of the Bonanza Unit 1 Power Plant (November 7, 1994) [hereinafter "DAQ's November 7, 1994 Letter"]. This letter states that Bonanza I's operating heat input was increased from 4,055 million British Thermal Units per hour ("MMBtu/hr") to 4,381 MMBtu/hr and this increase "would result in a significant increase in emissions from a change in the method of operation of Bonanza I . . ." which would be a PSD major modification. Id.

DG&T has researched the issues raised by the DAQ's November 7, 1994 Letter and determined that there are certain statements made therein that are incorrect. This letter has been prepared to respond to these issues.

II. Discussion.

A. DG&T's Current Operation of Bonanza I and the Operation Proposed in the NOI are Consistent With the Original NOI and the Current Approval Order.

The DAQ states that the original NOI dated August 4, 1980 ("Original NOI") and the original approval order ("Original AO") issued by the DAQ showed that the proposed operating heat input for Bonanza I was 4,055 MMBtu/hr. Id. This statement is only partially correct. The 4,055 MMBtu/hr heat input was used for air quality modeling but was not imposed as an operating limit on Bonanza I. The Original NOI and supporting documentation submitted to the DAQ indicated that Bonanza I's was capable of being operated at a higher maximum heat input of 4,381 MMBtu/hr.

The Original NOI was submitted as an amendment to an application for review that had been previously submitted to Region VIII of the U.S Environmental Protection Agency ("EPA Region VIII") on January 18, 1980. See Original NOI at 1. The Original NOI provided supplemental information regarding Bonanza I and added a second unit, Bonanza II, to the overall plans for the Bonanza Station. The Original NOI set forth the maximum generating capacity and heat input for both units. The Original NOI stated that the Bonanza Station "will consist of two conventional coal-fired steam electric generating units each with a nominal gross rating of 400 megawatts (440 megawatts, maximum gross)." Id. at II-2. The Original NOI also states that the "maximum instantaneous heat input to each furnace will be 4,381 million Btu per hour; heat input at 100 percent load will be 4,055 million Btu per hour." Id. at III-1.

DG&T also submitted details of the construction contract for Bonanza I to the DAQ. See DG&T's July 13, 1994 Letter. The

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amended construction contract stated that the heat input would be 4,381 MMBtu/hr. See id.; see also Burns & McDonnell, DG&T Moon Lake Station Unit No. 1, Contract 103 Sulfur Dioxide Absorption System Addendum No. 1, at 7, para. A3-5.A. (March 18, 1980). The original AO for Bonanza I provided that "[a]ll pollution control procedures and facilities shall be adopted or installed as proposed and equipment shall be operated to the manufacturer's specifications and/or to good engineering practices." Letter to Merrill J. Millett, DG&T, from Brent C. Bradford, Utah Air Conservation Committee ("UACC"), Re: Air Quality Approval Order for a Coal Fired Power Generation Plant (Two 400 MW Units) in Uintah County (Moon Lake) at § 1 (April 29, 1981) [hereinafter "Original AO"]. Similar language is included in Bonanza I's current AO. See Letter to Merrill Millett, DG&T, from F. Burnell Cordner, UACC, Re: Approval Order for Electric Utility Steam Generating Plant Unit #1 Uintah County, CDS A1 at § 1 (July 2, 1987) [hereinafter "Current AO"]. Operation of Bonanza I at the maximum heat input of 4,381 MMBtu/hr is consistent with the Original NOI, the manufacturer's specifications and the requirements of the Current AO. Therefore, DG&T's operation of Bonanza I at a heat input of 4,381 MMBtu/hr does not require any additional review, approval or modification of the Current AO.

Even if there was a basis to conclude that the NOI could be a major modification, State and Federal PSD rules provide specific exceptions to PSD requirements which are directly applicable to Bonanza I's circumstances. Under the Federal PSD rules, a change in the method of operation does not include "[a]n increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition." See 40 C.F.R. § 52.21(2)(iii)(e). State PSD rules likewise exempt "[a]n increase in the hours of operation or in the production rate unless such change would be prohibited under any enforceable permit condition." See UACR R307-1-1.89.5; see also DG&T's June 2, 1994 Letter at 4-5.

The Current AO does not include any enforceable limit for either power production or heat input because the actual limit is the maximum design of Bonanza I. Moreover, DG&T is allowed by its Current AO to operate Bonanza I at its maximum design heat input of 4,381 MMBtu/hr. Even if such operation were not provided by the Current AO, it would nevertheless be allowed because such increase is expressly exempt from PSD review.

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B. The Permitting Approach and Air Quality Modeling Followed By EPA Region VIII for Bonanza I is Consistent With Other Permitted Facilities.

Even though the maximum heat input and design operation of Bonanza I was 4,381 MMBtu/hr, the 4,055 MMBtu/hr value was used for air quality modeling. Even so, it was described in the Original NOI and supporting documentation and understood that the maximum design heat input for Bonanza I and II was 4,381 MMBtu/hr for each unit. Such approach, however, is consistent with the permitting procedures followed by EPA Region VIII for other facilities in the early 1980's. It is important to note that such modeling was based upon two units at 4,055 MMBtu/hr each for a combined heat input and emission rate based upon 8,110 MMBtu/hr for Bonanza I and II. Therefore, even if modeling was performed at the 4,055 MMBtu/hr level, the combined heat input that was modeled was still substantially higher than the maximum 4,381 MMBtu/hr level for a single unit.

Although the DAQ is the current permitting authority for Bonanza I, the original construction permit was issued by EPA Region VIII. EPA Region VIII was also the permitting authority for Platte River Power Authority's ("Platte River") Rawhide Facility ("Rawhide"). See EPA, Rawhide Unit No. 1 - Platte River Power Authority, Applicability Determination at 1 (February 27, 1980). Comparison of the permits for Bonanza I and Rawhide demonstrates that the same permitting procedures were followed for both units. Short-term air quality impacts for both facilities were based upon the assumed "100%" heat input without regard to the true maximum heat input. An annual load factor of 80% for Bonanza I and 70% for Rawhide was used to predict annual air quality impacts. Even though air quality modeling was based upon the 100% heat input level, no conditions were included in either permit that restricted the actual operating heat input. As a result, the practical maximum heat input limit for both facilities is their maximum design.

Discussing the Rawhide permit, DG&T's June 2, 1994 Letter states:

Although each PSD permit is unique and they cannot be generalized to other PSD permits, certain aspects of Rawhide's permit provide an example of the types of significant changes that can and have occurred at a PSD major source without triggering the requirements of PSD review as a major modification. The Rawhide application for a 279 MW coal-fired power plant, as amended, was filed in 1979. The Rawhide plant is located 20 miles

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north of Fort Collins, Colorado and is also located approximately 56 kilometers northeast of the Class I area of Rocky Mountain National Park ("RMNP"). EPA, Rawhide Unit #1 - Platte River Power Authority, Applicability Determination at 1 (February 27, 1980).

EPA estimated that at a generation of 230 megawatts net ("MWN"), the maximum coal consumption for the Rawhide unit was estimated to be 155 tons per hour ("TPH") [sic], with a heat input of 2,630 MMBtu/hr and an annual coal consumption of 872,000 TPY. . . .

An air quality analysis was performed by EPA for the Rawhide unit. EPA estimated that the 24-hour SO₂ ground level concentrations would be negligible at RMNP. Memorandum, Analysis of Air Quality Impact from the Rawhide Generating Station at 1 (March 10, 1980). Based upon these results, it was assumed that air quality impacts of the Rawhide unit on other Class I increments would be acceptable. Id. EPA Region VIII issued a PSD permit for the Rawhide unit in 1980. EPA, Conditional Permit to Commence Construction and Operate (May 22, 1980). EPA has not delegated PSD authority for the Rawhide unit to the State of Colorado. As a result of a request by Platte River, EPA revised the Rawhide PSD permit on December 21, 1992 to incorporate certain references in the original permit. EPA, Conditional Permit to Commence Construction and Operate (December 21, 1992). Although the Rawhide PSD permit is based upon a maximum heat input of 2,630 MMBtu/hr and a maximum coal consumption of 872,000 TPY (based upon 70% utilization), there are no permit limits in its current permit which limit heat input or coal consumption. Since there is no coal consumption limit, the actual potential air quality impacts of the Rawhide unit are limited to its actual design capacity for coal consumption.

At the same time that EPA was permitting the Rawhide unit under federal PSD requirements, the State of Colorado was permitting it under state new source review requirements. The Colorado Department of Health ("CDH") issued initial approval for the Rawhide unit in 1979 assuming SO₂ limits of 512 lb/hr, 1795 TPY and 0.3% sulfur content coal. CDH, Initial Approval, Emission Permit No. C-12,525-1 - Platte River Power Authority (November 2, 1979). Unlike the PSD permit for Rawhide, the CDH permit included a coal consumption limit. It appears that no additional air quality analysis was performed by

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EPA Region VIII for the increase in coal consumption from the 872,000 TPY assumed for the PSD permit to the 1.3 million TPY included in the CDH permit.

A final emission permit was issued by the CDH to Platte River in 1986 based upon a 90% limit of 0.19 lb/MMBtu (which is approximately 70.0% removal based upon a 3-hour averaging period) and a maximum coal consumption of 155 tons per hour ("TPH") and 1.3 million TPY. CDH, Final Approval, Emission Permit No. 12LR525 - Platte River Power Authority (November 25, 1986). Contrary to EPA Region VIII's air quality analysis, CDH estimated that coal consumption of 155 TPH or 1,086,240 TPY (based upon 80% utilization) would result in 50% consumption of the Class I increment for RMNP. CDH, Source Impact Analysis - Attachment 1 (August 9, 1979). This permit was later modified at the request of Platte River to increase the maximum coal consumption to 175 TPH and 1.5 million TPY to reflect the actual operating conditions of the Rawhide unit. CDH, Modification of Final Approval, Emission Permit No. 12LR525 - Platte River Power Authority (November 25, 1986). It also appears that no additional impacts analysis was performed by either CDH or EPA Region III for this increase in coal consumption.

Even though the original PSD review and current PSD permit assumes an ambient impacts analysis based upon 872,000 TPY of coal, no additional impacts analysis has been performed for the Rawhide unit. Because the CDH does not have PSD authority for Rawhide, any limits contained in the CDH permits could be revised without PSD review. Moreover, consistent with federal PSD rules, Platte River can increase production (i.e., coal consumption) at Rawhide without triggering PSD requirements--despite the original estimates for coal consumption that were relied upon for the original PSD application.

Although exact details of the Rawhide situation are different from Bonanza I, the principal is the same. Rawhide has increased estimated coal consumption by two-fold without undergoing additional PSD review. Clearly, the increased coal consumption will result in increased emissions--which are likely above the significance levels for PSD review. However, Rawhide is not restricted under any PSD permit from increasing its coal consumption.

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Therefore, like Bonanza I and the NOI, Platte River may increase coal consumption without triggering PSD review as a major modification.

See DG&T's June 2, 1994 Letter at 14-16 (emphasis added).

As stated above, because Rawhide does not have any coal consumption or heat input limits it may increase its operations up to the maximum design of its equipment--even though air quality modeling may have been based upon the 100% heat input level. Therefore, Rawhide has increased its total coal consumption above the level modeled for its original PSD application without obtaining a modification of its PSD permit from EPA Region VIII. As stated above, operation of Bonanza I at a heat input of 4,381 MMBtu/hr is allowed by the Current AO. Even if operation at 4,381 MMBtu/hr was not specifically allowed, it would nevertheless be exempt from PSD review under State and Federal rules. Like Rawhide, DG&T can operate Bonanza I at the maximum heat input of 4,381 MMBtu/hr without triggering PSD applicability.

VII. Conclusion.

For the reasons stated in their November 7, 1994 letter, the DAQ has determined that the NOI constitutes a major modification subject to PSD review. DG&T continues to believe that the NOI does not constitute a major modification. Nevertheless, DG&T has cooperated with the DAQ to ensure that the NOI satisfied all substantive and procedural PSD requirements. Operation of Bonanza I at a heat input of 4,381 MMBtu/hr is consistent with the Original AO, manufacturer's specifications and the Current AO. Even if operating at 4,381 MMBtu/hr was not specifically authorized, it would be exempt from PSD review under both State and Federal rules.

Sincerely,

Lynn W. Mitton/dsm

Lynn W. Mitton,
General Manager

cc: Montie Keller
J. Tim Blanchard
Ben Wilson
Fred G. Nelson