Air Pollution Control
40 CFR 49.151 Federal Minor New Source Review In Indian Country
Technical Support Document
Proposed Permit #MNSR-UO-000004-2015.004

Deseret Generation & Transmission Cooperative
Bonanza Power Plant
Uintah & Ouray Indian Reservation
Uintah County, Utah

In accordance with the requirements of the Tribal Minor New Source Review (MNSR) Permit Program at 40 CFR Part 49, this Federal permit to construct is being issued under authority of the Clean Air Act (CAA). The EPA has prepared this technical support document describing the conditions of this MNSR permit and presents information that is germane to this permit action.

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I. Introduction

On November 2, 2015, the EPA received an application from Deseret Generation & Transmission Cooperative ("Deseret"), requesting a Minor New Source Review (MNSR) permit allowing the installation of nitrogen oxide (NO_x) controls and establishment of NO_x emission limits and a coal consumption cap for the Bonanza Power Plant (the "Plant" or the "facility"), located near Bonanza, Utah, in accordance with the requirements of the Tribal MNSR Permit Program at 40 CFR Part 49 and the terms of the settlement agreement described below.

This permit action applies to an existing facility operating on Indian country lands within the Uintah & Ouray Indian Reservation. The facility consists of a single 500-megawatt coal-fired electric utility boiler and associated equipment, known as Bonanza Unit 1. The facility is supplied with coal from the Deserado coal mine, located approximately 35 miles east of the facility.

The Bonanza plant is located 7.5 miles northwest of Bonanza, Utah, and approximately 28 to 35 miles southeast of Vernal, Utah. The exact location is Latitude 40 degrees 4.94 minutes North, Longitude 109 degrees 17.48 minutes West. The Universal Transverse Mercator (UTM) coordinates are 4,438,606 meters Northing, 646,206 Easting.

The purpose of this permit action is to incorporate the terms of a proposed settlement agreement between Deseret Generation & Transmission Cooperative, Sierra Club, Wild Earth Guardians, and the EPA, related to air emissions at the Bonanza power plant. Specifically, this permit incorporates the nitrogen oxide (NO_x) control requirements and emission limits, as well as a coal consumption cap, from the proposed agreement. To achieve the NO_x requirements, this permit authorizes the replacement of the existing low-NO_x burners (LNBs) with new LNBs, along with installation of overfire air (OFA). This permit does not authorize the construction of any new emission sources, nor emission increases from existing units. The facility must also operate in accordance with the requirements of the Title V Operating Permit Program at 40 CFR Part 71.

The purpose of the proposed settlement agreement is to resolve an appeal by Sierra Club and Wild Earth Guardians of the Federal Title V Operating Permit No. V-UO-000004-00.00, issued by the EPA on December 5, 2014. The appeal was filed with the Environmental Appeals Board (EAB) on January 7, 2015 (Appeal Nos. CAA 15-01; CAA 15-02). The EAB stayed the appeal pending EPA's final action on Deseret's application for this MNSR permit. The proposed settlement agreement, identified by Docket ID No. EPA-HQ-OGC-2015-0678, was published in the Federal Register on October 22, 2015 (80 FR 63993).

The reductions in emissions from compliance with this MNSR permit are settlement agreement requirements and can be used when determining applicability of other Clean Air Act (CAA) requirements, such as the Prevention of Significant Deterioration (PSD) Permit Program at 40 CFR Part 52 and the Title V Operating Permit Program.

The EPA has determined that issuance of this MNSR permit will not cause or contribute to any National Ambient Air Quality Standard (NAAQS) violations, or have potentially adverse effects on ambient air quality.

II. Facility Description

The following description is taken from Attachment 1 of the Federal Title V Operating Permit for the Bonanza power plant. The Operating Permit may be found on the EPA Region 8 website at http://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8.

General: The Bonanza power plant is a 500-megawatt (estimated), coal-fired electrical generating facility. It consists of a dry bottom wall-fired Foster-Wheeler steam generator capable of producing over 3.2 million pounds of steam per hour. The turbine generator is a Westinghouse tandem compound two flow reheat unit.

Water for the unit is transported about 20 miles from the Green River near Jensen, Utah. Coal for the unit is mined in Colorado near Rangely, at the Cooperative's Deserado mine, and transported via an electric railroad 35 miles to the plant site. Occasionally, as needed, coal is also purchased on the open market and trucked to the site.

The project was originally developed for two generating units, but due to the downturn of the petroleum industry and cancellation of defense weapons in the late 1980's, only Unit 1 was built. Most of the power produced is used by the Cooperative's members in Utah and surrounding states, or sold under bilateral wholesale power purchase contracts, or sold on the open market.

Fuel systems: Bituminous low-sulfur coal is the primary fuel source for the plant. The coal comes into the plant by train from the Deserado coal mine. From the train the coal can be delivered to the outdoor coal storage pile or to the coal storage silo. From the storage silo the coal is conveyed to the crusher. Coal can also be reclaimed from the outdoor storage pile by conveying it to the crusher. Years ago the crusher was only used occasionally, but is now used routinely, as it helps the pulverizers run more smoothly.

Crushed coal is conveyed from the crusher to the bunkers just upstream of the pulverizers. There are five pulverizers. Each pulverizer has its own bunker. Stored coal is conveyed from the bunkers to the pulverizers. At the pulverizers the coal is pulverized to the consistency of talcum powder and fired into the boiler. The unit at full load burns about 250 tons of coal per hour and 6000 tons of coal every 24 hours. Full load heat input rate to the boiler is about 4,578 MMBtu per hour, as reported to EPA in a March 7, 2000 electronic supplied spreadsheet. LNBs are currently used in the boiler for NO_x emission control, but would be replaced with new LNBs along with installation of OFA.

Fuel oil is used to start up the main boiler from a cold start, to change pulverizing equipment on line, and to operate the auxiliary boiler during shutdowns and for cold unit starts. Natural gas may be used for firing these boilers in the future as economics dictate. Fuel oil is also used to operate the plant's emergency diesel generator and emergency diesel fire pump. Fuel oil is stored in two 288,000 gallon tanks on site.

Diesel refueling is performed on site for heavy equipment via above-ground 20,000-gallon storage tanks. Propane is used to heat outlying coal handling buildings via construction heaters. The propane storage tank holds 30,000 gallons. A gasoline refueling station using a 10,000 gallon above-ground storage tank is also on the plant site for smaller vehicles.

Turbine generator system: The turbine generator uses steam at 1,005°F and 2,485 psi produced by the boiler to generate electricity. The turbine generator uses a lube oil system which includes a main

reservoir, clean and dirty storage tanks, pumps and filters. The generating process involves converting mechanical energy to electrical energy supplying the plant site and for sales on the Western grid.

Steam generator system: Coal is pulverized and fed into the boilers via hot air streams to produce the steam needed for energy demands. Coal usage and steam production vary with energy needs. Fuel oil is used in the ignitors to support starting and stopping of the coal pulverizing equipment and for flame stabilization during transients. Fuel oil is also used for start-up steam production in a unit cold start. Auxiliary steam is produced by the package boiler for unit cold starts or supplemental heating during unit outages. The package boiler uses fuel oil and is rated at 150,000 pounds of steam an hour at 150 psi.

Pollution control systems: The power plant uses an Ecolaire baghouse for particulate control, a Combustion Engineering wet scrubber for SO_2 control, and low-NO_x burners for NO_x control.

Baghouse: The baghouse system for the main boiler is divided into two separate sections, each consisting of 12 compartments. The two sections (1-1 and 1-2) are on separate duct fan trains. Each compartment contains 450, 12-inch diameter, 37-foot long bags, for a total of 10,800 bags (both sections combined). Average pressure drop is 5.5 inches of water. The ducting allows for the use of any combination of compartments in a section at any time. Under normal circumstances, both sections of the baghouse are in use at the same time and all compartments are in use except during maintenance. Gas flow at full load through the baghouse and scrubber is approximately 1.16 million SCFM. The baghouse is designed to be 99.9% efficient.

The baghouse system is a reverse gas design using not only reverse gas but sonic horns for bag cleaning. Ash removal is accomplished by passing the boiler flue gas through the glass fabric bags where the ash is filtered by the fabric and trapped inside the bag. At a preset differential pressure, the compartment is removed from the gas stream and the bags are collapsed via a reverse gas stream. The collapsed bags release the trapped ash and it falls into a hopper below the compartment. From the hopper, the ash is transported to a silo where it is mixed with scrubber waste streams for landfill.

Scrubber: The SO_2 scrubber is a wet limestone system, built by Combustion Engineering. It consists of three identical countercurrent absorber modules, of which at least two are on line any time the plant is in service. Each absorber module uses three levels of counterflow limestone slurry sprays at 12,000 GPM to react with the flue gas. The spray is collected on a slotted tray which forces the gas through 1.5 inch diameter holes. This not only straightens the gas flow but provides a 100% contact between the gas and the slurry.

Limestone is ground on site in ball mills and mixed with water to a percent solids by weight typically between 25% and 35% to produce the needed slurry. The slurry is mixed into the absorber modules that operate with a percent solids by weight typically between 13% and 17% and a pH typically between 5.0 and 6.0. The base and lower portion of each module tower is the slurry reaction tank. Each module also includes a bulk entrainment separator and mist eliminator vanes for water droplet removal. A mist eliminator cleaning system is used to clean the vanes. On occasion, scrubber enhancers such as adipic acid are added to the slurry as needed to aid in the removal process. The solids formed in the scrubbing process are removed by a sludge handling system, mixed with flyash and conveyed or trucked to an on-site landfill.

Low-NO_x burners: The LNBs were originally installed by Foster-Wheeler during the initial design and construction of the boiler. In 1997, a new generation of LNBs designed by Advanced Burner Technologies were installed to help the boiler meet its Acid Rain Program Phase II early election

emission limit (0.50 lb/MMBtu). The LNBs work on the principle that a cooler flame combusts less of the nitrogen in the coal, therefore creating less NO_x emissions. The early election limit expired at the end of 2007 and cannot be renewed. The Acid Rain emission limit for NO_x has reverted to the standard Phase II limit of 0.46 lb/MMBtu, effective starting January 1, 2008.

Emission monitoring equipment: A Spectrum extractive dilution system continuously monitors the gaseous pollutants (SO_2 and NO_x) and diluent (CO_2) and flow rate at a level of the stack which is 334.5 feet above grade, and monitors SO_2 at the inlet ducts to the scrubber. Gas samples are carried by heated sample lines to the 6th floor of the scrubber where the analyzer and computer shelter is located. The data from the analyzers are sent to the data handling and acquisition system, where it is stored and used to generate reports to the EPA.

Inlet monitoring or coal analysis may be used to calculate inlet SO_2 in lb/MMBtu for removal calculation purposes. Coal sampling and analysis is done according to the applicable ASTM methods and 40 CFR 60 method 19 calculations.

Opacity is measured from the two ducts between the baghouses and the induced draft fans. The opacity monitors are located in the ductwork because the stack is a wet stack. Data from the two opacity monitors are averaged to report the stack opacity.

Stack parameters: The plant's main boiler stack is 600 feet high. It is constructed with a concrete shell and acid resistant brick liner. The exit diameter is 26 feet with an average exit temperature of about 120 degrees F. The stack flow rate at full load is estimated to be about 1.3 million SCFM with the new ruggedized rotor installed and operating.

The plant's auxiliary boiler stack is located in the Main Boiler building and extends through the roof. It is 240 feet high and has an exit diameter of 4.75 feet. The average exit temperature is 600 degrees F when the unit is in operation. The stack flow rate is about 1000 SCFM.

Water supply system: Water is transported approximately twenty miles from the Cooperative's wells along the Green River. The system discharges through a maximum 450 kilowatt hydro-generator into the Raw Water Storage pond on site prior to treatment. The system is capable of transporting at least 13,000 GPM.

Boiler feedwater must be extremely clean and demineralized prior to use. All treatment is performed on site. Two stages of cleaning occur, the first in the Water Treatment facility where boiler water goes through a reverse osmosis process. The second is in the turbine building where boiler water is then demineralized. The recirculation of the plant's condensate is also constantly polished to maintain strict compliance with boiler chemistry. Due to the remote location of the plant, the Cooperative also produces potable water on site.

The Bonanza power plant is a zero discharge facility. All waste water and storm water is collected and re-used where possible. All remaining water is sent to the evaporation ponds where it is impounded.

Potential facility-wide emissions: The facility-wide potential-to-emit for the existing facility, as listed in the Statement of Basis for the Draft Federal Title V Operating Permit, and repeated in Attachment B of

Deseret's application for this minor NSR permit, taking into account all federally enforceable emission limitations, is as follows:

Pollutant	Potential-to-emit (tons per year)
CO	503
SO_2	1,968
NO_x	9,228
PM_{10}	574
HAPs	68
VOC	70

The Statement of Basis for the Draft Operating Permit may be found on EPA Region 8 website.

After installation of new LNBs with OFA, and taking into account the proposed new emission limit of 0.28 lb/MMBtu for NO_x under the proposed settlement agreement, Deseret's permit application anticipates that the PTE for NO_x will be reduced to an estimated 5,619 tons per year.

III. Proposed Minor NSR Permit Action

Summary

At Deseret's request and consistent with the application, we are proposing this permit to authorize the replacement of the existing LNBs with new LNBs at the Bonanza power plant, along with installation of OFA, to reduce NO_x emissions, as provided for in the proposed settlement agreement. This permit does not authorize the construction of any new emission sources, nor emission increases from existing units.

This permit incorporates the NO_x control requirements and emission limits, as well as a coal consumption cap, from the proposed settlement agreement between Deseret Generation & Transmission Cooperative, Sierra Club, Wild Earth Guardians, and the EPA, related to air emissions at the facility.

Proposed project

We propose to approve replacement of the existing boiler burner system with a LNB/OFA burner system. The project will also involve boiler tube inspections/repairs and work. The MNSR permit will allow Deseret to proceed with the boiler burner replacement and other work. The primary effect of the project will be to reduce NO_x emissions from the facility.

The Bonanza facility is scheduled for a major outage in the spring of 2016 and again in spring of 2018. The settlement agreement requires Deseret to replace the existing burners with the LNB/OFA system during one of these planned outages, depending on timing of issuance of the requested permit prior to completion of the project. The proposed settlement agreement specifies that if the permit is finalized prior to December 31, 2015, then Deseret is required to install and operate the LNB/OFA by June 30, 2016; otherwise, the project may be delayed until the 2018 planned outage.

The two main elements of the project are described below.

A. Low NO_x Burner/Overfire Air System Installation

This part of the overall outage project consists of removing the existing Advanced Burner Technology burners (total 20) previously installed in the unit and installing the LNB/OFA system. The new burners and overfire air system components are expected to be supplied from one of a selected number of vendors that Deseret has approached for the project. The removal of the existing burners and installation of the new LNB/OFA system will be completed with assistance of boiler contractors and supervised by Deseret personnel. The removal will consist of taking the old burners out along with the coal feed elbow to the first Victaulic coupling. (Illustrative drawings may be found in Attachment A of Deseret's permit application, available on the EPA Region 8 website.)

Design change and modifications are expected to include and may also incorporate additions and/or changes to all portions of the burner/ignitor systems, including but not limited to: burner barrels, air registers, burner throat, air flow measurement devices, electronic controls and monitoring, spin vanes, coal pipes, coal distribution elbows, and start-up ignitors, among other components.

The purpose of the OFA system is to reduce NO_x emissions from the boiler by staging the combustion process. A portion of the secondary air is diverted from the burner front to a series of OFA ports that are located above the burners. Each OFA port is provided with a system to regulate OFA port airflow into the boiler. The ports incorporate systems of dampers, controllers, or other equipment to monitor and control air flow. OFA ductwork will be installed consisting of individual ducts that take air from the top of the existing burner wind box or another air source and feed one or more registers at each of the OFA ports.

Existing underfire air (UFA) ports in the boiler are not expected to be needed after the installation of the new OFA system. UFA air ports may be replaced with straight tubes as part of the overall LNB/OFA project, in which case the new design may include panels and associated modifications to UFA port and port locations.

B. Boiler Tube Inspections, Repairs and Replacement

The boiler auxiliaries, air heater, forced draft and induced draft fans and ductwork shields, dampers, ash handling system, and feed water pumps will be inspected and repaired as necessary as part of the overall LNB/OFA air project, to ensure that boiler operations match design criteria established as engineering basis for the LNB/OFA project performance. The additional boiler work is required as part of the project to maintain boiler efficiencies for the purpose of project performance acceptance and completion testing, and to avoid posing a safety risk to personnel during the installation, startup, testing, and post-startup phases.

The major boiler scope of work expected as part of, or in conjunction with, the LNB/OFA project will include the following:

→ Perform an overall inspection of the entire boiler/furnace to identify tubes and section in need of repair and replacement.
→ Perform high pressure system piping inspections.
→ Perform high pressure system hanger inspection (hot and cold).
→ Perform an interior wash down of the economizer and reheater area of the boiler.

→ Replace tubes that have previously been temporarily repaired by pad welds.
→ Repair damaged sections of the duct work, shields, dampers and expansion joints of the floe gas path identified during the inspection.
→ Repair and replace PA and SA expansion joints.
→ Replace or repair tube shields through the platens and super heater area identified during the inspection.
→ Replace or repair tube shields through the economizer and reheater area identified during the inspection.
→ Replace or repair the furnace water walls identified during the inspection.
→ Replace or repair the platens and super heater areas identified during the inspection.
→ From previous inspections, replace 80 economizer bundle assemblies and shields.
→ From previous inspections, replace 92 reheater bundle assemblies and shields.
→ Replace the bottom ash submerged flight conveyor chain and idlers.
→ Replace two air heater seals; hot and cold.
→ Replace absorber inlet damper seals.
→ Repair the scrubber outlet ductwork.
→ Replace or repair refractory throughout the boiler.
→ Repair internal leak in low pressure heater 1-3.
→ Perform an inspection on boiler safety valves; repair as necessary.
→ Clean/wash the air heater basket.
→ Perform chimney stack liner repairs as identified during inspection.
→ Inspect the major fans (FD, PA and ID); repair as necessary.
→ Overhaul the motors to the FD fan, PA fan, ID fan, cold-water pump, condensate pumps and feed water booster pumps.

Much of the work to be performed on the boiler in conjunction with installing and testing the LNB/OFA project is described by Deseret as routine repair and replacement/maintenance that would be expected to be performed in any event at the Bonanza plant. It is included in the scope of the project set forth in the permit application as it also will impact the overall LNB/OFA project completion (including performance testing).

Requested permit conditions

The permit conditions requested by Deseret, in section 4.0 of their permit application, are taken from the proposed settlement agreement and have been incorporated into the proposed MNSR permit as shown below. The permit condition numbers below are those used in the proposed permit.

I.C. Nitrogen Oxide (NO_x) Control Requirements and Emissions Limits

1. The Permittee shall install and operate LNB/OFA at the Plant no later than June 30, 2016, if the EPA issues a final MNSR permit for the Plant on or before December 31, 2015, or no later than June 30, 2018, if the EPA issues a final MNSR permit for the Plant on or after January 1, 2016.

2. Beginning no later than 425 boiler operating days after installation of LNB/OFA, Bonanza Unit 1 shall not discharge into the atmosphere NO_x in excess of 0.28 pounds per million British thermal units (lbs/MMBtu) heat input, based on a 365 boiler operating day rolling average. A "boiler operating day" means a 24-hour period between midnight and the following midnight during which any fuel is combusted at any time in the steam generating

unit, as defined by 40 CFR 60 Subpart Da. Compliance shall be monitored as laid out in condition I.E.3 of this permit. A new 365 boiler operating day rolling average emission rate shall be calculated for each new boiler operating day.

3. Total NO_x emissions from the Plant shall not exceed 5,700 tons per year on a rolling 12 calendar month basis (the "Base Limit"), to begin in the third calendar month after permitted operations of LNB/OFA commence. The Permittee shall provide written notification to EPA Region 8 of the date that operation of the LNB/OFA commences. Compliance shall be monitored as laid out in condition I.E.4 of this permit. A new 12-month emission total shall be calculated at the end of each calendar month.

4. For the period from January 1, 2030, until the permanent cessation of operations to generate electricity at Bonanza Unit 1 (the "End of Service"), total NO_x emissions from the Plant shall not exceed 3,000 tons per year on a rolling 12 calendar month basis. Compliance shall be monitored as laid out in condition I.E.4 of this permit. A new 12-month emission total shall be calculated at the end of each calendar month.

5. In determining NO_x emissions under condition I.C of this permit, from the period beginning no later than 60 boiler operating days after installation of the LNB/OFA until the End of Service, the Permittee shall use data from the continuous emission monitoring system (CEMS) as defined in 40 CFR §72.2 and installed and operated in accordance with 40 CFR Part 75, and shall include all periods of startup, shutdown and malfunction. The NO_x data need not be bias adjusted and the missing data substitution procedures of 40 CFR Part 75 shall not apply to such determinations. Diluent capping (i.e., 5% carbon dioxide (CO_2) may be applied to the NO_x emission rate for any hours where the measured CO_2 concentration is less than 5%, following the procedures in 40 CFR Part 75, Appendix F, Section 3.3.4.1.

6. The Permittee shall operate and maintain each approved emission unit or activity, including any associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions of MNSR regulated pollutants and considering the manufacturer's recommended maintenance schedule and procedures (or equivalent procedures developed by the vendor or Permittee) at all times, including periods of startup, shutdown, maintenance, and malfunction. The EPA will determine whether the Permittee is using acceptable operating and maintenance procedures based on information available, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the facility.

I.D. Coal Consumption Cap

1. Subject to the provisions of condition I.D.3 of this permit, for the period from January 1, 2020 through End of Service of Unit 1, coal consumption at the Plant shall not exceed 20,000,000 short tons of coal.

2. Coal consumption under this condition I.D shall be determined by weight avoirdupois, regardless of coal source or quality. Quantity of coal consumed will be measured by the Unit 1 coal pulverizer feeder belt scales, calculated monthly, and reported with the Plant's compliance report for the relevant reporting period (currently submitted at least semi-annually under 40 CFR §60.51Da). The pulverizer feeder belt scales shall be calibrated per manufacturer's calibration procedures no less than twice per calendar year and in at least two

different calendar quarters during the year. A pulverizer feeder belt scale calibration shall also be conducted when a pulverizer feeder belt is replaced.

A copy of the calibration procedure and, for each calibration, a record of the pulverizer number, calibration data and reason for calibration shall be kept on site. A copy of any revision to the manufacturer's calibration procedures and a record of the dates of each completed calibration shall be provided by the Permittee with its annual compliance certification required by 40 CFR §71.6(c)(5).

3. Contingent Releases from Coal Consumption Cap

(a) The coal consumption cap in condition I.D.1 of this permit shall not apply after the date that any of the following events occur:

(i) The Permittee applies for and receives approval to construct from the EPA (to the extent required), and installs and operates Selective Catalytic Reduction (SCR) for NO_x control at Unit 1 prior to December 31, 2029, and Unit 1 achieves and continuously complies with a NO_x emission limit of 0.05 lb/MMBtu on a 12-month rolling average, measured with CEMS (with permit terms that establish monitoring, recordkeeping and reporting requirements specific to the SCR system) as defined and required in condition I.C.5 of this permit, beginning no later than 180 days after the SCR installation is complete; or

(ii) Due to petitions or other actions commenced by unaffiliated third parties or governmental authorities (including the EPA), and without the Permittee's consent, the Permittee is required to and does install and operate an SCR at Unit 1 prior to December 31, 2030, and achieves and continuously complies with a NO_x emission limit of 0.05 lb/MMBtu on a 12-month rolling average, measured with CEMS (with permit terms that establish monitoring, recordkeeping and reporting requirements specific to the SCR system) as defined and required in condition I.C.5 of this permit, beginning no later than 180 days after the SCR installation is complete.

(b) As required by the proposed settlement agreement, the Permittee shall notify the Sierra Club and Wild Earth Guardians of its decision to install and operate an SCR at Unit 1 at least 24 months in advance of its intended date for commencing SCR operation, and shall apply to the EPA for a revision to this permit at least 12 months in advance of its intended date for commencing construction, and shall receive a revision to this permit before commencing construction of SCR, to incorporate requirements for SCR.

(c) If the Permittee does not notify Sierra Club and Wild Earth Guardians of its choice to install SCR prior to December 31, 2027 (in the event of voluntary SCR installation under condition I.D.3.(a)(i) of this permit), or prior to December 31, 2028 (in the event of SCR installation under condition I.D.3.(a)(ii) of this permit), then the release in condition I.D.3.(a) of this permit shall not apply and the coal consumption cap in condition I.D.1 of this permit will continue in effect until the End of Service of Bonanza Unit 1.

Additional proposed permit conditions

Besides the permit conditions requested by Deseret that come from the proposed settlement agreement, we are proposing additional conditions based on MNSR Permit Program requirements. Additional conditions include a "General Provisions" section that is included in all MNSR permits, and which may be found in section II of the proposed permit.

Additional conditions also include conditions specific to the Deseret project, involving monitoring, recordkeeping, notification and reporting requirements sufficient to ensure the emissions controls and operational limits arising from the proposed settlement agreement are effective in reducing emissions. These project-specific conditions may be found in sections I.E through I.H. of the proposed permit, as follows:

I.E. Monitoring Requirements **[40 CFR §49.155(a)(3)]**

1. CEMS Required. At all times after the effective date of this permit, a NO_x CEMS in the Unit 1 Main Stack, as defined in 40 CFR 72.2, shall be maintained, calibrated, and operated in full compliance with the requirements found at 40 CFR Part 75, to accurately measure NO_x, diluent, and stack gas volumetric flow rate. The CEMS shall be used to determine compliance with the NO_x emission limitations in this permit.

2. CEMS Operation.

   (a) For any hour in which fuel is combusted in Unit 1, the hourly average NO_x concentration in lb/MMBtu at the CEMS shall be calculated, in accordance with the requirements of 40 CFR Part 75.

   (b) An hourly average NO_x emission rate in lb/MMBtu is valid only if the minimum number of data points, as specified in 40 CFR Part 75, is acquired by both the NO_x pollutant concentration monitor and the diluent monitor (oxygen (O_2) or carbon dioxide (CO_2)).

   (c) Data reported to meet the requirements of this section shall not include data substituted using the missing data substitution procedures of Subpart D of 40 CFR Part 75, nor shall the data have been bias adjusted according to the procedures of 40 CFR Part 75.

   (d) The Permittee shall take all steps necessary to avoid CEMS breakdowns and minimize CEMS downtime. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with the CEMS plan, best practices, and maintaining an on-site inventory of spare parts or other supplies necessary to make rapid repairs to the equipment.

3. Monitoring compliance with NO_x emission limit in lb/MMBtu on a 365 boiler operating day rolling average.

   At the end of each boiler operating day, a new 365 boiler operating day rolling average emission rate in lb/MMBtu for NO_x shall be calculated and recorded, as follows:

(a) Sum the pounds of NO_x emitted from Unit 1 during the most recent boiler operating day and the previous 364 boiler operating days, based on NO_x CEMS data;

(b) Sum the total heat input to Unit 1 in MMBtu during the most recent boiler operating day and the previous 364 boiler operating days, using data from the Unit 1 heat input monitoring system; and

(c) Divide the total number of pounds of NO_x emitted during the 365 boiler operating days by the total heat input during the 365 boiler operating days. Periods of boiler operation during startup, shutdown and malfunctions shall be included in the calculation of average emission rates. No periods of boiler operation may be excluded.

4. Monitoring compliance with NO_x emission limits in tons on a rolling 12-month basis.

At the end of each calendar month, a new 12-month total for NO_x emissions shall be calculated and recorded, as follows:

(a) Sum the pounds of NO_x emitted from Unit 1 for the calendar month, based on NO_x CEMS data;

(b) Add the sum to the pounds of NO_x emitted from Unit 1 for the previous eleven calendar months and convert the result to tons. Periods of boiler operation during startup, shutdown and malfunctions shall be included in the calculation of tons of emissions. No periods of boiler operation may be excluded.

For monitoring continuous compliance with the NO_x emission limit of 5,700 tons per rolling 12-month period, the first compliance calculation shall be recorded no later than fifteen calendar months after permitted operation of LNB/OFA commences, and shall cover the 12-month period beginning three months after permitted operation of LNB/OFA commences.

For monitoring continuous compliance with the NO_x emission limit of 3,000 tons per rolling 12-month period, which takes effect beginning in the year 2030, the first compliance calculation shall be recorded no later than the end of December 2030, and shall cover the 12-month period beginning January 1, 2030.

I.F. Recordkeeping Requirements **[40 CFR §49.155(a)(4)(i)]**

The Permittee shall keep the following records:

1. All NO_x CEMS data, including all rolling 365 boiler operating day NO_x emissions in lb/MMBtu, all rolling 12-month NO_x emissions in tons, and all information used to calculate these values.

2. All coal consumption data and associated weight measurements at the coal pulverizer feeder belt scales used to demonstrate compliance with this permit, to include records of any calibration of the weighing device and the calibration procedure.

3. Records of quality assurance and quality control activities for the NO_x CEMS, including, but not limited to, any records required by 40 CFR Part 75.

4. Records of all major maintenance activities conducted on the air pollution control equipment and NO_x CEMS covered by this permit.

5. Any other NO_x CEMS records required by 40 CFR Part 75.

6. All specifications and maintenance requirements developed by the manufacturer, vendor, or Permittee for each emission control and monitoring device required in this permit.

7. All calibration, maintenance, repairs, rebuilds or replacements conducted for each emission control device and monitoring device required in this permit.

8. The results of all required performance testing and monitoring in this permit. The records shall include the following:

   (a) The date, place, and time of sampling or measurements;

   (b) The date(s) analyses were performed;

   (c) The company or entity that performed the analyses;

   (d) The analytical techniques or methods used;

   (e) The results of such analyses or measurements; and

   (f) The operating conditions as existing at the time of sampling or measurement.

9. All deviations of permit requirements, a description of the probable cause of the deviation, and any corrective actions or preventative measures taken.

I.G. Records Retention Requirements **[40 CFR §49.155(a)(4)(ii)]**

1. The Permittee shall retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records shall be kept in the vicinity of the facility, such as at the facility, the location that has day-to-day operational control over the facility, or the location that has day-to-day responsibility for compliance of the facility.

I.H. Reporting Requirements **[40 CFR §49.155(a)(5)]**

1. Emission compliance reports

The Permittee shall submit written reports demonstrating compliance with the NOx emission limits in this permit semiannually, by April 1 and October 1 of each year. The report due on April 1 shall cover the six-month period ending on the last day of February before the report is due. The report due on October 1 shall cover the six-month period ending on the last day of August before the report is due. The reports shall include the following information:

(a) The 365 boiler operatng day rolling average NO_x emissions in lb/MMBtu for each boiler operating day in the reporting period, and the rolling 12-month total NO_x emissions at the end of each month in the reporting period.

(b) Specific identification of any period during which emissions exceeded the emission limits in this permit, the cause(s) for the excess emissions (if known), and the corrective action taken or preventative measures adopted to eliminate the exceedance.

2. CEMS performance reports

The Permittee shall submit written reports of CEMS performance for NO_x and diluent semiannually, by April 1 and October 1 of each year. The report due on April 1 shall cover the six-month period ending on the last day of February before the report is due. The report due on October 1 shall cover the six-month period ending on the last day of August before the report is due. The reports shall include the following information:

(a) Dates and duration of each period during which the CEMS was inoperative (except for zero and span adjustments and calibration checks);

(b) Reason(s) why the CEMS was inoperative and steps taken to prevent recurrence;

(c) Any CEMS repairs or adjustments; and

(d) Results of any CEMS performance tests required by 40 CFR Part 75 (Relative Accuracy Test Audits, Relative Accuracy Audits, or Cylinder Gas Audits).

When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted during the reporting period, such information shall be stated in the report.

The CEMS performance reporting requirements in this permit are not intended to supersede or constitute a waiver of any monitoring system performance reporting requirements in 40 CFR Parts 60, 63 or 75.

3. Coal Consumption Reports

Beginning in the year 2021 until the End of Service of Unit 1, semiannually by April 1 and October 1 of each year, the Permittee shall submit written reports of accumulated coal consumption in short tons since January 1, 2020 for Unit 1, as measured by the Unit 1 coal pulverizer feeder belt scales.

4. Report submissions

All reports described in conditions I.1 and I.2 of this permit shall be certified to truth and accuracy by the person primarily responsible for Clean Air Act compliance for the Permittee, and shall be submitted to:

U. S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

Reports may be submitted electronically to r8airreportenforcement@epa.gov.

5. Deviation Reports. The Permittee shall promptly submit to the EPA a written report of any deviations of permit requirements, a description of the probable cause of such deviations, and any corrective actions or preventative measures taken. A "prompt" deviation report is one that is postmarked or submitted via electronic mail to r8airreportenforcement@epa.gov as follows:

(a) Within 30 days from the discovery of any deviation of the emission limits or operational limits that are left uncorrected for more than 24 hours after discovering the deviation; and

(b) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee's ability to meet the emission limits.

6. Reports Upon EPA Request. The Permittee shall submit any record or report required by this permit upon EPA request.

Inapplicability of Settlement Agreement to Additional Units

Paragraph 20 of the proposed settlement agreement states that nothing in the agreement restricts, limits, or otherwise applies to any new or additional units to be located at the site of the Plant. Any of the forbearance covenants of the agreement do not extend to any opposition to the issuance of permits to construct new or additional units at the Plant. Nothing in the agreement prevents Deseret from:

a. Proposing to construct or constructing a new source or unit on the site of the Plant, consistent with CAA applicable requirements. Any new source or unit must satisfy applicable preconstruction permitting requirements, as determined by EPA under applicable CAA requirements. Opposition to any permit to construct a new source or unit can be made on any grounds not based on the agreement.

b. Any proposal to construct a fuel co-firing project at Unit 1 must satisfy applicable preconstruction permitting requirements, as determined by EPA under applicable CAA requirements. Opposition to any permit to construct a new source or unit can be made on any grounds not based on the agreement.

c. Retaining, using, applying, or trading emission credits or allowances, including credits or allowances for CO_2 emissions, for Unit 1 or for any future projects, emission sources, or emission units at the site of the Plant, to the extent authorized.

IV. Air Quality Review

The MNSR Regulations at 40 CFR §49.154(d) require that an Air Quality Impact Assessment (AQIA) modeling analysis be performed if there is reason to be concerned that new construction would cause or contribute to a NAAQS or PSD increment violation. If an AQIA reveals that the proposed construction could cause or contribute to a NAAQS or PSD increment violation, such impacts must be addressed before a pre-construction permit can be issued.

This proposed permit action will not cause or contribute to a NAAQS or PSD increment violation. The proposed MNSR permit action does not authorize the construction of any new emission sources, or emission increases from existing units. The only project authorized under this permit will result in emission reductions for NO_x. The EPA proposes a NO_x emission limit of 0.28 lb/MMBtu, to take effect after installation of the project. This proposed limit is much lower than the current limit of 0.55 lb/MMBtu under the 2001 Federal PSD permit.

In short, this action will have no adverse air quality impacts; therefore, we have determined that an AQIA modeling analysis is not required for the proposed MNSR permit.

V. Tribal Consultations and Communications

We offer tribal government leaders an opportunity to consult on each proposed MNSR permit action. The tribal government leaders are asked to respond to the EPA's offer to consult within 30 days of receiving the offer. On November 6, 2015, the Ute Tribe sent to the EPA a document thanking the EPA for the opportunity to consult on the settlement agreement and identifying several concerns about it as well. On that same day, the EPA and the Tribe held a conference call to discuss the Tribe's concerns. On November 19, 2015, the EPA sent a letter to the Tribe committing to continue consultation on the proposed MNSR permit action and settlement agreement.

All minor source applications (synthetic minor, minor modification to an existing facility, new true minor or general permit) are submitted to both the EPA and the Tribes per the application instructions (see http://www2.epa.gov/region8/tribal-minor-new-source-review-permitting). The Tribes have 10 business days from the receipt of the application to communicate to the EPA any preliminary questions and comments on the application. In the event an AQIA is triggered, a copy of that document is emailed to the Tribes within 5 business days from the date the EPA receives it. The EPA enclosed a copy of the application with its letter to the Tribe dated November 19, 2015. A consultation between the EPA and the Tribe was held by conference call on December 17, 2015.

Additionally, the Tribes will be notified of the public comment period for the proposed MNSR permit and provided copies of the notice of public comment opportunity to post in various locations of their choosing on the Reservation. The Tribes will also be notified of the issuance of the final MNSR permit.

VI. Environmental Justice

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order

calls on each federal agency to make environmental justice a part of its mission by "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low income populations."

The EPA defines "Environmental Justice" as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. The EPA's goal with respect to Environmental Justice in permitting is to enable overburdened communities to have full and meaningful access to the permitting process and to develop permits that address environmental justice issues to the greatest extent practicable under existing environmental laws. *Overburdened* is used to describe the minority, low-income, tribal and indigenous populations or communities in the United States that potentially experience disproportionate environmental harms and risks as a result of greater vulnerability to environmental hazards.

A. Air Quality Impact Analysis and Compliance with the NAAQS

For purposes of Executive Order 12898 on environmental justice, the EPA has recognized that compliance with the NAAQS is "emblematic of achieving a level of public health protection that, based on the level of protection afforded by a primary NAAQS, demonstrates that minority or low-income populations will not experience disproportionately high and adverse human health or environmental effects due to the exposure to relevant criteria pollutants." *In re Shell Gulf of Mexico, Inc. & Shell Offshore, Inc.*, 15 E.A.D., slip op. at 74 (EAB 2010). This is because the NAAQS are health-based standards, designed to protect public health with an adequate margin of safety, including sensitive populations such as children, the elderly, and asthmatics. Although taken from the context of issuance of a PSD permit, this logic applies with equal force to our issuance of a MNSR permit under the CAA.

The EPA has determined that issuance of this MNSR permit will not contribute to NAAQS violations, or have potentially adverse effects on ambient air quality.

The EPA has determined that this proposed MNSR permit will not have disproportionately high and adverse human health or environmental effects on minority, low income and indigenous populations on Indian country within the Uintah and Ouray Indian Reservation and surrounding areas, for the reasons explained in section C of this analysis.

B. Demographics of Potential Environmental Justice Communities

This portion of the analysis provides summary information on the prevalence of minority, low income, or indigenous populations near the Deseret Bonanza plant. The EPA consulted the U.S. Bureau of the Census, American QuickFacts1 http://quickfacts.census.gov/qfd/states/49/49047.html and EJSCREEN2 http://www2.epa.gov/ejscreen for demographic and socioeconomic data.

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1 QuickFacts tables are summary profiles showing frequently requested data items from various Census Bureau programs. Profiles are available for the nation, states, counties, and places.

2 EJSCREEN is EPA's environmental justice mapping and screening tool that provides nationally consistent datasets and approach for combining environmental and demographic indicators. The information provided can be considered in a wide range of program contexts, and will help meet E.O. 12898's call for EPA to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of our programs, policies, and activities. All of the EJSCREEN indicators are publicly-available data. It also includes publicly available demographic data from the U.S. Census Bureau, American Community Survey (ACS) 2008-2012.

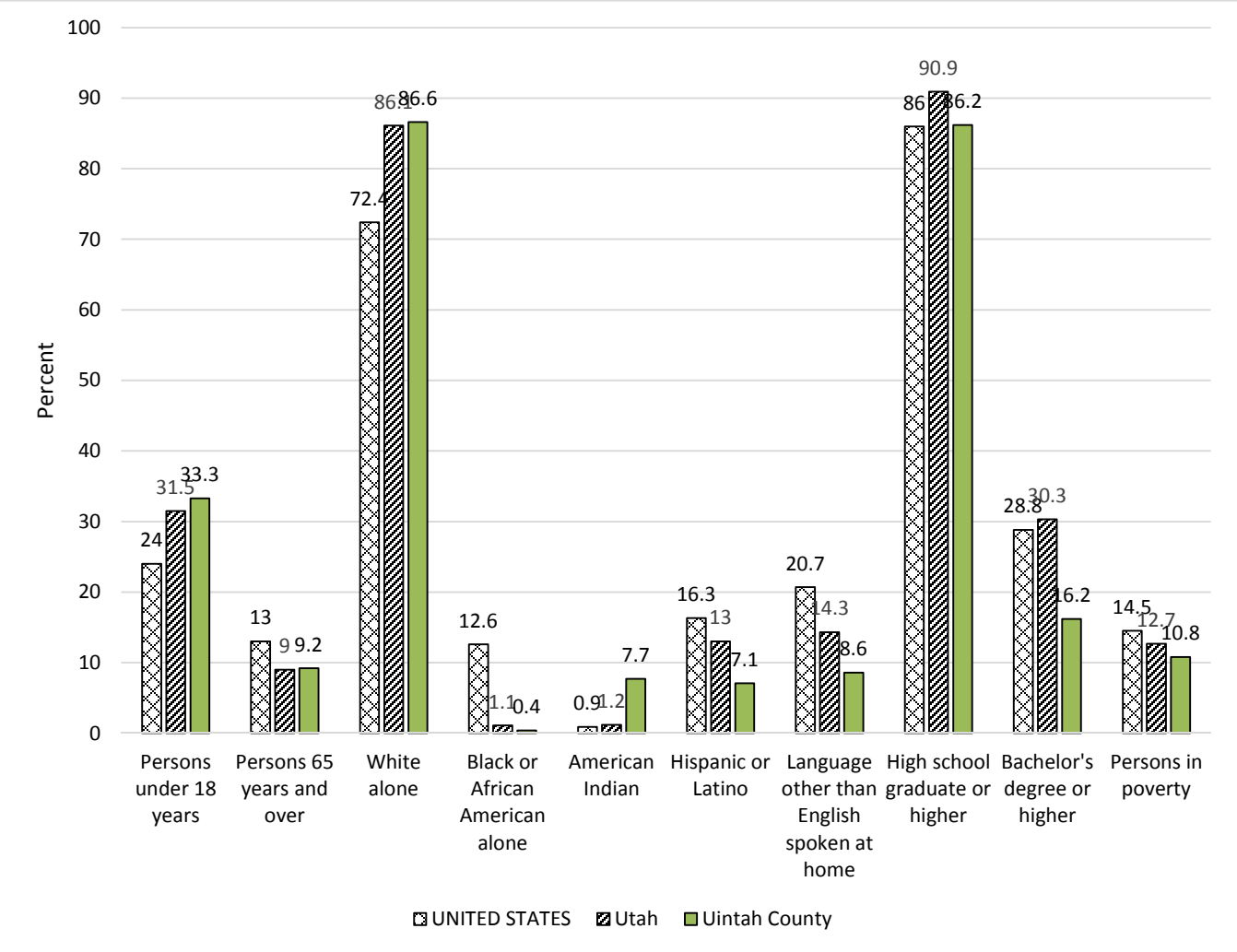
The Bonanza Power Plant is located in a sparsely populated area of Uintah County. EJSCREEN indicates that there are no persons living within 5-miles of the facility. Additional review of 2010 Census blocks surrounding the facility indicated that the nearest populated block (490479402011370) is approximately 5 ½ miles from the facility with a population of one (1) person. The next nearest block (490479402011376) is approximately six (6) miles from the facility with a population of five (5) persons. The nearest town is Dinosaur, Colorado approximately 17 miles from Bonanza.

The EPA reviewed demographic and socioeconomic data from the American QuickFacts for Uintah County and compared it to data for the State of Utah and the United States in order to characterize the general area surrounding the facility. The table below summarizes the percent of the total population that has a given demographic or socioeconomic characteristic. The same information is presented graphically in the bar chart which follows (Figure X).

Demographic and Socioeconomic Characteristic*	Uintah County	Utah	United States
Population	32,588	2,763,885	308,745,538
Persons under 18 years	33.3	31.5	24
Persons 65 years and over	9.2	9	13
White alone	86.6	86.1	72.4
Black or African American alone	0.4	1.1	12.6
American Indian and Alaska Native alone	7.7	1.2	0.9
Hispanic or Latino	7.1	13	16.3
Language other than English spoken at home, persons age 5 years+, 2009-2013	8.6	14.3	20.7
High school graduate or higher, age 25 years+, 2009-2013	86.2	90.9	86
Bachelor's degree or higher, age 25 years+, 2009-2013	16.2	30.3	28.8
Persons in poverty	10.8	12.7	14.5
Median household income (2013 dollars), 2009-2013	62067	58821	53046
Per capita income in past 12 months (2013 dollars), 2009-2013	23805	23873	28155
Population per square mile	7.3	33.6	87.4
Land area in square miles	4,479.69	82,169.62	3,531,905.43

*U.S. Census 2010 percent of population unless noted otherwise

Figure X. Demographic and Socioeconomic Characteristics for USA, Utah and Uintah County, Utah



C. Environmental Impacts to Potential Environmental Justice Communities

The EPA has determined that the proposed permit will not result in disproportionately high and adverse human health or environmental effects on minority or low-income populations for the following reasons; 1) the permit does not authorize the construction of any new emission sources nor emission increases from existing units; 2) the permit contains emissions limits that will result in reductions in emissions; 3) the Bonanza plant is in compliance with the NAAQS and the permit will not cause or contribute to NAAQS violations; 4) the permit will not cause potentially adverse effects on ambient air quality; and 5) the Bonanza plant is located in an area with sparse population.

VII. Authority

Requirements under 40 CFR §49.151 to obtain a MNSR permit apply to new and modified minor stationary sources, and minor modifications at existing major stationary sources ("major" as defined in 40 CFR 52.21). In addition, the MNSR program provides a mechanism for an otherwise major stationary source to voluntarily accept restrictions on its potential to emit to become a synthetic minor source. The EPA is charged with direct implementation of these provisions where there is no approved

tribal implementation plan for implementation of the MNSR regulations. Pursuant to Section 301(d)(4) of the CAA (42 U.S.C. Section 7601(d)), the EPA is authorized to implement the MNSR regulations at 40 CFR §49.151 in Indian country. The facility is located on the Uintah & Ouray Indian Reservation in eastern Utah. The exact location is Latitude 40 degrees 4.94 minutes North, Longitude 109 degrees 17.48 minutes West. The Universal Transverse Mercator (UTM) coordinates are 4,438,606 meters Northing, 646,206 Easting.

VIII. Public Notice and Comment, Hearing, and Appeals

A. Public Comment Period

In accordance with 40 CFR §49.157, the EPA must provide public notice and a 30-day public comment period to ensure that the affected community and the general public have reasonable access to the application and proposed permit information. The application, the proposed permit, this technical support document, and all other supporting materials for the proposed permit are available for review at:

US EPA Region 8
Technical Library
1595 Wynkoop Street
Denver, Colorado 80202-1129
Permit Contact: Mike Owens
Email: owens.mike@epa.gov
Phone: 303-312-6440
Fax: 303-312-6064

and: Uintah County Clerk's Office
147 East Main Street, Suite 2300
Vernal, Utah 84078
Phone: 435-781-5361

and: Ute Indian Tribe
Energy and Minerals Office, Air Quality
988 South 7500 East
Fort Duchesne, Utah 84026
Phone: 435-725-4950

All documents will be available for review at the U.S. EPA Region 8, Technical Library on Monday through Thursday, from 8:00 a.m. to 4:00 p.m. (excluding federal holidays). A copy of the proposed permit and technical support document will also be available on EPA website at: http://www2.epa.gov/region8/air-permit-public-comment-opportunities.

Public notice of this proposed permit action will be published in the Salt Lake Tribune, Vernal Express and Uintah Basin Standard. The proposed action will also be announced in the Ute Bulletin, a publication distributed by the Ute Indian Tribe.

Any person may submit written comments on the proposed permit and may request a public hearing during the public comment period. These comments must raise any reasonably ascertainable issue with supporting arguments by the close of the public comment period

(including any public hearing). The EPA accepts comments by mail to the EPA address and contact person above, by fax to 303-312-6064, and by email to R8AirPermitting@epa.gov. Please address comments with the subject "Comments on Proposed MNSR Permit for Deseret Generation & Transmission Cooperative, Bonanza Power Plant."

B. Public Hearing

A request for a public hearing must be submitted in writing and must state the nature of the issues proposed to be raised at the hearing. The EPA will hold a hearing whenever there is, on the basis of requests, a significant degree of public interest in a proposed MNSR permit. The EPA may also hold a public hearing at its discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the MNSR permit decision.

C. Final MNSR Permit Action

In accordance with 40 CFR §49.159, a final permit becomes effective 30 days after permit issuance, unless: (1) a later effective date is specified in the permit; or (2) the permit decision is appealed to EPA's Environmental Appeals Board pursuant to 40 CFR §124.19; or (3) we may make the permit effective immediately upon issuance if no comments resulted in a change in the proposed permit or a denial of the permit. The EPA will proceed with final permit issuance consistent with the settlement agreement.

A statement of reasons for changes made to the proposed permit and responses to all significant comments received will be sent to all persons who submitted comments and contact information on the proposed permit during the public comment period, or who requested notice of the final permit decision. In addition, the EPA will add the source to a list of final NSR permit actions which is posted on the EPA Region 8 website at http://www2.epa.gov/region8/nsr-and-psd-permits-issued-region-8. Anyone may request a copy of the final MNSR permit at any time by contacting the Region 8 Tribal Air Permit Program at (800) 227-8917 or sending an email to R8AirPermitting@epa.gov.

D. Appeals to the Environmental Appeals Board (EAB)

In accordance with 40 CFR §49.159, within 30 days after a final permit decision has been issued, any person who filed comments on the proposed permit or participated in the public hearing may petition the EAB to review any condition of the permit decision. The 30-day period within which a person may request review under this section begins when the Region has fulfilled the notice requirements for the final permit decision. Motions to reconsider a final order by the EAB must be filed within 10 days after service of the final order. A petition to the EAB is, under Section 307(b) of the Act, a prerequisite to seeking judicial review of the final agency action. For purposes of judicial review, final agency action occurs when the EPA denies or issues a final permit and agency review procedures are exhausted.