

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL  
STATE OF WYOMING

In the Matter of: )  
Basin Electric Power Cooperative ) Docket No. 10-2802  
Air Quality Permit No. MD-6047 )  
BART Permit: Laramie River Station )

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**RESPONSE TO BASIN ELECTRIC'S MOTION FOR SUMMARY JUDGMENT**

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**Basin Electric's Response to Request, received 9/14/09**

**EXHIBIT 19**

**BASIN ELECTRIC  
POWER COOPERATIVE**

1717 EAST INTERSTATE AVENUE  
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September 10, 2009

Mr. Chad Schlichtemeier  
Air Quality Division  
WY Department of Environmental Quality  
122 West 25<sup>th</sup> Street  
Herschler Building  
Cheyenne, WY 82002



Dear Mr. Schlichtemeier:

Basin Electric has reviewed the DEQ's letter dated August 27, 2009, requesting response to comments received regarding the Best Available Retrofit Technology (BART) Analysis for the Laramie River Station (LRS) and the Proposed Permit Conditions. We offer the following comments:

**1. Please clarify whether Basin's BART analysis for SCR includes the application of LNB with OFA.**

It is generally understood that SCR is added only after LNBs and OFA have been installed. Basin Electric's BART analysis did include the combination of OFA, new LNB's, and SCR. The performance of the SCR was based on installation after OFA and LNB. In fact, Basin's plan is to install OFA on each unit during the planned outages in 2009, 2010, and 2011 on Units 1, 2, and 3, respectively. New Low-NOx Burners are scheduled to be installed during the outages in 2012, 2013, and 2014. If SCR is added later, the NOx concentration entering the SCR will be reduced as low as practicable to enhance the SCR performance and minimize capital and operating costs.

**2. Please provide supporting information that the proposed 0.07 lb/MMBtu, 30-day rolling average NOx emission limit for SCR represents the most stringent control option.**

An emission rate of 0.07 lb/mmBtu is the best performance that can be expected from retrofitting an SCR on the existing Laramie River Station boilers. These boilers, which were built in the late 1970's, were not designed to accommodate the addition of an SCR between the reheat superheater and the air heater. Thus, the spacing and the temperature of flue gas are not optimum for an SCR. New power plants can be designed with a taller boiler and spacing appropriate for an SCR and with the specific temperature distribution through the boiler to provide more effective reduction of NOx. The design of an SCR is much different for a retrofit than for a new facility. Just because a new facility may be designed for an emission rate as low as 0.05 lb/mmBtu to meet BACT requirements does not mean a retrofit of an existing facility can achieve the same performance for BART. Holding a 30-year old

boiler to the same standards of a new facility is not appropriate and is not the intention of BART.

**3. Please provide additional justification for the proposed 30-day rolling NOx emission rates from the application of existing LNB with OFA and new LNB with OFA.**

The Laramie River Station already has an early version of LNB's. The burners were modified in the mid-1990's, which lowered NOx emissions from about 0.45 lb/mmBtu to about 0.27 lb/mmBtu. Due to existing boiler geometries, the addition of OFA with the existing low NOx burners have the potential of reducing NOx emissions to 0.23 lb/mmBTU. This will only be possible if the existing burners are able to be staged down to a 0.90 stoichiometric ratio and have stable flames. New burners, on the other hand, are primarily designed for the ability to stage down to 0.90 stoichiometric ratio; and, therefore, based on combustion chemistry, the level of NOx reduction is the same. Essentially if you could stage the existing burners down to the 0.90 stoichiometric ratio and maintain stable flames, there would not be a reason to replace burners.

**4. Please provide additional justification of why SCR cannot be installed on any of the units within 5 years of SIP approval as BART.**

As a result of the BART analysis following EPA's BART Guidelines, it was determined that the installation of OFA would meet the presumptive limit of 0.23 lb/mmBtu, thus satisfying the BART requirements. Basin Electric holds the position that OFA/LNB adequately satisfies the requirements of BART. While WY DEQ has incorporated SCR installation at LRS in 2018 and 2023 as a part of the SIP, Basin Electric believes SCR to be 'above and beyond' the original intent of BART at this time, which is to achieve further emission reduction in an economically feasible manner. BART should not be used in place of PSD to trigger the installation of BACT as that is not the purpose of BART.

If you have any questions or desire additional comment, please do not hesitate to contact me.

Sincerely,



Robert L. Eriksen, P.E.  
Sr. Environmental Compliance Administrator

/gmj

cc: Mike Fluharty  
Dave Cummings  
Lyle Witham