

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL  
OF THE STATE OF WYOMING

IN THE MATTER OF: )  
BASIN ELECTRIC POWER COOPERATIVE ) Docket No. 07-2801  
DRY FORK STATION, )  
AIR PERMIT CT-4631 )  
\_\_\_\_\_ )

**RESPONSE TO BASIN ELECTRIC’S ANNEX OF UNDISPUTED FACTS**

Protestants submits the following in response to Basin Electric’s annex of undisputed facts:

1. Undisputed.
2. Undisputed.
3. Protestants do not dispute this paragraph to the extent that it suggests what Basin

Electric determined. Protestants do not dispute that a “base load” facility can operate at near maximum capacity 24-hours a day, 7 days a week, year round. Protestants are without information to dispute Basin Electric’s ability to purchase supplemental electricity and Basin Electric’s ability to meet existing and projected demand by outside purchases, and therefore do not dispute these allegations of fact. Protestants dispute that projected power deficits in the western service area are 265 megawatts (MW) in 2011 and 309 MW in 2012. See Raatz Aff. at ¶ 3 (stating only that Basin Electric anticipates being short 200-300 MW of electrical power in 2011); see also Northeast Wyoming Generation Project, Power Justification and Support (July 2005), attached as Exh. A. to Raatz Aff., filed with Basin Electric’s Memorandum in Support of Motion for Summary Judgment on Protestants’ Claims Regarding Redefinition of the Source, PM<sub>2.5</sub> And Alleged Class I Increment Violations (stating only that approximately 300 MW of additional capacity will be needed to meet the electrical power needs in Northeast Wyoming, without any defined timeline).

4. Protestants do not dispute this paragraph to the extent that it suggests what Basin Electric believes. Protestants note, however, that Basin Electric's desired operational capacity of 90 to 95% is above the national average of 84.9%. See Protestants' Exh. 50 at 6.

5. Protestants do not dispute that Basin Electric selected advanced subcritical pulverized coal technology for the Dry Fork Station. Protestants also do not dispute that Powder River Basin is located in northeast Wyoming, is one of the world's largest sub-bituminous coal reserves, and that Powder River Basin coal is known for its low sulfur content. Protestants dispute that the low sulfur content "allows coal-fired boilers to limit emissions of sulfur dioxide to very low levels," to the extent that this characterization suggests that anticipated sulfur dioxide emissions from the Dry Fork Station are acceptable.

6. Protestants dispute that Basin Electric truly and thoroughly considered and evaluated IGCC technology, and supercritical or ultra-supercritical boiler technology that may be able to use coal from the Dry Fork Mine before seeking a permit from DEQ. Protestants further dispute that Basin Electric's consultants, Sargent & Lundy and CH2M Hill, studied and evaluated the potential use of IGCC technology, and supercritical or ultra-supercritical boiler technology for the Dry Fork Station power plant. Protestants note that CH2M Hill's study only evaluated IGCC technology for a 250 MW plant, prior to Basin Electric's proposal to construct a larger, 385 MW plant. See Protestants' Exh. 17. Additionally, CH2M Hill's study only briefly looked at supercritical technology for a 250 MW plant, and actually stated that "[t]he additional capital cost for a supercritical steam cycle is typically only justified by the efficiency improvement for PC units of 350MW and larger." See id. at 18. Finally, it is undisputed that Basin Electric did not conduct a BACT analysis for IGCC, supercritical, or ultra-supercritical technology for the Dry Fork Station. See Protestants' Exh. 19 at 11; Protestants' Exh. 18 at 73;

Protestants' Exh. 26 at 54-55. Protestants do not dispute that Basin Electric shared the documents from Sargent & Lundy and CH2MHill with DEQ during the permitting process.

7. Protestants dispute that the proposed size of 422 gross MW (approximately 385 MW net) for the Dry Fork Station eliminated supercritical technology from consideration in the BACT top-down process. Protestants' Exh. 26 at 97-99; Protestants' Exh. 29 at 4-9; Protestants' Exh. 30 at 1-2. Protestants do not dispute that generally, efficiencies gained by supercritical technology decrease as the size of the plant decreases. Protestants do not dispute that it would have been in Basin Electric's best interest to build a supercritical pulverized plant because such a plant would use less coal to generate the same amount of electricity as a subcritical pulverized coal plant. Protestants dispute that Basin Electric thoroughly considered supercritical technology, and note that Basin Electric did not consider supercritical technology as required in a BACT analysis. Protestants' Exh. 29 at 4-9; Protestants' Exh. 30 at 1-2.

8. Protestants do not dispute that Basin Electric submitted to DEQ a document stating differences between subcritical and supercritical plants, but Protestants dispute that this document represented a "detailed explanation." Protestants' Exh. 30 at 2. Protestants do not dispute that there are differences between supercritical and subcritical technologies, including the presence of a water drum, the construction materials and operation of the boiler, the construction materials of the economizers, the capacity of feed-water pumps to withstand pressure, and the high-pressure section of the turbines.

9. Protestants dispute that IGCC technologies are not yet mature. In fact, IGCC is not a new technology, and has its roots in century-old production plants. See Protestants' Exh. 13 at 6. Presently, there are approximately 138 gasification plants operating worldwide, and 16 modern IGCC plants operating worldwide. Id. Protestants do not dispute that there are five

coal-based IGCC plants operating in the world. Protestants do not dispute that these plants have not achieved reliable performance of 90 to 95% operational capacity, but dispute that these plants have not achieved the level of reliable performance “essential to the success” of the Dry Fork Station. Protestants dispute that vendors currently do not offer commercially available IGCC plants at the 385 net MW size at the specific elevation at Gillette, Wyoming, using sub-bituminous coal. See Protestants’ Exh. 50 at 5-6. Basin Electric has no basis for this allegation because the only Requests for Proposals sent to vendors for IGCC technology requested proposals for a smaller, 250 MW power plant. See Protestants’ Exh. 17 at App. H (showing RFPs sent January 2005, before plant size increase for Dry Fork); Protestants’ Exh. 16 at 279-81. And in fact, the RFPs submitted for this smaller sized plant showed that IGCC technology was in fact available. See Protestants’ Exh. 28 at App. H, Table 2. Protestants also dispute that vendors only offer existing designs that have been developed for larger projects of 600 – 630 net MW burning bituminous rather than sub-bituminous coals. See Protestants’ Exh. 50 at 5-6; Protestants’ Exh. 52 at 96-100.

10. Protestants dispute that Basin Electric’s basic project needs require commercial availability of at least 90%. As noted, the national average is only 84.9%. See Protestants’ Exh. 50 at 6. Furthermore, even if Basin Electric’s project needs required commercial availability of 90%, Protestants dispute that this would eliminate IGCC from consideration. Protestants’ Exh. 51 at 28. Protestants do not dispute that IGCC technologies have not achieved availability in excess of 80% on a continuing and reliable basis after several years of operation running on syngas alone, but note that other IGCC plants have achieved an excess of 80%. Protestants do not dispute that new generation IGCC plants running on syngas alone are only designed for 85% availability, and that 85% availability is not forecasted to be achieved until the third year of

operation at the earliest. Protestants note that other IGCC plants are designed for higher availability. See Protestant's Exh. 13 at 9 (noting a recent proposed IGCC plant anticipated availability of 96%); Protestants' Exh. 50 at 6. Protestants do not dispute that the existing coal IGCC plants in the world operated at less than 30% availability their first year and less than 60% availability by the third year. Finally, based on these facts, Protestants dispute that any IGCC plant would not be operational at least 15-20% of the time and perhaps as much as 70% in its first year of operation. This allegation is not based upon the promises of the new generation of IGCC plants. See Protestants' Exh. 51 at 28. In any event, none of these allegations of fact are dispositive as to whether Basin Electric and DEQ were required to conduct a BACT analysis for IGCC.

11. Protestants dispute that lack of operational availability of an IGCC plant at Dry Fork Station would force Basin Electric to (a) buy supplemental power from the grid or (b) run the IGCC plant on natural gas if possible to increase the operational availability. Protestants assert that Basin Electric would have other options, such as not producing electricity at a rate of 90 to 95% availability. Protestants do not dispute Basin Electric's motivation for the project. Protestants do not dispute that running an IGCC plant on natural gas increases the cost per kilowatt hour for electricity, though Protestants dispute Basin Electric's characterization that it would "greatly" increase cost. Protestants also dispute Basin Electric's value judgment that running the IGCC plant on natural gas wastes the expensive IGCC capital infrastructure for which the plant was built. Protestants do not dispute the rest of this paragraph.

12. Protestants do not dispute that IGCC does not use a coal-fired boiler, and that an IGCC plant employs a somewhat different way of generating electricity than a subcritical pulverized coal plant. Protestants do not dispute Basin Electric's description of how an IGCC

plant operates, except that Protestants dispute the characterization that IGCC “is more like a chemical plant.” Furthermore, though Protestants do not dispute that syngas is produced from the coal used in an IGCC plant, Protestants note that combustion does occur. See Protestants’ Exh. 16 at 137-38 & 163; Protestants’ Exh. 19 at 10. Protestants further dispute the assimilation of an IGCC plant to a natural gas-fired turbine. Protestants do not dispute that coal is the fuel for a subcritical pulverized coal plant, but Protestants note that the raw material used for both subcritical pulverized coal plants and IGCC is coal. To the extent that Basin Electric alleges that the major items of equipment and the two processes in a subcritical pulverized coal plant and an IGCC plant are fundamentally different, Protestants do not dispute that IGCC and subcritical PC coal plants are different production processes that produce electricity from coal.

13. Protestants dispute that the Dry Fork Station will result in emissions that are among the lowest of any sources of regulated pollutants in the country. Protestants do not dispute that subcritical technology is reliable burning Powder River Basin coal with proven availability and reliability needed for the project. Protestants allege that supercritical technology is also reliable burning Powder River Basin coal with proven ability and reliability needed for the project.

14. Protestants do not dispute that the permit limit for nitrogen oxides as a raw number is among the lowest in the country. Protestants allege that the averaging time of one year is longer than the majority of existing permits. Protestants’ Exh. 49 (DEQ/AQD 252-53); Protestants’ Exh. 29 at 14-16; Protestants’ Exh. 30 at 4. Protestants dispute that looking only at other permitted levels is determinative of BACT. Protestants allege that Dry Fork Station could achieve a lower permitted NO<sub>x</sub> level. Protestants’ Exh. 29 at 16-19; Protestant’s Exh. 30 at 4-6.

15. Protestants' dispute that the NO<sub>x</sub> permit limit for the Dry Fork Station is the lowest in the county. The air permit for the Desert Rock facility in New Mexico has a limit of 0.05 lb/MMBtu, averaged over a rolling 30-day period. Protestants' Exh. 48 at 9.

16. Protestants do not dispute that the permit limit for sulfur dioxide as a raw number is among the lowest in the country. Protestants allege that the averaging of one year is longer than the majority of existing permits. Protestants' Exh. 49 (DEQ/AQD 254-55); Protestants' Exh. 29 at 14-16; Protestants' Exh. 30 at 4. Protestants dispute that looking only at other permitted levels is determinative of BACT. Protestants also allege that the control efficiency for SO<sub>2</sub> at the Dry Fork Station is not among the lowest in the country. Protestants' Exh. 29 at 19-24; Protestants' Exh. 30 at 6-9.

17. Protestants do not dispute the first sentence. Protestants dispute that the SO<sub>2</sub> limit is among the very lowest permit limits in the country because the averaging time is higher than the majority of permits in the country. Protestants' Exh. 49 (DEQ/AQD 254-55). Protestants also allege that the control efficiency for SO<sub>2</sub> at the Dry Fork Station is not among the lowest in the country. Protestants' Exh. 29 at 19-24; Protestants' Exh. 30 at 6-9.

18. Undisputed.

19. Protestants dispute that Air quality regulations for PM<sub>2.5</sub> do not exist in Wyoming. Wyoming regulations prohibit the construction of any major stationary source without first ensuring NAAQS compliance for all pollutants regulated under the Clean Air Act and Wyoming law. 6 WAQSR § 4(b)(i). Wyoming regulations further require BACT analysis and limits for all pollutants regulated under the Clean Air Act and Wyoming law. 6 WAQSR § 4(a), (b)(ii). PM<sub>2.5</sub> is a pollutant regulated under the Clean Air Act and Wyoming law. See, e.g., 71 Fed. Reg. 61,144 (Oct. 17, 2006).

20. Protestants dispute that the regulatory tools for separately regulating PM<sub>2.5</sub> do not exist and that there is not currently a legal framework in place for regulating PM<sub>2.5</sub>. See 6 WAQSR §§ 4(a), (b)(i), (b)(ii); 73 Fed. Reg. 28,336. Wyoming regulations set the SIL for PM<sub>2.5</sub> at “any emissions rate.” 6 WAQSR § 4(a). Protestants dispute Basin’s characterization of that it would be “very difficult” to do “meaningful” ambient air quality modeling or BACT analysis. EPA concedes the technical difficulties with PM<sub>2.5</sub> monitoring, emissions estimation, and modeling that were the basis for the surrogate policy in 1997 have been resolved in most respects in the ensuing 11 years. 70 Fed. Reg. 66,043; Protestants’ Exh. 29 at 12; see also id. at 12-13. Meaningful analysis is therefore possible. Protestants’ Exh. 32 at 32. EPA and other states are currently doing modeling for PM<sub>2.5</sub> and BACT analysis. 73 Fed. Reg. 28,340; Protestants’ Exh. 32 at 32.

21. Protestants dispute that PM<sub>2.5</sub> impacts attributable to the Dry Fork Station will be well below the new PM<sub>2.5</sub> national ambient air quality standards (NAAQS). Neither Basin nor DEQ has done modeling to determine whether Dry Fork Station will exceed the PM<sub>2.5</sub> NAAQS. In particular, they have failed to do cumulative modeling, which is necessary to determine whether there will be a violation. Even if it is assumed that all PM<sub>10</sub> is PM<sub>2.5</sub>, cumulative modeling is still required to determine whether in combination with other sources, Dry Fork Station will lead to a violation of the NAAQS. Protestants’ Exh. 46 at 1-2.

22. Protestants dispute that the Dry Fork BACT emission limits and control equipment for PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and sulfuric acid mist, (each of which contributes to PM<sub>2.5</sub> emissions), will control PM<sub>2.5</sub> emissions to virtually the same maximum achievable level that would have been required by a separate BACT analysis for PM<sub>2.5</sub>. The company cannot know whether PM<sub>2.5</sub> will be controlled to virtually the same maximum achievable level that would have been required by



a separate BACT analysis for PM<sub>2.5</sub> without actually doing a BACT analysis. Regardless, Basin is legally required to control PM<sub>2.5</sub> to the maximum achievable level not virtually the legally level. Protestants do not dispute that NO<sub>x</sub> and SO<sub>2</sub> were subject to BACT. Protestants dispute that the permit limits for NO<sub>x</sub> and SO<sub>2</sub> are among the most stringent ever imposed anywhere in the country because the averaging times are longer than the majority of permit limits in the country. Protestants' Exh. 49 (DEQ/AQD 252-55). Protestants do not dispute that PPS bags with PTFE coating will control PM<sub>2.5</sub>. Protestants do not have any information about the control efficiencies that Basin anticipates from these bags because it is not in the record. Basin previously rejected using these "specialty bags" because they were too expensive. Protestants' Exh. 47 (AR 738-743); Protestants' Exh. 18 (AR 1538-1539). Basin also acknowledge that by using specialty bags, including those with a PTFE coating, it could achieve a lower permit level for PM<sub>10</sub> than 0.012 lb/MMBtu. Protestants' Exh. 18 (AR 1538-1539).

23. Undisputed, except Protestants note that Class I significance levels have not been approved by EPA.

Dated September 12, 2008.

/s/ Andrea Zaccardi  
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## CERTIFICATE OF SERVICE

I certify that on this day of September 12, 2008, I served a copy of the foregoing PROTESTANTS' RESPONSE TO BASIN ELECTRIC'S ANNEX OF UNDISPUTED FACTS via e-mail and Federal Express addressed to:

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