



July 31, 2008

David A. Finley  
Administrator, Division of Air Quality  
Wyoming Department of Environmental Quality  
Herschler Building  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**Subject: Medicine Bow Fuel & Power LLC  
Proposed Integrated Gasification and Liquefaction Plant  
(PSD Air Quality Permit Application AP-5873)  
Comments on Proposed Permit Conditions**

Dear Mr. Finley:

On behalf of Medicine Bow Fuel & Power LLC (MBFP) DKRW Advanced Fuels LLC (DKRW) is providing comments on the June 19, 2008 permit application analysis and proposed permit conditions for application number AP-5873 for the proposed MBFP facility located in Carbon County. We respectfully request that you consider the following comments.

Comments on Statements Made in the Application Analysis

- Page 5, Estimated Emissions, Saddleback Hills Mine: The 2<sup>nd</sup> sentence of this paragraph references 2.1 million tons of coal to be mined during the 3-year development period. DKRW wishes to note that a total of 2.5 million tons of coal is to be mined during the 3-year development period, as noted on page 3-1 of the application.
- Page 6, Table 1: This table does not agree with the table presented on page 3-1 of the application (Table 3.1). Table 1 in the analysis document lists only the PM<sub>10</sub> emissions associated with hauling coal to Seminoe II during the development period. Table 3.1 in the application includes an additional column listing emissions from coal conveying and loading operations during the development period. These coal conveying and loading emissions are markedly lower than those for hauling coal to Seminoe II; we assume this is the reason they are not included in Table 1 of the analysis document.
- Page 7, Table III: The coal storage emissions (CS) in this table are listed as 60.2 tons per year (tpy), but in two areas of the permit application (Table 3.3 on page 3-4 and Appendix B), this is noted as 61.08 tpy (rounded, 61.1 tpy). It appears that Table III in the application analysis is referencing only the fugitive emissions and does not include PM<sub>10</sub> from the coal conveyance system (point sources). Although this is only a 0.9 tpy difference, it is not technically complete.
- Page 8, Table Va: Annual NO<sub>x</sub> and CO emissions for the combustion turbines, for a 'cold startup year,' meaning a year in which the entire facility is brought on-line from a complete shutdown condition, are noted at 50.8 and 46.6 tpy, respectively. These emission rates reflect only six startup hours per year per turbine where natural gas is fired while syngas production is brought online. The more likely startup scenario will entail firing on natural gas for several days or weeks until a

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sufficient and stable amount of syngas is produced that can be combusted in the turbines. DKRW estimates a total of 1,000 startup hours per year per turbine (turbines firing natural gas) during a 'cold startup' year, with 6 cold hours (25 ppm NO<sub>x</sub>) and 994 warm hours (4 ppm NO<sub>x</sub>). The turbines are expected to operate the remainder of the cold startup year on the syngas fuel mixture. Using this assumption and the resulting difference in exhaust flow rates between natural gas and syngas fuel mixture, the annual cold startup emissions are slightly larger than those presented in Table Va.

- Page 9, Table Vb: Maximum hourly emission rates during cold startup for the Combustion Turbines (all pollutants), Gasifier Preheaters (NO<sub>x</sub>), HP Flare (NO<sub>x</sub> and VOC), and LP Flare (NO<sub>x</sub> and VOC) do not match maximum hourly emission rates presented in the application. DKRW requests WDEQ to review these numbers.
- Page 26, Chapter 6, Section 3 Major Source Applicability: This paragraph notes that the facility will be a major source of HAPs, stating that "HAP emissions are greater than 10 tpy of any individual HAP and 25 tpy of any combination of HAPs." DKRW would like to point out that the total Potential-to-Emit HAP emission rate for the proposed facility will be less than 25 tpy, and that the facility will fall under MACT applicability (40 CFR 63) due to the fact that emissions from one HAP will be slightly greater than 10 tpy.

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- Condition 10 presents annual [tpy] emission rates that reflect operations during a normal year and do not consider emissions during a 'cold startup' year. Due to the complex startup procedures associated with the facility and the extended time required for a complete startup, annual emissions during a 'cold startup' year are anticipated to be larger than the values presented in this condition. A 'cold startup' year will occur with the initial startup of this facility, as well as other years where the facility undergoes a major planned maintenance turnaround/outage (anticipated to be every three or four years). DKRW requests a separate condition, or additional language in this condition, to accommodate higher annual emission rates during 'cold startup' years.
- Condition 10 also presents short-term NO<sub>x</sub> and CO turbine emission limits of 11.6 and 10.6 lb/hr, respectively, as 30-day rolling averages. In the application's Appendix B emission calculations for the turbines, the NO<sub>x</sub> and CO emissions vary according to ambient conditions, with the highest short-term emissions occurring at lower ambient temperatures. The short-term emission rates in Condition 10 are representative of normal operations, when ambient conditions are around 45°F. We are concerned that actual ambient conditions at the facility may often fall below 45°F for 30 or more consecutive days, and thus, the proposed short-term NO<sub>x</sub> and CO emission limits are too low. DKRW requests that short-term NO<sub>x</sub> and CO emissions are increased to account for low ambient temperature conditions. We note that turbine emissions in the air quality standards analysis and risk analysis (dispersion modeling) represent the originally proposed 6 ppm NO<sub>x</sub> case, and thus, a revised analysis is not necessary to accommodate this request.
- Condition Nos. 16 and 18 note that the Black Start Generators will be limited to 250 hours per year of operation for each generator. DKRW is requesting to increase these operating hours to 360 hours per year per generator instead of the originally requested 250 hours per year. The emission calculations were updated in January 2008 to reflect this change, and emission rates used in the air quality standards analysis and risk analysis (dispersion modeling) reflect the additional hours. Refer to Table XIII on page 36 of the analysis, showing modeled NO<sub>x</sub> emission rates of 0.033 g/s [1.15 tpy] for each Black Start Generator. Refer also to emission calculations presented in Appendix B of the application, showing emissions based on 360 hours per year per generator.



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Unfortunately, the application text was not updated to reflect this change. DKRW will submit a set of revised application text pages noting 360 hours per year per generator.

- Condition Nos. 27, 30, and 31 address applicability to NSPS (40 CFR 60) and MACT (40 CFR 63) regulations for the Synthetic Organic Chemicals Manufacturing Industry (SOCMI). DKRW has been advised by our air permitting consultant (URS Corporation) that the proposed facility does not fall within the SOCMI definition; thus, regulations for the SOCMI should not apply to the facility. We realize that the US EPA has considered the question of how and when facilities must be considered to be within SOCMI, and we understand that previous case-by-case discussions on this topic have focused on the definition of "product" and whether or not a facility manufactures a listed chemical as a primary product. (In this case, the listed chemical of concern is methanol.) Raw methanol produced at the facility will not be a final product; it will be sent directly to the downstream methanol-to-gasoline (MTG) process unit under normal operations. The proposed methanol storage at the facility will be utilized only in cases of MTG unit or syngas production malfunction, or due to planned maintenance activities where methanol storage becomes necessary in order for the entire facility to continue operation. DKRW requests a discussion with the WDEQ regarding the specific reasoning for considering MBFP to be within the SOCMI.
- Condition No. 32 contains a typographical error, with a reference to a non-existent Condition 29A. It seems this reference should be to proposed Condition No. 33.

Conclusion

DKRW appreciates this opportunity to provide comments on the application analysis and draft permit conditions. If you have any questions about these comments or would like to discuss them in more detail, or if your staff has additional questions based on others' public comments, please contact Robert Moss of my staff at (713) 425-6533.

Sincerely,

A handwritten signature in black ink, appearing to read "Jude R. Rolfes", is written over a large, stylized circular flourish.

Jude R. Rolfes  
Senior Vice President

cc: Chad Schlichtemeier (WDEQ)  
Andrew Keyfauver (WDEQ)  
Robert Moss (DKRW)  
Susan Bassett (URS)