James M Parker
Manager – Compliance Services, Env
PPL Montana, LLC
303 N. Broadway, Suite 400
Billings, MT 59101
Tel. 406.740.9998 Fax 406.237.6901
jmparker@pplweb.com

PPL MONTANA

August 10, 2007

Laurel Dygowski
Air Quality Planning and Management Unit
US EPA - Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

Dear Ms. Dygowski:

Re: PPL Montana Corette SES Best Available Retrofit Technology (BART) Assessment

As requested by EPA Region 8, PPL Montana LLC has conducted a Best Available Retrofit Technology (BART) assessment for J.E. Corette generating station (Corette). Corette is located at Billings, Montana and is owned and operated by PPL Montana LLC. A report of the BART assessment that was prepared by PPL's consultant, TRC Environmental Corporation (TRC), is enclosed.

As I have kept you apprised, the last portion of the visibility modeling took longer than expected. Earlier this summer, based on TRC's recommendations, we asked that the modeling be run using a finer grid size. This was done to increase the accuracy of predicted results. However, the finer grid modeling also increased processing time. Consequently, we were slightly delayed in melding the "technology" portion of the BART analysis with the final modeling results.

The BART assessment was conducted in accordance with EPA's BART guidelines established under the rule. These procedures include an analysis of retrofit control technology and a modeling analysis to determine the visibility impacts of the units in federal mandatory Class I areas. This analysis was conducted for filterable particulate matter, sulfur dioxide and nitrogen oxides emissions. The modeling analysis was conducted with the EPA's CALPUFF model using three years of meteorological data for the years 2001 through 2003.

Corette was determined to be BART-eligible under the Federal Regional Haze Rule by the U.S. Environmental Protection Agency Region 8. The Class I areas within 300 km of Corette are the North Absaroka Wilderness Area (137 km to the southwest), Yellowstone National Park (145 km to the southwest), the Washakie Wilderness Area (171 km to the southwest), the UL Bend National Wildlife Refuge (192 km to the north), the Teton Wilderness Area (199 km to the southwest), the Gates of the Mountains Wilderness Area (276 km to the west) and Red Rock Lakes (277 km to the southwest).

The U.S. Environmental Protection Agency's (EPA's) BART Guideline approach has been applied to Corette to identify the "best system of continuous emission reduction" applicable to the plant for filterable particulate, sulfur dioxide (SO_2) and nitrogen oxides (NO_x) control in order to comply with Region 8's BART program. Corette already has relatively low emissions due to the use of an electrostatic precipitator, low sulfur Powder River Basin (PRB) coal and good combustion control (low NOx burners and close coupled over-fire air). A range of demonstrated control alternatives for reducing particulate,

SO2 and NOx emissions from sub-bituminous coal-fired boilers was evaluated considering costs, energy and environmental impacts, remaining useful life of the units and modeled visibility improvements.

For filterable particulate matter, cost analyses were conducted for upgraded electrostatic precipitators (ESP), fabric filters (baghouses) and wet scrubbers. Mechanical collectors were reviewed but not further evaluated because mechanical collectors are used as pre-filters and do not perform well as a retrofit option.

For SO_2, cost analyses were conducted for dry lime or limestone injection, dry gas scrubbing techniques, and wet scrubbing (flue gas desulfurization, FGD) techniques. Use of low sulfur coal was not evaluated as Corette already burns a low-sulfur (approximately 0.3 %) Powder River Basin Coal.

NO_x controls in-place at Corette include the tangential firing design of the boilers and existing low-NO_x burners with close coupled over-fire air. Installation of separated over-fire air (SOFA) and the addition of selective non-catalytic reduction (SNCR) were evaluated as was the installation of a hot-side selective catalytic reduction system (SCR) to reduce emissions.

The highest modeled annual 98th percentile visibility daily impact of emissions from the plant at maximum actual load is predicted to occur in the UL Bend National Wildlife Refuge (NWR) Class I area and is 0.645 deciviews. Note that this maximum modeled 98th percentile visibility impact from Corette is well below the 1.0 deciview value EPA employs as a metric to indicate that a source causes a visibility impact.

From a visibility improvement basis with respect to filterable particulate matter, only a 0.03 deciview improvement, which is not visually discernable, would result from installation of either ESPs or fabric filters. Consequently, implementation of additional particulate control at Corette is not warranted.

With respect to sulfur dioxide only a 0.08 deciview reduction is achieved with lime/limestone addition to either the boiler or fuel. The incremental improvement through installation of any of the other technologies considered are 0.15 deciviews or less. Again, such improvements are not discernable to the human eye and implementation of these control technologies are, therefore, not warranted.

Finally, with respect to nitrogen oxides only a 0.04 deciview improvement results from implementation of SOFA which is not discernable and the incremental improvements from controls beyond SOFA are 0.06 deciviews or less.

As a result of the studies and analysis, we are proposing that the existing permit limits for particulate, SO_2 and NO_x are BART.

Please contact me at (406)-237-6932 if you have any questions or comments concerning this BART assessment.

James M Parker, PE
Manager, Environmental Compliance Services

JMP/rtc