



MONTANA-DAKOTA UTILITIES CO.
ADVOCACY STAFF – MARC, LLC
DATA REQUEST DATED AUGUST 23, 2010
CASE NO. PU-10-124

NDPSC-DR-047 **What impact does minimum generation have on CO2 output?
Please explain with supporting documents.**

Response:

Overall, CO2 output, or total CO2 emissions, from Montana-Dakota's coal-fired generating facilities would be lower at minimum generation levels than at higher generation levels.

Operating a coal-fired generating facility at minimum generation, or load levels, compared to higher load levels would increase the CO2 emissions rate. This rate is usually referred to as the CO2 emissions intensity, calculated in tons of CO2 emitted per MW generated. The CO2 emissions intensity is the lowest at higher loads since these facilities are designed to run the most efficient at higher loads. If Montana-Dakota's coal-fired generating facilities were run at minimum generation levels, there would be an approximate average increase in CO2 emissions intensity of 10%, depending on the load range of the unit.

However, running Montana-Dakota's coal-fired facilities at minimum generation levels would result in a decrease in CO2 emissions for these facilities, even with an average 10% increase in the CO2 emissions intensity. Less coal is combusted to generate lower MW levels and, therefore, a lower amount of coal combusted would yield lower CO2 emissions. The amount of CO2 generated per ton of coal fired for operating at different load levels has a greater influence on total CO2 emissions from Montana-Dakota's facilities than the change in CO2 emissions intensity at different load levels.