BIG STONE II
PARTNERS IN GENERATION

48450 144th Street • Big Stone City, SD 57216
www.bigstoneii.com

May 14, 2009

Patricia Van Gerpen
Executive Director
South Dakota Public Utilities Commission
500 East Capitol Avenue
Pierre, SD 57501-5070

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Dear Ms. Van Gerpen:

Subject: Second Annual Report on Carbon Dioxide
EL05-022

The following Second Annual Report on Carbon Dioxide is provided in conformance with the Final Decision and Order for the Energy Conversion Facility Permit for the Construction of the Big Stone II Project Docket EL05-022.

This is the project's second report and we would welcome comments on the format and/or content, which could be incorporated into future reports.

Sincerely,

Mark Rolfes
Project Manager
Big Stone II Project

Enclosure

Second Annual Report on Carbon Dioxide
May 12, 2009

Final Decisions and Order
Energy Conversion Facility Permit for the
Construction of the Big Stone II Project

EL05-022

The following Annual Report on Carbon Dioxide is provided in conformance with the Final Decision and Order for the Energy Conversion Facility Permit for the Construction of the Big Stone II Project Docket EL05-022.

The Commission's Final Decision and Order paragraph 6 includes the following condition:

6. Because there does not yet exist any federal or state regulation of CO_2 emissions, and because we do not yet know what effect such regulation may have on ratepayers in the future, the Applicants shall submit an annual report to the Commission on CO_2 with the first such report to be filed on or before July 1, 2008. Such report shall review any federal or state action taken to regulate carbon dioxide, how the operator plans to act to come into compliance with those regulations, the expected costs of those compliance efforts and the estimated effect of such compliance on ratepayers. The report should also evaluate operational techniques and commercially available equipment being used to control CO_2 emissions at pulverized coal plants, the cost of those techniques or equipment, and whether or not the operator has evaluated the prudence of implementing those techniques or equipment.

Status of Federal Action to Regulate Carbon Dioxide

Proposed Legislation

Congress is considering a number of bills that would regulate greenhouse gas GHG emissions. Attachment 1 provides a comparative matrix of a number of the Congressional proposals. The matrix does not include the Waxman-Markey Discussion Draft proposal, the American Clean Energy and Security Act of 2009. The House Energy and Environment Subcommittee has held numerous hearings on the Waxman-Markey Discussion Draft proposal. Plans were to move the proposed legislation to the full House Committee on Energy and Commerce for mark-up in early May. However the proposed legislation has not moved out of the subcommittee. While there is continued Obama Administration and Congressional interest in regulating carbon dioxide and other GHG emissions, the scope and ultimate passage of comprehensive GHG legislation during this Congressional session remains uncertain.

EPA Regulation

On April 17, 2009, EPA Administrator Lisa Jackson signed a proposal in response to the Supreme Court's 2007 *Massachusetts v. EPA* decision finding that

- Six greenhouse gases threaten the public health and welfare of current and future generations.
- The combined emissions of four of the six GHSs – carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons - from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of these key greenhouse gases and to the threat of climate change.

The proposed EPA finding was public noticed on April 24, 2009 for a 60-day comment period. The next step in the process is for EPA to issue a final finding. The proposed finding did not include any proposed regulations.

Status of State Action to Regulate Carbon Dioxide

At this time, no state action has been taken that would regulate carbon dioxide emissions from Big Stone II. There are a number of state initiatives or accords that are working to establish regional carbon dioxide emissions reduction goals and regional cap and trade programs. One of those accords, the Midwestern Greenhouse Gas Accord plans to develop a regional greenhouse gas cap and trade program by 2010. The plan for a regional cap and trade includes the six Midwestern states of Michigan, Iowa, Illinois, Kansas, Wisconsin and Minnesota. Indiana, Ohio and South Dakota participate as observers.

Operational Techniques and Commercially Available Equipment

Big Stone II continues to follow on research initiatives whose goal is to develop commercially available equipment for the capture of carbon dioxide emissions from coal-fired boilers and for the commercial use or storage of the captured carbon dioxide.

Big Stone II is committed to using supercritical technology, however often today you will hear the term "ultra" supercritical. Ultra supercritical is not a defined term like supercritical is, but it refers to a supercritical steam cycle operating at higher temperatures then what has been the norm in the past. Usually this is for steam temperatures greater than 1100°F. The benefit of the higher temperatures is a process that operates more efficiently. The higher the temperature the more efficient. The more efficient the less CO_2 that will be produced per unit of output. However the temperature is limited by the material properties of the boiler, piping and turbine. As the science of metallurgy advances better materials are available.

The Big Stone II project has begun a study to assess the costs and benefits of constructing the unit as an "ultra supercritical unit. This study will weigh the increased cost for the better material and any construction and maintenance issues against the savings for less fuel consumption and less production of emissions including CO_2. The North Dakota Public Service Commission's order issuing an advance determination of prudence for Otter Tail and Montana-Dakota Utilities proposed participation in Big Stone II and associated transmission and the Minnesota Public Utilities Commission's order issuing a transmission certificate of need for Minnesota-based transmission interconnection facilities are conditioned upon completion of an assessment and report on ultra-supercritical technology. It will also be provided to you as part of subsequent reporting.

CLIMATE LEGISLATION COMPARISON (12-15-08)

	Dingell-Boucher Discussion Draft	Boxer Substitute to S. 3036	Waxman H.R. 1590	Markey H.R. 6186	President Obama Policy
Targets	6% ↓ '05 levels by '20 44% below by 2030 80% below by 2050	7% below 2006 levels by 2012[1] 39% below 2006 by 2030 72% below 2006 by 2050	2009 levels by 2010 1990 levels by 2020 80% below 1990 by 2050	2005 levels by 2012 20% below 2005 by 2020 85% below 2005 by 2050	1990 levels by 2020 80% below 1990 by 2050
Covered Sectors	• Electric power • Energy-intensive industry (oil, gas, coal, steel, alum., etc.)	• Electric power • Industrial (coal and gas) • Commercial • Transport (via upstream coverage of petroleum sector)	TBD by EPA Administrator (cover largest sources and most cost-effective opportunities to reduce)	• Electric power • Industrial (coal and gas) • Transport (via upstream coverage of petroleum sector)	Economy-wide
Allowances	Option A (1 of 4 options) – • 42% allocation to electric LDCs (2014-2025) • 4% to IPPs Option D • 0% allocation to electric generators or LDCs	Allocation • 18%→2.75% for fossil-fired generators (2012-2030) • 9.75% to LDCs (2013-2025)	100% auction	2012-2019 • 94% auction • 0% allocation to electric generators 2020→ • 100% auction	100% auction
Cost Containment	Strategic Allowance Reserve • Borrow allowances from future periods • Allowances auctioned at floor price of $20-30/ton in 1st year • Floor price increases 5%/yr + inflation for 2d and 3d yrs • Allowances auctioned at floor price of 30-100% above 36-mo. avg. spot price yrs 4→ • Can be supplemented w/ unsold allowances from regular auction + int'l seq. offsets credits • Use ltd to 10% of entity target	Strategic Allowance Reserve • Borrow allowances from future periods and/or increase limits on offsets use • Allowances auctioned at floor price of $22-30/ton CO_2 in 1st year • Floor price increases 5%/year plus inflation	• 2009-2011 targets can be extended for 2 years	None	Not addressed
Offsets & Other Flexibility Provisions	• Limited to ≤ 5% of target for first 5 years (dom. or int'l); • 15% limit for years 6-8; • 30% limit for years 9-11 (15% domestic & 15% int'l); • 35% limit in years 12→; (20% domestic & 15% int'l) • Sequestration allowed • Banking and borrowing	• Limited to ≤ 30% of target (15% domestic & 15% int'l) • CMEB can increase use for cost containment • Qualifying criteria will likely further limit use • Banking and borrowing	• Offsets not included • Banking	• Limited to ≤ 30% of target (15% domestic & 15% int'l) • Qualifying criteria will likely further limit use • Banking and borrowing	Not addressed

[1] Reduction values based on EIA, "Energy Market and Economic Impacts of S. 2191, the Lieberman-Warner Climate Security Act of 20907" v (Apr. 2008).