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October 14, 2015

Darrell Nitschke  
Director of Administration/Executive Secretary  
North Dakota Public Service Commission  
State Capitol  
Bismarck, ND 58505

**RE: Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc.  
Application for Advance Determination of Prudence Big Stone Air Quality Control  
System Project  
Case No. PU-11-163**

**Otter Tail Power Company Application for Advance Determination of Prudence  
Big Stone Air Quality Control System Project  
Case No. PU-11-165**

**Quarterly Report - Compliance Filing**

Dear Mr. Nitschke:

On May 9, 2012 the North Dakota Public Service Commission issued a Findings of Fact Conclusions of Law and Order Granting Advance Determination of Prudence in the above described cases. In compliance with ordering paragraph 2, Otter Tail Power Company hereby submits the Big Stone Air Quality Control System Project Report. This report has been electronically filed. Enclosed you will find an original and seven (7) copies.

I have been authorized by Montana-Dakota Utilities Co. to file this report in both cases described above.

129 PU-11-165 Filed 10/14/2015 Pages: 10  
Compliance filing - Big Stone Air Quality Control System Project Report  
Otter Tail Power Company  
Mark Rolfes, P.E.

131 PU-11-163 Filed 10/14/2015 Pages: 10  
Compliance filing - Big Stone Air Quality Control System Project Report  
Otter Tail Power Company  
Mark Rolfes, P.E.

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If you have any questions regarding this report, please contact me at 218-739-8648 or at [mrolfes@otpc.com](mailto:mrolfes@otpc.com).

Sincerely,

*/s/ MARK ROLFES*  
Mark Rolfes, P.E.  
Manager, Generation Development

wao  
Enclosures  
By electronic filing and US mail  
c: Tamie A. Aberle (by email)

**BIG STONE PLANT  
AIR QUALITY CONTROL SYSTEM PROJECT  
QUARTERLY REPORT**

**TO THE**

**NORTH DAKOTA PUBLIC SERVICE COMMISSION**

**FOR THE**

**PERIOD JULY 1 THROUGH SEPTEMBER 30, 2015**



**October 13, 2015**

Montana-Dakota Utilities Co. and Otter Tail Power Company submit this report on the Big Stone Plant Air Quality Control System (AQCS) Project in compliance with the North Dakota Public Service Commission May 9, 2012 Order in Cases No. PU-11-163 & PU-11-165, ordering paragraph 2.

This report describes progress made on the project during the period ending September 30, 2015. Specifically, in compliance with the above-referenced Order, this report includes information on the status of the United States Environmental Protection Agency (EPA) review of the South Dakota Regional Haze State Implementation Plan (SIP); it describes the types and amounts of costs incurred on the project to date; and it describes changed circumstances that are expected to affect the cost, schedule or installation of the AQCS Project.

## **Section I**

### **Status of the United States Environmental Protection Agency's (EPA) review of the South Dakota Regional Haze State Implementation Plan (SIP)**

On March 29, 2012, the Administrator for EPA Region 8 signed as a final rule the approval of South Dakota's Regional Haze SIP. The final rule was published in the *Federal Register* on April 26, 2012 and became effective on May 29, 2012.

## **Section II**

### **Types and amounts of Project cost actually incurred**

Actual construction on the project is now 100 percent completed, however there is the possibility that the start-up and tuning process may reveal minor modifications that will need to be made. Also, the demolition of the old baghouse, ID fans, and ash silo still remain to be completed. The quarter began with the plant still not running because of the extended outage for turbine repairs. The unit started up in early August but experienced problems that kept it from reaching full load until late in the month. AQCS equipment has been started and tuned whenever an appropriate load point could be maintained. Compliance testing started late in September. Examples of work performed this quarter include:

- All construction activity has been completed. This includes paving of all roads, installation of all lighting, painting, insulation and roofing.
- Boiler work was completed, the contractor's testing crew has been onsite and we are now evaluating data to determine if all guaranteed performance levels are being achieved.
- The quarter began with approximately 175 people working on the project and ends with only six project team and some vendor start-up support on site.
- Compliance testing started late in September.

Costs incurred through September 30, 2015, can be broken down into the following general categories:

<b>Category</b>	<b>Costs Through September 30, 2015</b>
<b>Equipment/Material Procurement:</b>	\$ 104.4M
<b>Construction:</b>	\$ 210.2M
<b>Engineering/Field Engineering Support:</b>	\$ 24.1M
<b>Owners Cost:</b>	\$ 14.0M
<b>Total:</b>	<b>\$ 352.7M</b>

(Project costs identified do not include individual company costs.)

Equipment and Material Procurement: All owner-procured material for the project, such as the flue-gas desulfurization system equipment, selective catalytic reduction catalyst, induced draft fans and their motors, transformers, structural steel, ductwork, ammonia handling equipment and the Distributed Control System.

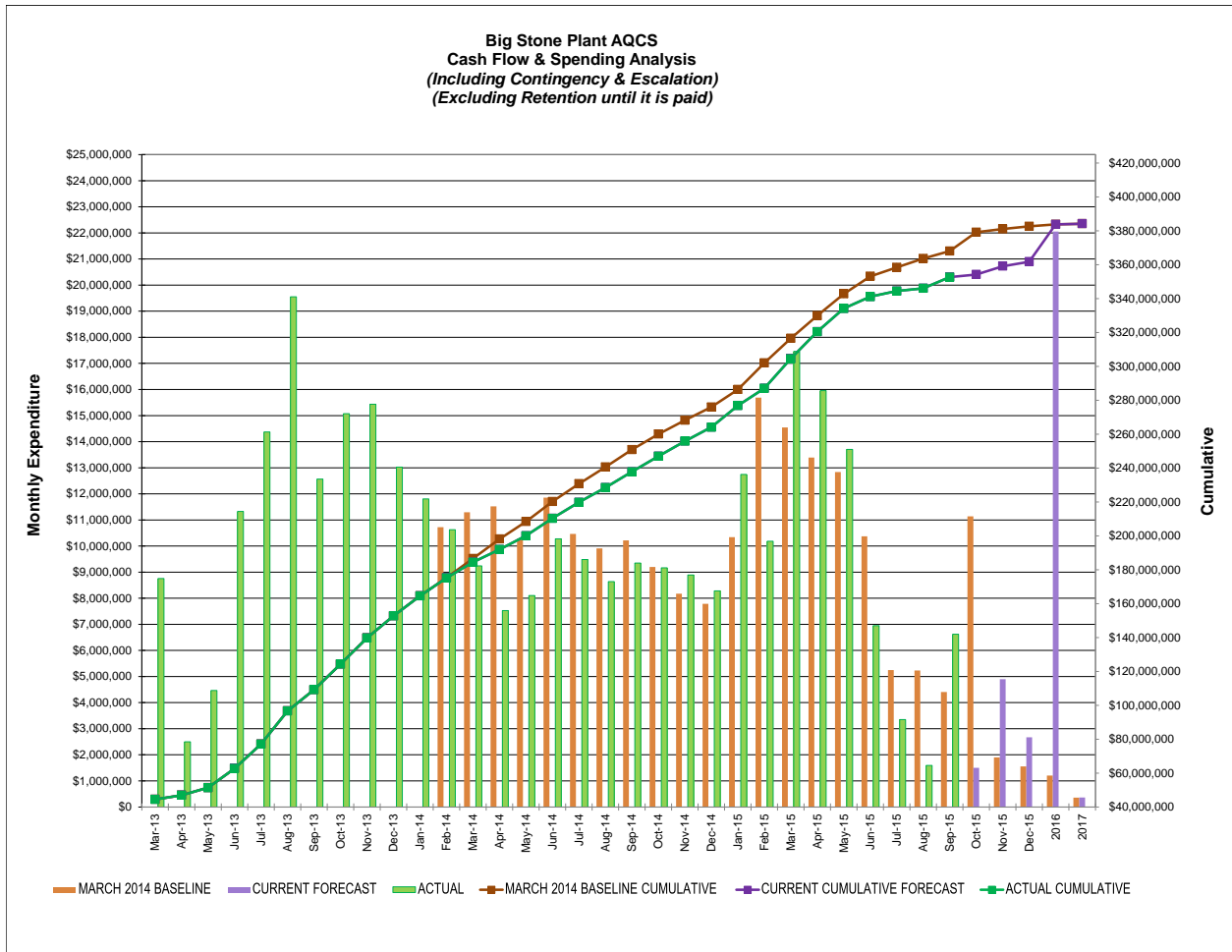
Construction: Payments made to Graycor (the General Work Contractor), site preparation work, testing work, surveying work and work to remove equipment that is no longer needed or which needs to be moved.

Engineering and Field Engineering Support: Engineering and procurement work done by Sargent & Lundy (Project engineer) and engineering field support for construction and commissioning.

Owners Cost: Items such as labor for project development and construction management, and such things as insurance, legal costs, permitting, office space and equipment; also spare parts and consumables used during testing and commissioning.

As described in previous quarterly reports, the project budget was reviewed in early 2013 and then again in early 2014. Following both reviews the projected project budget was reduced. The original project budget was \$491M; it was reduced in 2013 to \$405M and again reduced to \$384M in 2014. Even with the outage extension, the project still should finish on or under budget.

Actual project cash flow and spending through September 2015, and forecast through project completion, is illustrated on the following graph:



The following photographs illustrate various construction activities on the project during the quarter.



07-07-15 SCR (painter on JLG doing touchup painting)



07-07-15 Baghouse process equipment



07-07-15 Waste ash/pebble lime silos, CFB, ACI silo and SCR



07-07-15 Reclaim of parking lots begins



07-29 Reclaim of main laydown area



08-20 Waste ash/pebble lime silos, baghouse, CFB, SCR, ACI silo



08-20 Close-up scrubber



08-20 Close-up WA/PL (old ash silo will be removed)



08-20 Baghouse & ID Fans



08-20 SCR



08-20 Ammonia unloading & storage



08-20 Ammonia mixing skid



08-20 Ammonia injection grid



08-20 Baghouse pulse headers



8-20 Baghouse hoppers



08-20 Hydrated lime weigh bins



08-20 Hydrated lime system silo dust collector

Safety is very important to us. We are taking extra steps to insure a safe work site. The table below is included to provide information on recordable and lost-time injuries and near miss incidents for the total labor hours worked on the project through August 31, 2015 (reporting does not go to the end of the quarter as most craft labor was off site by the end of August):

	<b>Hours</b>	<b>Recordable</b>	<b>Lost Time</b>	<b>Near Miss</b>	<b>First Aid</b>
Graycor	1,664,134	3	0	10	13
Project Team & Contractors	149,506	0	0	0	1
Engineering	171,987	0	0	0	0
B&W (Boiler)	283,484	7	1	5	55
<b>Totals</b>	<b>1,556,415</b>	<b>10</b>	<b>1</b>	<b>15</b>	<b>69</b>

OSHA rate for recordable incidents: 0.88

OSHA rate for lost time: 0.09

### **Section III**

#### **Any changed circumstances that will affect cost or project installation**

The EPA has issued the Mercury and Air Toxic Standards (MATS) rule, also known as the utility Maximum Achievable Control Technology (MACT) rules, which require control of hazardous air pollutants. While the final rule has been issued, on June 29, 2015 the U.S. Supreme Court held that EPA must consider cost, including cost of compliance, before deciding whether Regulation is appropriate and necessary. However, the MATS rule remains in effect while the rule is remanded to the D.C. Circuit for further proceedings. The rule as issued requires the Big Stone Plant to reduce mercury emissions, which can be controlled by adding Activated Carbon Injection (ACI) to the project. The estimated cost to add ACI as a standalone project is \$5M. Because of the synergies of installing the system at the same time as the AQCS, the owners have decided to include the ACI system as part of the scope of the AQCS Project; we have only increased the projected cost of the AQCS Project by \$2.1M to account for the ACI system. Although the standard MATS rule compliance date is April 16, 2015, on August 27, 2013 the South Dakota Department of Environment and Natural Resources granted a one year compliance extension for Big Stone Plant, such that the new compliance date is April 16, 2016.

Construction is now 100 percent complete. There is always the possibility that the start-up process could reveal changes needed or deficiencies that would need to be addressed, but at this point we do not anticipate any of these changes to be very large or expensive.

### **Summary**

The project's in-service date will be delayed by the extended outage due to the problems with the HP turbine. Currently we are expecting to declare the AQCS equipment in Commercial Operation on December 1, 2015. We will attempt to move this date earlier if conditions allow. Nothing is foreseen at this time to keep the project from coming in at or under its budgeted cost.