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April 13, 2015

Mr. 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.

127 PU-11-165 Filed 04/13/2015 Pages: 10  
Compliance filing - Big Stone Air Quality Control System Project Report  
Otter Tail Power Company  
Mark Rolfes, P.E.

*An Equal Opportunity Employer*

129 PU-11-163 Filed 04/13/2015 Pages: 10  
Compliance filing - Big Stone Air Quality Control System Project Report  
Otter Tail Power Company  
Mark Rolfes, P.E.

Mr. Darrell Nitschke

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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 JANUARY 1 THROUGH MARCH 31, 2015**



**April 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 quarter ending March 31<sup>st</sup>, 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 approximately 94 percent completed. The project entered a new phase with the shut down of Big Stone Plant on the evening of February 27<sup>th</sup> for the start of the outage to “tie-in” all of the AQCS Project equipment. The outage also signals the start of the large amount of boiler work that is part of the AQCS project. During the last quarter the focus has started to shift from construction to commissioning and start-up activities.

Examples of accomplishments this quarter include:

- All inlet ductwork to the Flue Gas Desulfurization (“FGD”) system has been set in place with the exception of the ducts that need to be installed during the tie-in outage.
- All ductwork from the FGD outlet to the Induced Draft (“ID”) Fans and then to the stack is complete except for the ducts that need to be placed into the stack during the tie-in outage.
- Baghouse bags and cages are being installed.
- Selective Catalytic Reduction (“SCR”) has had all the catalysts loaded.
- The oil system for the ID Fans has been completed and has been placed into service. The fans are in the process of being commissioned and run for the first time.
- Commissioning work is well underway with the control system changes being implemented.

- The tie-in outage has begun with the focus on the demolition work that needs to be done. All ductwork that needs to be removed has been removed. The contractor working on the boiler is well into the removal of the boiler sections that need to come out.
- Boiler work is approximately 35 percent complete at this time.
- The quarter began with approximately 370 people on site working on the project. The number declined some in January, but has risen to approximately 650 people with the start of the tie-in outages. We don't expect this number to change greatly for the next two months, but then it will decline rapidly beginning in the late-May timeframe.

Costs incurred through March 31, 2015, can be broken down into the following general categories:

<b>Category</b>	<b>Costs Through March 31, 2015</b>
<b>Equipment/Material Procurement:</b>	\$ 100.5M
<b>Construction:</b>	\$166.05M
<b>Engineering/Field Engineering Support:</b>	\$ 22.7M
<b>Owners Cost:</b>	\$ 11.1M
<b>Total:</b>	<b>\$ 300.3M</b>

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

Equipment and Material Procurement: All owner-procured material for the project, such as the FGD system equipment, SCR catalyst, ID fans and their motors, transformers, structural steel, ductwork, ammonia handling equipment and the Distributed Control System.

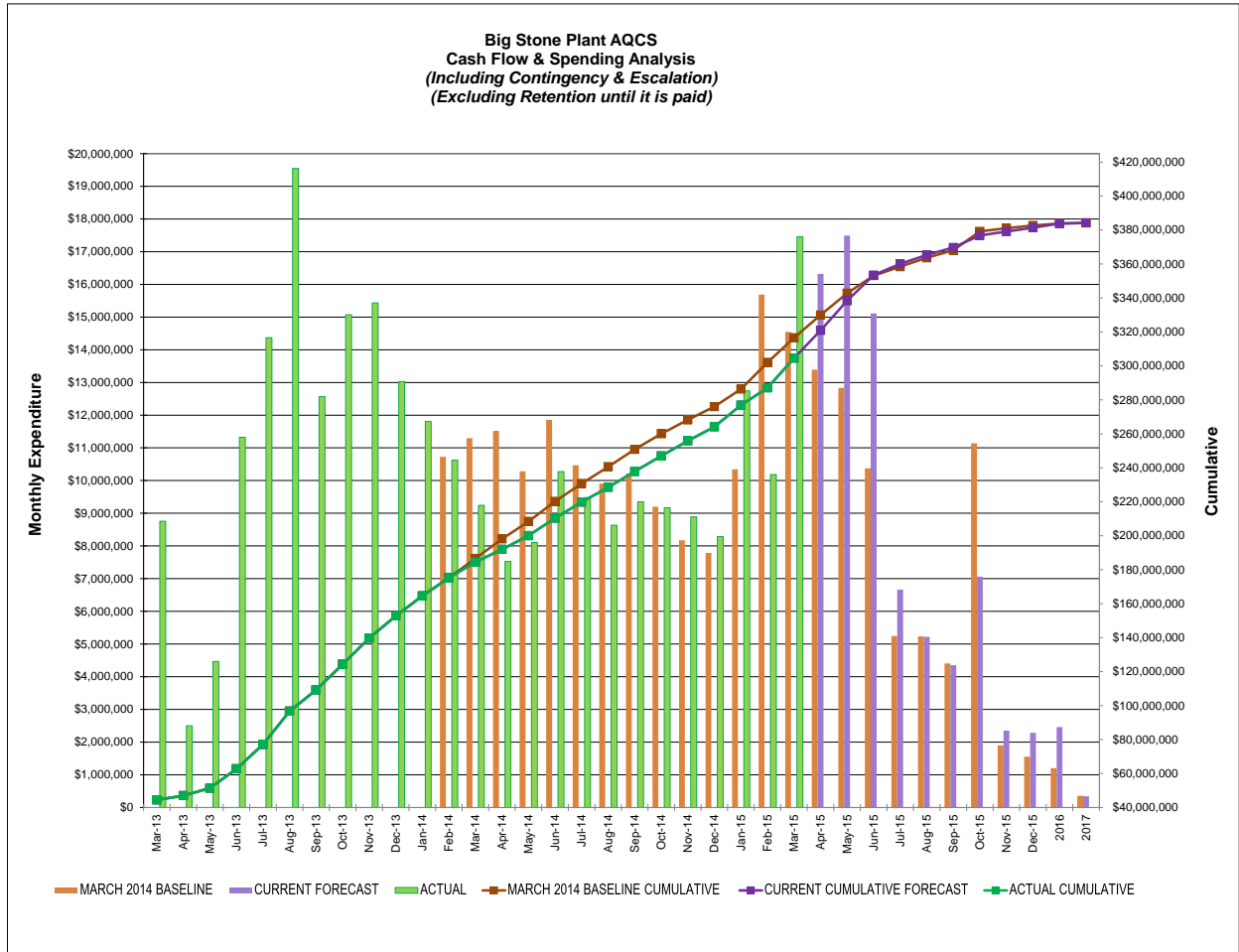
Construction: Payments made to Graycor (the General Work Contractor), site preparation work, testing work, surveying work and work to remove equipment that is no longer needed or which needs to be moved.

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. As the tie-in outage progresses we will again assess the cash flow needed to complete the project so that budget projects can be refined for the balance of the project.

Actual project cash flow and spending through March 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.



01-14 Setting section 7 CFB inlet ductwork



01-26 Final CFB inlet ductwork sections & activated carbon injection silo set



01-26 B&W pendants staged



02-02 G27 ductwork lift



02-09 Insulating baghouse north



02-09 Insulating ID fan to chimney ductwork



02-11 Staging going on in various areas of the plant in preparation for tie-in outage



02-17 SCR



02-17 Commissioning ownership



02-25 B&W boiler 14<sup>th</sup> floor



02-25 B&W openings south side of building



03-05 B&W cranes south side



03-05 Reheat outlet header unloaded awaiting install



03-09 Air heater outlet duct demo



03-12 14th floor reheat header outlet removal



03-13 Very full parking lots



03-13 ID fan & ductwork to stack

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 March 30, 2015:

	<b>Hours</b>	<b>Recordable</b>	<b>Lost Time</b>	<b>Near Miss</b>	<b>First Aid</b>
<b>Graycor</b>	1,512,497	3	0	10	13
<b>Project Team &amp; Contractors</b>	120,732	0	0	0	0
<b>Engineering</b>	169,190	0	0	0	0
<b>B&amp;W (Boiler)</b>	100,958	2	0	3	33
<b>Totals</b>	1,912,378	5	0	13	46

OSHA rate for recordable incidents: 0.52

OSHA rate for lost time: 0.0

### **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, several petitions for review have been filed in United States Court of Appeals for the D.C. Circuit which could ultimately delay its effective date. 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 94 percent complete. To date we have not seen anything to cause us to alter our schedule or increase our final project cost estimate.

#### **Summary**

The project continues to stay on schedule and on budget.