

215 South Cascade Street  
PO Box 496  
Fergus Falls, Minnesota 56538-0496  
218 739-8200  
[www.otpc.com](http://www.otpc.com) (web site)



July 14, 2014

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.

114 PU-11-165 Filed 07/14/2014 Pages: 11  
Compliance filing - Big Stone Air Quality Control System Project Report  
Otter Tail Power Company  
Mark Rolfes, P.E.

*An Equal Opportunity Employer*

115 PU-11-163 Filed 07/14/2014 Pages: 11  
Compliance filing - Big Stone Air Quality Control System Project Report  
Otter Tail Power Company  
Mark Rolfes, P.E.

Mr. Darrell Nitschke

July 14, 2014

Page 2

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)

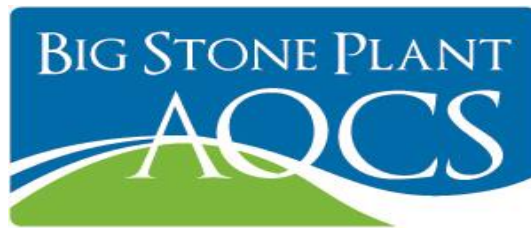
**BIG STONE PLANT  
AIR QUALITY CONTROL SYSTEM PROJECT  
QUARTERLY REPORT**

**TO THE**

**NORTH DAKOTA PUBLIC SERVICE COMMISSION**

**FOR THE**

**PERIOD APRIL 1 THROUGH JUNE 30, 2014**



**July 14, 2014**

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 June 30, 2014. 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 more than 50 percent complete. Considerable progress was made this quarter, although the weather at times has been a challenge to schedule and productivity. Examples of accomplishments include:

- All concrete foundation work was completed.
- Induced Draft (“ID”) Fans and motors have been assembled and placed on their pedestals, and alignment has been completed.
- Baghouse middle modules are nearing completion, equipment has been placed in the bottom of the building and electrical cable pulls and piping are well underway.
- Replacement of the power supply cables from the plant substation to the switchgear was completed.
- Selective Catalytic Reduction (“SCR”) structural steel is over 70 percent complete, with SCR reactor section placement underway.
- Ammonia system unloading facilities placement is underway.
- Approximately 425 construction workers are on-site.
- Most material is now on-site.

Costs incurred through June 30, 2014, can be broken down into the following general categories:

<b>Category</b>	<b>Costs Through June 30, 2014</b>
<b>Equipment/Material Procurement:</b>	\$91.6M
<b>Construction:</b>	\$91.1M
<b>Engineering/Field Engineering Support:</b>	\$19.7M
<b>Owners Cost:</b>	\$8.0M
<b>Total:</b>	<b>\$210.4M</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, SCR 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; insurance, legal costs, permitting, office space and equipment; and spare parts and consumables used during testing and commissioning.

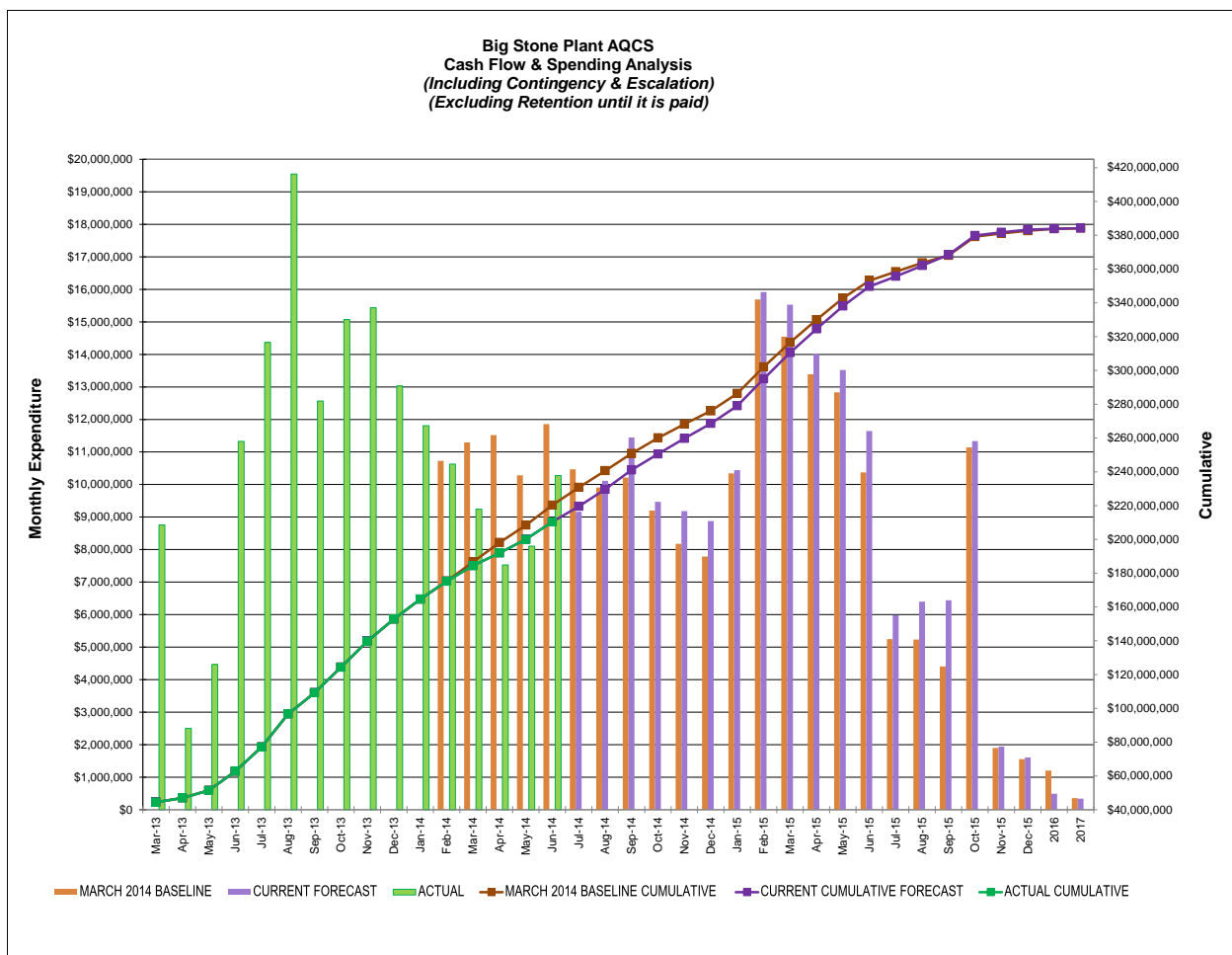
As described in the April Quarterly report for 2013, the overall project budget was reduced from \$489M to \$405M.

When the project was one year into construction, a review of projected project cost was completed. Based on the review, we again reduced the projected project cost to \$384M. The owners approved this budget variance in March 2014.

There are three main reasons for the reduction. The first was the final procurements coming in under the expected amount. The second reason is a reduction in the expected engineering costs. The total engineering work for the project was approximately 90 percent completed and was running under projections. The third and largest factor was a reduction in the contingency. Contingency was reduced because procurements are complete, construction is over one-third complete, and engineering is approximately 90 percent complete. In the process each budget line item was assessed for the proper contingency level. Significant effort has been devoted to controlling cost and minimizing contingency expenditures.

At this time we do not anticipate additional changes in the project’s cost projection prior to completion.

Actual project cash flow and spending through June 2014, and forecast through project completion, is illustrated on the following graph:



The following photographs illustrate various construction activities during the quarter.



2014-04-02 Plant south view

2014-05-22 Southeast overview



2014-04-08 G5B duct lift



2014-05-17  
Recirculation duct being set



2014-06-05 Recirculation ducts in place



2014-05-02 ID fans set

2014-05-05 North SCR steel installation



2014-05-22 Waste ash/pebble lime silos

2014-05-14 Aux boiler stack extension  
@1320'





2014-06-16 Ground assembly CFB outlet ducts



2014-05-30 Aerial view of project

Safety is paramount. We are taking extra steps to ensure a safe work site. The table below provides information on recordable and lost-time injuries and near miss incidents for the total labor hours worked on the project through June 30, 2014:

	<b>Hours</b>	<b>Recordable</b>	<b>Lost Time</b>	<b>Near Miss</b>	<b>First Aid</b>
Graycor	778,221	3	0	8	13
Project Team & Contractors	73,771	0	0	0	0
Engineering	159,166	0	0	0	0
<b>Totals</b>	<b>1,011,158</b>	<b>3</b>	<b>0</b>	<b>8</b>	<b>13</b>

OSHA rate for recordable incidents: 0.59, 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 54 percent complete. To date we do not anticipate altering our schedule, or increasing our final project cost estimate.

### **Summary**

The project remains on schedule and under initial budget.