Before the North Dakota Public Service Commission

State of North Dakota

In the Matter of the Application of Otter Tail Power Company

For Authority to Increase Rates for Electric Utility

Service in North Dakota

Case No. PU-17-

Exhibit___

BIG STONE AQCS AND HOOT LAKE MATS CAPITAL PROJECTS

Direct Testimony and Schedules of

KIRK A. PHINNEY

November 02, 2017

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I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Kirk A. Phinney. I am the Manager, Generation Services for Otter Tail Power Company (OTP).

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have a Bachelor of Science Degree in Mechanical Engineering from South Dakota School of Mines and Technology. I have worked in the power generation business for 15 years and for OTP for 12 years. I have experience with coal-fired generation as a plant engineer at Coyote Station and Big Stone Power Plant (Big Stone). I was the Principal Engineer, and later, the Commissioning Manager for the Big Stone Air Quality Control System (AQCS) project. I was also responsible for all close-out activities relating to the Big Stone AQCS project. In my current role at OTP, I provide support to various generation assets within OTP's Energy Supply Department.

II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. My Direct Testimony supports the reasonableness of the costs of the Big Stone AQCS project, as required by the Commission's May 9, 2012 Order in Case No. PU-11-165, the AQCS Advance Determination of Prudence Docket (AQCS ADP Docket). I will explain how OTP achieved an approximately 26 percent savings in the construction cost of the Big Stone AQCS project. I will also discuss how OTP completed the Hoot Lake plant (Hoot Lake) Mercury Air Toxins Standard (MATS) project under budget.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF YOUR DIRECT TESTIMONY.

A. OTP has completed its Big Stone AQCS and Hoot Lake MATS capital projects significantly under budget, resulting in substantial savings for OTP's customers.

Q. DID YOU USE ANY LABELING CONVENTIONS IN YOUR DIRECT TESTIMONY?

A. Yes. There are certain power plant projects where OTP is only a part owner. In those circumstances, I included each of the following: the total project costs, labeled as (Total Plant or Total Project), the OTP ownership allocation of the project amounts, labeled as (OTP Total), and the North Dakota jurisdictional share, labeled as (OTP ND). There may also be instances with project-related amounts where an estimate must be made of OTP's jurisdictional share of such costs, which are labeled as (OTP ND EST).

Q. HOW IS YOUR DIRECT TESTIMONY ORGANIZED?

A. In Section III, I describe OTP's Big Stone AQCS and Hoot Lake MATS capital projects. In Section IV, I explain how OTP successfully completed these projects substantially under budget. Section V provides my conclusion.

III. BIG STONE AQCS AND HOOT LAKE MATS CAPITAL PROJECTS

Q. PLEASE DESCRIBE THE BIG STONE PLANT.

A. Big Stone is a 475 megawatt (MW) coal-fired generation facility located near Milbank, South Dakota, approximately two miles west of the Minnesota border. Big Stone is jointly owned by OTP, Montana-Dakota Utilities Co., and NorthWestern Energy. OTP owns 53.9 percent of Big Stone and is the operating agent, which means that the employees at the plant are OTP employees and are subject to OTP management policies and procedures. Significant decisions that impact the plant are approved by co-owner governance. The plant output supplies customers in North Dakota, South Dakota and Minnesota.

Q. PLEASE DESCRIBE THE HOOT LAKE PLANT.

A. Hoot Lake is a 138 MW coal-fired generation facility located near Fergus Falls, Minnesota. Hoot Lake is wholly owned by OTP.

Q. WHAT IS THE BIG STONE AQCS PROJECT?

A. The Big Stone AQCS project refers to the installation of the following equipment at Big Stone: a dry Flue Gas Desulfurization (FGD) system with a new baghouse, an ammonia-based Selective Catalytic Reduction (SCR) system, a Separated Overfire Air (SOFA) system and an Activated Carbon Injection (ACI) system. The purpose of the FGD system and baghouse is to control sulfur dioxide (SO2) and particulate matter (PM) emissions. The SCR and SOFA technologies are designed to control nitrogen oxide compounds (NOX) emissions. The ACI system controls mercury.

Q. WHAT IS THE HOOT LAKE MATS PROJECT?

A. The Hoot Lake MATS project involved the upgrade of Electrostatic Precipitators (ESP) and the installation of an ACI system at Hoot Lake. The Hoot Lake MATS project is designed to control mercury and PM emissions at the plant.

Q. WHY DID OTP UNDERTAKE THESE PROJECTS?

A. The Big Stone AQCS project was primarily designed to comply with two separate environmental regulations that needed to be met in order to maintain operation of the Big Stone plant: (1) the South Dakota Department of Environment and Natural Resources' Regional Haze State Implementation Plan (SD Regional Haze SIP); and (2) the Environmental Protection Agency (EPA) Mercury and Air Toxic Standards (MATS) rule (MATS Rule). The Hoot Lake MATS project was designed to comply with the MATS Rule, and without it, OTP would have had to discontinue operating the plant at the end of 2015.

Q. PLEASE BRIEFLY DESCRIBE THE REGIONAL HAZE REGULATIONS.

A. The EPA Regional Haze Rule required installation of Best Available Retrofit Technology (BART) at certain power plants, including Big Stone, to control visibility-impairing emissions, such as SO2, NOX, and PM. The SD Regional Haze SIP was established to meet the EPA Regional Haze Rule, and required the installation of the following control technologies at Big Stone:

- Selective Catalytic Reduction with Separated Overfire Air: This technology provides the highest feasible level of control for NOX.
- Dry Flue Gas Desulfurization: This technology provides the maximum control of SO2 consistent with reducing visibility impact, given the technologies required to control NOX and PM.
- Baghouse: This technology provides the highest feasible level of control for PM.

Q. PLEASE BRIEFLY DESCRIBE THE MATS RULE.

A. The MATS Rule established emissions standards for new and existing power plants. The MATS Rule focuses on mercury and other hazardous air pollutants.

Q. DID OTP INSTALL ACI SYSTEMS AT BIG STONE AND HOOT LAKE TO COMPLY WITH THE MATS RULE?

A. Yes. The ACI systems at both the Big Stone and Hoot Lake plants help control mercury emissions to comply with the MATS Rule.

IV. CAPITAL PROJECT COST AND IMPLEMENTATION

Q. IS OTP PROPOSING TO INCLUDE THE BIG STONE AQCS PROJECT AND HOOT LAKE MATS PROJECT IN THE 2018 TEST YEAR RATE BASE?

A. Yes. The Big Stone AQCS system was put into commercial operation on December 29, 2015 and it is included in the 2018 Test Year rate base. The Hoot Lake MATS project was placed into commercial operation on August 21, 2015 and is also included in the 2018 Test Year rate base.

Q. ARE THE BIG STONE AQCS PROJECT COSTS NECESSARY AND REASONABLE?

A. Yes. The Big Stone AQCS project is necessary to comply with the EPA Regional Haze Rule, the SD Regional Haze SIP and the MATS Rule. The Commission also made an advance determination that the AQCS project was prudent in the AQCS ADP Docket. Further, as discussed in more detail below, OTP and the other Big Stone owners undertook significant efforts that resulted in the Big Stone AQCS project coming in

substantially under budget. Thus, not only are the Big Stone AQCS project and its costs necessary, the costs are reasonable, and were prudently incurred. OTP Witness Mr. Stuart D. Tommerdahl explains that the savings associated with the under-budget completion of the Big Stone AQCS project provide a substantial benefit for OTP customers in North Dakota and other states.

Q. WHAT IS AN ADP?

A. North Dakota Century Code §49-05-16 provides that a public utility, like OTP, that intends to make a resource addition (including modification of a generation facility) may file an application with the Commission for an advance determination that the resource addition is prudent. This is done in advance of the project being constructed. This process is not required, but OTP followed this procedure in connection with the Big Stone AQCS project.

Q. DID OTP OBTAIN APPROVAL FOR RECOVERY OF THE HOOT LAKE MATS PROJECT?

A. Yes. In Case No. PU-15-131, the Commission approved OTP recovering the costs of the project through the Environmental Cost Recovery Rider.

A. Big Stone AQCS Project

Q. IS OTP REQUESTING BASE RATE RECOVERY FOR AQCS PROJECT COSTS?

A. Yes. To date, OTP has recovered the eligible cost of the Big Stone AQCS project through its Environmental Cost Recovery Rider (ECRR), as approved in Order PU-13-79 and PU-13-84. OTP proposes to move these costs from the rider recovery to base rate recovery in this case. OTP witness Mr. Bryce C. Haugen discusses OTP's proposal to roll the costs of the Big Stone AQCS Project into base rates as part of this case.

Q. WHY IS OTP FURTHER EXPLAINING THE COST OF THE BIG STONE AQCS PROJECT IN THIS DOCKET?

A. The Commission's May 9, 2012 Order in the AQCS ADP Docket required that OTP "must be prepared to demonstrate in subsequent rate recovery proceedings the reasonableness of all costs incurred or obligated to implement the AQCS project" and

that OTP "must also be prepared to demonstrate in subsequent rate recovery proceedings that any costs incurred, other than AFUDC, of the AQCS were prudently incurred." Similarly, in OTP's consolidated Environmental Rider Tariff (Case No. PU-13-79) and Rates (Case No. PU-13-84), the Commission determined that: "When the project is completed and the final costs are known, Otter Tail will provide the Commission sufficient information to enable the Commission to perform a final reasonableness review of costs incurred in the execution of the project." The project is now complete and all costs have been accounted for. As I will explain, the costs for completing the Big Stone AQCS Project were substantially under budget and were reasonable and prudent.

1. Budgeted AQCS Project Costs

Q. WHAT WAS THE INITIAL BUDGET OF THE AQCS PROJECT?

A. The original budget that was presented as part of the AQCS ADP Docket was approximately $489 million (Total Plant), $263.6 million (OTP Total), $96.0 million (OTP ND). An additional cost for the ACI of $5 million (Total Plant), $2.7 million (OTP Total), $1.0 million (OTP ND) was also presented as part of the AQCS ADP.

Q. HOW WAS THAT ORIGINAL BUDGET DEVELOPED?

A. The original budget was based on cost estimates compiled by Sargent & Lundy, a global engineering firm with extensive expertise and experience with electric power generation and power delivery systems.

Q. WHY WAS SARGENT & LUNDY SELECTED?

A. Sargent & Lundy had more experience engineering AQCS systems than any other firm in the country, having worked on 57 percent of the dry FGD projects, 46 percent of the wet FGD projects, and 30 percent of the SCR projects in the industry. Sargent & Lundy also prepared a very detailed and thorough estimate that included budgetary quotes for all of the major procurements. Additionally, Sargent & Lundy compared the AQCS project estimate against similar projects.

Q. DID OTHER FACTORS ALSO PROVIDE CONFIDENCE IN THE ESTIMATE?

A. Yes. OTP's project team also reviewed the virtually identical emission reduction projects installed at Xcel Energy's Allen S. King Plant and Minnesota Power's Boswell Unit 3 and provided input to Sargent & Lundy. The AQCS project was expected to be slightly higher in cost than those projects because of the boiler work that would be required for the Big Stone SCR to operate properly. Even so, after adjusting for plant size and year of completion, the Sargent & Lundy cost estimate for Big Stone was consistent with the costs incurred by these comparable projects.

Q. HOW HAVE THE ACTUAL COSTS COMPARED TO THE BUDGET?

A. The final cost of the AQCS project, including the ACI System, is $365.5 million (Total Plant), $197 million (OTP Total), $71.8 million (OTP ND), or approximately 26 percent below budget. I will explain the factors contributing to the project being completed below budget.

2. Management of AQCS Project Costs

Q. HOW DID OTP AND THE OTHER BIG STONE OWNERS MANAGE AQCS PROJECT COSTS AND COMPLETE THE PROJECT BELOW BUDGET?

A. There were three primary drivers of bringing the project in under budget: (1) prudent design/engineering modifications; (2) project delivery method, timing and market conditions; and (3) project management.

Q. PLEASE DISCUSS THE EFFECT OF PRUDENT DESIGN/ENGINEERING MODIFICATIONS.

A. Through prudent engineering, there were a number of changes in the project design and specifications that resulted in considerable cost savings without compromising the performance or operability of the project. For example, changes to the requirements and design of the boiler modifications eliminated major structural changes that were originally contemplated. Another example was the reuse of the Big Stone plant's 13.8 kV switchgear that had been replaced in 2011. Reusing the switchgear eliminated the need for a new plant substation and transformer to feed the Big Stone AQCS project.

Q. PLEASE DISCUSS THE EFFECT OF PROJECT DELIVERY METHOD, TIMING AND MARKET CONDITIONS.

A. The combination of the project delivery method, which was a general work contract target pricing methodology, and a "buyer's market" allowed OTP and the Big Stone owners to take advantage of many very competitive situations that often yielded bid prices below what we expected. Market conditions were favorable and OTP and the Big Stone owners were active in taking advantage of these conditions to reduce costs.

Q. HOW DID PROJECT DELIVERY AFFECT THESE SAVINGS?

A. OTP selected the project delivery method to allow us to get to the market at the right time, and we aggressively pushed ahead to be in the market during this opportune time.

Q. CAN YOU PROVIDE EXAMPLES OF PROCUREMENT STRATEGIES THAT HELPED CONTROL COSTS?

A. OTP selected Sargent & Lundy as the engineer for the project based on Sargent & Lundy's demonstrated ability to control costs as compared to its competitors. Also, based on a recommendation from Sargent & Lundy, OTP solicited bids from suppliers for each of the AQCS major systems (the FGD, the SCR, and the remaining plant modifications) rather than issue a single engineer-procure-construct solicitation under which a single contractor would complete the entire project. This approach increased the competition in the bidding process and allowed OTP to go to market sooner to take advantage of favorable market conditions. We also contracted with a single construction contractor to efficiently coordinate site work.

Q. HOW WAS PROJECT MANAGEMENT HANDLED?

A. OTP took on the duties of construction management for the project and added people to the project staff to ensure that we could fulfill our obligations. With a project delivery method focused on having a single contractor for the construction of the AQCS equipment, the Big Stone owners felt OTP could take on the construction management of the project rather than using a third party. While this is not the typical approach, OTP

and the Big Stone owners believed that it provided the opportunity for significant savings. This decision did lead to substantial savings.

Q. HOW DID OTP'S CONSTRUCTION MANAGEMENT REDUCE THE COSTS OF THE BIG STONE AQCS PROJECT?

A. Management by OTP eliminated the costs of having a third-party manage the construction. A third-party construction manager, even if procured through a competitive bidding process, would necessarily include a premium in its costs to account for the risk of meeting the project deliverables. By deciding that OTP would accept this risk, the risk premium that would have been charged by a third party was essentially removed from the total project costs. Taking on this risk also aligned OTP's goals of completing the project on time and at the lowest achievable cost with the interests of OTP's customers.

Q. PLEASE DESCRIBE OTP'S SYSTEM TO MANAGE CONTRACTORS.

A. There were several key elements to contractor management on the project. The first was the creation of a project execution manual. This manual described the information and process for clear communication on the project. It included definitions around Requests for Information, Fieldwork Authorization, and Non-Conformance Reports. This was a clear communications protocol for everyone on the project team to manage information.

Second, there was early discussion of performance indices before contractors mobilized to the site. The performance indices were cost performance index, schedule performance index, labor productivity index, OSHA Rate, Lost time rate, etc. Third, regularly scheduled information exchange with the contractors was routine at the site, with daily and weekly coordination meetings and monthly recording meetings.

Q. WHAT WAS THE FINANCIAL IMPACT OF THE DESIGN MODIFICATIONS, PROJECT DELIVERY, AND PROJECT MANAGEMENT ELEMENTS?

A. Table 1 quantifies the total savings of each of these elements.

Table 1
AQCS Project Budget Savings

	Total Savings (Total Plant)	Total Savings (OTP Total)	Total Savings (OTP ND)	Percent of Original Budget
2013 Budget Reduction[1]	$89,235,100	$48,097,719	$17,518,337	18.0%
2014 Budget Reduction[2]	$20,975,000	$11,305,525	$4,117,742	4.2%
Final Project Cost	$18,686,185	$10,071,854	$3,668,409	3.8%
Total Budget Reduction	*$128,896,285*	*$69,475,098*	*$25,304,488*	26.1%
Drivers				Percent of Total Reduction
Design / Engineering Modifications[3]	$48,761,465	$26,282,429	$9,572,688	37.83%
Project Delivery Method/ Market Conditions[4]	$37,921,287	$20,439,574	$7,444,580	29.42%
Project Management[5]	$14,088,364	$7,593,628	$2,765,781	10.93%
Remainder	$28,125,169	$15,159,466	$5,521,439	21.82%
Total	*$128,896,285*	*$69,475,098*	*$25,304,488*	

Q. WERE THESE REDUCTIONS REFLECTED IN PRIOR REPORTS TO THE COMMISSION?

A. Yes. The Commission's May 9, 2012 Order in the AQCS ADP Docket required OTP to file reports regarding the project. OTP filed quarterly reports with the Commission in the AQCS ADP Docket through June 2017. These quarterly reports explained the then-current status of the project, important milestones achieved, costs incurred, and changed circumstances that could have affected cost or project installation. The 2013 and 2014

[1] April 9, 2013 Compliance Filing in AQCS ADP Docket.
[2] April 14, 2014 Compliance Filing in AQCS ADP Docket.
[3] April 9, 2013 Compliance Filing in AQCS ADP Docket attributed approximately 45 percent of the 2013 budget reduction to prudent design / engineering modifications.
[4] April 9, 2013 Compliance Filing in AQCS ADP Docket attributed approximately 35 percent of the 2013 budget reduction to the project delivery method and market conditions.
[5] April 9, 2013 Compliance Filing in AQCS ADP Docket attributed approximately 13 percent of the 2013 budget reduction to OTP's project management.

budget reductions were discussed in our April 9, 2013 and April 14, 2014 quarterly report filings in the AQCS ADP Docket.

Q. WHAT IS THE OVERALL IMPACT OF THE EFFORTS TO MANAGE THE COSTS OF THE BIG STONE AQCS PROJECT?

A. The final cost of the Big Stone AQCS project is $365.5 million (Total Plant), $197 million (OTP Total), $71.8 million (OTP ND). Through the efforts of OTP and the other Big Stone owners, we were able to reduce the cost of the project by more than $128.9 million (Total Plant), $69.5 million (OTP Total), $25.3 million (OTP ND), or approximately 26 percent below budget.

Q. DO THESE COST REDUCTIONS PROVIDE BENEFITS TO OTP'S NORTH DAKOTA CUSTOMERS?

A. Yes. As explained by Mr. Tommerdahl, these cost savings will provide significant and long-lasting benefits to OTP's customers in North Dakota and other states.

3. Timeliness and Safety of Big Stone AQCS Project Implementation

Q. PLEASE SUMMARIZE THE BIG STONE AQCS PROJECT TIMELINE.

A. Work began in 2011. Detailed engineering was carried out in 2011 and 2012, with major procurements beginning in the first half of 2012. Actual on-site construction started in March of 2013 and continued through the summer of 2015, with the last construction personnel leaving the site on September 4, 2015. Construction milestones throughout 2014 kept the project on schedule. The majority of construction was completed by the spring of 2015 when the Big Stone Plant was taken off-line to make needed modifications to the boiler and to tie the new AQCS equipment in to the existing plant.

The AQCS equipment was then started up and operated for the first time in August 2015. For the next three months, the system was tuned and then tested to insure it was performing as intended. The AQCS system was put into commercial operation on December 29, 2015. Demolition of equipment that was no longer needed occurred in 2016 along with closing out of major contracts. The final payments to equipment suppliers were made in October of 2017.

Q. DID OTP PRIORITIZE SAFETY AS PART OF THE PROJECT IMPLEMENTATION?

A. Yes. Safety is a primary concern for every project, but because of the size and complexity of this project, we placed an increased emphasis on safety. For example, project employees were required to complete safety orientation, and were instructed on 10 "Cardinal Rules" of safety with zero tolerance for safety violations. Sub-contractors held daily safety meetings where safety concerns were identified and communicated to the workforce through a Task Safety Analysis.

Our contract required a specific safety representative for every 50 workers. During peak construction, we had a workforce of approximately 500 people, and during the tie-in outages we had approximately 650 people working on site. There were over 2.3 million work-hours spent on the project with only one lost time accident.

OSHA's metric for safety performance measures the number of injuries that meet the reporting criteria for each 100 employees working a full year. Our OSHA rate for the entire project has been 0.88. For comparison purposes, in 2014, the overall OSHA rate reported by the Bureau of Labor Statistics for utility construction projects nationwide was 2.6.

Q. DID THE PROJECT STAY ON SCHEDULE?

A. Yes, the Big Stone AQCS project stayed on schedule. The start-up and commercial operation of the AQCS equipment was delayed approximately two months, but as discussed below, this adjustment to the commercial operation date was not due to any issues with the Big Stone AQCS project. It was due to an issue with existing equipment at the Big Stone plant that was identified for correction during the scheduled outage during which the AQCS tie-in occurred. Furthermore, the two-month delay did not have a material impact on the cost of the Big Stone AQCS project.

Q. WHAT CAUSED THE APPROXIMATE TWO-MONTH DELAY IN THE COMMERCIAL OPERATION DATE OF THE AQCS PROJECT?

A. The scheduled Big Stone plant outage began on February 27, 2015. During a routine inspection, it was discovered that all ten rows and the control stage blades of the plant's high pressure (HP) turbine needed to be replaced. This issue was unrelated to the Big

Stone AQCS project. Replacing the blades extended the outage by approximately two months (June 11 to August 4). It also delayed when we could begin testing the Big Stone AQCS project equipment because testing could only start when the plant was back online.

Q. WHY DID THE TWO MONTH DELAY NOT HAVE A MATERIAL IMPACT ON COST OF THE PROJECT?

A. The most important schedule consideration as it relates to project cost was having the AQCS equipment ready to be tied-in to the existing Big Stone plant infrastructure during a scheduled outage. The two-month delay had no impact on this factor. The tie-in could only occur during a plant outage. Plant outages, which generally occur every three to five years, are expensive and planned well in advance of the outage date. When the Big Stone AQCS project timeline was developed, the Big Stone plant was scheduled for an outage in 2015 for non-AQCS scheduled maintenance. Performing the tie-in during the planned 2015 outage allowed us to avoid a second outage.

Q. IS THE AQCS EQUIPMENT NOW FULLY FUNCTIONAL AND OPERATING AS EXPECTED?

A. Yes. The AQCS equipment was put into commercial operation on December 29, 2015, has achieved the desired emissions reductions necessary to comply with regulations and is performing as expected.

B. Hoot Lake MATS Project

Q. IS OTP REQUESTING BASE RATE RECOVERY FOR THE HOOT LAKE MATS PROJECT COSTS?

A. Yes. To date, OTP has recovered the eligible cost of the Hoot Lake MATS project through its Environmental Cost Recovery Rider (ECRR), as approved in Order PU-15-131. OTP proposes to move these costs from the rider recovery to base rate recovery in this case. The Commission also approved recovery of the reagents related to the Hoot Lake MATS project in Case No. PU-14-668. Mr. Haugen discusses the roll-in process in greater detail.

Q. WHAT WAS THE PROPOSED HOOT LAKE MATS PROJECT BUDGET?

A. After getting firm bids on the project and further project development, the overall projection for the project was $8.6 million (OTP Total), $3.1 million (OTP ND). This is approximately $1.4 million (OTP Total), $510,000 (OTP ND) lower than the cost of environmental compliance identified in the 2012 Baseload Diversification Study.

Q. PLEASE DESCRIBE THE PROCESS FOR COMPLETING THE HOOT LAKE MATS PROJECT.

A. OTP began issuing contracts and plans in 2013. Various components were ordered and fabricated in 2013 and 2014, and Hoot Lake was shut down in March of 2014 for a planned 10-week outage to upgrade the ESPs, install the ACI system, and install the new emissions monitoring systems. The installation went very well. After startup in June through August 2014, the system was verified to meet all performance guarantees. After both Hoot Lake units were placed back into service, the balance of the project was to install and verify the emissions monitoring equipment, and complete the required testing to demonstrate compliance with the MATS Rule. The entire Hoot Lake MATS project was deemed in compliance and in service on August 21, 2015.

Q. DID THE HOOT LAKE PROJECT MEET THE PLANNED OBJECTIVES?

A. Yes. The MATS Rule became effective on April 16, 2015. The entire Hoot Lake MATS remains in compliance with the MATS Rule. Compared to the project budget originally identified in the 2012 Baseload Diversification Study of approximately $10 million (OTP Total), $3.6 million (OTP ND), the final project cost was $2.8 million (OTP Total), $1.0 million (OTP ND), or approximately 28 percent below budget.

Q. WHAT WAS THE FINAL COST OF THE HOOT LAKE MATS PROJECT?

A. The final cost of the Hoot Lake MATS project was $7.145 million (OTP Total), $2.6 million (OTP ND).

V. CONCLUSION

Q. HAVE THE BIG STONE AQCS PROJECT AND HOOT LAKE MATS PROJECT ACHIEVED THE DESIRED REDUCTIONS IN EMISSIONS?

A. Yes. The Big Stone AQCS project and Hoot Lake MATS project have achieved the desired reductions necessary to comply with regulations and are performing as expected.

Q. WERE THE BIG STONE AQCS PROJECT AND THE HOOT LAKE MATS PROJECT COMPLETED UNDER THE ORIGINAL BUDGETS?

A. Yes. The Big Stone AQCS project, which was OTP's largest-ever capital expenditure, has been completed for a cost approximately 26 percent under budget. OTP also completed the Hoot Lake MATS project approximately 28 percent under budget. I have explained the sources of these savings in my Direct Testimony.

Q. WAS THE BIG STONE AQCS PROJECT COMPLETED ON SCHEDULE?

A. Yes. The Big Stone AQCS project was completed on schedule and within the time period required by the regulations. Commercial operation was delayed by approximately two months from the anticipated in-service date because of issues identified during routine maintenance of the Big Stone plant. The delay was not related to the AQCS project.

Q. HAS THE ON TIME AND UNDER-BUDGET COMPLETION OF THESE CAPITAL EXPENDITURES RESULTED IN SIGNIFICANT CUSTOMER SAVINGS?

A. Yes. Mr. Tommerdahl explains the significant savings that have resulted for all OTP customers, including a significantly lower revenue requirement for North Dakota customers in this rate case. Mr. Tommerdahl also explains the lasting benefits to customers that will continue for many years into the future.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.