MONTANA-DAKOTA
UTILITIES CO.
A Division of MDU Resources Group, Inc.

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December 1, 2014

Executive Secretary
North Dakota Public Service Commission
State Capitol Building
Bismarck, ND 58505-0480

Re: R.M. Heskett Station – Unit 3
88 MW Combustion Turbine Project
Semi-annual Report 5
Case Nos. PU-11-395

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc., herewith submits its fifth semi-annual report regarding the status of the 88 MW Combustion Turbine Project to be constructed at the R.M. Heskett Station near Mandan, North Dakota in accordance with the Commission's Order on Settlement issued on April 11, 2012 in this Case.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed, stamped envelope.

Sincerely,

Caitlin Straabe

Caitlin Straabe
Regulatory Compliance Specialist

Attachment

110 PU-11-395 Filed 12/01/2014 Pages: 10
Compliance filing - 5th semi-annual report regarding status of turbine project
Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc.
Caitlin Straabe

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.

R.M. Heskett Station – Unit 3
88 MW Combustion Turbine Project
Semi-Annual Report
Case No. PU-11-395

Report Number 5

Presented to:
North Dakota Public Service Commission

Submitted:
December 1, 2014

R.M. Heskett Station – Unit 3
88 MW Combustion Turbine Project
Semi-Annual Report Number 5

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1.0 Introduction

In accordance with the North Dakota Public Service Commission's ("Commission's") April 11, 2012 Order in Case Nos. PU-11-395 and PU-11-396, Montana-Dakota Utilities Co. ("Montana-Dakota") hereby submits Semi-Annual Report Number 5 on the status of the 88MW Combustion Turbine Project ("Project") under construction at the R.M. Heskett Station near Mandan, North Dakota. The Project is referred to as the R.M. Heskett Station Unit 3.

The Project consists of the construction of a simple cycle combustion turbine ("Combustion Turbine"), the necessary transmission interconnection facilities for the turbine ("Interconnect"), and approximately 24 miles of natural gas pipeline to supply fuel to the turbine ("Pipeline").

The overall Project budget, including Allowance for Funds Used During Construction ("AFUDC") is $85.6 million. Construction of the Combustion Turbine commenced on April 29, 2013, while construction of the Interconnect and Pipeline commenced in September 2013. The Project successfully entered commercial operation on August 5, 2014.

2.0 Status

Overall status of the Project

The Project has entered commercial operation ahead of schedule and under budget. The majority of the activities that have occurred since the last report are Project management, final construction, commissioning, startup, tuning, and testing of the Project.

Combustion Turbine

The first construction contract for site preparation, service building, foundations, and underground installation ("Site Prep") has been substantially complete since November 15, 2013. On May 21, 2014, the Site Prep contractor completed the contractual closeout requirements such as providing final submittals, redlined drawings, O&M manuals, and spare parts.

The second construction contract for mechanical and electrical installation ("M/E") was substantially completed on July 18, 2014. In addition to construction work, the M/E contractor also provided commissioning and startup labor support during the period of June 10 to July 18. On October 14, 2014, the M/E contractor completed the contractual closeout requirements such as providing final submittals, redlined drawings, O&M manuals, and spare parts.

Bids for the third construction contract for miscellaneous installation ("Cleanup") were received in late April 2014. The Cleanup construction contract was awarded in early May 2014 and executed in early June 2014. Cleanup construction work includes final grading, final aggregate surfacing, final concrete pavement, final asphalt pavement, completion of security fencing and gate access, concrete sidewalks and pads, turbine-generator foundation benchmarks, and final site cleanup. The Cleanup construction work commenced on August 13, 2014 and was substantially completed on October 16, 2014. The Cleanup contractor is expected to complete the contractual closeout requirements before year end.

Bids for the fourth construction contract for painting ("Painting") were received in early May 2014. The Painting construction contract was awarded in mid-May 2014 and executed in early June 2014. The Painting construction work is scheduled to commence around May 1, 2015 for a duration of approximately 6 weeks. Painting work includes preparation, painting, and finishing of all surfaces requiring field-applied paint, which encompasses the majority of the Combustion Turbine equipment.

More detail on the weekly progress of the Site Prep and M/E construction work contracts can be found in the weekly construction reports submitted to the Commission in accordance with Case No. PU-11-631.

Delivery of the General Electric Company ("GE") PG7121(EA) combustion gas turbine packaged power plant ("7EA") has been substantially complete since October 18, 2013. One GE case was delivered in December 2013 and the final 3 GE cases were delivered on April 10, 2014. Delivery and installation of all Combustion Turbine equipment has been completed since the last report.

First fire of the combustion turbine was achieved on June 10, 2014 and the generator was successfully synchronized to the electric grid for the first time on June 16, 2014. Tuning and testing activities required for the 7EA occurred between June 10 and July 28, 2014. The 7EA contract guarantee test for acoustics was completed on July 2, 2014. The preliminary results for the 7EA contract guarantee tests for emissions and thermal performance were provided on July 30, 2014. All 7EA contract guarantees were successfully met and the Project was released for commercial operation on August 5, 2014.

Tests of the continuous emissions monitoring system and pollutant emissions required by the Prevention of Significant Deterioration Permit to Construct ("PTC") were performed on September 9, 2014 and October 2, 2014 respectively. All test results indicate the Project is in compliance with the PTC.

Table 1 – Equipment Contracts – Overall Completion Status

Equipment Contract	Manufacturing	Delivery	Installation	Startup
Turbine, Generator, and support equipment	June 28, 2013	Apr 10, 2014	July 18, 2014	Aug 5, 2014
Generator Step-Up Transformer	Aug 22, 2013	Sept 13, 2013	Jan 7, 2014	May 20, 2014
Unit Auxiliary Transformer	Oct 16, 2013	Oct 25, 2013	Nov 18, 2013	May 22, 2014
Exhaust System and Silencing Package	Aug 19, 2013	Oct 2, 2013	Apr 29, 2014	June 10, 2014
480-Volt Electrical Equipment	Sept 10, 2013	Sept 12, 2013	Mar 14, 2014	May 22, 2014
Medium Voltage Electrical Equipment	Oct 1, 2013	Oct 4, 2013	Mar 14, 2014	May 22, 2014
Fuel Gas Coalescing Filter	Nov 6, 2013	Nov 12, 2013	May 12, 2014	June 6, 2014
Continuous Emissions Monitoring System	Nov 15, 2013	Dec 5, 2013	May 8, 2014	Sept 9, 2014

Pipeline

Construction of the Pipeline was substantially completed on April 16, 2014. A successful hydrostatic pressure test of the main pipe was completed on April 24, 2014. Air pressure testing of the interconnection and Combustion Turbine regulator stations was successfully achieved on April 7 & 9, 2014 respectively. On June 5, 2014, the final drying, cleaning, odorizing, and purging activities for the Pipeline were completed and it was released for use.

Other Pipeline work such as finalizing instrumentation, gas yard surfacing, painting, fencing, seeding, mulching, tree planting, building installation at the regulator stations, and other miscellaneous cleanup was substantially completed on October 31, 2014.

Bids for a fuel supply and management ("Gas Supply") contract for the Project were received in mid-December 2013. The Gas Supply contract was successfully executed on May 16, 2014.

More detail on the weekly progress of the Pipeline can be found in the weekly construction reports submitted to the Commission in accordance with Case No. PU-11-680.

Interconnect

Substation wiring, checkout, and relay configuration for the Interconnect was completed on May 16, 2014 and the Interconnect was energized on May 20. Backfeed into the medium and low voltage systems was successfully completed on May 22, 2014.

3.0 Costs

Amounts and types of costs incurred

The total Project cost incurred through October 31, 2014 is approximately $75.5 million. This is approximately 88 percent of the original budgeted total for the Project.

The majority of the Combustion Turbine costs incurred were for Site Prep, M/E, and Cleanup construction progress payments, with the large remainder of Combustion Turbine costs incurred for equipment milestone payments, engineering, construction management, commissioning, startup, tuning, and performance testing. The majority of Interconnect costs incurred were for transmission line materials, configuration of substation relays, and checkout and startup of substation equipment. The majority of Pipeline costs incurred were for pipeline construction, with the large remainder of Pipeline costs incurred for surveying, engineering, construction management, and pipeline testing and startup.

Table 2 – Cost Summary

Through 10/31/13	Budget	Committed	Actual
Combustion Turbine	$55,229,376	$49,072,405	$48,079,274
Interconnect	$1,215,625	$962,923	$947,831
Pipeline	$18,554,999	$21,441,512	$20,919,253
Total before Loadings	$75,000,000	$71,476,840	$69,946,358
Loadings	$10,629,000	$5,522,589	$5,517,905
Overall Total	**$85,629,000**	**$76,999,429**	**$75,464,263**

4.0 Changes

Any changed circumstances that will materially affect cost, schedule or installation

The Project entered commercial operation on August 5, 2014, which is more than 6 months ahead of the original milestone schedule. The remaining Project activities, such as Painting, will extend into the spring of 2015.

As of November 26, 2014, approximately 99 percent of the overall Project budget is considered committed. The Painting and other miscellaneous work activities that remain are well defined and well within the Project budget.

Montana-Dakota is projecting the overall Project will finish under the original budget by approximately 10 percent. This is due in large part to completing the Project ahead of schedule, which significantly reduced AFUDC costs. In addition, the Combustion Turbine and Interconnect are projected to finish under budget by approximately 11 and 20 percent respectively. The Pipeline is projected to finish over budget by approximately 15 percent due to construction challenges with the route terrain, the unusually wet weather encountered during the fall of 2013, and challenges meeting final Pipeline dryness and cleanliness requirements.