

South Dakota Infrastructure Rider 2017 Project List and Descriptions

Existing Rider Projects

The following projects were approved for recovery by the Commission in the Company's Infrastructure Rider in Docket No. EL14-058, and re-affirmed for cost recovery most recently in Docket No. EL15-038:

MNGP Extended Power Uprate (Monticello LCM/EPU) (w/o 10245258)

PI-9 TN-40 Casks (Prairie Island Casks #39-47) (w/o 11101522)

PI-Relicense ISFSI (Prairie Island ISFSI Relicensing) (w/o 10798851)

PI U2 Generator Replacement (w/o 11808202)

PI U2 GSU Transformer Replacement (w/o 11808219)

MNGP EDG Tornado Missile Protection (w/o 11946062)

MNGP Fukushima Modifications (w/o 11503439)

PI LR Ph II-U2 MRP-227A Implementation (w/o 11812440)

PI-NFPA 805 Fire Model (w/o 11044898)

PI U2 HDTP Speed Control Upgrade (w/o 11230621)

BRD0C Border Wind ND (w/o 11551351)

PLV0C Pleasant Valley Wind (w/o 11869600)

SHC1C U1 Couton Bottom Replacement (w/o 10935185)

BDS0C Install Package Boiler (w/o 11345791)

SHC3C Motor Control Sys PL (w/o 11487734)

Midtown 115kV line (w/os 11219377 and 11627836)

NSM0953 Galloping Mitigation (w/o 11892875)

GIST-III Computer Software (w/o 11465739)

Hiawatha Dam Interconnect Substation (w/o 11083245)

Scott County 345 kV Expansion, Substation (w/o 11806389)

BS-Fcst-BD-SW-CM-M (w/o 11218029)

PI-Repl Instrument Air Compressor (w/o 10799550)

The following projects were approved for recovery by the Commission in the Company's Infrastructure Rider in Docket No. EL15-038:

Prairie 3rd 230/115 kV tra (w/o 11491534)
PI Emerg Resp Equipment FLEX (w/o 11634222)
PI U1 HDTP Speed Control U (w/o 11101124)
SHC2 U2 DCS Controls Repl (w/o 11648818)
SHC2C U2 Turbine EHC Ctrl (w/o 11488127)
Dynamic EMS Environment Phase (w/o 10818773)
Work and Asset Ph 1 SW MN (w/o 11491932)
MNGP Security Physical Upgrade (w/o 12076265)
PI Sfgds CL Pump Redesign (w/o 12075477)
760-Red Wing to Wabasha (w/o 11776427)
NSM0953 Galloping Mitigation (w/o 12077207& 12051340)
HBC7C U7 HGP/Combustion Inspec (w/o 10785655)
SHC1C U1 DCS Controls Repl PH (w/o 11350867)
MNGP Rplc IMUX Front End Proce (w/o 11366818)
GIST-II Computer SoftwareNSPM (w/o 11434783)
MNGP Cyber Security 08-09 (w/o 11468481)
Purch EMS DEMS Ph2 HW MN (w/o 11584375)
PI Fan Coil Unit Face Repl (w/o 11812451)
PI NFPA 805 -08 Fire Detection (w/o 11825933)
MNGP EDG Fuel Oil Train Separ (w/o 11926489)
PI FLEX Storage Building (w/o 12035378)
CRT0C Courtenay Wind Farm Construct (w/o 12173639)
RIV9C-U9 HGP Inspection No 1 (w/o 11215945)

Additional Settlement Agreement Exhibit C Projects

These projects were among those identified on Exhibit C to the Settlement Agreement approved by the Commission in Docket No. EL14-058 and that have forecasted revenue requirements beginning in 2017. Exhibit C provided the list of specific capital projects for which potential Rider cost recovery may be requested in future Infrastructure Rider filings.

SHC 3 Turbine EHC Controls (w/o 11487740)

This project will replace all original obsolete turbine control equipment of the Sherco Unit 3 Main Turbine with modern control equipment. The majority of existing control and monitoring systems is an original electronic-analog system that has been in-service since in the 1980s. The system has become hard to maintain given the outdated operator interface consisting of hard-wired switches, lamps, and indicators located on insert panels in the control room bench board. This project will improve the plant's availability and reliability with new controls for all turbine and generator auxiliaries control systems. New control logic and control hardware will be installed which will improve automatic control of the turbine in all operating states. The new system will match the comparable systems used in Sherco Units 1 and 2 to the extent possible. Installation will occur during a regular scheduled unit outage.

PI-Screenhouse Cl Header P (w/o 11100514)

The project will replace approximately 80 feet of 24-inch diameter safety related piping, which includes all sections of known degradation, with new internally-coated piping. The pipe replacement will require entry into a 72-hour Technical Specification LCO (Limiting Condition for Operation) Action Statement that applies to both Unit 1 and Unit 2 at the same time.

Safety-related Cooling Water piping in the Plant Screenhouse, supplying water to both Units, is currently degraded. The known degradation is described as follows:

- A Train: Two straight pipe sections have localized spots within 0.020" of Code (ASME B31.1) allowable minimum wall thickness (as measured in 2012). Both sections are anticipated to be less than B31.1 minimum wall, and ASME III Class 1 localized wall thickness calculations (alternate acceptance criteria) are being prepared for upcoming inspections in Refueling Outage 1R30. Both sections of piping have had previous repairs.
- B Train: One straight pipe section has a localized spot currently less than Code allowable minimum wall thickness (as measured in 2015). Operability is currently supported by ASME III localized calculations. This pipe section has been previously repaired.

The conduct of this work will require entry into a 72-hour LCO Action Statement. However, due to the large scope of this project, it is likely that a dual Unit shutdown will be needed as the planned fieldwork is expected to exceed the 72-hour Technical Specification action limit. A dual Unit shutdown is not currently planned for 2017, therefore it is doubtful that this project will actually be in-service in 2017.

New Proposed Rider Projects

The Company seeks eligibility determination for the following projects:

SHC3 Boiler Intermediate and Finishing Superheater replacement (A.0001574.147)

The scope of work is to replace the Sherco Unit 3 Intermediate and Finishing Superheater Pendant sections from the intermediate inlet header to the finishing outlet header. Unit 3 Reheat Pendant sections have reached end-of life which is being driven by several failure mechanisms. Oxide growth on the tube inner surface has reached more than twice the industry and company guidelines for chemical cleaning. If the replacement is not scheduled for 2017 a chemical cleaning shall be required costing approximately \$6 million. Replacement of the reheat pendant tubes will 1) reduce future O&M costs for tube repair and 2) avoid a minimum of two 40 hour forced outages per year due to tube failures.

PI Reactor Coolant Pump Rebuild (A.0000035.211)

The project will deliver a newly installed Reactor Coolant Pump (RCP) and RCP Seal Package with Mayer Groove seals. Applicable design, implementation, closeout, and procurement activities will be performed by the project. The project will be fully implemented in the 1R30 Refueling Outage in November 2016. [Note that the Mayer Groove seal package was previously installed as a partial project implementation during Forced Outage 1F2903CS in April 2015.]

Reactor Coolant Pump (RCP) internals have been identified as a single-point vulnerability (SPV), which is defined as a critical component whose failure results in a reactor trip, turbine trip, or loss of generation capacity. The original internals assembly currently installed in 12 RCP has never been inspected or refurbished in over 43 years of plant operation. In addition, the 12 RCP Seal Package has been subject to foreign material intrusion. A change to the seal package is desired to preclude further reliability issues.

MT TSTF-523 Vent Installation (A.0000029.015)

To meet the regulatory requirement of TSTF-523, permanent probes will be installed at the pipe locations where gas voids accumulate to monitor the size and location of the voids per the industry standard. This project takes place at the Monticello Plant.

MT EDG Fuel Oil Pump Mtr Rplc 1R28 (A.0000017.116)

This project will replace 17 Klockner Moeller MCC buckets that are operable but non-conforming (OBN) in motor control centers MCC-134 and 144 at the Monticello Plant. This project is to meet a regulatory requirement.

MT KM 480VAC Cubicle Rplc (A.0000029.018)

This project at the Monticello plant will replace all four original diesel fuel oil pump assemblies which are operable but non-conforming (OBN) and require replacement. Implementing this project at this time prevents regulatory consequences and will allow for spares as the replacement parts to be readily available. This project is to meet a regulatory requirement.

Forecasted Rider Projects

While we are not specifically asking for approval of the following projects at this time, we include them in our 2018 Rider forecast on Attachment 2:

- MNGP DAS & PPCS Rplc (A.0000017.003)
- PI Proc Controls Repl (A.0000035.079)
- MNGP 2018 Dry Fuel Storage Loa (A.0000060.001)
- BDS0C Black Dog U6 Simple Cycl (A.0001634.001)
- PI 122 Cooling Twr Structural (A.0000040.035)