

Unit #4 Main Steam Pipeline



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- Originally, \$300,000 was budgeted in FY 2016 to minimize pressure drops and eliminate unnecessary piping. Estimated benefit .25 mw.
- Presently, steam delivered to Unit #4 turbine drops 3.2 psig from outside the plant fence line to the turbine building.
- Numerical modeling/in-house calculations show that half the pressure drop and approximately 1 MW of generation can be recovered by directly routing the steam into the turbine building.
- If approved, additional funds of \$650,000 would be required in FY 2017 to accomplish the re-route for total project cost of \$950,000.

Unit 4 Main Steam Pipeline

Proposed Re-Route



Existing Unit #3 & #4 Pipelines

Google earth

292 ft

Financial Analysis – Assumptions

- Project Life - 15 years
- Project Cost - \$950,000
- Benefit – 1 MW Gain Declining @ 2% per year
- 10 Day Outage required in FY 2017 to do pipeline tie-ins
 - Loss of 30 MW during this period
- 6 Week Outage Every 6 Years
- 97% Unit Availability

Financial Analysis- Economic Results

- IRR 38.5%
- NPV @ 5% \$4,104,163
- Average Annual Benefit \$365,455
- Payback Period 3 Years

Schedule

Phase 1 – Establish roadside tie-in

- April 2016 Unit #4 Outage
- Order Long Lead Materials
- Approximately \$200,000

Phase 2 – Prefab new pipeline

- Spring/Summer 2016
- Approximately \$400,000

Phase 3 – Complete tie-in

- Fall 2016 Shutdown 10 days
- Complete tie-ins
- Approximately \$223,000



Unit #4 Main Steam Pipeline Public Works Contract

- Public Notice on December 22 & 28, 2015
- Mandatory Bid Walk on January 12, 2016
 - Four contractors participated
- Bids Received on January 26, 2016
 - Southwest Contractors Bid - \$1,398,980
 - ***Northern Industrial Construction - \$822,908***
- Additional contingency funds (15%) - \$127,092
- ***Total project cost - \$950,000***

Recommendation

Recommend Commission approve the Unit 4 Main Steam Pipeline project and associated contract with Northern Industrial in the amount of \$822,908 and authorize change orders up to an additional \$127,092 for contingency. Total Project Cost - \$950,000