



B1 to B4 Risk Assessment 3 Unit Simultaneous Modernization

Board Presentation September 5, 2017

Purpose

- Present risk assessment as promised at the B1-B4 award presentation in Dec. 2016 for three unit simultaneous modernization.
 - Off-ramp 1 - summer 2017
 - Off-ramp 2 - spring 2018
- Approval to hire 2 additional operators



Background

Benefits:

- Returns B1 to B4 to service prior to 2020 HCP check-in
- B5 to B8 completed 1 year earlier
- Reduces resource impacts on start of PH2 rehab (fall 2021)
- Lower contract cost - \$2.9M
- Reduced outage time revenue - \$1.9M
- Savings to award in 2016 - \$1.24M
- Gross benefit – \$6M



Background

Dec. 30 Alternate Bid Risks and Costs:

- Need to purchase additional dewatering equipment (head gates, stop logs, pumps) - \$2.85M.
- District electrical work to provide additional power feed equipment - \$300k
- Additional engineering labor - \$250k
- Contracted labor to supplement CM wireman - \$500k
- Additional plant operations support – \$1.8M
- Gross Cost: \$5.8M



Risk Assessment

Comprehensive list of risks and mitigation options developed through interviews with:

- Operations Management
- Plant Crafts
- Central Maintenance Crafts
- Engineering and Project Management
- Modernization Contractor

The risk assessment was facilitated by a consultant.



Risk Assessment

33 risks grouped into 6 categories:

- Safety
- Unit Dewatering
- Reuse of existing components
- Site utilization
- Plant equipment reliability
- Work force availability

See spreadsheet for details



Cost Review

Description	Dec. 2016 Estimate	July 2017
Dewatering Equipment – District	\$2,000,000	\$1,280,000*
Dewatering Equipment – Andritz	\$850,000	\$1,256,900*
District work for 3 rd Unit Dewatering	\$200,000	\$150,000
Contracted craft support	\$500,000	\$500,000 est.
Additional Electrical feeds and reliability	\$100,000	\$40,000
Contracted Engineering	\$250,000	\$250,000 est.
Plant Operators (one shift)	\$1,867,803	\$1,814,000
Budget for repair of existing	\$3,000,000	\$3,000,000
Plant Equipment Capability & Reliability	\$0	\$275k est.
- Cranes		
- HVAC/Ventilation		
- Sewer/Water		
Plant Craft Support	\$0	\$100k OT est.
Total	\$8,767,803	\$8,665,900

*District procuring stop logs and pumps. Andritz procuring head gates.

Workforce Decisions

- Risk
 - Lack of operators to monitor plant systems, perform timely energy isolation support and respond to emergencies.
 - Lack of plant wireman and mechanics to inspect equipment, perform increased maintenance and perform repairs quickly.
- Mitigation
 - Hire additional operators
 - Plant crafts to work overtime if needed



Workforce Recommendation

- Additional Operators
 - Staff an additional 24/7 shift for project duration
 - Currently hiring 4 operators due to attrition
 - Need to hire an additional 2 to fill extra shift
 - Extra positions anticipated to attrition out to baseline staffing levels (21) by no later than the end of 2024



Conclusion

- Summer 2017 off-ramp passed
 - Risks identified and being mitigated
 - Design and construction work proceeding on schedule
 - Costs within original estimates
- Request approval to hire additional operators fall 2017
- Next update Spring 2018



Questions?

