

An aerial photograph of the Rock Island Dam and Powerhouse One. The dam is a long, curved concrete structure with multiple spillways, situated on a wide river. Water is cascading over the spillways, creating white rapids. To the right of the dam is a large, steep earthen dam structure. In the foreground, there are several buildings and structures, likely part of the powerhouse or dam infrastructure. The surrounding landscape is a mix of green fields and brown, rocky terrain. The sky is clear and blue.

Rock Island Rehabilitation Powerhouse One B5 to B8 Annual Update

Brett Bickford
Nov. 21, 2016

Purpose of Today's Discussion

- As promised provide the annual check-in on B5-B8
- Follow up from Nov. 7 Board meeting – purchase of additional equipment for 5th and 6th Units



Board Action Today:

- Resolution authorizing execution of FWO's 5-01 and 6-01



Key Points

- The B5-B8 check-in is provided annually prior to authorizing additional expenditures.
- The total project cost has not changed (~\$121M).
- The economics are still positive at ~8.3% IRR.
- B6 was disassembled on schedule. B7 manufacturing on schedule.
- Decision evaluation criteria supports this plan.
- Need to adjust equipment purchase and outage schedules for B5 and B8 to account for B1 to B4 modernization schedule.



Staff Proposal

- 5th Unit
 - Release \$6.2M of additional equipment now instead of \$19M in January 2017.
 - Release balance (\$12.8M) 16 months before outage.
- 6th Unit
 - Release \$6.2M of additional equipment now instead of \$19M in January 2018.
 - Release balance (\$12.8M) 16 months before outage.
- Contractor to provide storage of climate sensitive items.
- NPV analysis of proposal at 7% discount is (-\$200k)



Benefits / Risks Mitigated

- Although B5 and B8 installation will be later, procurement of long-lead items is a cost and risk mitigation advantage
 - Reduces contractual risk – early procurement better commits vendor to delayed schedule
 - Reduces cost escalation risk – could avoid cost escalations impacting project budget
 - Reduces quality risk – quality control benefits realized with consistent materials and equipment
 - Reduces outage risk / adds flexibility – can react more quickly to unplanned outage



Board Action Requested

- Authorization for GM to execute Field Work Order/Change Order Nos. 5-01 and 6-01 to contract 04-01B for a total cost not to exceed \$12.4M.



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Questions ?



Appendix

- Reference information follows this slide



Background

- Board approved Resolution 14-13922 on December 1, 2014
 - effectively resumed rehabilitation of B5-B8 at a cost of \$99M
- Board approved Resolution 15-14001 on December 7, 2015
 - effectively modified the B5-B8 project cost to \$121M and scope to include higher efficiency turbines to realize incremental value
- Board approved Resolution 16-16054 on June 20, 2016
 - authorized solicitation of bids for an estimated \$60M project to modernize B1-B4 and a schedule that inserted this project in the middle of the B5-B8 rehabilitation to optimize schedule, resources, and hydro unit availability.



Current Contract Status

B5-B8 Project Budget by Year

UNIT	2015	2016	2017	2018	2019	2020	2021	2022	Total \$M
B6	\$5.4	\$10.6	\$11.1						\$27.1
B7		\$7.8	\$12.0	\$11.5					\$31.3
B5		\$2.5	\$6.2	\$11.1	\$11.5				\$31.3
B8		\$2.0	\$3.7	\$3.0	\$11.1	\$11.5			\$31.3
Total \$M	\$5.4	\$22.9	\$33.0	\$25.6	\$22.6	\$11.5	\$0.0	\$0.0	\$121

Andritz Contract Value by Year

UNIT	2015	2016	2017	2018	2019	2020	2021	2022	Total \$M
B6	\$4.5	\$7.9	\$7.3						\$19.7
B7		\$7.8	\$8.4	\$7.4					\$23.6
B5		\$2.2	\$6.0	\$7.8	\$7.4				\$23.4
B8		\$1.8	\$3.5	\$2.5	\$8.3	\$7.4			\$23.5
Total \$M	\$4.5	\$19.7	\$25.2	\$17.7	\$15.7	\$7.4	\$0.0	\$0.0	\$90.2



Early Purchase Comparison

Andritz Contract - Purchase as late as possible

UNIT	2015	2016	2017	2018	2019	2020	2021	2022	Total \$M
B6	\$4.5	\$7.9	\$7.3						\$19.7
B7		\$7.8	\$8.4	\$7.4					\$23.6
B5		\$2.2	\$1.7		\$4.8	\$7.3	\$7.4		\$23.4
B8		\$1.8	\$2.1			\$3.9	\$8.3	\$7.4	\$23.5
Total \$M	\$4.5	\$19.7	\$19.5	\$7.4	\$4.8	\$11.2	\$15.7	\$7.4	\$90.2

Amount subject to Escalation - \$39.1 M

Andritz Contract – Recommended Purchase

UNIT	2015	2016	2017	2018	2019	2020	2021	2022	Total \$M
B6	\$4.5	\$7.9	\$7.3						\$19.7
B7		\$7.8	\$8.4	\$7.4					\$23.6
B5		\$2.2	\$5.5	\$2.1	\$1.4	\$4.8	\$7.4		\$23.4
B8		\$1.8	\$3.5	\$3.0	\$1.6	\$1.5	\$4.7	\$7.4	\$23.5
Total \$M	\$4.5	\$19.7	\$24.7	\$12.5	\$3.0	\$6.3	\$12.1	\$7.4	\$90.2
Delta	\$0.0	\$0.0	\$5.2	\$5.1	-\$1.8	-\$4.9	-\$3.6	\$0.0	\$0.0

Amount subject to escalation - \$26.7M

Cost reduction of 2% on \$ 12.4M is \$248,000



Escalation Risks

- Included in current Contract
 - \$3.2M metals: Commodity indices
 - \$14.5M site craft labor: Millwright wage adjustment
 - \$900k salaried labor: 3% per year
- May not be included
 - \$15.3M subcontracted procurements (out-of-state labor)
(The \$12.4M recommended pre-purchase items are in this category)
 - \$1.9M non-metal material purchases
 - \$3.3M equipment use charges
 - \$640k performance bond costs



Decision Evaluation Criteria

1. What is the impact on our Customer-Owners?

- B5-B8 is still an economic benefit with 8.3% IRR
- Procuring long-lead items in advance of schedule mitigates contract, outage, and cost escalations that will protect budget and better ensure consistency and quality of unit components

2. Are there stewardship implications?

- Supports strategic objective to reinvest in assets and secure long-term value for customer owners
- No incremental environmental risks associated with schedule or early procurement



Decision Evaluation Criteria

3. What are legal implications?

- Requires negotiation of contract revision for delay of last two units B5 and B8, while seeking to protect contract and secure quality
- Warranty is not impacted by schedule, based on commissioning of unit
- Negotiation and execution of Field Work Order prior to B1-B4 may be beneficial to the District

4. Are there workforce implications?

- Engineering and Project Management impacted through negotiation of contract changes and procurement of long-lead items
- Maintains craft workforce plan developed for B1-B4



Decision Evaluation Criteria

5. What are other stakeholder implications?

- Power purchasers benefit through reduced outage risk through early procurement. Capital costs maintained.
- FERC will be supportive of continuing current optimized schedule to ensure retention of hydraulic capacity

6. What are impacts to Values?

- Safety – optimized schedule and resources maintained
- Stewardship – continued investment in value assets
- Trustworthiness – builds relationships by offering early procurement of components to offset schedule delay
- Operational Excellence – continues efforts to optimize value, schedule and quality to support operations

