

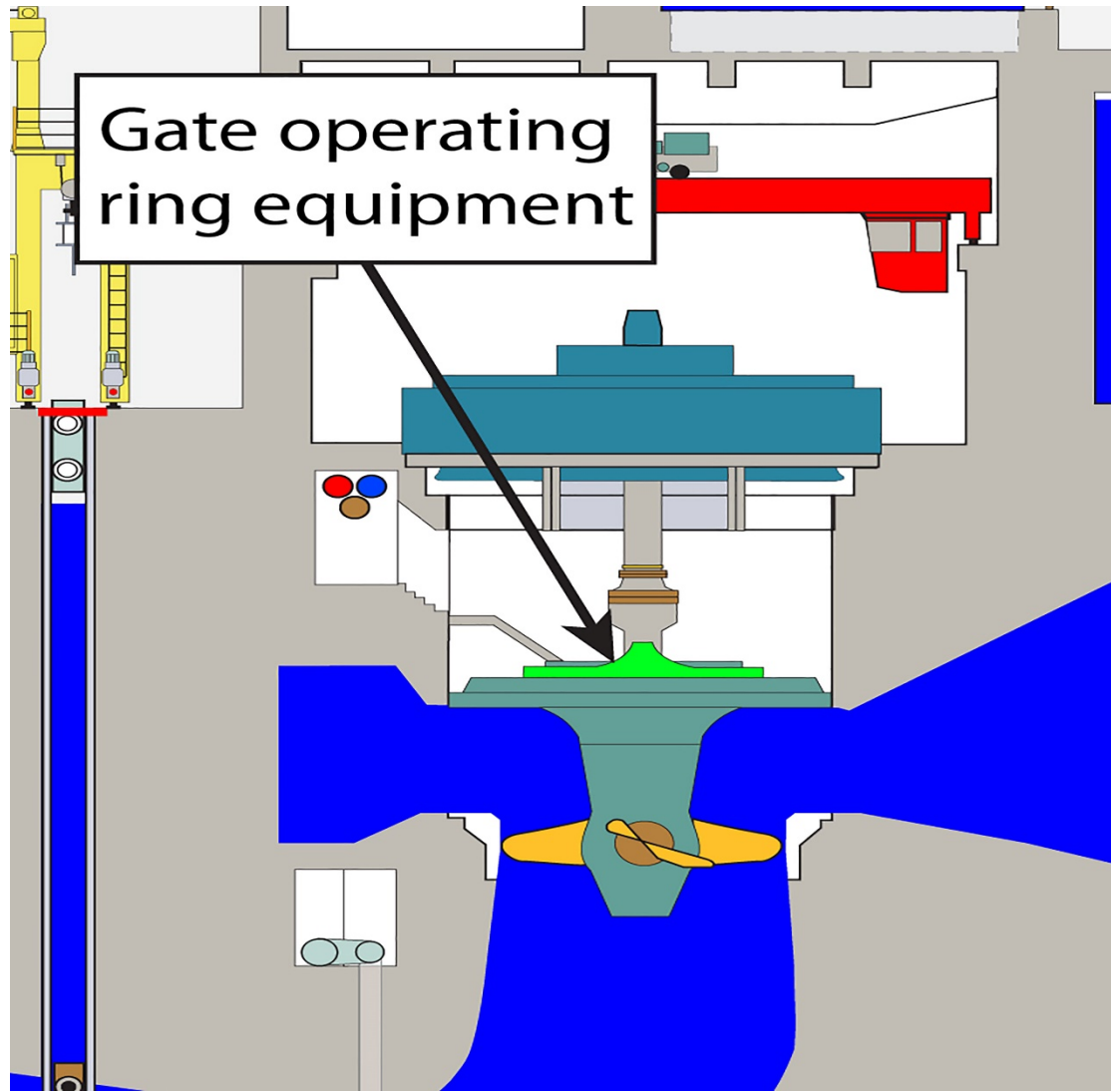
Rock Island B1-B4 Gate Ring Evaluation Commission Presentation



July 1, 2019

Presentation Objective

- Review evaluation of procurement of new gate operating ring equipment for B1-B4.
- Update on Unit B4. This is first of 4 unit rehab program. Similar to other unit rehab programs, discovery of parts not meeting 50-yr fatigue life occurs on first unit.
- Commission consideration of a resolution to purchase new gate operating ring equipment.



Gate operating
ring equipment

Do we buy new gate rings?

Problem

- Original gate operating ring from B4 has many cracks. Performed two metallurgical evaluations of cracks from low stress areas. Cracks appear to be original, but ring is not expected to last another 50 years. Likely similar cracks in B1-B3.

Options evaluated

1. Reuse
 2. Test further
 3. Replace
- Complicated by needing new attached gate arms and levers





Options

- Reuse considerations
 - Some unknown life left in rings
 - Risk that duress of commissioning will exacerbate cracks
 - Future outage costs if ring needs to be replaced (roughly \$200k per unit), in addition to replacement ring costs.
 - New gate arms for old gate ring are more expensive than with new ring and will not fit if new gate ring is needed.
 - Need enhanced monitoring / maintenance.
- Further test considerations
 - Losing time that is impacting overall schedule / cost for all B units
- Replacement considerations
 - \$1.6 million cost
 - Replacing gate arms less costly than reuse option
 - Have confidence that 50 year design life can be achieved

Bottom Line

- Net \$1.2 million cost for greater certainty on achieving 50-year life (ring costs minus reduced cost of new gate arms).



Recommendation

- Request the Commission authorize the General Manager to execute FWO/CO's in an amount not to exceed \$1,600,000 (excluding sales tax) for new gate operating rings (up to 4 total).
- Provide new or existing gate operating ring equipment on a schedule as to not delay the contractor (potentially avoids approximate \$1M impact). This means on 1st unit B4, we may have to install existing gate ring, and replace with new at end of rehab program.
- Look for alternate vendors for earlier delivery on first gate ring.