


Bradley Lake Hydroelectric Project Governor Replacement



Update
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The Bradley Lake Project

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- Located: Kachemak Bay
 - Owner: The Alaska Energy Authority
 - Two 63 megawatt turbines
 - Two voltage deviation compensators
 - Bradley Lake to Soldotna 115KV line

The Bradley Lake Project

- Energy, capacity and costs allocated to project participants in accordance with project shares (Chugach 30.4%)
- Participants are: Chugach, AML&P, MEA, HEA, GVEA and the City of Seward
- Managed by the utility General Managers, sitting as the Bradley Lake Project Management Committee (BPMC)

The Problem



- Severe power swings and unstable oscillations at Bradley Lake following minor power system deviations
- Control response problems that have led to load shed or blackouts on the Kenai Peninsula

What can we do about it?

- We have developed three alternatives
 1. Modify operating procedures
 2. Replace and upgrade Governor Controls
 3. Add mechanical equipment to improve control response (in addition to alternative 2)

Cost Benefit Study

- Alternative 3 (replace governor controls and improve response) was chosen as yielding the greatest benefit over 28 year life
 - #1 – NPV \$8.9 million
 - #2 – NPV \$13.2 million
 - #3 – NPV \$14.7 million

What will it cost?



- Estimated worst-case cost is 5 million dollars
- The estimate will be revised based on the successful vendors proposal

Where are we now?

- Functional specification developed
- Benchmark power systems studies updated
- Request for qualifications (RFQ) issued
- Homer Electric (Bradley Lake Operator) named project lead
- Technical advisory committee (other participants) established to advise Homer Electric

What's next?



- Selection of vendor
- Installation scheduled to begin early 2003
(Subject to final BPMC approval)
- Re-run power system and final operating studies using modified plant control model

Funding?

- Project funded out of Bradley Lake Project's repair and replacement (R&R) fund
- R&R fund repaid over four year period
- Chugach Share - \$1.5 million or \$380,000/yr
- Cost impacts fuel adjustment charge
- Impact to members is .34% increase in monthly bill for 4 years

Questions and Answers

