

CHUGACH ELECTRIC ASSOCIATION, INC.
Anchorage, Alaska

BOARD MEETING
AGENDA ITEM SUMMARY

January 19, 2005

ACTION REQUIRED

AGENDA ITEM NO. IX.E.

Information Only
 Motion
 Resolution
 Executive Session
 Other

TOPIC

Beluga Unit 3 Controls Upgrade – Project Authorization

DISCUSSION

This project replaces the controls for the Beluga Unit 3 gas turbine. The original controls, installed in 1973, are the oldest GE Frame 7 controls in Alaska. They repeatedly fail causing unit load reductions and turbine trips. In recent years the unit starts successfully approximately 67% of the time. The new Unit 5 controls have been successfully starting Unit 5 better than 95% of the time and significantly reducing outage time through rapid identification of failed inputs. General Electric, the original manufacturer of the controls, stopped supporting the technology in the early 1990's.

The Unit 3 controls upgrade is budgeted in 2005 at \$ 1,394,737. A similar upgrade for Beluga Unit 5 was installed in 2004. The least cost response to our RFP for necessary work was \$805,000. Other costs are as described in the Project Authorization sheet, attached.

CEO's RECOMMENDATION

Move that the Chugach Board of Directors authorizes project expenditures for the Beluga Unit 3 Controls Upgrade with an estimated cost of \$1,394,737 and an estimated completion date of November 2005.

WHEREAS, Chugach Electric Association, Inc., has a need to upgrade the Beluga Unit 3 control system and,

WHEREAS, Chugach Electric Association, Inc., has included the Beluga Unit 3 Controls Upgrade in the 2005-2009 Capital Improvement Plan and,

WHEREAS, Chugach Electric Association, Inc., Inc. has included funding in its 2005 Annual Operating budget for the Beluga Unit 3 Controls Upgrade.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Chugach Electric Association, Inc., that the CEO is authorized to expend \$1,394,737 for the Beluga Unit 3 Control System Upgrade with an estimated completion date of November, 2005.

Chugach Project Authorization – Budget Year 2005

Project Name: Beluga Unit 3 Controls Upgrade

Project Category:

Safety		Incremental Load Growth		New Service		R&R T&D	
Agency Mandated		Reliability		Operating Efficiency		R&R Generation	X

Accountabilities & Approvals

	Signatures	Date
Board of Directors: Pat Jasper, Secretary	_____	__/__/__
CEO: Evan J. Griffith, CEO	_____	__/__/__
Executive Sponsor: Brad Evans, Senior V.P. Energy Supply	_____	__/__/__
Project Manager: Paul Risse, Mgr, Plant Technical Services	_____	__/__/__

Purpose and Need:

This project replaces the controls for the Beluga Unit 3 gas turbine. The original controls from 1973 repeatedly fail causing unit load reductions and turbine trips. A turbine trip in September of 2003 resulted in outages in Anchorage. General Electric, the original manufacturer of the controls, stopped supporting the technology in the early 1990's.

Project Description:

This project replaces 1973 vintage analog controls with a new digital control system. This is essentially the same upgrade installed on Beluga Unit 5 in 2004.

Approval Amount: \$1,394,737

Project included in **2005/2009 CIP** and **2005 Budget** @ \$ 1,394,737

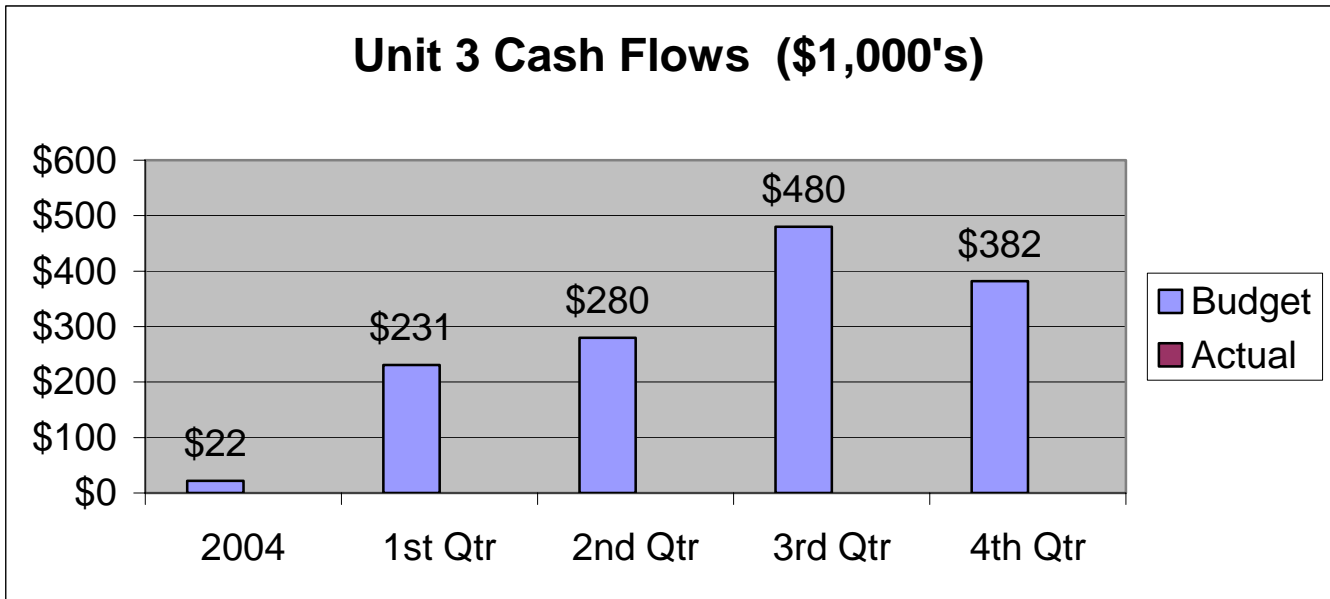
Category	Budget	Actual	Projected	Variance \$	Variance %	Notes
Labor	156,000		156,000			
Transportation	149,250		149,250			
Materials	18,200		18,200			
Professional Services	927,893		927,893			
OH	143,394		143,394			
Total	1,394,737		1,394,737			

Chugach Project Authorization – Budget Year 2005

Variance Discussion (Note #)

None

Cash Flows



Economic Analysis

Net Present Value (NPV)	Payback Period (years)	Benefit/Cost Ratio
W/O Reliability Benefits		
\$1,930,754	6.1	2.4

Economic Analysis Summary

The 30 year old controls have become increasingly unreliable. The direct costs of the unit outages are fuel costs for running other units, startup costs for both replacement units and the failed unit, labor, parts, and professional services. The consequential costs associated with system outages have not been included in the economic analysis.

Current Project Status: Percent Complete 5 %

Project Schedule: (see attached timeline)