

**CHUGACH ELECTRIC ASSOCIATION, INC.**  
**Anchorage, Alaska**

**BOARD MEETING**  
**AGENDA ITEM SUMMARY**

**May 11, 2005**

**ACTION REQUIRED**

**AGENDA ITEM NO. IX.H.**

**Information Only**  
 **Motion**  
 **Resolution**  
 **Executive Session**  
 **Other**

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**TOPIC**

Beluga Unit 5 Major – SRU Project

**DISCUSSION**

Beluga Unit 5 is a GE Frame 7 gas turbine. Hot Gas Path parts within the turbine have limited lives due to operating environments involving high speeds, vibration, and temperatures. The row 2 blades maintenance interval is approximately 48,000 operating hours. Continued operation would risk part failure and consequential damage. Therefore this part will be replaced during the inspection.

Additionally, in April of 2005 the unit was inspected because of high variations in exhaust temperatures and damage was discovered. High temperature seals failed damaging downstream turbine buckets and nozzles. The planned outage for hot gas path repairs has been extended to accommodate the additional repair work. Additional costs of approximately \$800,000 are anticipated. The cash flow impact is approximately \$350,000 because of the inventory value of the parts to be used.

Beluga Unit 5 receives a Hot Gas Path or Major inspection every 24,000 operating hours. This major inspection will replace two rows of turbine blades, rows 1 & 2.

**CEO's RECOMMENDATION**

Move that the Chugach Board of Directors authorizes project expenditures for the Beluga Unit 5 Major – SRU Project with an estimated cost of \$1,504,479 and an estimated completion date of July 2005.

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# CHUGACH

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## RESOLUTION

WHEREAS, Chugach Electric Association, Inc., has a need to perform regular maintenance on the hot gas path components of various gas turbines and needs to repair damaged components,

WHEREAS, Chugach Electric Association, Inc., has included the Beluga Unit 5 Major – SRU Project in the 2005-2009 Capital Improvement Plan ,

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Chugach Electric Association, Inc., authorizes project expenditures for the Beluga Unit 5 Major – SRU Project with an estimated cost of \$1,504,479 and an estimated completion date of July, 2005.

## CERTIFICATION

I, David Cottrell, do hereby certify that I am Secretary of Chugach Electric Association, Inc , an electric non-profit cooperative membership corporation organized and existing under the laws of the State of Alaska: that the foregoing is a complete and correct copy of a resolution adopted at a meeting of the Board of Directors of this corporation, duly and properly called and held on the \_\_\_ day of \_\_\_\_\_, 20\_\_\_, that a quorum was present at the meeting; that the resolution is set forth in the minutes of the meeting and has not been rescinded or modified

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed the seal of this corporation the \_\_\_ day of \_\_\_\_\_, 2005

(Seal)

\_\_\_\_\_  
Secretary

# Chugach Project Authorization – Budget Year 2005

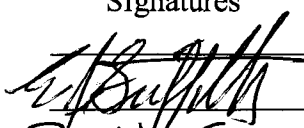
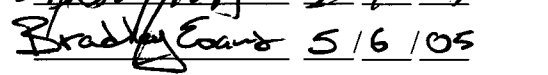
**Project Name: BELUGA UNIT 5 Major – SRU PROJECT**

**Project Category:**

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

**Accountabilities & Approvals**

Board of Directors: Dave Cottrell, Secretary  
 CEO: Evan J. Griffith, CEO  
 Executive Sponsor: Brad Evans, GM G&T Division  
 Project Manager: Paul Risse, Director GTS

| Signatures                                                                         | Date        |
|------------------------------------------------------------------------------------|-------------|
|  | _ / _ / _   |
|  | 5 / 19 / 05 |
| _____                                                                              | 5 / 16 / 05 |
| _____                                                                              | _ / _ / _   |

**Purpose and Need:**

Beluga Unit 5 is a GE Frame 7 gas turbine. Hot Gas Path parts within the turbine have limited lives due to operating environments involving high speeds, vibration, and temperatures. The row 2 blades maintenance interval is approximately 48,000 operating hours. Continued operation would risk part failure and consequential damage. Therefore this part will be replaced during the inspection.

Additionally, in April of 2005 the unit was inspected because of high variations in exhaust temperatures and damage was discovered. High temperature seals failed damaging downstream turbine buckets and nozzles. The planned outage for hot gas path repairs has been extended to accommodate the additional repair work. Additional costs of approximately \$800,000 are anticipated. The cash flow impact is approximately \$350,000 because of the inventory value of the parts to be used.

**Project Description:**

Beluga Unit 5 receives a Hot Gas Path or Major inspection every 24,000 operating hours. This major inspection will replace two rows of turbine blades, rows 1 & 2.

**Approval Amount: \$ 1,504,479**

Project included in 2005/2009 CIP and 2005 Budget @ \$ 679,650

## Chugach Project Authorization – Budget Year 2005

| Category              | Budget  | Actual | Projected | Variance \$ | Variance % | Notes |
|-----------------------|---------|--------|-----------|-------------|------------|-------|
| Labor                 | 226,200 |        | 451,184   | 224,984     | 99%        | 1     |
| Transportation        | 0       |        | 11,304    | 11,304      |            |       |
| Materials             | 400,000 |        | 877,281   | 477,281     | 119%       | 1     |
| Professional Services | 0       |        | 0         | 0           |            |       |
| OH                    | 53,450  |        | 81,181    | 27,731      | 52%        | 1     |
| Total                 | 679,650 |        | 1,504,479 | 824,829     | 121%       | 1     |

### **Variance Discussion (Note #):**

1. Reflects additional work due to damage caused by seal failures.

### **Cash Flows**

2<sup>nd</sup> QTR 2005:       \$ 100,000  
 3<sup>rd</sup> QTR 2005:       \$ 1,404,479

### **Economic Analysis**

Capitalized maintenance project.

### **Economic Analysis Summary**

Required routine maintenance of hot gas path parts and repair of damaged parts.

**Current Project Status:**   Percent Complete   0  %

**Project Schedule: (see attached timeline)**

May - July of 2005