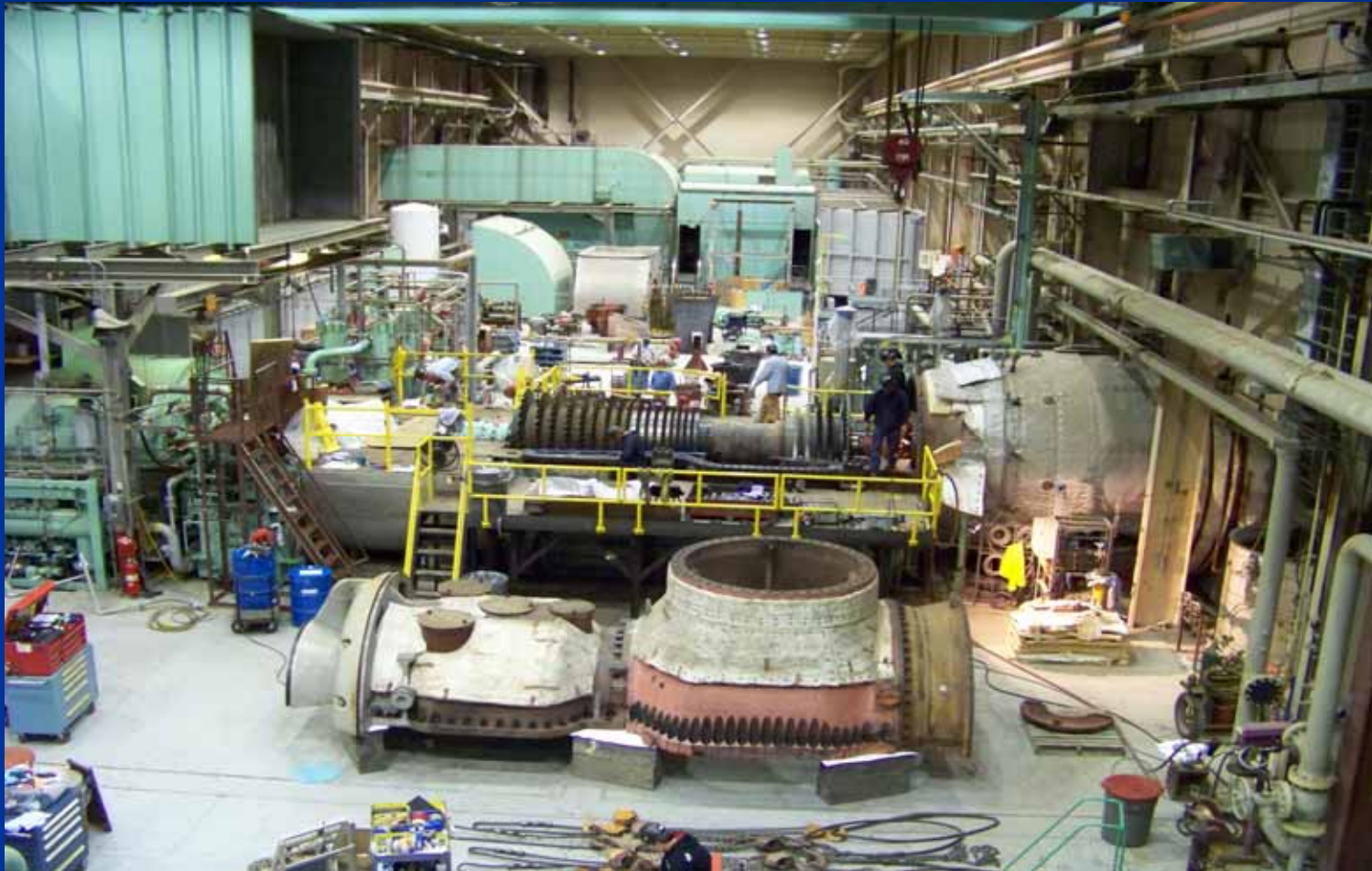


# Parts Life and Interval Extension Program Impact on Beluga Unit 6 Outage



# Program Overview

- Life extension program began in 2003
  - Extend major maintenance intervals
  - Increase parts life expectancy
- Savings in fuel and repair costs
- Initiative presented to Board in April 2004

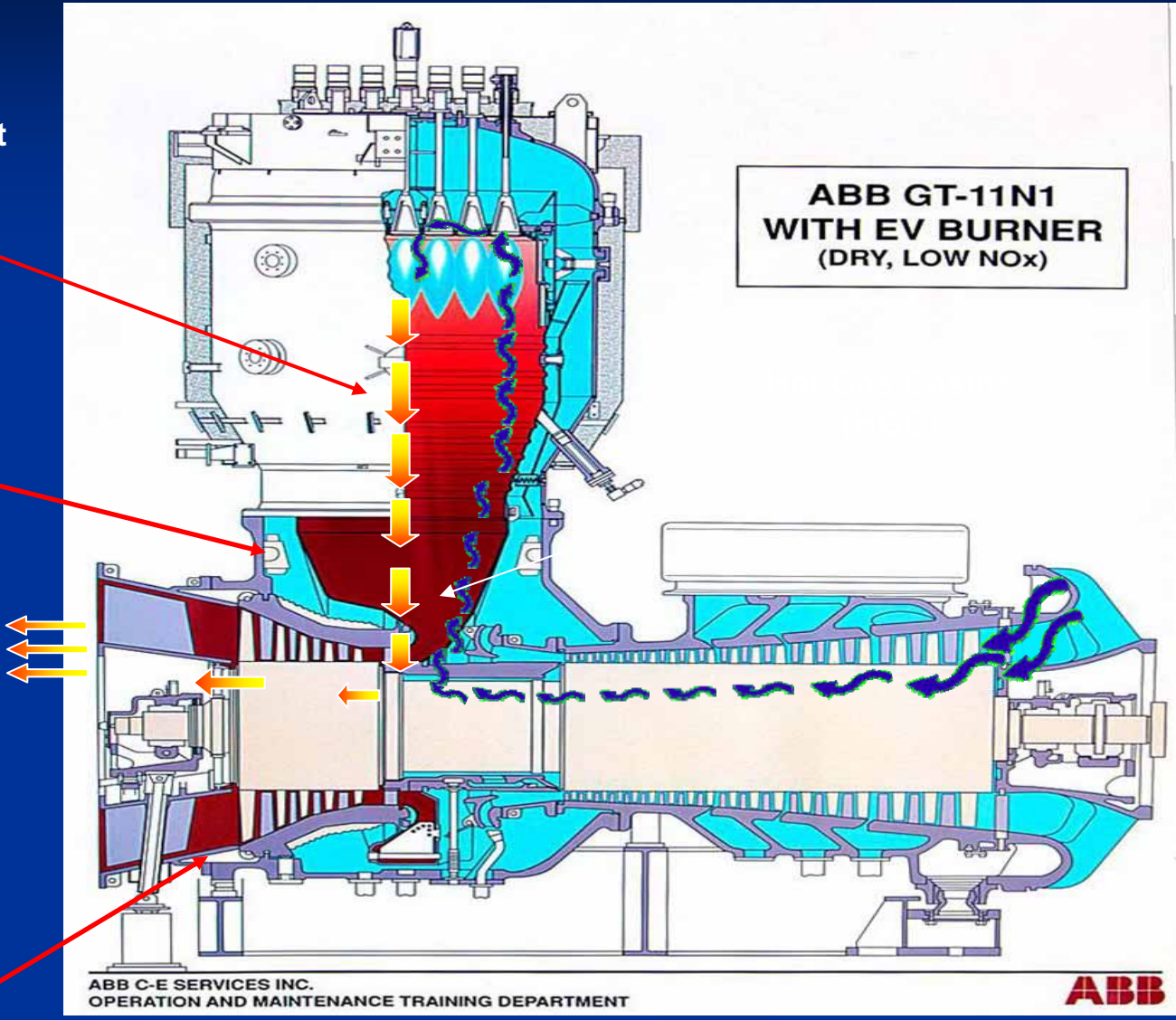


# Hot Gas Path Parts

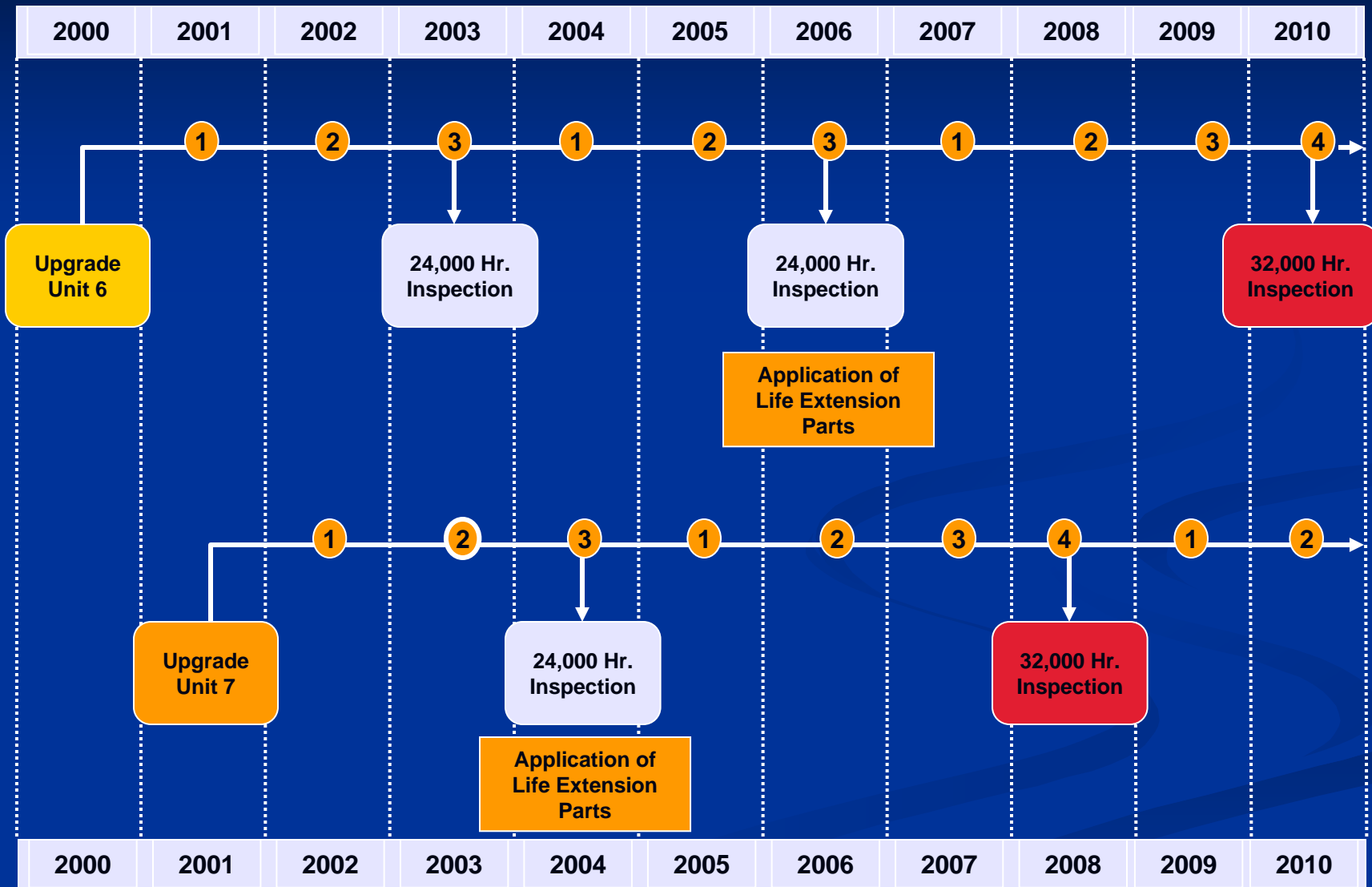
Lower Combustor Insert (LCI)

Hot Gas Casing

Blades & Vanes

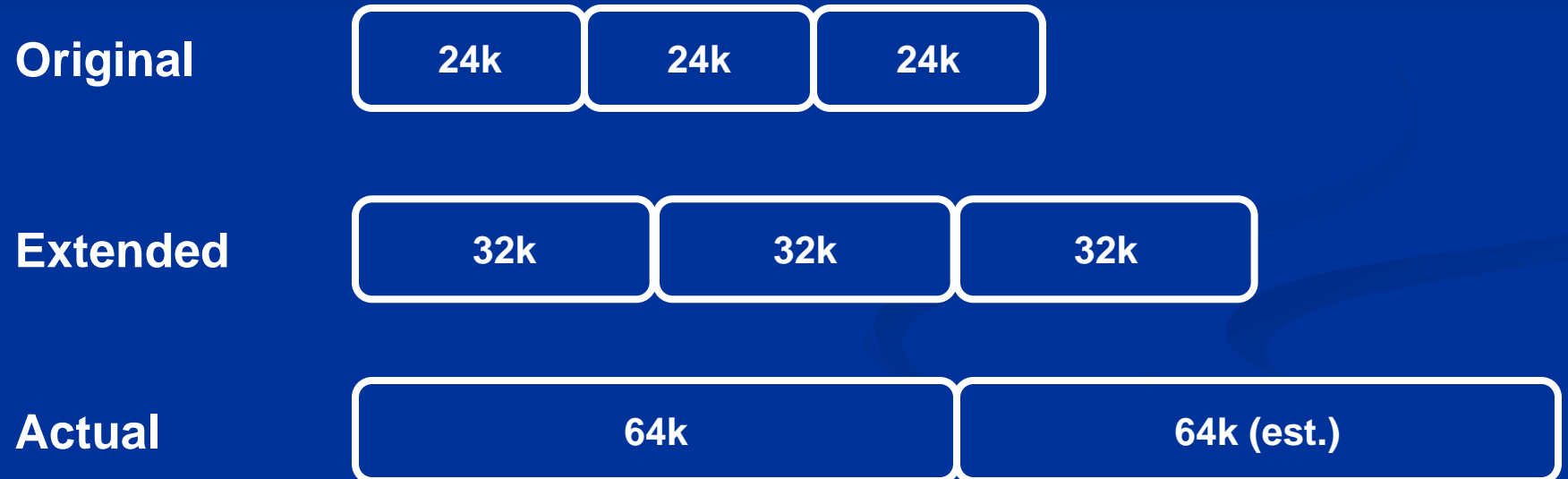


# Parts Life & Interval Extension Schedule



# Parts Life Extension - Example

Example: Hot Gas Casing



# Program Savings

- **Annualized savings of \$1.4 Million**
  - **Fuel**
  - **Labor**
  - **Parts**
  
- **Annualized savings increase as the cost of natural gas goes up**

# Beluga Unit 6 Outage

- Operating Data
  - 247,461 OH
  - 32,052 Hours/Since Last “C” Inspection
- Scope
- Overhaul Schedule
- Major Tasks
- Budget
- Questions



# Unit 6 Outage Scope

- Disassemble Turbine and Generator
- Inspect Turbine
- Replace majority of HGP parts
- Generator Inspection
- Critical Instrumentation and Safety Devices

# Schedule

- Duration Forecasted 65 Days
- Started on July 8
- Completion Date, September 11

# Fuel Distribution System (FDS)



# Turbine/Compressor Rotor

- Remove rotor
- Turbine Blades and Vanes Replaced
- Compressor Cleaned
- Rotor Balanced
- Rotor re-installed



# Vane Carrier Alignment



# LCCI & Hot Gas Case (1)



# LCCI & Hot Gas Case (2)

24,000 Hours



32,000 Hours



# Generator Disassembly and Inspection



# Impact of Interval & Life Extension

- Major Parts “Not” Replaced
  - Hot Gas Case
  - Lower Combustion Chamber Insert
  - Vane Carrier
  - Burners
  - Hex Rings
  - Heat Shields

# Unit 6 Budget Performance

Budget: \$11,079,525

Projected: \$5,300,000

Cost Reduction: \$5,779,525

# Questions?

