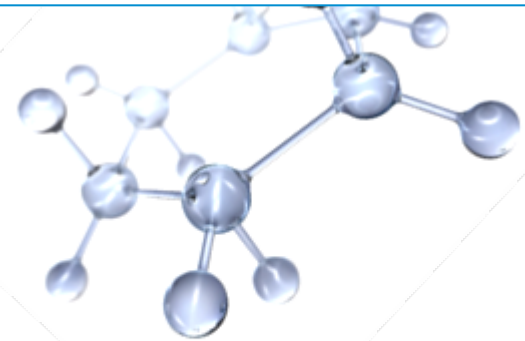


GTG24 S1S Cooling Holes

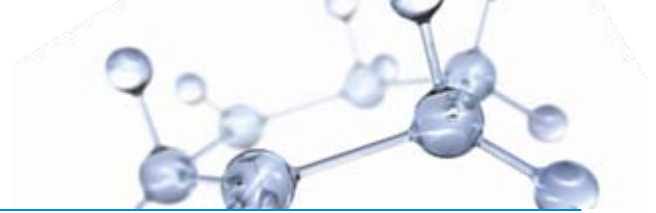
Cause of High 1AO Wheelspace Temperatures Since 2010 HGPI

Hunter Newby
April 11, 2012



This presentation includes forward-looking statements. Actual future conditions (including economic conditions, energy demand, and energy supply) could differ materially due to changes in technology, the development of new supply sources, political events, demographic changes, and other factors discussed herein (and in Item 1 of ExxonMobil's latest report on Form 10-K). This material is not to be reproduced without the permission of Exxon Mobil Corporation.

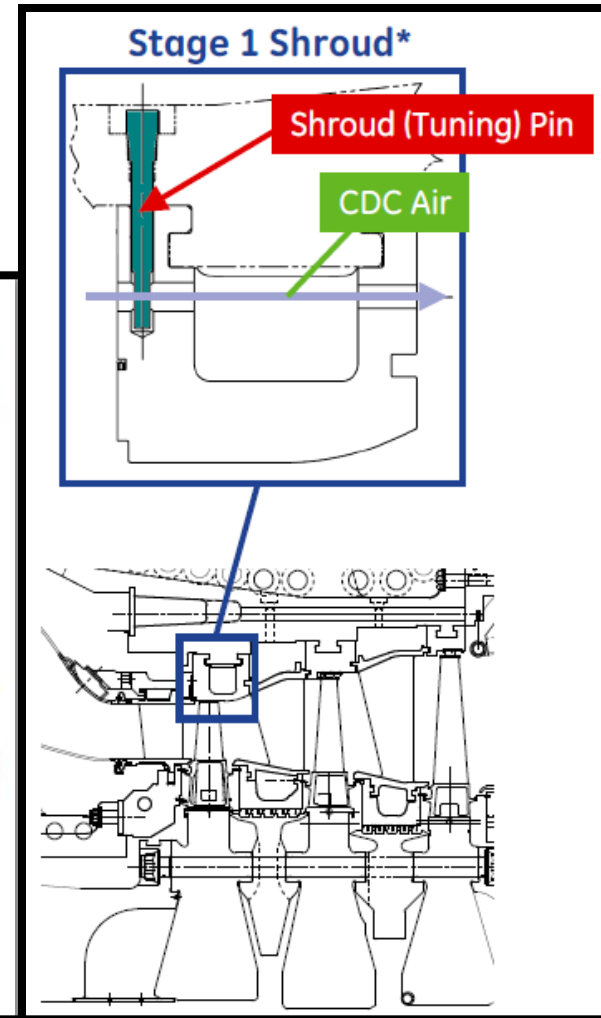
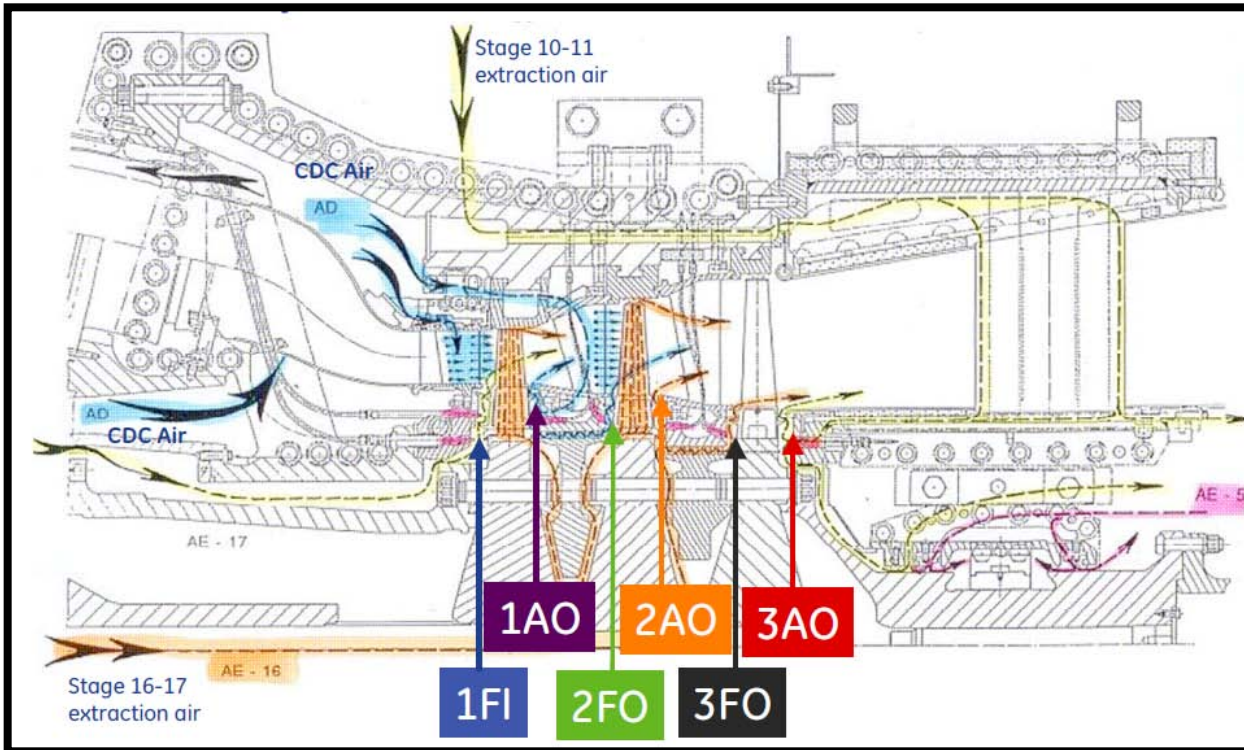
Site Demographics



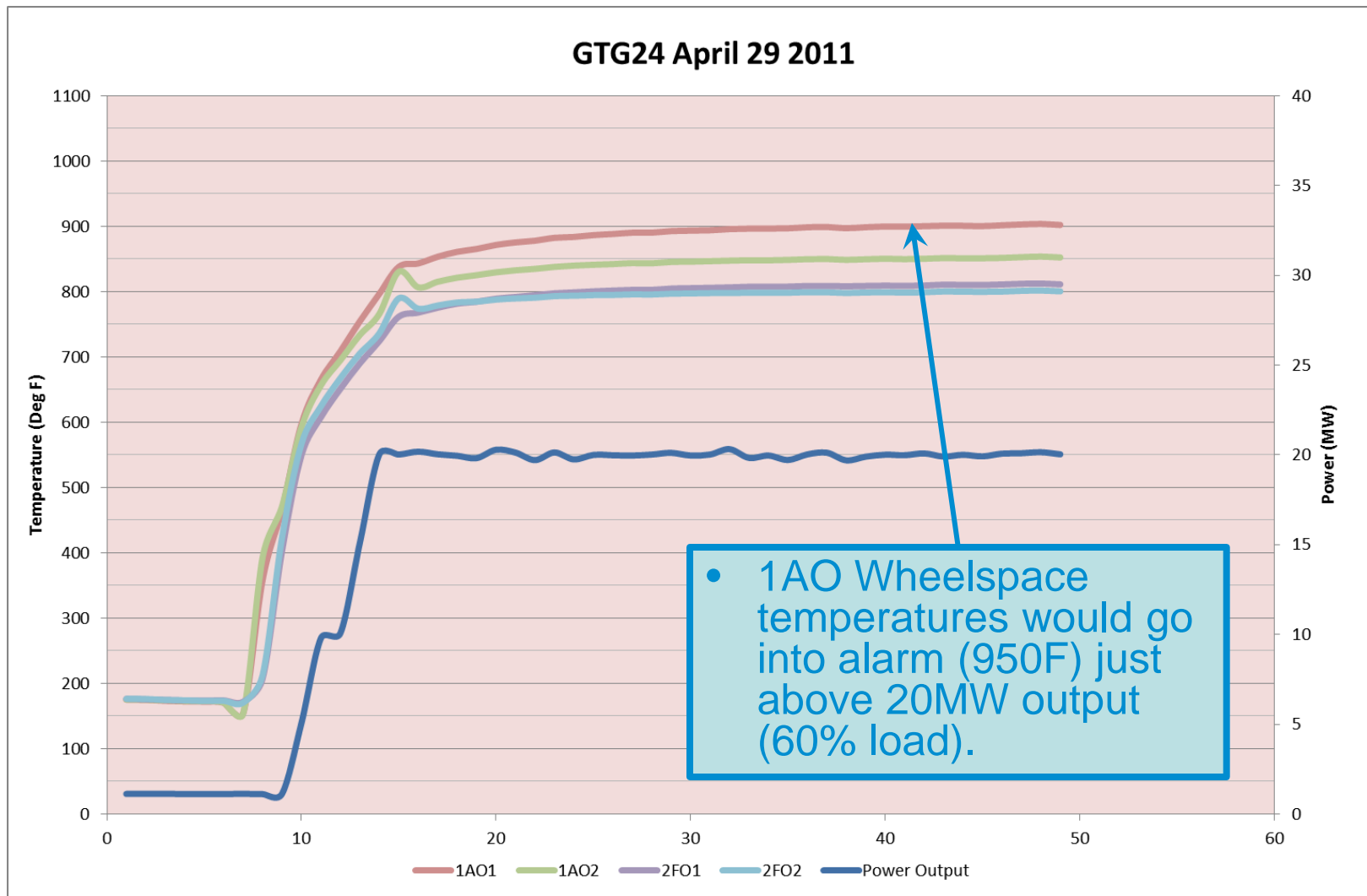
- Location/Plant – Beaumont Refinery, Beaumont, TX
- COD 1992-1993 timeframe
- Base-load operation
- 2010 HGPI @ 124,700 hours
- 2010 HGPI included turbine destack and restack required to assess corrosion from a leaking deNOx steam valve during an extended outage. New S1S installed including custom-machining of about 20 shroud blocks due to casing ovalization.
- 2012 EBI/correction outage @ 135,900 hours

S1S/Tuning Pin Graphic

- S1S tuning pins are used to meter compressor discharge air from the CDC case to the 2nd stage nozzle
- S1S are shipped “blank”, hole locations are marked in the field to match the tuning pin holes in the casing, then drilled and installed



High 1AO Temps



GE Troubleshooting



- PAC case entered after 2010 HGPI to aid high WST
 - Multiple exchanges with PAC resulted only in suggestions to replace WST thermocouples
 - 2011 EBI inspection showed no issues with the thermocouples
- S1S Tuning Pins
 - ExxonMobil requested GE to look at S1S tuning pins as a potential cause
 - Measured 0.498” dia pins during 2011 EBI inspection
 - GE records indicated 0.490” dia. Pins installed in the unit
 - PAC reevaluation of our design showed that the pins should be 0.475” dia.
- S1S Cooling Holes
 - 2012 EBI showed lack of S1S cooling holes – quality mistake by GE when installing new S1S during 2010 HGPI
 - Locating holes were marked and drilled, but not the cooling air holes
 - Turbine case removed, S1S holes drilled, and 0.475” pins installed

Reduced 1AO Temps

