Q. With reference to Hydro's response to PUB 39.0 NLH, why has the GAS Turbine Station Log History for 2006 not been provided for Hardwoods (as it has been for Stephenville per Hydro's response to PUB 40.0 NLH)? What is the explanation for the missing Hardwoods GAS Turbine Station Log History for 2001, 2003 and 2004? Why has the Work Order History for Hardwoods not been provided (as it has been for Stephenville per Hydro's response to PUB 40.0 NLH)?

A. The missing station log data was due to the permanent operator being on annual leave and the relief operator was unable to find the information in time for the response. Since that time, the missing log has been found and the data is attached. This includes Hardwoods 2001, 2003, 2004 and 2006 operator data as well as Hardwoods work order history.

Events and Details for 2001 from Hardwoods Station Log

Jan 2.	A. Marche on site loading engine for S'ville on truck from Bishop's.
Jan 3	Started GGA & GGB the same time, ran up to 1.5 mw, no alarms. Took inverter, spare black one, to C. Warren to ship out for repairs. Talking to F. Deir, new inverter to be shipped on the 10th by air.
Jan 12	Alliance security on site, repaired keypad in maintenance bldg. (Loose wire on keypad)
Jan 16.	Security alarm, glass breakage, office-very windy.
Jan. 17.	Security alarm, found loose connection on window sensor.
Feb 05	Security alarm.
Feb 07	Picked up inverter at Hydro Place.
Feb 11	Called in ECC wanted unit on generation, Vibration Alarms.
Feb 13.	Completed daily inspections. Unit on sync cond 30 mvars ECC shut down unit around 1100 hrs. Had to re-program IRD Vibration Monitoring system.
Feb 19.	Air leak on dryer and GGA snow doors. Called R. Day concerning air leaks. R. Day on site, isolated air system and issued work permit to R. Day. Ordered solenoid for dryer at Diesel Injection.
Feb 23.	Called in ECC needed unit on generation. After second attempt GGA started ok. Then we got field ground alarm. Advised ECC to put load on unit 10 mw to dry out unit and alarm will reset. When alarm reset ECC shut down unit.

March 29. R. Day on site, issued work permit to work on solenoids on dryer.
Cancelled permit, restored dryer to service.

April 05 J C Pratt & Engineering (C Reid) on site inspecting for new fire system.
Worked on lighting GGA clutch.

April 27 Unit on sync cond.
Jenkins Power on site to install louvers over engines.
Isolated GGB, by removing air from starter, took permit for contractor to replace louver over GGB. Cancelled permit, restored GGB.
Isolated GGA, by removing air from starter, took permit so contractor could install louver over engine. Cancelled permit, restored unit.(work order # 173816)

May 08 Unit on Sync cond.
New Stephens dryer installed in HWDTS station.

May 14. Completed daily inspections. Unit on sync cond.
Alarm, filter for alternator blocked, won't reset. Checked filters, saturated with water. Put in work request to have filters changed.

May 20. Generator alarm, heater for fuel system tripped on safety.
Reset ok.

June 02 Unit on sync cond. ECC wanted unit on generate. ECC
Started both ends, both tripped. When I arrived on site unit tripped,
Both sets of snow doors wide open, both DC oil pumps running, all
kinds of alarms such as Low oil level main tank, snow door problems,
DC voltage low. Etc. No alarm on charger, checked oil level in tank
By dipstick, oil level ok. Called G. Brinston (on call) to request assistance
No luck, could not reach anyone in P&C, finally reached R. Day.
Found control bkr. Tripped, keeps tripping. Working on wires 2 & 4
To isolate problem so bkr. will reset. Ground alarm up on charger,
Isolated ground alarm from controls, ground still up on charger.
R. Day on site, C. Walsh showed up on site. Finally bkr resets, clears
Alarms, runs GGB up, in local. Unit won't sync in auto had to do it
Manually, switches over to sync cond. Put unit back in supv. ECC
Starts GGA in generate unit to 5 mw than back to sync cond. O k for
now. Ground still up on charger.

June 12. Called in ECC, no green lights on unit, checked set temp regulator in auto on glycol system. Martin's Fire Systems on site, checking why bottle in aux module is low (Halon) had them send bill to Bishop Falls, att: F. Deir. (Bill too high for card) In future have quote before work begins.

June 19 Checked out start horn, relay burnt out. Checked motor armature burnt.
Checked at Harris & Rome, new horn $997.00 + tax, 2-3 week delivery.

June 20. ECC started GGA to put unit on sync cond. Ran up ok on second start.

June 26. When I arrived on site compressor # 1 at hwds had air leak
On inner-cooler. Notified R. Day. Put compressor # 2 in lead
and waited for system to be built up, compressor cut out.

July 25 ECC started unit on sync cond. Tripped on high temp, bearings.
R. Day on site adjusted temp. regulator on glycol system.
Put unit on sync cond for 2 hrs to check out system.

July 26. Engineering, W.Rice & R. Day on site to review temp regulator for
glycol system. Regulator doesn't seem to be responding in auto.

July 27. R. Day on site, changed bellows & Temp. probe on temp. regulator
Glycol system. Ran up GGB to put unit on sync cond so we could
Set up temp. controller. Seems to be responding for now.
In auto 1 mark equals 2 degrees.

Aug 18. AVR Fault alarm. Reset ok. (Lightning storm in area)

Aug. 20. Alliance Security on site re-located photo beams # 8 & 9.

Aug. 21 Engineering on site looking at relocating Demister.

Aug.22 Unit on sync cond. ECC wanted unit on generate, GGA ran up ok,
GGB kept tripping on exhaust temperature. Tried 3 times, same results.
R.Stoyles on site. Tried GGB on generate with unit on sync cond
Kept tripping on exhaust temperature.
Put unit back on sync cond.

Aug. 24. P & C technicians on site, working on problem with GGB starting.
Did water wash GGB, Checked ignitors ok.
Tried run up on GGB generate, ran up ok,
Put unit on sync cond, tried GGB in generate same problem-
Keeps tripping on exhaust temperature.
Until further notice when unit is needed on generate, shut down
sync cond. Start GGB run up to min load. Than start GGA, both
units should be available. There seems to be a problem with load
droop when in sync cond .C. Warren (Engineering) notified along with ECC.

Aug. 28. Unit put on sync cond via GGB. No alarms.

Sept 4 ECC started GGB to put unit on sync cond. (no alarms)

Sept 10 Outage on unit to relocate demister and exhaust fan.
K&D Pratt on site fuel forward bldg. Installing Inergen Fire system.

Sept 11 Security alarm Zone 10. (very foggy)

Sept 17. Oil leak on demister, A Marche on site, to look at demister.
Put in work request to have leak repaired on Demister and Jacking pump GGA.

Sept 19. DC Grd & Gen. Filter blocked. Unit on sync cond.
Unit tripped, power outage, (AVR + lockout) reset.
ECC started both units same time loaded up to 50 mw. No alarms.
On generation for approx. one hour then went back to sync cond.

Sept 23. AVR problems. Alarm on avr power supply. Fuse F9 blown.
Replaced fuse, blew right away. Called personal on call for technican.
R.Stoyles on site. Shut down sync cond to check avr.
Still no further ahead, informed ECC unit out of service until further notice. (7 hrs. o/t) Left site 2430 hrs.

Sept 24. Technicians (RS & JM) & H. Moores on site checking on AVR.
Had to remove back panel to control bldg to get at back of AVR.
Found diode D12 blown, replaced diode.
Problems with speed monitor card. Changed card still no luck.
Reinstalled old speed monitor card, took relay RL1 from new card.
Ran up unit several times to adjust card so that avr would come in at the correct speed.(3150) Put unit on sync cond.
Installed panel back on bldg.

Sept 25 Reported oil leak on demister to R. Day. (approx 1 gallon a day)

Sept 26 A. Marche, R. Day & Diesel Injection Rep on site checking on demister.

Sept 27 Got air system alarm Hwds station, checked system found unloader failure Comp. B, Put Comp A in lead. Reset alarm, Notified R. Day.

Sept 28. Changed sump level switch.
Have spare NTA106 card, waiting for request to send it to S'ville.

Oct. 1 Pumped out dyke tank farm. C.Warren requested that we ship board NTA106 to S'ville, (W.Ruth)

Oct 4 Training on GT unit, with electricians from Whitbourne, F.Deir & S. Carter. Shut down unit. Ran up engine GGB, loaded to 5 mw then switched unit back to sync cond.

Oct 18. Unit on sync cond. Shut down for outage.
Replaced limit switch GGB blow in doors WO # 237636
Repaired oil leak Jacking Pump GGA WO # 237606.
Picked up oil pads, rags & Comp. Oil at D.I.
ECC started GGB to put unit back on sync cond. (no alarms)

Nov. 14. Jordan valve GGA leaking, reported to F.Deir.
Isolated GGA, issued permit to R. Day to change out Jordan Valve.
Cancelled permit, restored GGA to service.
Took valve to New Valve Services (Tony Goobie) to repair.

Nov. 22 Ran up GGA to test Jordan Valve. OK.

Nov. 23 Changed Jordan Valve GGA to check out repaired valve. OK.
Put other valve in stock, tagged ok.

Dec. 17 Reported leaking Jordan Valve to J. Sceviour. (F. Deir off)
Isolated GGB and took permit to change Jordan Valve.
M. Penney from Whitbourne changed Jordan Valve.
Cancelled permit, returned GGB to service. (1 hr o/t)

Jan. 1. Stat. Holiday. (New Year's Day)

Jan. 2. Had snowplough in to clear road to station.
Cleared snow around unit with snowblower.
Did up Vehicle report took it to Hydro Place.
Picked up mail at Hydro Place.

Jan 3 Completed daily inspections.
K & D Pratt on site measuring up for piping for unit. (3 separate systems)
Garbage was picked up today.

Jan 4. Completed daily inspections.
Repaired lighting execiter module.
Faxed copy of tool list to Y. Thorne , Whitbourne, tools and equipment under $1000.00, as requested by C. Bailey & F. Deir. Tool list to be put in system.
F. Deir informed me that T5 has a small oil leak near neutral bushing.
Keep checking on leak daily.
K. & D Pratt on site installing cylinders in aux bldg for unit.
Picked up some office supplies at Staples.

Jan. 6. Called in security alarm Zone 14 – cleaned contacts ok for now. Hwds air normally alarm, B8B9 low air in control room, but low Sf6 alarm on bkr. Advised by G. O'Brien to disconnect alarm. Boys Will work on it tomorrow. Disconnected wire # 40, alarm reset.

40, 41 & 42 SF6 alarms:
27 & 28 Air alarms:

Events and Details for 2003 from Hardwoods Station Log

2003

Jan 06. Assisted R. Stoyles & R. Day with N4 speed switches adjustment.

Jan 08. N. Seymour on site looking at specks for heat exchanger, mlo system.
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Jan 22. Picked up XYCom monitor at Hydro Place. (monitor for G.T.)
C. Warren & R. Stoyles on site, installed monitor & new trackball keyboard. C Warren eliminated the ciu alarms.
Unit tripped on vibration, reset, ran up OK.

Jan 23. Put spare monitor for G.T. over office & identified.
Put box for the XYCom monitor overhead.

Jan 30. Power gone, asked by M. Read to report to Oxen Pond.
Problems with Bus 1, found lighting arrester A phase T1 gone.
Isolated T1 High side, requested by ECC to report to Hwds.
Arrived at Hwds, ECC tried to start GGA, went to sync with system, system tripped again before I put unit in local. Put unit in local, ECC requested I put both units on in generate, sync in manual if required. Unit synced normally, Put unit back in supv. ECC loaded unit up to 43 MW, GGB went to high temp limit, GGA got exhaust spread alarm, asked ECC to keep unit at 40 MW, OK for now.
ECC shut down unit at 1330 hrs.
After shut down ECC got trip GGA, Snow door stuck open, problem with limit switch, OK now.

Jan 31. C. Warren on site looking at trends for yesterday's run.
Put unit in local, Started GGA with no indication of pressure rise, suspect mechanical problems. Put unit back in supv, ECC shut unit down.
Put in work request to have the CDP & N4 speed switches checked.

Feb 6. C. Warren on site has unit de-rated to 40 MW. GGA alone to 15 MW, GGB full load.

Feb 14. ECC started GGB to put unit on sync cond. Started GGB at 2150 hrs shut down at 0445 hrs.
ECC started both ends on generate, loaded unit up to 40 mw. Ran unit for 15 minutes, then shut down. Test run in case unit is needed later, very cold. Wind Chill –18 C.
ECC wanted both ends on for generation, GGA tripped on high exhaust temp spread. Called in to restart GGA. Reset alarms GGA started OK.
Loaded unit up to 30 MW no alarms, left station with unit on generate.

Feb. 20 J. Mallam on site, wanted to check differential pressure across filters
Ran both ends up to 15 mw, no pressure, Lines plugged. Put in work request to have lines replaced or repaired.
John also looked at log book for GGA last hot spot inspection was in 92 and it showed early signs of can damage on can 3 & 5. He will check with Rolls Royce to see if we can do another hot spot inspection.

Feb 21 C. Warren & R. Stoyles on site brought temp reference on GGA down to 705 from 777 C. Load on unit reduced to 36 MW. Ran up unit to 17 MW no alarms,

March 3. ECC had Alarm – Fuel Pump Trouble, checked fuel pump tripped, reset o/l (small screwdriver pushed on o/l indicators) OK now. Meggered pump, OK.
Dipped fuel tank, did up reports.
R. Stoyles on site getting trends for lube oil system over the weekend.

March 5. Rolls Royce rep, J. Mallam. A. Marche & N. Seymour, R. Day & M. Penney on site, for hot spot inspection. N. Seymour had a look at Daniel's flow meter, suggest putting in check valve by flow meter to correct fuel usage calculations. He also sized up auto shut off valve on fuel tank for Diesel. Rolls Royce Rep., suggest cleaning nozzles, will do up report.

March 10 Isolated GGA by removing fuel and air from starter, Issued permit to R. Day to clean nozzles WO 328345.R. Day & M. Penney took out nozzles GGA, put in bucket of safety solve too soak overnight. Used ultronic bath for ½ hr. for each nozzle, before putting them in the bucket to soak overnight.

March 11. Picked up toothbrushes, rubber gloves etc., at Walmart to clean nozzles.
Picked up scotts pads at Murray's Industrial, could not get them at Rideout's.
Replaced screens (part # 4711031601) Cancelled permit, ran up GGA, we get alarm at 15 mw and trip at 20 mw, same as before. Returned GGA to service with load reduction.

March 17. Reset dryer alarms at Hwds, informed Max Read.
ECC started both ends for generation, 40 mw, no alarms.

April 22. Gov. inspector on site doing inspection of air receivers.

May 21. J. Mallam wanted to do a test run to check differential pressure across filters, ECC has unit on sync cond and doesn't want a trip. We'll do test later.

May 29. ECC tried GGB twice, to put unit on sync cond. no luck- incomplete sequence 2nd acceleration, tried GGA ran up OK.

June 4. Ran up GGA to 21 mw and GGB to 22 mw, got temp alarm each end, to check pressure drop across intake filters. J. Mallam & N. Seymour on site.
J. Mallam suggested we calibrate the filter block alarm back to 4" H20 instead of 5" H20. Put in work request to have them calibrated.

June 9. Isolated GGA by removing fuel and air from starter, Issued work permit to R. Day to pull Nozzles.

June 10. Bought boxes at Diesel Injection to ship nozzles in.

June 11. N. Seymour on site, took pictures of each nozzle.
Packed up nozzles for shipment, took them to Hydro Place for N. Seymour to do labeling and paperwork for shipment.

June 16. Isolated Heat Exchanger and issued work permit to R. Day to remove the core of the heat Exchanger.

June 20. Added 5 gallons of glycol to system and topped up with water.
The glycol is ETHYLENE GLYCOL picked up at Chem. Inc. 50 Clyde Ave, Donovans.
Started GGB, on generate 5mw for 1 hr. to check operation of main oil cooler.
Returned unit back to ECC.

June 26. Security Alarm Zone 14. Everything OK. Reset alarms.

Aug. 11. Received Burners, fuel Nozzles for GGA from Rolls Royce around 1500 hrs.

Aug.12 Installing fuel nozzles GGA.

Aug 13 Installing fuel nozzles. GGA. Cancelled permit on GGA,
Turned on fuel and air to starter to run up GGA. Paul Woodford on site for start up.
GGA keeps tripping on clutch malfunction,

Aug 14. Had ECC shut down unit from sync cond, so we could work on clutch GGA.
Give time for lube system to shut down before boys from Whitbourne arrive on site.

R. Stoyles & R. Day change proximity switch GGA. Ran up unit for testing after lunch. GGA, started OK GGA is limited to 18 mw due to temp. control set at 705 C. It was adjusted back to 705 from 777 when we first had problems with the fuel nozzles. Needs to be re-adjusted to 777 C. Turned unit back to ECC, both ends available.

Aug 15. R. Stoyles on site, brought temp. reference on GGA up to 777 as per drawings.

ECC would not let us start unit because it was on sync cond & they didn't want a trip. Load 18 mvars.
R. Day & R. Stoyles adjusted the differential across inlet filters to 4 " H20, on GGA WO 344179 and on GGB WO 344170.

Aug. 18 Ran up GGA to 24 mw, took readings at 5 mw intervals for engineering.

Sept 18. Several outages in city, Unit on generation 45 mw, called in at 0930 hrs.

Sept 19. Worked until 0330 hrs. unit on generation.

Sept 22. ECC started both units on generation, ran up to 40 mw OK.

Sept 23. Annual.

Sept 24. Alliance Security on site, disconnected Fire, Medical Alert & Panic Buttons from both push button pads on the security system.

Sept 28. ECC ran up GGA & GGB in generate, testing station service at the Bay.

Nov. 4 ECC started GGA to put unit on sync cond, ran up OK.

Nov 5. WO 370 332 Fire trouble alarms;
Informed by J. Wheeler we had several intermitting fire trouble alarms yesterday just after work. Checked system seems to be OK now. Checked with ECC last alarm around 1715 hrs yesterday. Around this time Nfld. Power was having trouble on system. The off-loading module is fed from Nfld. Power, if power was intermitting we would get fire system trouble alarm.

Nov. 6 Unit on generation (20 MW) for approx. 1 hr. trouble at Holyrood. No Alarms.

Nov 7. When I came on site, unit on generate 5 MW.

Nov. 9. Generater Alarm GGB. Unit on 47 MW's reduced load to 40 Mw. Computer locked up cannot tell what the alarms are. Notified on call personnel who called in R. Stoyles and C. Warren. Had ECC drop load to 5 MW, than did a cold reboot on computer, alarms reset.

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Nov 21. ECC started GGA to put unit on sync cond. GGA got incomplete sequence, started GGB ran up OK.

Events and Details for 2004 from Hardwoods Station Log

Jan. 9. ECC started both ends in generation for test run. Ran up to 15 MW than shut down, no alarms.

Jan. 12 ECC started GGA in generate for a test run, ran up ok, no alarms.

Jan 16. ECC started GGA to put unit on sync cond, got in-complete sequence, ECC than started GGB, ran up OK.

Feb 19. ECC started GGA to put unit on sync cond, got incomplete sequence the first time, tried GGA again went on ok.

March 3. Reg on site to repair leak on dryer, replaced solenoid valve.

March 26 ECC called alarm on GGB. No Green Light. Checked found fitting for air to starter, filter loose, tightened fitting, let system build up. Alarm reset.

April 01 Installed new kit in float switch for sump.

April 16. Jorden valve on GGB leaking, turned off fuel to GGB.
Informed ECC GGB out of service.
Informed Steve & Max that we need a mechanic to change Jorden valve & set up same. We need to run unit up to 5 MW to check if valve is working properly.
M. Penney & R. Day on site, changed valve, etc.
Ran up unit to 5 MW, checks out ok, returned unit to service.

April 27 ECC tried GGA to put unit on sync cond. tripped on in-complete sequence, ECC than tried GGB, Unit went on OK.
Checked out fan 1 on GGB.

May 17. Security alarm, Zone 14. Unit on Sync Cond.
ECC tried to off load unit so that we could check speed switches
Unloaded unit to 5 MVARS, could not go any further up or down.
Checked out system with B. Stoyles – suspect motor on rheostat burnt out.
Manually adjusted rheostat to put unit on 0 mvars. No spare motor on site or at Sville, Informed H. Ireland off situation.
If ECC needs to raise or lower MVARS the operator has to do it manually.

May 20. Took unit down to check out problems MVAR adjustment motor – motor burnt out.

Bernie found spare motor at S'ville, Complete unit. He is shipping it to Hydro Place to be picked up Tuesday next week.

May 25. P & C picked up motor and controls for auto mvar adjustment at Hydro Place and installed on unit.

June 1. E. Burglar on site, took motor for auto mvar controls, to see if he can get it repaired.

J. Mallam called wants to do an exhaust inspection tomorrow on unit.

June 2. Completed exhaust inspections on GGA & GGB. J. Mallam & R. Seymour on site for inspection. GGA was modified in 1990 and is as good as new.
GGB is ok, not modified, but has a plate over seam.
Had to remove blanket for inspection, and re-install. R. Day assisted.

June 3. Put in work request to inspect combustion chamber Turbine Drain Valve as recommended by service bulletin # 332.

June 4 Unit on sync cond. 11 mvars.
Pouring rain, alarm filters blocked on alternator filters, reset ok.

June 17. Security alarm Zone 14, (Contacts bad on sensor and needed to be cleaned.

July 5. Unit took off sync cond yesterday, total of 911 hrs.

Aug. 18. ECC started GGB to put unit on sync cond. – outage TL201.
Got High temperature Exhaust, and high Vibration alarms,
Both alarms reset, unit went on sync cond.

Aug. 19 R. Day & B. Tobin on site working on air leak compressor 1.
Government inspector on site to look at heat exchanger mlo system and the heater on the fuel system.

Aug. 25. ECC tried GGA to put unit on sync cond. TL203 out of service.
GGA tripped on incomplete sequence. ECC than tried GGB, unit went on, no alarms.
Work order 405801, pressure test fuel line. Assisted Mike & Reg with testing fuel line. At 1130 hrs pressure was 169.5 lbs.

Aug. 26 Checked pressure on fuel line 119 lbs. Down 50 lbs, informed Mike.
Put unit in local for tests, after tests started both ends, ran up to idle speed to check speed switches. Shut down unit, put unit back in Supv.

Sept. 11 Called out. Main lube oil system alarm, no green lights on unit. Reset alarm, OK.

Sept 19. Called out -cooling system fault. No ready lights.
Found problem with float switch for sump. By-passed switch for now. (heavy rain in area)

Sept 25. ECC tried GGB 3 times, failed to go on line. Exhaust temp alarms. Tried GGB again went on OK.

Oct 07. Security alarm, Zone 14. Alarm reset.

Oct 11. Stat Holiday.
Security alarm Zone 4. Door to control bldg. was open.

Oct 18. ECC getting generator alarm, checked found battery grd alarm keeps coming up. Disconnected wire 1562 to get rid of alarm for now. Will check out circuit when unit comes down.

Oct 19. Re-connected wire 1562, no alarms.
ECC ran up GGA to put unit on sync cond. No alarms.

Oct 20. Unit on sync cond, no alarms.

Nov 22 When I arrived on site, no green lights on unit, checked found problem with float switch on sump set. By-passed switch for now.

Nov 23. Someone called 911 and reported a fire in station. When I arrived on site the fire trucks were already here. Walked around station, everything seems OK. Informed ECC—let fire truck go.

Dec. 6. Vibration alarms, Unit on sync cond. later on generate.

Events and Details for 2006 from Hardwoods Station Log

Jan 4 HWD GT Fuel transferred from Hydro Place to HWD (21,418 liters). arranged by Norman Bungay. Transferred by Crosby's Industrial using the same truck as is used to empty the sump at HWD.

Jan 23 Due to system load requirements HWD and SVL GT's were required for generation.

0702 hrs HWD GGB was started in Generate mode. At that time GGA failed to start.

0706 hrs SVL GGA failed to sync after 2 attempts.

0755 hrs HWD GGA was started from local control and put on line. Both units were on line at this point with approximately 30 MW load total.

0901 hrs SVL GGA put on line and loaded to approximately 20 MW. Maximum available due to EGT Spread alarm. The unit was monitored locally and kept at 20 MW.

1048 hrs HWD Unit tripped with approximately 28 MW. Investigation indicated the DC breaker for unit controls (both GGA & GGB) tripped. DC breaker was reset and unit (GGA & GGB) given a start command. Breaker tripped again during the attempt to start. In local control GGA only was given a start command resulting in the breaker again tripping. GGB alone was then given a start command and started successfully. It was determined that the DC fault was directly linked to the operation of GGA. GGB was then loaded to 17 MW to support system load. At that time technicians at site were investigating the problem with GGA.

1359 hrs HWD GT tripped (GGB) with at 17 MW / 17 MVAR due to anti ice fail. Crew on site removed anti ice valve and solenoid from GGA and replaced the failed unit on GGB with it. Unit was made available at 1658 hrs. At that time the anti ice unit was removed from GGB at SVL and shipped via air to St. John's to arrive at 2100 hrs.

1658 hrs HWD GGB put on line and loaded to 15 MW. Restricted to 15 MW due to EGT Spread alarms.

2148 hrs HWD GT was switched to Sync Condense Mode as per system requirements. During this time the anti ice unit from SVL was installed on HWD GGA and trouble shooting of the DC cct. continued.

2208 hrs HWD tripped at 0 MW / 0 MVAR while attempting to switch GGA to generate mode. DC breaker trip. Further trouble shooting at that point identified a failed cable in the DC control cct. The cable was replaced and a GGA start was again attempted. The DC breaker did not trip at this point but attempts to start GGA were unsuccessful due to GGA Incomplete Sequence. Several attempts were made to start GGA and at approximately 0245 hrs crews discontinued work. HWD was left with GGA unavailable and GGB available up to the 15 MW restriction.

Jan 24 0208 hrs HWD GGB on line.

0216 hrs HWD switched to sync condense mode.

1200 hrs Crew returned to HWD to further troubleshoot the problems with GGA incomplete sequence. They indicate the incomplete sequence problem appears to be associated with the cable issue from last night and a complete unit outage is required to further investigate. An outage is scheduled for 2006-01-24 (2100 hrs) to continue investigating.

HWD GGA DC breaker trip was identified as failure of the snubber circuit for the fuel solenoid. Zenor diodes across 401 and 4 (fuel solenoid) was shorted causing the DC breaker to trip during the starting sequence. The snubber was removed and unit returned to service without the snubber. Currently working with P&C and engineering to identify replacement parts.

Jan 30 – Feb 2 SVL GGB Combustor cans were removed from GGB and replaced by a refurnished set stored in HWD. Rolls Royce representative Alain Joseph was on site for this. There were no apparent defects identified with the removed cans other than some erosion near the interconnector port on #2. Alain indicated this would not create the EGT problems we are experiencing. There were design differences in the cans. The manufacturer indicated the cans from HWD were Phase 1 and the existing cans on GGB were phase 2. Phase 2 is an upgrade to increase the time between maintenance overhauls. The manufacturer indicated putting back phase 1 cans is not a problem.

Feb 7 & 8 SVL GGA logic was modified to inhibit EGT Spread Deviation shutdown and trip until the engine reaches N3 speed greater than 3540rpm (clutch engaged) and generator is at minimum load (2 MW). EGT spread deviation alarm will be enabled during startup but shutdown (runback) and trip are disabled. Also at that time the screen graphics was modified to show EGT Spread Deviation on both GGA and GGB. GGA was test run to 25 MW successfully. A work order is in place to make the same logic changes to SVL GGB an HWD GGA and GGB.HWD GGA & GGB logic changes are scheduled for the week of Feb. 13, 2006.

Feb 15 HWD GT The upper bearing on Fan # 2 in the glycol cooler was identified as being noisy. Bearing detail was identified and a replacement is being shipped to be installed 2006-02-18 & 19 (Sat & Sun) due to the availability requirements of the gas turbine. On 2005-05-05 the lower bearings on the same fan were found noisy and both lower bearings were replaced. Provision is made to replace the upper bearing on Fan # 1 as soon as the work can be scheduled.

Feb 20 HWD GT tripped at 9 MW during testing to determine if the glycol cooler could maintain enough cooling to the unit with #2 fan turned OFF. Unit tripped on Low Liquid Fuel Pressure. Problem was investigated and it was determined the motor operated fuel valve had malfunctioned. It appeared to have overtravelled leaving no indication to the DCS system whether the valve was open or closed. Valve was operated several time and operated correctly. Unit was returned to service. One possible reason is the valve bay have been iced outside and when the ice broke free it overtravelled due to excess torque being applied.

Feb 24 HWD GT Inverter failed. Inverter bypassed to station service AC until outage can be approved to replace.

HWD GGA. Unable to load GGA beyond 5 MW with a fuel valve position of 48 %, which should represent half of full load (approximately 12 MW). All three fuel filters on GGA replaced without success.
Jordan valve removed and calibrated at Diesel Injection without success. During testing it was identified that one of the igniters on GGA was not working. Igniter was replaced.

Feb 25 HWD GGA tested for load capacity and was only able to achieve 8.8 MW at 100% fuel valve. Fuel restriction still an issue. During shutdown and transfer to sync condense the clutch on GGA failed to release. The clutch casing had to be removed and the clutch physically separated. GGA will not be available for service in any capacity until the clutch is removed and repaired. During the immediate requirement to restore HWD sync condense it was identified that when GGB was started, the motorized main fuel valve did not open.

March 6 HWD GGB. Old burners removed and replaced with overhauled burners taken from SVL GGB. Unit was run up and went into alarm (EGT Spread Deviation) at 18 MW. Unit released with same 15 MW load restriction until further notice.

March 13 HWD GGB. Engine fuel hoses inspected and found okay. Hoses were exchanged with GGA as well with no success to correct the EGT spread deviation problem on GGB.

March 14 HWD GGA. Total outage today to do the following.
1) Oil solenoid on GGA clutch replaced. A oil line to the solenoid was identified as damaged and replaced also.
2) Inverter at Gas turbine replaced.
3) Anti ice valve replaced on GGA with rebuilt that was removed Jan 23, 2006.
4) Failed cable to fuel forwarding module replaced.
During start up problems were experienced with the supply breaker to the glycol pump tripping. Another breaker (not sized exactly as the failed one) was used to replace the failed unit. A new breaker sized the same as the original is being sourced. New breaker on order.
The repaired anti-ice valve failed to operate and showed the same problems as when it failed originally, 2006-01-23. It was removed and replaced with the unit drum SVL GGA. Failed unit sent back to Ozark for re-evaluation.
GGA was started and run to 1300 rpm at which time a fuel leak was detected on the fuel line to engine. On rundown it was not determined definitely if the clutch operated correctly. Both engine and generator were coasting at the same time. GGA clutch was disengaged when GGB was started to put the unit on in sync condense.

March 15 HWD GGA. Failed anti-ice valve returned to Ozark for evaluation. Crew repaired leaks on GGA fuel lines.
Ran up GGA and tested manual valve in fuel return line. Testing indicated this bypass circuit is not our problem. Next step is to replace GGA fuel actuator to identify GGA not able to get to full load.
On unit stop (GGA) today the clutch failed to separate!!!!!

March 16 HWD GGA. Clutch solenoid valve sent to Diesel Injection for inspection. To determine the loading issues with GGA, the manufacturer suggests replacing the fuel distributor. We have a spare distributor at HWD.
Mechanics installed today a fuel pressure gauge to monitor the fuel pressure into the distributor.

The mechanics installed a pressure gauge on the input line to the fuel distributor on GGA today and ran the unit to 8 MW. Pressure @ 8 MW and full valve was recorded at 800 psi. HWD sump was pumped out today.

March 17 HWD. Nelson discussed with Rolls Wood. RR indicated the distributor is most likely not the issue with GGA fuel and loading. They referred to a servo dump valve as possible suspect and Nelson will pursue details with RR today to determine a test procedure or process to investigate the servo dump valve.
RR indicated the distributor is considered a prime suspect for the EGT spread seviation issues with GGB and recommends replacing it on GGB. Plan for today is to replace the distributor and final filter on GGB and test the unit. Nelson will also check on the status of the anti-ice valve at Ozark as well as the clutch solenoid at Diesel Injection. Also Reg suggested installing a pressure gauge on of the output list from the distributor. Is this a good idea and if so what should we expect to see. Are we wasting our time here and should we go directly to replacing the distributor. By the way the clutch on GGA failed again on run down. Fuel distributor replaced on GGB as well as final filter and unit test run to 18 MW at which time the EGT spread deviation became active again. Changing the distributor on GGB did not correct the problem on GGA.

March 18 HWD GT High sump alarm received from HWD. Investigation found sump full. Also a local alarm indicating main lube oil level low. Found sump full of lube oil. Sump was emptied, unit shutdown and investigation started to identify the source of oil leak.

March 19 HWD GT 0il leak was found to be the expansion joint to the rear journal bearing on turbine A. Repairs were made and 6 drums of oil required to replace that lost from the main lube oil tank.

March 20 HWD GT Oil sourced from HRD plant and process to top up tank today. 10 barrels ordered from HRD.
Mechanics are checking the remaining expansion joints in the lube oil system today for possible leaks and integerity. The events of Saturday indicated the lube oil level low alarm is not seen by the ECC. This low level alarm inhibits the oil heaters from coming on thus blocking a unit start.

March 21 HWD GT More lube oil Teresso 32 required to bring the reservoir up to full mark. Another 13 barrels ordered from HRD and system filled today. The clutch solenoids on GGA and GGB to be switched today with the intent to confirm the failure mode of GGA clutch. Flex lines to both solenoids will be replaced as recommended my mechanic. Repairs to demister scheduled for today. Complete inspection of oil line flex connections today and tomorrow. Note to Steve to discuss PM checks to include inspection of lube oil flex connections as well as checks of lube oil level at both HWD and SVL. Clutch solenoids were interchanged on GGA and GGB. Both GGA and GGB were run up. GGB functioned correctly and GGA clutch failed the same as prior to changing the solenoid. (No improvements to GGA clutch problem) During the run of a GGB the intermediate filter housing o-ring failed causing a fuel leak. O-ring was replaced. Sump high level alarm was modified to be indicated at both ECC and local. Before this only the ECC received the sump high level alarm.

March 22 HWD GT P & C to perform checks today to confirm the controls to GGA clutch solenoid are working correctly. Monitor solenoid voltage during run-up and shutdown.
P & C found fuse blown in the clutch solenoid cct preventing the solenoid from operating. This is an output from the DCS. Blown fuse was a result of a failed snubber. This snubber is located in the same jct box as the one that failed 2006-01-23 in the liquid fuel valve cct.

Snubber was removed and the unit returned to service. This cct does not have blown fuse indication. Snubber removed and fuse replaced. GGA clutch tested for operation and is now functioning correctly.

March 23 HWD GTChecked DC controls to fuel system on GGA and found a failed snubber on Dump Servo Valve SV-LF-1. Snubber removed and unit tested to normal load (24.8mw) without alarm. HWD GGA back to normal non-restricted operation. Anti-ice valve will be tested on GGA at the first opportunity and if okay SVL GGB anti-ice will be returned to SVL.

March 24 HWD GT GGB Nelson recommending swap burners 1 (hottest) and burner 4 (coldest) and test run monitoring temps. and alarms. Targeted for today to identify GGB spread deviation issues.
Old burners from HWD GGB are being transported today to be installed on SVL GGB. Still waiting on anti-ice testing at HWD before getting anti-ice back to SVL GGB.

Results as follows:
Reg interchanged burners 1 & 4. No change, got exhaust spread alarm at 19 MW.
No 1 burner the coldest at 626
No 2 burner 654
No 3 burner 690
No 4 burner the hottest at 708
No 5 burner at 670
No 6 burner at 689
No 7 burner at 685
No 8 burner at 675
Exhaust average 674
B temp reference 766
Alarm spread comes in at 50

Also fuel flex hoses on burners 1 and 4 (GGB) were switched with same on GGA.

Interchanging the flex hoses and swapping burners had no change to GGB EGT Spread Deviation.

April 19 HWD GT Swapped burners 2 & 5. on GGB. No change, still got exhaust spread temp alarm at 19 MW. I have temperatures and load readings at 5 MW intervals, which I will deliver to N. Seymour tomorrow. Engineering requested to make arrangements with the manufacturer to be on site to oversee the removal of cans from SVL GGB and install same in HWD GGB. This is required to prove if HWD GGB is a cans issue before major investment to fix HWD GGB cans.

April 21 HWD GT Pressure tested pipeline going to sump, by capping off line in sump and filling line with water, from drain in floor in fuel forward pump house. Checked pipe and 1/2 hour later, no sign of any water. This is the new pipe line that was installed less than a year ago. This test is a result of the sump being filled with water at a higher rate than previously recorded. Request to engineering for recommendations.

July 3 GGA failed to start due to a failed proximity switch on GGA clutch. Switch was replaced and unit made available on Tuesday, July 4.

July 4 It was identified that an excessive amount of water is being collected in the HWD GT sump system. Leak test indicates there is a failure in the underground piping. The piping

was exposed near End A and a break was found in the pipe joint. Both sections of pipe were tested from the broken exposed area and found the okay except for a failed backflow valve from End A air intake module. Valve was replaced and repairs made to the ruptured joint that was exposed. Work order in place to test system in November 2006 and spring of 2007.

July 16 In an effort to bring both Hardwoods and Stephenville up to their full 50 MW rating we plan to remove the combustor cans from Stephenville End B (these are the cans that were installed at S'Ville End B and improved the rating from 10 MW to 25 MW) during the week of Aug 7, 2006 and then reinstall the old cans. This will de-rate the unit at S'Ville to 10 MW but will ensure both ends are available for starting for synchronous condenser purposes.

The cans removed from S'Ville will then be transported by road on Aug 14, 2006 and installed in HWD End B. During the same outage to remove the cans at Hardwoods we are also doing an inspection of the LP Turbine blades as recommended in a service bulletin. It is important to note all work at Hardwoods will be under the Supervision and direction of Rolls Royce representative. At the end of this work it is hoped we will have a good idea of the condition of the LP Turbine blades and (hopefully) have HWD End B back to a 25 MW rating (up from the current 15 MW rating).

Aug 4 During a run up this past week on Hardwoods End A, we experienced a problem with the anti-ice control circuit that initiated a trip on the unit. After some testing we cannot seem to duplicate the problem. However we have concern with the anti-ice valve on end A and suspect this is the root cause of the problem. Our next step is to remove the anti-ice valve from End B in Stephenville on Tuesday (August 8, 2006) and ship it via air to St. John's to be installed and tested at Hardwoods on Wednesday August 9, 2006.

As a result, End A at Hardwoods shall be restricted from being operated in generate mode but can still be used to place the unit in synchronous condense mode as required. Also for your information Stephenville is fully available up to and including August 7, 2006 (at which time End B will be taken off line for combustion can removal) but Hardwoods is restricted to 15 MW on End B only.

Aug 11 Anti-ice valve replaced today with unit from SVL GGB and works properly without alarming.

Testing done on valve from SVL GGB as well as failed valve from HWD GGA. Test detail is recorded on work order 533666 and it was concluded the limit switches embedded in the valve motor are not operating correctly causing the motor to want to run. This is pulling the 24 Vdc power supply down causing false indication to the DCS system which makes both GGA and GGB not available. The valve removed from HWD GGA has been repaired locally as well as being sent to the UK some years ago for repair. We are unable to make repairs to the valve limit switches.

Aug 14 Scheduled outage to HWD GGB to perform low pressure turbine inspection and replace combustor cans with those (new / refurbished) that were installed in SVL GGB and proven to get SVL GGB to full load without EGT Spread alarm. Schedule was delayed as it was identified on Monday that the engine (HWD GGB) had to be removed for LP inspection. At that point it was discovered the lifting beam for such was at SVL and had to be transported to HWD. There was no actual delay as the engine had to be readied as well as an extension beam had to be installed prior to the lift. The extension beam had to be modified as to accommodate the mounting bolts even though it was used previously. LP turbine inspection was completed by Steve Press of Rolls Royce (from UK) at 1530 hrs on 2006-06-16, (Wed). Engine GGB was reinstalled and the combustor cans replaced with the set removed from SVL GGB. Significant work was involved from Wed 92006-08-16) to Monday (2006-08- 21) to return the engine and replace cans. Dowels in the engine shroud were very difficult to remove and some were damaged during removal. HWD was test run Monday afternoon (2006-08-21) and results are as follows:

HWD GGB - Before cans changed out reached 19 MW before EGT Spread Alarm.
HWD GGB - Test run after cans changed an EGT Spread alarmed at 22 MW.
Outdide ambient temp at that time was 22 deg C.
HWD GGA was also run at that time and maximum output at that time was 22.3 MW at which point the unit went into high temperature control. Alain Joseph of Rolls Royce (Canada) was on site for changeout of combustion cans. Due to a death in the family he was unable to stay for the run up.

Aug 24 HWD GGB Plan for next week is to install the burners / nozzles that are / were in SVL GGB in HWD GGB and unit will be test run with refurbished cans from SVL GGB along with existing burners from SVL GGB. This combination of burners and cans worked in SVL GGB to get full load on SVL GGB. The cans removed from HWD GGB last week will be installed in SVL GGB and depending on the results of HWD GGB as set of burners will be shipped to SVL GGB.

Aug 30 HWD GGB Installed burners from SVL GGB but EGT spread again at ~ 22 MW. Decided to keep HWD GGB as is and install the original HWD GGB in SVL GGB. This work is plan to be completed by Sept 15, 2006.

Hardwoods Work Order History

30-Aug-06 Installed burners from SVL GGB but EGT spread again at ~ 22 MW. Decided to keep HWD GGB as is and install the original HWD GGB in SVL GGB. This work is plan to be completed by Sept 15, 2006.

21-Aug-06 Installed combustion cans (under supervision of Rolls Royce Rep Alain Joseph) from SVL END B in HWD END B EGT alarm at 22MW

19-Aug-06 L/P Turbine Inspection completed by Steve Press of Rolls Wood. Everything looked good.

8-Aug-06 Exhaust stack noise reduction panels repaired. Bolts rusted off. Black and Mac performed temporary repairs. Permanent repairs scheduled for fall.

4-Aug-06 Attempted to repair leak on demister

31-Jul-06 HWDGT END A tripped following logic changes due to anti ice valve problem pulling down voltage to P/S. Anti ice valve from SVL END B installed at HWD End A.

17-Jul-06 DC ground fuel valve. Replaced corroded junction box.

7-Jul-06 Repaired drainage sump piping due to heaving from frost.

4-Jul-06 Replaced proximity switch GGA clutch.

14-Jun-06 Changed snubbers (9) in junction box for fuel system GGA & B.

14-Jun-06 Rewired anti ice power supply to increase capacity due to ongoing intermittent P/S loading down problem.

5-Jun-06 HWDGT call out - clutch problem.

1-Jun-06 Fuel leak - Replaced Jordan valve

29-May-06 Repair air dryer - Replaced Hex Air Valve

26-May-06 Repair fuel leak - Replace o-ring on filter GGA

24-May-06 HWDGT, repair leak stand by diesel unit. Replace valve cover gaskets.

23-May-06 Repair lube oil leak on vacuum pump. Replaced line from vacuum pump to demister.

9-May-06 Replace anti ice P/S as a result of a callout on May 7, 2006 due to low voltage on P/S. Calibrated spare P/S and installed.

28-Apr-06 Repaired leaks on MLO System.

24-Apr-06 Replaced bearing and shaft on #1 fan for Glycol cooling system.

19-Apr-06 HWDGT, End B swapped burners 2 & 5 and EGT alarm at 19 MW.

3-Apr-06 Repair demister leak. Replace filter gaskets and housings.

3-Apr-06 Changed solenoid GGA/GGB lube oil system.

30-Mar-06 Installed repaired anti ice valve from OZARK and shipped SVL unit back.

30-Mar-06 Replace 30A, 600V breaker for Gycol system.

24-Mar-06 HWDGT, replace burners GGB (removed burners that were installed March 6, 2006)

22-Mar-06 HWDGT, check P/S to clutch solenoid. Found problem with snubber circuit. Repair clutch on END A OK.

21-Mar-06 GGA, replace Jordan valve.

21-Mar-06 Competed adding 20 drums of TRESSO 32 bearing oil due to sump alarm on March 19. The source of this leak was the expansion joint on rear journal bearing on Turbine A. All expansion joints at HWD and SVL were inspected and tightened as required.

19-Mar-06 Investigate sump alarm at HWDGT.

15-Mar-06 Reinstall anti ice valve from SVL and send anti ice valve back to OZART for repairs.

14-Mar-06 Replaced inverter.

14-Mar-06 Replace cable to fuel filter alarm.

14-Mar-06 Replace safety relief valve on comp "B".

6-Mar-06 Snow doors END B - replaced regulator and solenoid, 3 brackets and clamps.

6-Mar-06 HWDGT, replace burners. Installed refurbished burners in END B and sent old back to SVL.

1-Mar-06 GGA, clutch malfunction. Removed covers and unlocked clutch.

28-Feb-06 HWDGT, high press on fuel forward pump. Replace and relocate thermocouple.

28-Feb-06 Changed final fuel filter on GGA.

23-Feb-06 HWDGT, Glycol S,s #1 fan noisy. Grease bearing housing.

18-Feb-06 Replace Glycol fan belts (2 of 3)

14-Feb-06 Stand by diesel. Replaced AVR, speed pot, replaced actuator cable.

14-Feb-06 Repaired oil leak on demister.

9-Feb-06 Stand by diesel prot trip.

9-Feb-06 HWDGT, repair flow meter error message.

27-Jan-06 Install anti ice from SVL B on HWD End A.

27-Jan-06 Tested manually operation of END A and END B to determine if one end could take 25MW and other 15MW. Failed; Denoted SWDGT to 2 X 15MW = 30MW.

27-Jan-06 Fabricate 2 Jboxes, to prevent water from entering due to snubber circuit failures.

23-Jan-06 See station log for details.

20-Jan-06 Snow Doors, repair solenoid.

18-Jan-06 Calibrate fuel meter.

12-Jan-06 Replace Jordan valve.

10-Jan-06 Checked Thermocouples on END B (to ensure exhaust gas temp are "real".

20-Dec-05 GGB replace Jordan valve.

16-Dec-05 Pumped out 240 gallons of fuel. Replaced 3 pressure relief valves in fuel forwarding system.

28-Nov-05 Repaired broken line on snow doors.

18-Nov-05 Installed flow meter. HWDGT GGB Hot End Inspection.

17-Nov-05 HWDGT, GGB invest hot burner.

17-Nov-05 Inspection of HWDGT and SVLGT by Rools Wood/ABB Rep to help with EGT problem.

15-Nov-05 Installed new 125 VDC bank.

14-Nov-05 Replaced standby diesel unit

14-Nov-05 Replaced bottom bearings on both fans.

14-Nov-05 Replace dirty alternator filters.

10-Nov-05 Failed to start. Relay burned up for starting Demister .Replaced relay "OK"

8-Nov-05 Replace burnt vib cards.

27-Oct-05 Replace rusty conduit.

19-Sep-05 HWDGT, fuel module leak/repair.

19-Sep-05 HWDGT, END B temp test.

16-Sep-05 HWDGT, END A replaced proximity switch due to clutch malfunction.

15-Sep-05 HWDGT, invest END A clutch. Checked operation, starting and stopping (intermittent problem)

9-Sep-05 Repaired fuel leak on fuel nozzle no. 7.

23-Aug-05 Repaired broken wire on field GND where it attaches to brush, (Alarm).

21-Aug-05 Snow doors, END A repaired air leak.

12-Aug-05 HWDGT, programmed logic for motorized fuel valve.

8-Aug-05 HWGT END A, clutch alarm. Replaced proximity switch on END A and ok.

5-Aug-05 Replace sump drain lines.

4-Aug-05 Hot end inspection performed. W/O 385531

3-Aug-05 Upgrade fuel system for stand fuel to connect to sump drainage system.

27-Jul-05 Contractor install new supply and return lines from fuel forwarding BLDG to END A and END B due to a fuel leak discovered on June 9, 2005 during excavation to tie diesel building drainage system into sump system.

28-Jun-05 Snow doors, replace all flex. Line on snow doors. Replace rusted air canisters and filters.

22-Jun-05 Pressure tested lines and discovered Sup/Ret lines were pitted and leaking

14-Feb-05 Repaired air leak on snow doors.

27-Jan-05 Repaired fuel leak - FF BLDG - Replaced air trap for main fuel filter.

8-Nov-04 HWGT, repaired fuel leak and pressure tested.

14-Sep-04 Call in - Loss of ready lights. Low temp on MLO, reset unit OK.

9-Sep-04 Call out - computer locked up unit at 40MW ECC had alarms but could not be seen locally. Had to re-boot.

27-May-04 HWGT, replaced AVR voltage adjust motor.

16-Apr-04 HWDGT, repair fuel leak.

10-Apr-04 Replace alternator filters.

7-Apr-04 HWDGT, JB-3 replaced term strip and wiring

1-Apr-04 Repaired float switch for sump

12-Mar-04 Glycol cooling system - installed 2 inspections hatches

12-Dec-03 HWDGT would not start due to vibration alarm. Tightened monitoring bolts on vib detec.

5-Nov-03 HWDGT, intermittent GT fire system alarm. (NF Power system problem and when power would go off, alarm would come in.

20-Aug-03 HWDGT GGA, Replace proximity switch clutch A.

18-Aug-03 GGA, installed overhauled burners that were sent to Rolls Wood in June 2003.

20-Jun-03 Replaced main lube oil heat exchanger.

12-Mar-03 HWDGT END A Problem with EGT at 22MW.

5-Mar-03 GGA perform hot end inspection by R.R. up

9-Dec-02 GGB repaired Jordan valve.

10-Oct-02 Replaced shaft on main fuel pump #1

27-Sep-02 Change logic for EGT trips/alarms as per Craig Warrens request.

19-Sep-02 Repair oil leak on main supply line to main tank (contractor completed HP welding)

19-Apr-02 Repair demister leak.

18-Apr-02 Repair leak on #1 fuel forwarding pump.

10-Jan-02 Repair leak on Jacky pump GGB

19-Dec-01 Replace and repair Jordan valve GGB.

14-Nov-01 GGA, Repair leak on Jordan valve.

29-Oct-01 GGB tripping on single exhaust thermocouple. All thermocouples are reading high on END B.

22-Oct-01 Repair oil leak on demister

18-Oct-01	Repair leak on jacky pump, GGA
18-Oct-01	Replace limit switch on blow in doors.
28-Sep-01	Elect. Switch for sump replaced.
24-Sep-01	Can not control voltage on unit
4-Jun-01	Fuel leak repair filter housing GGB
15-Mar-01	Check and repair DC GND
9-Mar-01	Trouble MLO - found belts broken on Glycol cooling fan #1
14-Feb-01	Installed new invertor.
25-Dec-00	Starting problems on Xmas Eve and day. Eventually got END B ON.
18-Dec-00	Inverter and DC GND. GND on the A END governor motor. Flex conduit from motor to JB was replaced.
8-Nov-00	Replaced and tapped broken proximity Switch cover and replaced Prox switch due to clutch A problem.
17-Oct-00	Point fuel storage tank.
6-Oct-00	Replaced safety valves on both receivers.
2-Oct-00	Replaced oil seal on MLO pump #1
28-Aug-00	HWDGT, GGA, oil alarm. Adjusted Glycol regulator.
9-Jun-00	Replace mech seal and o-ring on main fuel forwarding pump.
17-May-00	RR Rep complete hot end inspection on A & B
27-Apr-00	Due to vibration problems GGA was sent to Scotland for repairs.
30-Mar-00	Test thermocouples on EGT A & B 200^{o}C, 400^{o}C, 600^{o}C using oven form HRD plant. All temp within 3% of oven settings. HWGT A & B, recalibrate exhaust thermocouples due to END A tripping EGT.
24-Dec-99	Clutch A-Repair
8-Dec-99	HWDGT, repaired thermostat valve on Glycol system
1-Dec-99	HWDGT, GGA fail to start. C. Warren made logic changes due to BRG/ lube temp trip and alarm being reversed.
30-Nov-99	HWDGT, GGA fail to start. C. Warren made logic changes due to BRG/ lube temp trip and alarm being reversed.
30-Sep-99	Replaced air filters.
10-Sep-99	Install GGA that was removed from SVL.
18-Jun-99	HWDGT, AVR/Exciter trouble AVR 1 & 2 tripped due to 400A fuses in exciter. Four of six fuse, had to be replaced.
15-Jun-99	HWDGT, repair demister leak.
15-Jun-99	Change alternator filters.
June 3-8, 1999	Investigate lube oil trip. Raised High temperature alarm, shut down and trip from 75-100, 80-105, 90-115 on A and B. Change filter on GGA and GGB lube system.
21-Apr-99	Investigate sequence failure/ignitor END A. Adjust sequence fail ignitor form 10-12 sec.
8-Mar-99	Call out - Sync cond trouble, alarm on shut down. Alarm reset okay.
28-Feb-99	Auto Sync Trouble - Callout Reset Okay.
20-Feb-99	Callout - Loss of control of Gas Turbine Aux relay in IRD (KS) faulty.
Mar 12 & 14, 1999	Auto sync trouble alarm on start down of sync condense on March 12 and twice on March 14, 1999, March 23 & 24. After consulting with eng. 1. Sync trouble 2. Auto Sync trouble 3. Stator temp low were disabled to ECC's alarm page.