

Derate/ Outage Report		GREC		Report No. 14-01 - 14-04	
PART 1	Date	January 7, 2014		Type:	Forced
	Date/Time Off Line:	1/7/2014	9:19		
	Date/Time On Line:	1/7/2014	20:22		
	Date/Time at 70nMW:	1/7/2014	23:35	Time AGC on	23:36
	Total Lost Time:		14.27 hrs		
Conditions Proceeding Outage	Freezing weather causing problems with drum level and feedwater flow transmitters.				
Primary Cause of Outage	Two drum level transmitters read high due to freezing causing drum high level trip.				
Supporting Information	DCS historian, DCS trends.				
PART 2	Corrective Actions	Transmitters thawed out and blown down			
	Investigation Required	No further investigation needed.			
	Problems/Delays	Generator synced to grid and tripped thee times prior to final sync. Trips caused by Low Total Air Flow MFT, High Drum Level- attemperator block valve opened with control valves at 100% causing drum swings, then Low Total Air Flow MFT again.			
	Actions taken to prevent reoccurrence	Insulation and heat lamps installed around all critical transmitters. Staged propane and FO heaters in plant for use during freeze events. Winter Readiness Procedure developed. Developed Standing Orders and Operations Notes relating to start-up SOP's for PA air flow and Attemperator block valve operation.			
	Action items remaining to be taken and due date	14-01.1 Continue developing Winter readiness procedure and check list. (Draft by 2/7/14) COMPLETE 14-01.2 Working with Valmet to configure logic to prevent reaching Total Air Flow Low trip. (Logic change at fist planned outage) COMPLETE 14-01.3 Working with Valmet to determine the reason our control narrative directs Attemperator Block Valve left in manual. COMPLETE-AUTO FUNCTION ENABLED			

	Derate/ Outage Report	GREC		Report No.	14-05
PART 1	Date	January 14, 2014		Type:	FORCED
	Date/Time Off Line:	1/14/2014	0:29		
	Date/Time On Line:	1/14/2014	7:20		
	Date/Time at 70nMW:	1/14/2014	10:25	Time AGC on	10:31
	Total Lost Time:		9.93 hrs		
	Conditions Proceeding Outage	Normal operation on AGC, full availability			
	Primary Cause of Outage	Lightning strike caused disturbance			
	Supporting Information	Local observation, South PDC bus 1 & bus 2 feeder breakers failed open.			
PART 2	Corrective Actions	Restart unit			
	Investigation Required	Ongoing			
	Problems/Delays	Gas header supply block valve failed to open - suspect power surge. Boiler bottled up and ICE tech called in to investigate.			
	Actions taken to prevent reoccurrence	To be determined No actions required			
	Actions remaining to be taken and due date	To be determined None			

Derate/ Outage Report		GREC			
		Report No. 14-06 - 14-09			
PART 1	Date	January 20, 2014		Type:	FORCED
	Date/Time Off Line:	1/20/2014	11:17		
	Date/Time On Line:	1/20/2014	17:11		
	Date/Time at 70nMW:	1/20/2014	20:10	Time AGC on	20:20
	Total Lost Time:		8.88 hrs		
	Conditions Proceeding Outage	Normal operation on AGC, full availability			
Primary Cause of Outage	While shifting Boiler Feed Pumps operator failed to open oncoming pump discharge MOV resulting in low boiler drum level trip.				
Supporting Information	Operator observations, DCS historian.				
PART 2	Corrective Actions	Restart unit. Replace HP Bypass positioner.			
	Investigation Required	None			
	Problems/Delays	HP Bypass failed to open causing all steam to exit via Sky Vent. Generator brought to sync. speed and SCC requested no sync for one hour as they had bought power. After SCC informed LCRO unit could sync and hold at min load, lost condenser level when Start-up Make-up Water pump tripped, drum low level caused a generator trip. After eventual re-sync. Generator tripped on MFT (Low Total Air Flow due to placing PA Fan controler in remote operation at too low of a load.) Generator re-synced again at 17:11.			
	Actions taken to prevent reoccurrence	HP Bypass positioner replaced. BFP switching procedures reviewed and use of procedures reemphasized. Low Total Air Flow alarm added.			
Action items remaining to be taken and due date	14-6.1 Metso Automation working wth GREC on programing change to place a minimum PA air flow stop in logic. (see AI 14-01.2) COMPLETE				

Derate/ Outage Report		GREC			Report No. 14-10	
PART 1	Date	January 28, 2014		Type:	DERATE	
	Date/Time Off Line/ load reduced:	1/28/2014	9:03			
	Date/Time On Line:					
	Date/Time at 70nMW:	1/28/2014	9:50	Time AGC on	9:51	
	Total Lost Time:		0.78 hrs			
Conditions Proceeding Outage	Ground Fault found indicated in the North PDC. Fault found and were in process of restoring to normal electrical lineup.					
Primary Cause of Outage/ Derate	#1 Fuel Silo turning gear motor tripped on overload. Fuel feed lost on east side and #2 feed side was slow to react. Load dropped from approximately 74nMW to 45nMW while ramping up fuel feed on #2 side. Once feed rate increased adequately, steam pressure and then load returned to normal.					
Supporting Information	DCS historian, local observation.					
PART 2	Corrective Actions	Took generator to Internal Control to minimize load reduction. Increased fuel feed.				
	Investigation Required	NO				
	Problems/Delays	DCS did not respond quickly to fuel feed interruption due to feed screws volumetric feeders and DCS continued seeing normal feed rate.				
	Actions taken to prevent reoccurrence	Developed SOP for LCRO's to secure or reduce to minimum speed feed screws on affected side when experiencing fuel interruption so that remaining side will react more quickly to fuel feed demand.				
	Actions remaining to be taken and due date	None required				

Derate/ Outage Report		GREC			
		Report No. 14-11			
PART 1	Date	February 6, 2014		Type:	Forced
	Date/Time Off Line/ Reduced load:	2/5/2014	9:16		
	Date/Time On Line:	2/5/2014	15:13		
	Date/Time at 70nMW:	2/5/2014	17:52	Time AGC on	18:17
	Total Lost Time:		8.60 hrs		
	Conditions Proceeding Outage	Normal operation. Performing maintenance on HP bypass valve positioner.			
	Primary Cause of Outage	When placing valve positioner in service, valve came open much faster than anticipated. This resulted in rapid reduction in boiler drum pressure, and drum level high trip.			
	Supporting Information	Operator observation. DCS historian.			
PART 2	Corrective Actions				
	Investigation Required	RCA			
	Problems/Delays	Hogging ejector block valve would not open.			
	Actions taken to prevent reoccurrence	Require a more comprehensive pre-job review of work to be done.			
	Actions remaining to be taken and due date				

Derate/ Outage Report		GREC			
		Report No. 14-12			
PART 1	Date	March 5, 2014		Type:	Derate
	Date/Time Off Line/ Reduced load:	2/28/2014	10:55		
	Date/Time On Line:	2/28/2014			
	Date/Time at 70nMW:	2/28/2014	12:26	Time AGC on	12:26
	Total Lost Time:		1.52 hr		
	Conditions Proceeding Outage	Normal operation.			
	Primary Cause of Outage	Loss of Fuel Bin feed belt #9 drive couplings. Drive 1 fusible plug ruptured. Drive two would not start due to oil level low.			
	Supporting Information	DCS historian, local observation.			
PART 2	Corrective Actions	Added oil to drive 2 coupling, replaced fusible plug in drive 1 & replaced oil. This required Lock Out of conveyor.			
	Investigation Required	None			
	Problems/Delays	None			
	Actions taken to prevent reoccurrence	Monitor area for oil leaks			
	Actions remaining to be taken and due date	14-12.1 Investigate a means to monitor oil level either on line or with short duration shutdown of conveyor. -Complete 14-12.2 Provide a kit stationed in plant with oil and plugs to allow for a more rapid response. -Complete			

Derate/ Outage Report		GREC			
		Report No. 14-13			
PART 1	Date	March 18, 2014		Type:	Maintenance
	Date/Time Off Line:	3/11/2014	22:56		
	Date/Time On Line:	3/17/2014	4:05		
	Date/Time at 70nMW:	3/17/2014	16:43	Time AGC on	16:43
	Total Lost Time:		138.15 hr		
	Conditions Proceeding Outage	normal operation			
	Primary Cause of Outage	ID fan began exhibiting increased vibration on 2/27/14. Decision was made to remove unit from service to inspect fan. Repairs necessary took until 20:00 3/15/14.			
	Supporting Information	Observations, NDE inspections.			
PART 2	Corrective Actions	Fan was repaired.			
	Investigation Required	Fan manufacturer and boiler OEM are conducting a root cause analysis.			
	Problems/Delays				
	Actions taken to prevent reoccurrence	Further actions are pending result of RCA			
	Actions remaining to be taken and due date	14-13.1 Fan will be inspected carefully during future outages for reoccurrence of failure modes. - Complete, PM in CMMS			

Derate/ Outage Report		GREC			
		Report No. 14-14			
PART 1	Date	March 18, 2014		Type:	Forced
	Date/Time Off Line:	3/16/2014	16:45		
	Date/Time On Line:	3/17/2014	11:31		
	Date/Time at 70nMW:	3/17/2014	16:43	Time AGC on	16:43
	Total Lost Time:		17.20 hr		
Conditions Preceding Outage		Starting unit up after maintenance outage			
Primary Cause of Outage		Boiler controls tuning caused a rapid reduction in firing rate while transitioning from gas to solid fuel. Drum level dropped quickly, causing a MFT and subsequent turbine trip.			
Supporting Information		DCS historian, local observation.			
PART 2	Corrective Actions		Prior to next startup, we will modify boiler tuning to prevent rapid fuel swings when gas valve is open.		
	Investigation Required		None		
	Problems/Delays		Event occurred after cold start-up. Demineralized water tank was low. Decision made to delay restart until demineralized water tank was refilled to acceptable level.		
	Actions taken to prevent reoccurrence		Standing order issued to LCRO's explaining event and requiring boiler master in manual when transitioning from gas to solid fuel		
	Actions remaining to be taken and due date		14-1-1 Boiler tuning during next startup - determined no tuning needed 14-14.2 Develop simulator scenarios for fuel switching / casualties - in progress		

Derate/ Outage Report		GREC			Report No. 14-15	
PART 1	Date	April 4, 2014		Type:	Derate	
	Date/Time Off Line:	4/3/2014	18:12			
	Date/Time On Line:					
	Date/Time at 70nMW:	4/3/2014	19:38	Time AGC on	19:40	
	Total Lost Time:		1.43 hr			
Conditions Proceeding Outage		Recovering from loss of fuel feed on one side of boiler.				
Primary Cause of Outage		When reintroducing fuel into combustor from side that was out of service the bed temperature raised faster than FGR could compensate for. LCRO took action by reducing fuel feed and increased FGR flow setpoint. Excursion caused boiler pressure to drop low enough that TG load dropped.				
Supporting Information		DCS historian, local observation.				
PART 2	Corrective Actions		Once bed temperatures were stabilized load was returned to normal.			
	Investigation Required		None			
	Problems/Delays		None			
	Actions taken to prevent reoccurrence		Standing order issued to LCRO's explaining event and SOP developed to reintroduce fuel in stages to allow bed and air flow to stabilize between steps.			
	Actions remaining to be taken and due date		(see - 14-14.2 Develop simulator scenarios for fuel switching / casualties)			

Derate/ Outage Report		GREC			Report No. 14-16	
PART 1	Date	April 14, 2014		Type:	Derate	
	Date/Time Off Line:	4/14/2014	9:30			
	Date/Time On Line:					
	Date/Time at 70nMW:	4/14/2014	9:46	Time AGC on		
	Total Lost Time:		0.27 hr			
Conditions Proceeding Outage		Operating with one O2 sensor controlling boiler combustion air due to one sensor reading erratically. Fuel feed biased to #2 side while belt 10 down for maintenance.				
Primary Cause of Outage		O2 on #2 side dropped while biased to a greater percentage feed to that side. Combustion air was in single element control due to one probe's erratic readings. The flue gas was stratified enough that the controlling probe was reading a higher O2 from the unfed side of the boiler, and therefore not increasing airflow. When 2 of 3 probes read low, solid fuel tripped out and load reduced.				
Supporting Information		DCS historian, local observation.				
PART 2	Corrective Actions		Once O2 levels turned around, solid fuel was reintroduced and load was returned to normal.			
	Investigation Required		None			
	Problems/Delays		None			
	Actions taken to prevent reoccurrence		Completed repairs to O2 sensor and returned combustion air control to O2 averaging.			
	Actions remaining to be taken and due date		14-16.1 place spare O2 sensor in inventory - Complete			

Derate/ Outage Report		GREC		
		Report No. 14-17		
PART 1	Date	April 28, 2014		Type: Maintenance
	Date/Time Off Line:	4/23/2014	23:57	
	Date/Time On Line:	4/25/2014	23:18	
	Date/Time at 70nMW:	4/26/2014	1:58	Time AGC on
	Total Lost Time:		47.35 hr	
Conditions Proceeding Outage		Normal full power operation		
Primary Cause of Outage		Scheduled maintenance outage to repair Primary Air duct leak.		
Supporting Information		Local observation		
PART 2	Corrective Actions	Rewelded failed joints.		
	Investigation Required	None		
	Problems/Delays	None		
	Actions taken to prevent reoccurrence	None		
	Actions remaining to be taken and due date	None		

Derate/ Outage Report		GREC			Report No. 14-18	
PART 1	Date	May 14, 2014		Type:	Maintenance	
	Date/Time Off Line:	5/1/2014	1:21			
	Date/Time On Line:	5/14/2014	7:02			
	Date/Time at 70nMW:	5/14/2014	8:55	Time AGC on		
	Total Lost Time:		341.68 hrs			
	Conditions Preceding Outage	Normal Full Power Operation				
	Primary Cause of Outage	Detected Superheater tube leak in penthouse				
	Supporting Information	Visual and audible observation				
PART 2	Corrective Actions	NDE performed on header welds. Weld repairs performed on all tubes found to have cracks.				
	Investigation Required	Root cause to be performed by boiler manufacturer.				
	Problems/Delays	Three welds failed after PWHT. Required re welding and PWHT.				
	Actions taken to prevent reoccurrence	Annual NDE on affected SH header - PM in CMMS				
	Actions remaining to be taken and due date	14-18.1 evaluate root cause determination from manufacturer				

Derate/ Outage Report		GREC			Report No. 14-19	
PART 1	Date	May 16, 2014		Type:	Forced	
	Date/Time Off Line:	5/16/2014	18:18			
	Date/Time On Line:	5/16/2014	19:06			
	Date/Time at 70nMW:	4/26/2014	22:03	Time AGC on		
	Total Lost Time:		hr			
	Conditions Preceding Outage	Normal full power operation				
	Primary Cause of Outage	PA fan vibration sensor malfunction				
	Supporting Information	Local observation				
PART 2	Corrective Actions	Took sensor out of trip circuit, restarted unit.				
	Investigation Required	Review signals from all other similar sensors for same issue				
	Problems/Delays	None				
	Actions taken to prevent reoccurrence	Will review signals from all fan vibration sensors to see if there are any similar false signals				
	Actions remaining to be taken and due date	14-19.1 Vibration trips to be masked for all fans except ID fan. -Complete				

Derate/ Outage Report		GREC			
		Report No. 14-20			
PART 1	Date	May 27, 2014		Type:	Derate
	Date/Time Outage/Derate:	5/25/2014	10:47		
	Date/Time On Line:				
	Date/Time at 70nMW:	5/25/2014	11:04	Time AGC on	11:05
	Total Lost Time:		0.30 hrs		
Conditions Proceeding Outage/ Derate	Normal Full Power Operation				
Primary Cause of Outage/ Derate	Fuel feed system plug requiring load reduction from 70nMW to 63nMW.				
Supporting Information	Visual and DCS plug chute alarms.				
PART 2	Corrective Actions	Plugged conveyors were cleared and fuel feed system returned to normal.			
	Investigation Required	None			
	Problems/Delays	None			
	Actions taken to prevent reoccurrence				
	Actions remaining to be taken and due date	14-20.1 Investigate means to control fuel level on belt prior to pinch points. - in progress			

Derate/ Outage Report		GREC			Report No. 14-21	
PART 1	Date	May 28, 2014		Type:	Forced	
	Date/Time Outage/Derate:	5/27/2014	19:52			
	Date/Time On Line:	5/27/2014	20:05			
	Date/Time at 70nMW:					
	Total Lost Time:		0.22 hrs			
	Conditions Preceding Outage/ Derate	Troubleshooting I/O Rack faults / failures. Fault had caused a loss of control of DA level control valve.				
	Primary Cause of Outage/ Derate	While troubleshooting the incorrect I/O card was re-seated causing loss of control of ID Fan damper and trip on furnace pressure.				
	Supporting Information	DCS Historian.				
PART 2	Corrective Actions	Control of ID Fan damper regained immediately, Hot restart initiated. DA level control remained in manual.				
	Investigation Required	None				
	Problems/Delays	None				
	Actions taken to prevent reoccurrence	Reviewed verification procedures with ICE Techs. Post-job review and discussion of lessons learned.				
	Actions remaining to be taken and due date	14-21.1 Clearly label cards - in progress				

Derate/ Outage Report		GREC			
		Report No. 14-22			
PART 1	Date	May 28, 2014		Type:	Forced
	Date/Time Outage/Derate:	5/27/2014	20:21		
	Date/Time On Line:	5/28/2014	1:32		
	Date/Time at 70nMW:	5/28/2014	3:15	Time AGC on	3:30
	Total Lost Time:		6.90 hrs		
	Conditions Proceeding Outage/ Derate	Recovering from trip caused while troubleshooting I/O Rack faults.			
	Primary Cause of Outage/ Derate	While troubleshooting with continued loss of automatic DA level control, an I/O fault forced HP Bypass to shut causing a Low Drum Level Trip.			
	Supporting Information	DCS Historian.			
PART 2	Corrective Actions	Bottled up unit until troubleshooting complete. Faulty rack backplane was found which required plant to be off line to replace. Once replaced, unit restarted.			
	Investigation Required	None			
	Problems/Delays	None			
	Actions taken to prevent reoccurrence	None			
	Actions remaining to be taken and due date	To be detemined None			

Derate/ Outage Report		GREC			Report No. 14-23	
PART 1	Date	June 9, 2014		Type:	Forced	
	Date/Time Outage/Derate:	6/5/2014	22:57			
	Date/Time On Line:	6/6/2014	9:46			
	Date/Time at 70nMW:	6/6/2014	11:16	Time AGC on	11:35	
	Total Lost Time:		10.82 hrs			
Conditions Proceeding Outage/ Derate	Normal full power operations					
Primary Cause of Outage/ Derate	FGR inlet damper failure caused FGR Fan to trip. Bed temperature rapidly increased and operator took actions to reduce load quickly. As steam pressure dropped Generator tripped on loss of condenser vacuum.					
Supporting Information	DCS historian					
PART 2	Corrective Actions	FGR damper repaired and unit brought back on line.				
	Investigation Required	Investigating cause of blown fuse on FGR inlet damper.				
	Problems/Delays	Had difficulty drawing condenser vacuum. Found SJAE condenser steam traps improperly installed, and warm-up line drains not cycling.				
	Actions taken to prevent reoccurrence					
	Actions remaining to be taken and due date	14-23.1 Check calibration of instruments used to control warm-up drains/ condensate traps. -Complete 14-23.2 Determine / correct cause of blown fuse Investigation continues 14-23.3 Investigate possibility of damper bypass to manual control parts on order 14-23.4 Re-plumb SJAE traps next outage -Complete				

Derate/ Outage Report		GREC			
		Report No. 14-24			
PART 1	Date	June 9, 2014		Type:	Forced
	Date/Time Outage/Derate:	6/6/2014	16:42		
	Date/Time On Line:	6/7/2014	9:00		
	Date/Time at 70nMW:	6/7/2014	11:05	Time AGC on	12:22
	Total Lost Time:		16.30 hrs		
	Conditions Proceeding Outage/ Derate	Returning to full load after a forced outage			
	Primary Cause of Outage/ Derate	Continuing vacuum problems caused plant upsets and swings. When vacuum issue caused generator to back down, fuel feed was rapidly lowered by operator and low fluidizing air flow triggered an MFT.			
	Supporting Information	DCS Historian and trends			
PART 2	Corrective Actions	Vacuum leak found and isolated			
	Investigation Required				
	Problems/Delays	GRU System Control would not allow GREC to return on line until 09:00 6/7/14			
	Actions taken to prevent reoccurrence	Vacuum leak isolated			
	Actions remaining to be taken and due date	14-24.1 Repair Hogging Ejector suction valve - Planned for Octobe outage			

Derate/ Outage Report		GREC			Report No. 14-25	
PART 1	Date	June 23, 2014		Type:	Forced	
	Date/Time Outage/Derate:	6/17/2014	10:25			
	Date/Time On Line:	6/22/2014	0:59			
	Date/Time at 70nMW:	6/22/2014	3:34	Time AGC on	4:06	
	Total Lost Time:		110.57 hrs			
Conditions Proceeding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Steam turbine control valve actuator developed an oil leak.					
Supporting Information	Visual Observation					
PART 2	Corrective Actions	Unit shutdown, cooled down and actuator rebuilt				
	Investigation Required	Siemens engineering investigating				
	Problems/Delays					
	Actions taken to prevent reoccurrence					
	Actions remaining to be taken and due date	14-25.1 Siemens Engineering investigating cause and solution. Complete- Replaced O-Rings. One O-Ring appeared to be wrong material.				

Derate/ Outage Report		GREC			Report No. 14-26	
PART 1	Date	June 26, 2014		Type:	Forced	
	Date/Time Outage/Derate:	6/25/2014	13:21			
	Date/Time On Line:	6/25/2014	13:37			
	Date/Time at 70nMW:			Time AGC on		
	Total Lost Time:		0.27 hrs			
	Conditions Proceeding Outage/ Derate	Normal operation				
	Primary Cause of Outage/ Derate	ICE Technician opened door to the secondary Air Fan VFD control cabinet, which has a safety trip circuit that activates when opened. Loss of SA fan resulted in MFT and loss of generator.				
	Supporting Information	First person report.				
PART 2	Corrective Actions	Door was shut, breaker reset, and fans restarted.				
	Investigation Required	None				
	Problems/Delays	None				
	Actions taken to prevent reoccurrence	Discussion and training with employees on observing, reading and obeying safety labeling prior to taking action.				
	Actions remaining to be taken and due date					

Derate/ Outage Report		GREC			
		Report No. 14-27			
PART 1	Date	June 26, 2014		Type:	Forced
	Date/Time Outage/Derate:	6/25/2014	13:44		
	Date/Time On Line:	6/25/2014	13:50		
	Date/Time at 70nMW:	6/25/2014	15:28	Time AGC on	15:29
	Total Lost Grid Time:		0.10 hrs		
	Conditions Proceeding Outage/ Derate	Recovering from forced outage, solid fuel firing and generator synchronized, ramping up load.			
	Primary Cause of Outage/ Derate	STG inlet temperature gradient deviation trip. Main steam temperature adversely affected by leaking #3 attemperator.			
	Supporting Information	TCS/DCS historian			
PART 2	Corrective Actions	Reset and re-synced generator.			
	Investigation Required	Complete			
	Problems/Delays	Leaking attemperator caused a delay by reducing steam temperature.			
	Actions taken to prevent reoccurrence				
	Actions remaining to be taken and due date	14-27 Repair leaking attemperator next outage (6/29/14) Complete			

Derate/ Outage Report		GREC			Report No. 14-28		
PART 1	Date	June 30, 2014		Type:	Forced		
	Date/Time Derate(or <70nMW):	6/29/2014	6:01				
	Date/Time Outage(Gen. Brkr open):	6/29/2014	6:48				
	Date/Time On Line:	6/29/2014	22:30				
	Date/Time at 70nMW:	6/30/2014	0:31	Time AGC on	0:31		
	Total Lost Grid Time:		15.70 hrs				
	Time < 70nMW		18.5 hrs				
	Conditions Preceding Outage/ Derate	Normal operation with STG control valve actuator leaking oil.					
	Primary Cause of Outage/ Derate	STG control valve leaking oil.					
Supporting Information	Visual observation						
PART 2	Corrective Actions	Shutdown and rebuilt actuator with new O-Rings					
	Investigation Required	None					
	Problems/Delays	None					
	Actions taken to prevent reoccurrence	Close observation on regular operator rounds.					
	Actions remaining to be taken and due date	None					

Derate/ Outage Report		GREC			Report No. 14-29		
PART 1	Date	July 14, 2014			Type:	Derate	
	Date/Time Outage/Derate:	7/11/2014	13:19		Time <70nMW	13:34	
	Date/Time On Line:	7/11/2014					
	Date/Time at 70nMW:	7/11/2014	15:07	hrs.	Time AGC on	15:07	
	Total Lost Grid Time:		0.00	hrs.			
	Total <70nMW		1.55	hrs.			
	Conditions Preceding Outage/ Derate	Normal Full power operation					
Primary Cause of Outage/ Derate	Fuel plug at conveyor 9 resulting in loss of fuel feed to bins.						
Supporting Information	Plug chute trip, visual observation.						
PART 2	Corrective Actions	Conveyor LOTO'd, 13:19 reduced load to 50nMW. Gas burners used to supplement solid fuel. 13:40 reduced to 40nMW. ~14:15 plug cleared.					
	Investigation Required	RCA on causes of plugs.					
	Problems/Delays	At 14:17 told System Control ready to ramp up in 15 min. Told to wait until top of hour. 14:51 Sys. Control told GREC to come to 70nMW.					
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	14-29.1 Complete RCA on causes of plugging. Belt plows removed. Continue to monitor.					

Derate/ Outage Report		GREC			Report No. 14-30		
PART 1	Date	July 16, 2014		Type:	Derate		
	Date/Time Outage/Derate:	7/15/2014		Time <70nMW	5:03		
	Date/Time On Line:						
	Date/Time at 70nMW:	7/15/2014	5:16	Time AGC on			
	Total Lost Grid Time:		0.00 hrs.				
	Total <70nMW		0.22 hrs.				
	Conditions Preceding Outage/ Derate	Running at 70nMW while #2 side fuel feed screw #2 jammed.					
Primary Cause of Outage/ Derate	#2 fuel metering bin gave false normal level indication causing two volumetric feed screws to run empty. Loss of fuel feed resulted loss of boiler pressure and reduction in generator load.						
Supporting Information	DCS Historian						
PART 2	Corrective Actions	Loss of fuel feed was compensated for on side #1. Boiler Master taken to manual, Generator to internal control.					
	Investigation Required	None					
	Problems/Delays	None					
	Actions taken to prevent reoccurrence	SOP developed to bias fuel feed and monitor metering bin locally.					
	Actions remaining to be taken and due date	None					

Derate/ Outage Report		GREC			Report No. 14-31		
PART 1	Date	July 16, 2014		Type:	Derate		
	Date/Time Outage/Derate:	7/15/2014		Time <70nMW	8:12		
	Date/Time On Line:						
	Date/Time at 70nMW:	7/15/2014	9:38	Time AGC on			
	Total Lost Grid Time:		0.00 hrs.				
	Total <70nMW		1.43 hrs.				
	Conditions Preceding Outage/ Derate	Feeding on #1 side of boiler while making repairs to #2 side.					
Primary Cause of Outage/ Derate	Loss of drag chain fuel feed on #1 resulting in loss of all fuel. #1 drag chain failed to manual 0% feed.						
Supporting Information	DCS historian.						
PART 2	Corrective Actions	Attempted to return #1 drag chain to automatic before taking manual control. After stabilizing from upset returned to 70nMW.					
	Investigation Required	On going					
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	Test/troubleshoot during October outage					

Derate/ Outage Report		GREC			Report No. 14-32		
PART 1	Date	July 16, 2014		Type:	Forced		
	Date/Time Outage/Derate:	7/15/2014	11:14	Time <70nMW			
	Date/Time On Line:	7/15/2014	12:07				
	Date/Time at 70nMW:	7/15/2014		Time AGC on			
	Total Lost Grid Time:		0.88 hrs.				
	Total <70nMW		0.88 hrs.				
	Conditions Preceding Outage/ Derate	Running at 70nMW recovering from single side boiler feed.					
Primary Cause of Outage/ Derate	PA Fan thermal overload - relay trip, caused by higher than normal PA flow while feeding single side.						
Supporting Information	DCS historian. Relay historian.						
PART 2	Corrective Actions	Relay reset, fan restarted, plant start-up.					
	Investigation Required	None					
	Problems/Delays	None					
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	14-32.1 provide a PA fan overload alarm to come in prior to reaching trip point. October Outage.					

Derate/ Outage Report		GREC			Report No. 14-33		
PART 1	Date	July 16, 2014		Type:	Forced		
	Date/Time Outage/Derate:	7/15/2014	12:11	Time <70nMW			
	Date/Time On Line:	7/15/2014	13:13				
	Date/Time at 70nMW:	7/15/2014	14:37	Time AGC on	14:39		
	Total Lost Grid Time:		1.03 hrs.				
	Total <70nMW		14.62 hrs.				
	Conditions Preceding Outage/ Derate	Performing hot restart after trip.					
Primary Cause of Outage/ Derate	STG inlet temperature gradient trip.						
Supporting Information	DCS / TCS						
PART 2	Corrective Actions	Restart STG roll-up					
	Investigation Required	None					
	Problems/Delays	Second trip caused enough of a delay that vacuum decayed requiring Hogger to be lined up manually (14-24.1)					
	Actions taken to prevent reoccurrence	SOP developed on hot restart- after roll-up do not synchronize generator until steam inlet temperature has stabilized.					
	Actions remaining to be taken and due date	None					

Derate/ Outage Report		GREC			Report No. 14-34		
PART 1	Date	July 28, 2014		Type:	Forced		
	Date/Time Outage/Derate:	7/27/2014	14:23	Time <70nMW	13:41		
	Date/Time On Line:	7/28/2014	19:29				
	Date/Time at 70nMW:	7/28/2014	21:16	Time AGC on	21:17		
	Total Lost Grid Time:		29.10 hrs.				
	Total <70nMW		31.57 hrs.				
	Conditions Preceding Outage/ Derate	Normal operation					
Primary Cause of Outage/ Derate	ZDS Brine Concentrator Vapor Compressor drive failure. Phase module found to have failed.						
Supporting Information	Breaker trip, ICE trouble shooting with support from manufacturer.						
PART 2	Corrective Actions	Phase module ordered and express delivered to site.					
	Investigation Required						
	Problems/Delays	Module had to be located and express delivered on a Sunday. Arrived early afternoon Monday.					
	Actions taken to prevent reoccurrence	Additional phase module ordered and will be inventory item.					
	Actions remaining to be taken and due date	None, modules in inventory.					

Derate/ Outage Report		GREC			Report No. 14-35		
PART 1	Date	August 1, 2014		Type:	Forced		
	Date/Time Outage/Derate:	7/30/2014	15:58	Time <70nMW	15:12		
	Date/Time On Line:	7/30/2014	17:47				
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		1.82 hrs.				
	Total <70nMW		8.80 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Hydraulic oil leak at STG ESV actuator supply line fitting.						
Supporting Information	Visual observation						
PART 2	Corrective Actions	Generator and hydraulic system secured, leak repairs performed.					
	Investigation Required	None					
	Problems/Delays	None					
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	None					

Derate/ Outage Report		GREC			Report No. 14-36		
PART 1	Date	August 1, 2014		Type:	Forced		
	Date/Time Outage/Derate:	7/30/2014	19:47	Time <70nMW			
	Date/Time On Line:	7/31/2014	0:59				
	Date/Time at 70nMW:	8/1/2014	2:55	Time AGC on	2:56		
	Total Lost Grid Time:		5.20 hrs.				
	Total <70nMW		50.90 hrs.				
	Conditions Preceding Outage/ Derate	Holding load at 10 nMW for previous two hours at GRU Sys. Control direction					
Primary Cause of Outage/ Derate	Condenser instability at minimum load resulted in high condenser level trip.						
Supporting Information	DCS / TCS historians						
PART 2	Corrective Actions	Reset and prepared to come back on line					
	Investigation Required	None					
	Problems/Delays	GRU Sys. Control directed GREC to stay off line until at least 00:00. While bottling up the boiler to preserve system temperature and pressure, Economizer supply block valve failed at 30%. Troubleshooting & temporary repairs required depressurizing and draining economizer and boiler.					
	Actions taken to prevent reoccurrence						
Actions remaining to be taken and due date	14-36.1 Reinstall rebuilt actuator in October outage.						

Derate/ Outage Report		GREC			Report No. 14-37		
PART 1	Date	September 3, 2014		Type:	FORCED		
	Date/Time Outage/Derate:	9/2/2014	12:59	Time <70nMW	12:59		
	Date/Time On Line:	9/2/2014	13:52				
	Date/Time at 70nMW:	9/2/2014	15:39	Time AGC on	15:40		
	Total Lost Grid Time:		0.88 hrs.				
	Total <70nMW		2.65 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Generator Control Valve position fault						
Supporting Information	STG HMI alarm logs						
PART 2	Corrective Actions						
	Investigation Required	Yes. Contacted manufacturer to assist in investigation.					
	Problems/Delays	NONE					
	Actions taken to prevent reoccurrence	TBD					
	Actions remaining to be taken and due date	TBD-Siemens to investigat during October outage.					

Derate/ Outage Report		GREC			Report No. 14-38		
PART 1	Date	September 5, 2014		Type:	DERATE		
	Date/Time Outage/Derate:	9/5/2014		Time <70nMW	11:36		
	Date/Time On Line:						
	Date/Time at 70nMW:	9/5/2014	13:04	Time AGC on	13:04		
	Total Lost Grid Time:		0.00 hrs.				
	Total <70nMW		1.45 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Plug on Boiler feed conveyor #9. Derated to 30nMW due to lowering bin levels.						
Supporting Information	Visual observation						
PART 2	Corrective Actions	Cleared plug & removed plows.					
	Investigation Required	NONE					
	Problems/Delays	NONE					
	Actions taken to prevent reoccurrence	Belt plows removed					
	Actions remaining to be taken and due date	NONE					

Derate/ Outage Report		GREC			Report No. 14-39A		
PART 1	Date	October 22, 2014		Type:	MAINTENANCE		
	Date/Time Outage/Derate:	10/4/2014	0:00	Time <70nMW	22:37		
	Date/Time On Line:						
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		335.98 hrs.				
	Total <70nMW		336.33 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Scheduled maintenance outage						
Supporting Information							
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays	Abnormal noise heard in Turbine Control Valve operation. Forced outage commenced at 10/17/14 23:59.					
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 14-40		
PART 1	Date	October 22, 2014		Type:	MAINTENANCE		
	Date/Time Outage/Derate:	10/17/2014	23:59	Time <70nMW	23:59		
	Date/Time On Line:	10/19/2014	20:59				
	Date/Time at 70nMW:	10/19/2014	23:15	Time AGC on	23:12		
	Total Lost Grid Time:		45.00 hrs.				
	Total <70nMW		47.25 hrs.				
	Conditions Preceding Outage/ Derate	Returning from Maintenance outage					
Primary Cause of Outage/ Derate	Abnormal noise heard in Turbine Control Valve operation while rolling TG.						
Supporting Information	Local observation. Found packing rolled and valve guide rod bent.						
PART 2	Corrective Actions	Straightened valve guide and replaced packing.					
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	14-39.1 Replace guide rod and re-pack April 2015 outage.					