

Derate/ Outage Report		GREC			Report No. 15-01		
PART 1	Date	January 9, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	1/8/2015	23:18	Time <70nMW	23:18		
	Date/Time On Line:	1/8/2015	23:39				
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		0.35 hrs.				
	Total <70nMW		0.35 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Condenser level indication deviation Turbine trip caused by erratic readings on two of three channels.						
Supporting Information	DCS & Turbine Control System historians						
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	15-01.1 Blow down level transmitters and trouble shoot. COMPLETED 1/12/15					

Derate/ Outage Report		GREC			Report No. 15-02		
PART 1	Date	January 9, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	1/8/2015	23:42	Time <70nMW	23:42		
	Date/Time On Line:	1/9/2015	0:48				
	Date/Time at 70nMW:	1/9/2015	2:00	Time AGC on	2:00		
	Total Lost Grid Time:		1.10 hrs.				
	Total <70nMW		2.28 hrs.				
	Conditions Preceding Outage/ Derate	Returning from recent TG trip - Hot Restart, at 7nMW.					
Primary Cause of Outage/ Derate	TG Low steam inlet temperature trip. #2 Attemperator flow issues.						
Supporting Information	DCS Historian.						
PART 2	Corrective Actions	Isolated Attemperator.					
	Investigation Required	Yes, see below.					
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	15-2.1 Open and inspect #2 Attemperator. COMPLETED DURING MAINTENANCE OUTAGE 1/14/15					

Derate/ Outage Report		GREC			Report No. 15-03		
PART 1	Date	January 13, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	1/11/2015	22:16	Time <70nMW	22:16		
	Date/Time On Line:	1/11/2015	22:36				
	Date/Time at 70nMW:	1/12/2015	0:44	Time AGC on	0:44		
	Total Lost Grid Time:		0.33 hrs.				
	Total <70nMW		2.45 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Sporadic Condenser hotwell level control fault resulted in turbine trip						
Supporting Information	DCS / TCS historians						
PART 2	Corrective Actions	Performed hot restart while investigating fault.					
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	SEE REPORT 15-04					

Derate/ Outage Report		GREC			Report No. 15-04		
PART 1	Date	January 13, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	1/12/2015	1:43	Time <70nMW	1:43		
	Date/Time On Line:	1/12/2015	8:55				
	Date/Time at 70nMW:	1/12/2015	11:01	Time AGC on	11:02		
	Total Lost Grid Time:		7.20 hrs.				
	Total <70nMW		9.28 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation following a return from a hot restart.					
Primary Cause of Outage/ Derate	Sporadic Condenser hotwell level control fault resulted in turbine trip.						
Supporting Information	DCS/TCS historians						
PART 2	Corrective Actions	Investigation found root cause of fault, addressed and corrected.					
	Investigation Required	None					
	Problems/Delays						
	Actions taken to prevent reoccurrence	Cause of fault identified and corrected. Vibration @ transmitter electronically snubbed.					
	Actions remaining to be taken and due date	Mechanical vibration dampeners to be installed next outage. COMPLETED 1/14/15 OUTAGE.					

Derate/ Outage Report		GREC			Report No. 15-05		
PART 1	Date	January 20, 2015		Type:	MAINTENANCE		
	Date/Time Outage/Derate:	1/14/2015	23:59	Time <70nMW	22:51		
	Date/Time On Line:	1/20/2015	14:29				
	Date/Time at 70nMW:	1/20/2015	17:19	Time AGC on	17:19		
	Total Lost Grid Time:		134.50 hrs.				
	Total <70nMW		138.45 hrs.				
	Conditions Preceding Outage/ Derate	Full power operation. Indications of a steam leak in superheater.					
Primary Cause of Outage/ Derate	Shutdown to open and inspect penthouse to find location of steam leak.						
Supporting Information	Local observation.						
PART 2	Corrective Actions	Repaired leak.					
	Investigation Required	None					
	Problems/Delays	None					
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-06	
PART 1	Date	April 2, 2015		Type:	Forced	
	Date/Time Outage/Derate:	4/1/2015	19:05	Time <70nMW	19:05	
	Date/Time On Line:	4/1/2015	19:54			
	Date/Time at 70nMW:	4/1/2015	22:25	Time AGC on	22:25	
	Total Lost Grid Time:		0.82 hrs.			
	Total <70nMW		3.32 hrs.			
	Conditions Preceding Outage/ Derate	Normal full power operation				
Primary Cause of Outage/ Derate	Steam Turbine control valve deviation caused turbine upset and trip.					
Supporting Information	DCS historian, Turbine Control System historian.					
PART 2	Corrective Actions	Recovered and resynchronized TG				
	Investigation Required	On going				
	Problems/Delays					
	Actions taken to prevent reoccurrence					
	Actions remaining to be taken and due date	15-06.1 Siemens TFA to assist in troubleshooting Control Valve ASAP- Field service eng. Arrived April 4. By process of elimination concluded we have a loose or poor electrical connection in control valve wiring. We will troubleshoot further in the next outage.				

Derate/ Outage Report		GREC			Report No. 15-07		
PART 1	Date	April 17, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	4/16/2015	19:10	Time <70nMW	19:10		
	Date/Time On Line:	4/16/2015	20:51				
	Date/Time at 70nMW:	4/16/2015	22:07	Time AGC on	23:52		
	Total Lost Grid Time:		1.68 hrs.				
	Total <70nMW		2.93 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operation					
Primary Cause of Outage/ Derate	Steam Turbine control valve deviation caused turbine upset and trip.						
Supporting Information	DCS historian, Turbine Control System historian.						
PART 2	Corrective Actions	Found loose cable connection at control valve. Connector has stripped threads. Taped connector to help stabilize. Recovered and resynchronized TG					
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date	15-07.1 replace faulty cable in April outage					

Derate/ Outage Report		GREC				
		Report No.		15-08		
PART 1	Date	April 18, 2015		Type:	FORCED	
	Date/Time Outage/Derate:	4/17/2015	18:43	Time <70nMW		
	Outage Date/Time (available for) On Line:	4/17/2015	20:46	Forced Outage over. Available for restart.		
	Date/Time at (available for) 70nMW:	4/18/2015	1:46	Time AGC on (available for 102.5 nMW)	1:46	
	Total Lost Grid Time:		2.05 hrs.			
	Total <70nMW		7.05 hrs.			
	Conditions Preceding Outage/ Derate	Normal full power operation.				
Primary Cause of Outage/ Derate	Steam Turbine control valve deviation caused turbine upset and trip. Transducer giving false signal to turbine control system.					
Supporting Information	DCS historian, Turbine Control System historian.					
PART 2	Corrective Actions	Faulty signal stayed active allowing for identification of bad component. Replaced connector and signal returned to normal. Boiler kept in hot stby. ready for roll and re-sync of generator.				
	Investigation Required	none				
	Problems/Delays	At 19:55 System Control Center called GREC and informed us to stay off line.				
	Actions taken to prevent reoccurrence					
	Actions remaining to be taken and due date					

Derate/ Outage Report		GREC			Report No. 15-09		
PART 1	Date	April 18, 2015		Type:	RESERVE SHUTDOWN		
	Date/Time Outage/Derate:	4/17/2015	20:46	Time <70nMW			
	Date/Time On-Line:	4/24/2015	23:00	GREC Planned Outage began			
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		170.23 hrs.				
	Total <70nMW		hrs.				
	Conditions Preceding Outage/ Derate	Completed repairs that caused a Forced Outage.					
Primary Cause of Outage/ Derate	Instructions from GRU System Control Center to remain off line through outage (outage start time 4/24/15 23:00)						
Supporting Information	IAM,						
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-10		
PART 1	Date	May 11, 2015		Type:	PLANNED OUTAGE		
	Date/Time Outage/Derate:	4/24/2015	23:00	Time <70nMW			
	Date/Time On Line:	5/8/2015	23:26				
	Date/Time at 70nMW:	5/9/2015	1:15	Time AGC on	1:19		
	Total Lost Grid Time:		336.43 hrs.				
	Total <70nMW		338.25 hrs.				
	Conditions Preceding Outage/ Derate	Plant in reserve shutdown					
Primary Cause of Outage/ Derate	Annual Planned Outage for maintenance						
Supporting Information							
PART 2	Corrective Actions	None					
	Investigation Required	None					
	Problems/Delays	None					
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-11		
PART 1	Date	June 8, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	6/6/2015	17:06	Time <70nMW	17:06		
	Date/Time On Line / Force Outage over:	6/7/2015	0:14				
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		7.13 hrs.				
	Total <70nMW		hrs.				
	Conditions Preceding Outage/ Derate	Normal operation and availability					
Primary Cause of Outage/ Derate	Condenser controls-3150- Valvel control fault						
Supporting Information	DCS						
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC		
		Report No. 15-12		
PART 1	Date	June 8, 2015		Type: RESERVE SHUTDOWN
	Date/Time Outage/Derate:	6/7/2015	0:14	Time <70nMW
	Date/Time Available On Line:	6/7/2015	8:00	
	Date/Time at 70nMW:			Time AGC on
	Total Lost Grid Time:		7.77 hrs.	
	Total <70nMW		hrs.	
	Conditions Preceding Outage/ Derate	Recovered from Forced Outage		
Primary Cause of Outage/ Derate	After GREC requested to come back on line, GRU SCC dispatched GREC to a Reserve Shutdown status until 08:00.			
Supporting Information	LCRO logs, IAM			
PART 2	Corrective Actions			
	Investigation Required			
	Problems/Delays			
	Actions taken to prevent reoccurrence			
	Actions remaining to be taken and due date			

Derate/ Outage Report		GREC			Report No. 15-13		
PART 1	Date	June 8, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	6/7/2015	8:00	Time <70nMW			
	Date/Time On Line:	6/7/2015	16:53				
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		8.88 hrs.				
	Total <70nMW		hrs.				
	Conditions Preceding Outage/ Derate	In Reserve Shutdown Status					
Primary Cause of Outage/ Derate	Light-off Burners - 0380- Burner start-up faults						
Supporting Information							
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-14		
PART 1	Date	June 14, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	6/7/2015	16:56	Time <70nMW	16:56		
	Date/Time On Line:	6/7/2015	22:18				
	Date/Time at 70nMW:	6/8/2015	0:04	Time AGC on			
	Total Lost Grid Time:		5.37 hrs.				
	Total <70nMW		7.12 hrs.				
	Conditions Preceding Outage/ Derate	Re-start after Forced Outage					
Primary Cause of Outage/ Derate	Feed Water- HP heater tube leak						
Supporting Information	DCS						
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-15		
PART 1	Date	August 10, 2015		Type:	FORCED		
	Date/Time Outage/Derate:	8/7/2015	20:00	Time <70nMW	20:00		
	Date/Time placed on reserve Shutdown:	8/7/2015	20:42				
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		0.70 hrs.				
	Total <70nMW		0.70 hrs.				
	Conditions Preceding Outage/ Derate	Normal full power operations. Strong thunderstorm in area					
Primary Cause of Outage/ Derate	Loss of feedwater flow causing drum level trip.						
Supporting Information	DCS Historian						
PART 2	Corrective Actions	Restored Feedwater flow					
	Investigation Required						
	Problems/Delays	At 20:09 GRU SCC told GREC not to come back on line.					
	Actions taken to prevent reoccurrence						
Actions remaining to be taken and due date							

Derate/ Outage Report		GREC			Report No. 15--16		
PART 1	Date	August 25, 2015		Type:	Reserve Shutdown		
	Date/Time Outage/Derate:	8/7/2015	20:42	Time <70nMW			
	Date/Time Reserve shutdown end:	8/25/2015	7:00				
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		418.30 hrs.				
	Total <70nMW		418.30 hrs.				
	Conditions Preceding Outage/ Derate	Recovered from Forced Outage and rolled up turbine generator to synchronous speed.					
Primary Cause of Outage/ Derate	As per GRU SCC request						
Supporting Information	IAM						
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-17		
PART 1	Date	August 25, 2015		Type:	Maintenance Outage		
	Date/Time Outage/Derate:	8/25/2015	7:00	Time <70nMW	7:00		
	Date/Time On Line:	8/28/2015	6:28				
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		71.47 hrs.				
	Total <70nMW		71.47 hrs.				
	Conditions Preceding Outage/ Derate	In Reserve Shutdown with HP2 isolated and bypassed.					
Primary Cause of Outage/ Derate	Perform maintenance on High Pressure heater.						
Supporting Information							
PART 2	Corrective Actions	Heater tubes plugged and heater integrity restored.					
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-18		
PART 1	Date	August 28, 2015		Type:	Reserve Shutdown		
	Date/Time Outage/Derate:	8/28/2015	6:28	Time <70nMW			
	Date/Time On Line:	9/20/2015	7:43				
	Date/Time at 70nMW:	9/20/2015	15:25	Time AGC on			
	Total Lost Grid Time:		553.25 hrs.				
	Total <70nMW		567.40 hrs.				
	Conditions Preceding Outage/ Derate	Maintenance Outage to work on HP2					
Primary Cause of Outage/ Derate	Restored HP2 integrity and returned plant to Reserve Shutdown status with HP2 isolated and bypassed and plant in standby available for 102.5 nMW.						
Supporting Information							
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-19		
PART 1	Date	September 23, 2015		Type: Reserve Shutdown			
	Date/Time Outage/Derate:	9/21/2015	10:30	Time <70nMW 9:37			
	Date/Time On Line:	11/4/2015	16:26				
	Date/Time at 70nMW:	11/4/2015	19:50	Time AGC on 19:50			
	Total Lost Grid Time:		1,061.93 hrs.				
	Total <70nMW		1,066.20 hrs.				
	Conditions Preceding Outage/ Derate	Operating at full load.					
Primary Cause of Outage/ Derate	GRU SCC dispatched GREC off to Reserve Shutdown						
Supporting Information	IAM						
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						

Derate/ Outage Report		GREC			Report No. 15-20		
PART 1	Date	November 12, 2015		Type:	Reserve Shutdown		
	Date/Time Outage/Derate:	11/12/2015	1:52	Time <70nMW	1:10		
	Date/Time On Line:						
	Date/Time at 70nMW:			Time AGC on			
	Total Lost Grid Time:		hrs.				
	Total <70nMW		hrs.				
	Conditions Preceding Outage/ Derate	Operating at full load.					
Primary Cause of Outage/ Derate	GRU SCC dispatched GREC off to Reserve Shutdown						
Supporting Information	IAM						
PART 2	Corrective Actions						
	Investigation Required						
	Problems/Delays						
	Actions taken to prevent reoccurrence						
	Actions remaining to be taken and due date						