

Facility: <u>Perry U1</u>		Scenario No.: <u>1</u>		Op-Test No.: <u>2004-01</u>	
Examiners: <u>D. McNeil (D. Reeser - Cert)</u>		Operators: _____			
<u>M. Bielby</u>		_____			
<u>C. Phillips</u>		_____			
Initial Conditions: <u>Mode 2, Reactor Critical at the POAH, Hot reactor startup in progress (approx. 470°F and 500 psig), a RFPT is in service on low flow control. MFP tagged out of service.</u>					
Turnover: <u>Reactor startup is progress; reactor is critical at the point of adding heat. Temp ~470 degrees F Rx pressure ~500 psig. Planned activities include continued heat-up and entry to Mode 1 per IOI-0002 (section 4.6)</u>					
Event No.	Malf. No.	Event Type*	Event Description		
1	None	R _(RO/SRO)	Establish and maintain Heat-up rate.		
2	CV03 (F024B)	C _(BOP/SRO)	RHR Pump B Low Discharge Pressure Condition (Tech Spec)		
3	None	N _(BOP/SRO)	Shift RFPT to Startup Level Controller		
4	CU02, MVO6 on G33F053	C _(RO/SRO)	Small isolable RWCU leak; Containment Isolation valve fails to fully close. (Tech Spec)		
5	TC04	C _(RO/BOP/SRO)	Short-circuit in Bypass Valve Jack control circuit results in depressurization above reactor capacity resulting in excessive cooldown. Reduce steam loss, shutdown the reactor and isolate MSIVs. (SCRAM & Activities to minimize cooldown)		
6	RD15	C _(RO/SRO)	Several control rods fail to insert, shutdown criteria not met but reactor is sub-critical.		
7	RD13	C _(BOP/SRO)	CRD Pump Suction Filter clogs and CRD pump trips preventing recharge of scram accumulators. (Restores CRD after bypassing filters)		
8	PC04	M	Security calls to report a bomb threat. Explosion in RHR C Pump Room. SP Leak.		

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 1 Page 1 of 1Event Description: Establish and maintain plant heat-up rate.

Time	Position	Applicant's Actions or Behavior
	SRO	Short brief on continuing heat-up with emphasis on Control Rod Movement (FTI-B0002). Reviews IOI-2 for upcoming activities.
	RO	Reviews FTI-B002 and SOI-C11(RCIS) in preparation for control rod movement. Establishes and maintains desired heat-up rate (# 100°F) <ul style="list-style-type: none"> ■ Withdraws control rods <ul style="list-style-type: none"> ■ Selects INDIVID DRIVE or GANG DRIVE mode as appropriate ■ Selects the appropriate control rod(s) in accordance with the Control Rod Movement Sheet (FTI-B0002-1) ■ Withdraws selected control rod(s) to the specified pos ■ Adjusts Press Set as necessary to maintain BPV-1 20-80% open.
	BOP	Monitors plant parameters.

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 2 Page 1 of 1Event Description: RHR Pump B Low Discharge Pressure Condition

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Acknowledges announcement of RHR PUMP B DISCHARGE PRESSURE HI/LO alarm.</p> <p>Refers to TS 3.5.1, ECCS – Operating.</p> <ul style="list-style-type: none"> ■ Declares RHR B INOPERABLE. ■ Enters Action A – Restore to OPERABLE status within 7 days. <p>Initiates maintenance request to restore RHR B to OPERABLE status.</p>
	RO	Continues heat-up and monitors plant parameters.
	BOP	<p>Announces receipt of RHR PUMP B DISCHARGE PRESSURE HI/LO alarm.</p> <p>Refers to ARI-H13-P601-0017-F3</p> <ul style="list-style-type: none"> ■ Dispatches PO to check operation of RHR B&C Water Leg Pump ■ Determines that alarm is due to low pressure ■ Refers to SOI-E12 to initiate one or more of the following: <ul style="list-style-type: none"> ■ Alternate Keep Fill ■ RHR B High Point Vent ■ RHR B Fill and Vent

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 3 Page 1 of 1Event Description: Shift RFPT to Startup Level Controller

Time	Position	Applicant's Actions or Behavior
	SRO	Directs BOP to shift RFPT to Startup Level Controller in accordance with SOI-C34.
	RO	Monitors plant parameters.
	BOP	<p>Shifts RFPT to Startup Level Controller in accordance with section 4.5 of SOI-C34.</p> <ul style="list-style-type: none"> ! Verifies inservice RFPT is on MANUAL SPEED CONTROL DIAL and operation at > 4000 rpm. ! Verifies RFP A, B, and C FLOW CONTROL and STARTUP RX LEVEL CONTROL are in manual. ! Selects inservice RFPT with STARTUP FDW PUMP SELECT ! Adjusts STARTUP RX LEVEL CONTROL output to zero the RFP DEV METER. ! Places the inservice RFPT GOV MODE CONT to AUTO ! Adjusts STARTUP RX LEVEL CONTROL tape-set to null deviation ! PLACE the LOW FLOW RX LEVEL CONTROL in MANUAL. ! PLACE the STARTUP RX LEVEL CONTROL in AUTO. ! ADJUST the STARTUP RX LEVEL CONTROL tapeset to desired level. Normally at 196". ! MAINTAINS level constant, WHILE throttling open the Low Flow Rx Level Control Valve. ! JOGS OPEN FW Heater 6A&B Outlet Valves ! CLOSES the LOW FLOW CONTROL VALVE, 1N27-F175.

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 4 Page 1 of 2

Event Description: Small isolable RWCU leak; Containment Isolation valve (G33-F053) fails to fully close.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Acknowledges announcement of RWCU AREAS LD TEMP and/or RWCU AREAS LD) TEMP alarm(s).</p> <p>Directs shutdown and isolation of RWCU system.</p> <p>Refers to TS 3.6.1.3 Primary Containment Isolation Valves (PCIVs)</p> <ul style="list-style-type: none"> ■ Declares G33-F053 INOPERABLE. ■ Enters Action A <ul style="list-style-type: none"> A.1 Isolate the affected penetration flow path with 4 hours; AND A.2 Verify the affected penetration flow path is isolated prior to entering MODE 2 or 3 from MODE 4 in not performed within the previous 92 days. <p>Initiates maintenance request to restore G33-F053 to OPERABLE status.</p>
	RO	<p>Announces one or both of the following alarms as applicable:</p> <ul style="list-style-type: none"> ■ RWCU AREAS LD TEMP P632 ■ RWCU AREAS LD) TEMP P632 <p>Refers to ARI-H13-P680-1-D4 &E4</p> <ul style="list-style-type: none"> ■ Directs BOP to verify proper operation of Containment Vessel Ventilation System (M11). <p>Shutdown and isolate RWCU in accordance with SOI-G33</p> <ul style="list-style-type: none"> ■ Stops RWCU pumps and shuts containment isolation valves. ■ Identifies that G33-F053 did not close. ■ Reports that RWCU System is isolated except for G33-F053.
	BOP	<p>Checks EQUIPMENT AREA AMBIENT TEMP Recorder, 1E31-R608, and EQUIPMENT AREA DIFF TEMP Recorder, 1E31-R611, on panel P632 to determine location of high temperature.</p> <p>Reports that high temperature is in the RWCU heat exchanger room.</p> <p>Verifies proper operation of Containment Vessel Ventilation System (M11) and Containment Vessel Chill Water System (P50).</p>

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 5 Page 1 of 2Event Description: Bypass valve fails open resulting in excessive cooldown.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Acknowledges reports from RO.</p> <p>Enters ONI-C51, Unplanned Change In Reactor Power Or Reactivity</p> <p>Enters ONI-C85-2, Pressure Regulator Failure Open</p> <p>Directs RO to manually scram the Reactor by Arming and Depressing Manual Scram Pushbuttons:</p> <p>Directs Closure of the MSIVs.</p> <p>Enter ONI-C71-1, Reactor Scram.</p> <p>Enters PEI-B13, RPV CONTROL (NON-ATWS) and transitions to PEI-B13, RPV CONTROL (ATWS)</p>
	RO	<p>Observes and reports decreasing reactor pressure.</p> <p>Observes and reports bypass valve failure.</p> <p>Attempts to close Bypass Valves.</p> <p>Manually Scrams the Reactor and performs Immediate Operator Actions Per ONI-C71-1.</p> <ul style="list-style-type: none"> ■ Places Mode Switch in SHUTDOWN AND REMOVES key. ■ Announces Mode Switch in SHUTDOWN and Control Rod Status ■ Initiates ARI ■ Announces ARI Initiated, Control Rod Status, and APRM Status ■ Verify HST LVL CV MANUAL CONTROL, N21-S19, in OFF. ■ Verify the reactor water level stabilizes near 200 inches (178 inches if Setpoint Setdown is actuated) using Feedwater, RCIC, and/or HPCS as appropriate. ■ Inform Unit Supervisor of systems being used for current level and pressure control.

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 5 Page 2 of 2

Event Description: Bypass valve fails open resulting in excessive cooldown.

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Closes the MSIVs when directed.</p> <p>Performs Immediate Operator Actions Per ONI-C71-1.</p> <ul style="list-style-type: none"> ■ Verify the reactor water level stabilizes near 200 inches (178 inches if Setpoint Setdown is actuated) using RCIC and/or HPCS as appropriate. ■ If reactor pressure is not being maintained with the Bypass Valves, manually cycle SRV's in the order labeled on 1H13-P601 as necessary to maintain reactor pressure within the desired band. ■ Inform Unit Supervisor of systems being used for current level and pressure control. ■ If any SRV has lifted or any relief setpoint is being approached, evacuate the containment. ■ If manpower is available, place the Hydrogen Analyzers in service per SOI-M51/56.

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 6/7 Page 1 of 2

Event Description: Several control rods fail to insert, shutdown criteria not met but reactor is sub-critical. CRD Pump Suction Filter clogs and CRD Pump trips preventing recharge of scram accumulators.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Enters PEI-B13, RPV CONTROL (ATWS)</p> <ul style="list-style-type: none"> ■ RPV POWER CONTROL <ul style="list-style-type: none"> ■ Directs insertion of IRMs and SRMs ■ Directs insertion of Control Rods per PEI-SPIs 1.1-1.7 ■ If Suppression Pool Temperature cannot be maintained less than 110°F, direct injection of Boron and inhibiting of ADS. (This action is not expected) ■ RPV LEVEL CONTROL <ul style="list-style-type: none"> ■ Directs verification of required automatic actions ■ Directs Inhibiting of ADS ■ Directs preparation of two or more injection systems per PEI-SPI 6.1-6.5. ■ Gives direction to inject and maintain level within band of -25 to 215 inches ■ RPV PRESSURE CONTROL <ul style="list-style-type: none"> ■ Gives direction to stabilize pressure # 1000 psig (should not open MSIVs until bypass valves are closed)
	RO	<p>Inserts IRMs and SRMs</p> <p>Inserts control rods using:</p> <ul style="list-style-type: none"> ■ PEI-SPI 1.2 (SCRAM/RESET/SCRAM) and/or <ul style="list-style-type: none"> ■ If scram cannot be reset due to plant conditions requests installation of RPS Jumpers per PEI-SPI 1.2 (and removal after SDV drains) ■ If ARI cannot be reset due to plant conditions, request lifting of leads per PEI-SPI 1.2 (re-landing after SDV drains) ■ PEI-SPI 1.3 (Manual Rod Insertion) <ul style="list-style-type: none"> ■ Requests bypass of LPSP <p>Maintains RPV water level -25 to 215 inches using CD/FW (FBPs)</p>

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 6/7 Page 2 of 2

Event Description: Several control rods fail to insert, shutdown criteria not met but reactor is sub-critical. CRD Pump Suction Filter clogs and CRD Pump trips preventing recharge of scram accumulators.

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Verifies required automatic initiations and isolations.</p> <p>Inhibits ADS.</p> <p>Stabilizes pressure below 1000 psig using SRVs, RCIC, and/or MSL Drains.</p> <p>Announces receipt of CRD PUMP SUCTION FILTER DIFF PRESS HI alarm.</p> <ul style="list-style-type: none"> ■ Refers to ARI-H13-P601-0022-H3 ■ Dispatches PO to bypass Suction Filters <p>Announces receipt of CRD PUMP A(B) TRIP SUCT PRESS LOW</p> <ul style="list-style-type: none"> ■ Refers to ARI-H13-P601-0022-G2(G3) ■ Refers to SOI-C11 (CRDH), CRD Pump Trip Recovery ■ Recovers the CRD Pump.

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 8 Page 1 of 2Event Description: Security calls to report a bomb threat. Explosion in RHR C Pump Room. SP Leak.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Acknowledges report of explosion.</p> <p>Directs RO and BOP to monitor plant parameters to assess impact of explosion.</p> <p>(Re-)Enters PEI-T23, Containment Control when Suppression Pool level drops to 17.8 ft.</p> <ul style="list-style-type: none"> ■ SUPPRESSION POOL LEVEL CONTROL <ul style="list-style-type: none"> ■ Gives direction to makeup to the Suppression Pool using available systems. ■ When level cannot be maintained above 14.25 ft., enters PEI-B13 RPV Control (ATWS) (Level Control Leg at F and Pressure Control Leg at X) ■ Monitors other Containment Control Parameters to assess need for other mitigating actions. <p>Enters PEI-B13, EMERGENCY DEPRESSURIZATION</p> <ul style="list-style-type: none"> ■ Gives direction to Terminate and Prevent Injection except for Boron, CRC and RCIC ■ Verifies Suppression Pool level above 5.25 ft. ■ Directs opening of all ADS valves. ■ Directs SLOW recovery of RPV level when Reactor Pressure drops below 140 psig.
	RO	<p>Continues with Control Rod insertion.</p> <p>Monitors plant parameters to assess possible damage.</p> <p>When directed, Term & Prevents injection from Condensate/Feedwater per PEI-SPI 5.3</p> <p>As Directed, when Reactor Pressure drops below 140 psig, begins to slowly inject with Condensate/Feedwater (if available) to restore RPV water level above -25 inches.</p>

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: 8 Page 2 of 2

Event Description: Security calls to report a bomb threat. Explosion in RHR C Pump Room. SP Leak.

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Monitors plant parameters to assess possible damage.</p> <p>Observes and reports drop in Suppression Pool Level.</p> <p>When directed, Initiates make up to the Suppression Pool</p> <p>When directed, Term & Prevents injection from HPCS per PEI-SPI 5.1, and LPCS and LPCI per PEI-SPI 5.2</p> <p>If Condensate/Feedwater is not available then AS DIRECTED, when Reactor Pressure drops below 140 psig, begins to slowing inject with RCIC and/or LPCI A(B)[Outside the Shroud Injection] to restore water level above -25 inches.</p>

Op-Test No.: 200X-0X Scenario No.: 1 Event No.: N/A Page 1 of 1Event Description: Scenario Termination Criteria

Time	Position	Applicant's Actions or Behavior
		<ol style="list-style-type: none">1. Emergency Depressurization completed.2. RPV water level has been restored above -25 inches.3. All control rods inserted or candidates have demonstrated sufficient ability to insert control rod as determined by Chief Examiner.

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: N/A Page 1 of 1

Event Description: Critical Task No. 1: Prior to Emergency Depressurization, injection is Terminated and Prevented from all sources except Boron, RCIC and CRD.

Time	Position	Applicant's Actions or Behavior
		<p>1. Safety Significance</p> <p>If control rod insertion alone cannot ensure the reactor will remain shutdown under all conditions, then extra measures are taken to prevent power excursions which may result from positive reactivity additions due to the injection of cold, unborated water.</p> <p>2. Cues</p> <ul style="list-style-type: none"> - Procedural Compliance - Control Rod Positions <p>3. Measurable Performance Indicator</p> <p>The operators perform the applicable steps of PEI-SPI 5.1, 5.2, and 5.3 prior to opening Safety Relief Valves to commence Emergency Depressurization.</p> <p>4. Performance Feedback</p> <p>No injection to the RPV is observed from Condensate/ Feedwater, HPCS, LPCS, and LPCI (A, B, and C).</p>

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: N/A Page 1 of 1

Event Description: Critical Task No. 2: Emergency Depressurizes the RPV when or before Suppression Pool Level reaches 14.25 ft.

Time	Position	Applicant's Actions or Behavior
		<p>1. Safety Significance</p> <p>The RPV is not permitted to remain at pressure if suppression of steam discharged from the RPV to the suppression pool cannot be assured. Failure to ED at this time could lead to Containment failure.</p> <p>2. Cues</p> <ul style="list-style-type: none"> - Procedural Compliance - Decreasing Suppression Pool Level Trend <p>3. Measurable Performance Indicator</p> <p>At or before 14.25 ft. in the Suppression Pool the operator opens at least 5 Safety Relief Valves (preferably all 8 Automatic Depressurization Valves)</p> <p>4. Performance Feedback</p> <p>Decreasing Reactor Pressure Trend</p>

Op-Test No.: 2004-01 Scenario No.: 1 Event No.: N/A Page 1 of 1

Event Description: Critical Task No. 3: When Reactor Pressure drops below 140 psig, slowing increases injection from sources that inject outside the shroud and restores RPV water level above -25 inches.

Time	Position	Applicant's Actions or Behavior
		<ol style="list-style-type: none"> 1. Safety Significance <p>When RPV pressure drops below the Minimum Steam Cooling Pressure, injection into the RPV must be re-established to maintain adequate core cooling.</p> 2. Cues <ul style="list-style-type: none"> – Procedural Compliance – Decreasing Reactor Pressure Trend 3. Measurable Performance Indicator <p>When Reactor Pressure is less than 140 psig, the operator begins to slowly inject with one or more of the following – Condensate/Feedwater, RCIC, CRD, or LPCI A(B) [thru SDC Return Line] – and restores RPV level above -25 inches.</p> 4. Performance Feedback <p>RPV water level above -25 inches and rising.</p>

Facility: Perry U1 Scenario No.: 2 Op-Test No.: 2004301

Examiners: D. McNeil (D. Reeser - Cert) Operators: _____
M. Bielby _____
C. Phillips _____

Initial Conditions: Mode 1, 100% RTP EOC, RCIC Isolated, MFP tagged out of service.
Winter Weather Advisory in effect. RPV Head inner Omega seal failed.

Turnover: Plant at 100% RTP, MFP tagged OOS for bearing replacement, and RCIC was isolated on the last shift due a steam leak on the FO45 valve. The RPV Head inner seal failed several weeks ago and will be replaced at the next outage. APRM D is bypassed for calibration and is expected to be returned to service this shift. A Winter Weather Advisory is in effect. Plans are to reduce power to approx. 92% to perform Main Turbine Valve Exercise surveillance.

Event No.	Malf. No.	Event Type*	Event Description
0	TH03A	Initial Condition	RPV Head inner Omega seal fails
1	None	R (RO/SRO)	Reduce power to 92% with RR Flow
2	NM08H	C (RO/SRO)	APRM H Flow Card fails to 50% (Tech Spec)
3	None	N (BOP/SRO)	Perform Main Turbine Valve Exercise
4	OBE, FW10, MV06	C (BOP/SRO)	Earthquake exceeding OBE; CST rupture, HPCS Suppression Pool Suction Valve fails shut due to mechanical binding. (Tech Spec)
5	SSE, FW08B, TH03B	C (RO/SRO)	Earthquake exceeding SSE; RFPT B bearing oil line break, RPV Head Outer seal fails. (Reactor coolant leak to DW)
6	OBE/SSE, MC03, MV05	M	CW expansion joint rupture/loss of CW/loss of vacuum, Turbine Trip/ RFPT A Trips/Group 1 Isolation, Reactor Scram, HPCS Min Flow valve fails open. (No high pressure injection except CRD & SLC)
7	RD14	C (BOP/SRO)	CRDH Discharge Filter clogged

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 1 Page 1 of 1Event Description: Reduce power to 92% with RR Flow

Time	Position	Applicant's Actions or Behavior
	SRO	Conducts a short brief on the power reduction using Reactor Recirc flow.
	RO	<p>Reviews IOI-3, Power Changes, precautions and limitations, and Attachment 4, Power Maneuvering, prior to power decrease.</p> <p>Decreases power to 92% using Reactor Recirc flow in accordance with Attachment 4 of IOI-3.</p> <ul style="list-style-type: none"> ! Ensures Reactor Engineering contacted to determine if thermal limits considerations require control rods to be moved prior to reducing power using reactor recirculation flow. ! Reduces reactor power to approximately 92% RTP by decreasing Reactor Recirculation System flow. ! Maintains the turbine LOAD SET approximately 120 MWe above generator output to a maximum of 1450 MWe, by utilizing the turbine LOAD SELECTOR.
	BOP	<p>Monitors plant parameters during power reduction.</p> <p>Reviews SVI-N31-T1151, Main Turbine Valve Exercise Test.</p> <p>When directed, jogs OPEN HTR 4 START UP VENT TO CNDR for 1 to 2 seconds as required to maintain the dissolved oxygen concentration within specification.</p>

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 2 Page 1 of 2Event Description: APRM H Flow Card fails to 50%.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Acknowledges announcement of alarms.</p> <p>Directs APRM back-panel indications checked.</p> <p>Refers to TS 3.3.1.1, RPS Instrumentation</p> <ul style="list-style-type: none"> ! Declares APRM H INOPERABLE ! Enters Action A <ul style="list-style-type: none"> A.1 Place channel in trip within 12 hours OR A.2 Place associated trip system in trip within 12 hours <p>Refers to ORM 6.2.1, APRM Control Rod Block Instrumentation</p> <ul style="list-style-type: none"> ! Declares APRM H INOPERABLE (No other action required by ORM since minimum operable channels still satisfied.) <p>Requests status of APRM D calibration.</p> <p>When APRM D declared OPERABLE, directs RO to un-bypass APRM D and then Bypass APRM H.</p>
	RO	<p>Announces receipt of the following alarms:</p> <ul style="list-style-type: none"> ! RPS NEUTRON MON TRIP ! 1/2 SCRAM B/D ! ROD WITHDRAWAL BLOCK ! ROD BLOCK APRM UPSCALE ! APRM D/H UPSC INOP/TRIP OPRM D/H TRIP <p>Diagnoses and reports failure of APRM H low indication.</p> <p>Refers to the following Alarm Response Instructions:</p> <ul style="list-style-type: none"> ! ARI-H13-P680-0005-B7 ! ARI-H13-P680-0005-B9 ! ARI-H13-P680-0005-E10 ! ARI-H13-P680-0006-C4 ! ARI-H13-P680-0006-E5 <p>When directed, refers to SOI-C51(APRM) and then un-bypasses APRM D and bypasses APRM H in accordance with that procedure.</p>

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 2 Page 2 of 2

Event Description: APRM H Flow Card fails to 50%.

Time	Position	Applicant's Actions or Behavior
	BOP	Checks APRM back-panel indications Assists RO with ARI response.

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 3 Page 1 of 1Event Description: Perform Main Turbine Valve Exercise

Time	Position	Applicant's Actions or Behavior
	SRO	Grants permission to perform Main Turbine Valve Exercise Test in accordance with SVI-N31-T1151.
	RO	Monitors plant parameters during performance of surveillance test.
	BOP	Performs Main Turbine Valve Exercise Test in accordance with SVI-N31-T1151. <ul style="list-style-type: none"> ■ Reviews procedure and obtains permission to perform (may have been done earlier) ■ Adjusts ADFL setpoint to 110% ■ Cycles each MSV and CIV <ul style="list-style-type: none"> ■ Depresses associated test pushbutton ■ Observes position indicator for valve close response ■ Releases associated test pushbutton ■ Records test results ■ Waits for plant to stabilize before continuing

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 4 Page 1 of 3

Event Description: Earthquake (OBE) resulting in loss of CST.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Acknowledges announcement of alarms.</p> <p>Enters ONI-D51, Earthquake</p> <ul style="list-style-type: none"> ! Determines OBE levels have been exceeded. ! Initiates Normal Reactor Shutdown. ! Directs shutdown of all Under-drain pumps. ! Directs BOP to start all ESW Loops (A, B, and HPCS) ! Refers to EPI-A1 and declares an ALERT. ! Directs MCR and plant personnel to evaluate plant parameters and inspect areas of the plant to assess impact of earthquake. <p>Declares seismic instrumentation INOPERABLE and refers to ORM 6.2.7, Seismic Monitoring Instrumentation</p> <ul style="list-style-type: none"> ! Restore within 30 days <p>Acknowledges report on HPCS Suction Valve failed shut.</p> <p>Refers to TS 3.5.1</p> <ul style="list-style-type: none"> ! Declares HPCS INOPERABLE ! Enters Action D (RCIC not operable) <ul style="list-style-type: none"> " Hot Shutdown within 12 hours AND " Cold Shutdown within 36 hours ! Initiates maintenance request on HPCS Suction Valve

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 4 Page 2 of 3

Event Description: Earthquake (OBE) resulting in loss of CST.

Time	Position	Applicant's Actions or Behavior
	RO	<p>Announces receipt of the following alarms:</p> <ul style="list-style-type: none"> ■ SEISMIC ALARM P969 ■ SEISMIC MONITOR TRBL <p>Refers to the following Alarm Response Instructions:</p> <ul style="list-style-type: none"> ■ ARI-H13-P680-0008-B3 ■ ARI-H13-P680-0008-C3 <ul style="list-style-type: none"> ■ ONI-D51 entry condition ■ Contact Responsible System Engineer ■ Seismic Instruments Inoperable <p>Monitors plant parameters to assess impact of earthquake.</p> <p>When directed, commences power reduction in accordance with IOI-3 and IOI-4</p>

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 4 Page 3 of 3

Event Description: Earthquake (OBE) resulting in loss of CST.

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Observes and reports the status of the red AND amber lights at the SEISMIC MONITORING ANNUNCIATOR on 1H13-P969.</p> <p>Monitors plant parameters to assess impact of earthquake.</p> <p>Observes and reports rapid drop in CST level.</p> <p>Announces receipt of the following alarms</p> <ul style="list-style-type: none"> ! CONDENSATE STORAGE TANK DIKE LVL HI ! CONDENSATE STORAGE TANK LEVEL LOW <p>Refers to the following Alarm Response Instructions:</p> <ul style="list-style-type: none"> ! ARI-H13-P870-0002-F2 ! ARI-H13-P870-0002-F4 <ul style="list-style-type: none"> " Secure all non-safety uses of CST " Initiate makeup (this will not have any significant affect) " Monitor CRD and Condensate Transfer pumps for loss of suction. <p>Refers to SOI-P45/49 and starts up all ESW Loops.</p> <ul style="list-style-type: none"> ! For each loop: <ul style="list-style-type: none"> " Starts associated ESUPH Ventilation Fan " Verifies RHR Hx Inlet and Outlet Isol Valves open " Takes pump control switch to start and observes <ul style="list-style-type: none"> - Discharge Valve starts to open - Pump starts when discharge valve approx. 5% open - Discharge Valve fully opens " If ESW Inlet Temperature <34°F, opens de-icing valve. ! Notifies Chemistry to obtain samples and Chlorinate as necessary. <p>Monitors plant parameters during power reduction.</p> <p>Recognizes and reports failure of HPCS Suction Valve to open on low CST level.</p> <ul style="list-style-type: none"> ! Dispatches PO to investigate breaker and valve locally.

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 5 Page 1 of 2

Event Description: Second earthquake resulting in loss of RFPT B (oil leak) and failure of the RPV Head outer omega seal.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Re-enters ONI-D51, Earthquake</p> <ul style="list-style-type: none"> ■ Directs MCR and plant personnel to re-evaluate plant parameters and inspect areas of the plant to assess impact of earthquake. ■ Continues with Normal Reactor Shutdown. <p>Enters ONI-N27</p> <ul style="list-style-type: none"> ■ Ensures IMMEDIATE ACTIONS are completed ■ If additional power reduction is required, directs RO to insert Cram Rods in accordance with FTI-B0002, Control Rod Movements. ■ Directs BOP operator to place RFP B FLOW CONTROL in MANUAL. ■ Directs BOP operator to shutdown the RFPT B Turning Gear in accordance with SOI-N27.

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 5 Page 2 of 2

Event Description: Second earthquake resulting in loss of RFPT B (oil leak) and failure of the RPV Head outer omega seal.

Time	Position	Applicant's Actions or Behavior
	RO	<p>Monitors plant parameters to assess impact of earthquake.</p> <p>Announces receipt of the following alarms:</p> <ul style="list-style-type: none"> ■ RFP B BRG OIL PRESS LO ■ RFPT B BEARING OIL PRESSURE LOW ■ RFPT B TRIP ■ RFPT B HYD OIL PRESS LO <p>Refers to the following Alarm Response Instructions:</p> <ul style="list-style-type: none"> ■ ARI-H13-P680-0003-A4 ■ ARI-H13-P870-0008-D1 ■ ARI-H13-P680-0003-D7 ■ ARI-H13-P680-0003-B4 <p>ONI-N27 Actions</p> <ul style="list-style-type: none"> ■ Performs applicable Immediate Actions from memory <ul style="list-style-type: none"> ■ Reduces core flow to reduce power below 63% or to just outside the edge of the IMMEDIATE EXIT region of the Power-to-Flow map. ■ When directed, inserts Cram Rods in accordance with FTI-B0002, Control Rod Movements. <p>Observes and reports increasing DW Temperature and Pressure.</p>
	BOP	<p>Monitors plant parameters to assess impact of earthquake.</p> <p>ONI-N27 Actions</p> <ul style="list-style-type: none"> ■ Places the tripped Feedwater Pump FLOW CONTROL in MANUAL. ■ Shuts down the RFPT B Turning Gear in accordance with SOI-N27. <p>Observes and reports increasing DW Temperature and Pressure.</p>

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 6/7 Page 1 of 5

Event Description: Third earthquake resulting in failure of a CW Expansion joint and subsequent loss of CW/loss of vacuum. After the reactor scram CRD Pump Discharge Filters clog and HPCS Min Flow Valve fails open resulting in loss of high pressure injection except for SLC.

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Re-enters ONI-D51, Earthquake</p> <ul style="list-style-type: none"> ■ Directs MCR and plant personnel to re-evaluate plant parameters and inspect areas of the plant to assess impact of earthquake. <p>Acknowledges TURBINE BLDG BASEMENT WATER LEVEL HIGH alarm.</p> <p>Upon confirmation of high water level in the Turb Bldg basement:</p> <ul style="list-style-type: none"> ■ Directs RO manually scram the reactor ■ Directs BOP to trip all CW pumps. ■ Directs BOP isolate Condenser Waterboxes and Cooling Tower makeup. <p>Enters the following ONIs</p> <ul style="list-style-type: none"> ■ ONI-C71-1 ■ ONI-N62 <p>Enters PEI-B13, RPV CONTROL (NON-ATWS)</p> <ul style="list-style-type: none"> ■ ENTRY ACTIONS <ul style="list-style-type: none"> ■ Directs placing the Reactor Mode Switch in SHUTDOWN ■ Directs startup of the H2 Analyzers ■ Directs insertion of IRMs and SRMs ■ RPV LEVEL CONTROL <ul style="list-style-type: none"> ■ Directs verification of required automatic actions ■ Gives direction to restore and maintain level within band of 185 to 215 inches ■ When RFPs are no longer available, gives direction to maximize CRD in accordance with PEI-SPI 4.1. ■ Gives direction to inject with SLC (demin water) in accordance with PEI-SPI 4.5 ■ Ensures 2 or more injection sources (LPCI A, B, or C; LPCS) lined up and running. ■ When RPV level cannot be maintained above -25 inches, enters PEI-SPI B13, EMERGENCY DEPRESSURIZATION while continuing in RPV Level Control ■ Directs injection at maximum flow to restore RPV level to between 185 and 215 inches.

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 6/7 Page 2 of 5

Event Description: Third earthquake resulting in failure of a CW Expansion joint and subsequent loss of CW/loss of vacuum. After the reactor scram CRD Pump Discharge Filters clog and HPCS Min Flow Valve fails open resulting in loss of high pressure injection except for SLC.

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> ! RPV PRESSURE CONTROL <ul style="list-style-type: none"> " Gives direction to stabilize pressure # 1000 psig " Gives direction to perform a controlled depressurization of the RPV (< 100°F/hr) Enters PEI-T23, CONTAINMENT CONTROL ! DRYWELL TEMPERATURE CONTROL <ul style="list-style-type: none"> " Gives direction to operate all available cooling " Gives direction to restore NCC to Drywell ! DRYWELL AND CONTAINMENT PRESSURE CONTROL <ul style="list-style-type: none"> " When Containment Pressure exceeds 2.25 psig, directs initiation of Containment Sprays " Terminates Containment Sprays to when Containment Pressure cannot be maintained above 0 psig. ! SUPPRESSION POOL TEMPERATURE CONTROL <ul style="list-style-type: none"> " When Suppression Pool Temperature cannot be maintained below 95°F, operates all RHR Loops not needed to maintain adequate core cooling in Suppression Pool Cooling (Both loops should be available) ! SUPPRESSION POOL LEVEL CONTROL <ul style="list-style-type: none"> " Monitors Suppression Pool Level ! CONTAINMENT TEMPERATURE CONTROL <ul style="list-style-type: none"> " Monitors Containment Temperature PEI-SPI B13, EMERGENCY DEPRESSURIZATION <ul style="list-style-type: none"> ! Verifies Suppression Pool level above 5.25 ft. ! Directs opening of all ADS valves. ! Returns to RPV Control for level recovery and concurrently monitors decreasing Reactor Pressure trend

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 6/7 Page 3 of 5

Event Description: Third earthquake resulting in failure of a CW Expansion joint and subsequent loss of CW/loss of vacuum. After the reactor scram CRD Pump Discharge Filters clog and HPCS Min Flow Valve fails open resulting in loss of high pressure injection except for SLC.

Time	Position	Applicant's Actions or Behavior
	RO	<p>Monitors plant parameters to assess impact of earthquake.</p> <p>When directed, Manually scrams the reactor and performs immediate actions per ONI-C71-1</p> <ul style="list-style-type: none"> ■ Places Mode Switch in SHUTDOWN AND REMOVES key. ■ Announces Mode Switch in SHUTDOWN and Control Rod Status ■ Verify HST LVL CV MANUAL CONTROL, N21-S19, in OFF. ■ Verify the reactor water level stabilizes near 200 inches (178 inches if Setpoint Setdown is actuated) using Feedwater, RCIC, and/or HPCS as appropriate. ■ Inform Unit Supervisor of systems being used for current level and pressure control. <p>PEI-B13, RPV CONTROL (NON-ATWS)</p> <ul style="list-style-type: none"> ■ Inserts IRMs and SRMs ■ Uses FW to maintain level until RFPT trips on low vacuum or MSIVs are closed. ■ Uses Bypass Valves to control Reactor Pressure until Bypass Valves close on low vacuum or MSIVs are closed. <p>Monitors plant parameters and assists BOP as directed.</p>
	BOP	<p>Monitors plant parameters to assess impact of earthquake.</p> <p>Announces receipt of TURBINE BLDG BASEMENT WATER LEVEL HIGH alarm.</p> <p>Refers to ARI-H13-P870-0003-H1</p> <ul style="list-style-type: none"> ■ Confirms high level using computer point 1N71BC011 ■ Informs SRO of Subsequent Actions(Reactor Sram/Trip CW Pumps) ■ When directed, trips all CW Pumps ■ When directed isolates Condenser waterboxes and Cooling Tower makeup.

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 6/7 Page 4 of 5

Event Description: Third earthquake resulting in failure of a CW Expansion joint and subsequent loss of CW/loss of vacuum. After the reactor scram CRD Pump Discharge Filters clog and HPCS Min Flow Valve fails open resulting in loss of high pressure injection except for SLC.

Time	Position	Applicant's Actions or Behavior
		<p>Performs Immediate Operator Actions Per ONI-C71-1.</p> <ul style="list-style-type: none"> ■ Verify the reactor water level stabilizes near 200 inches (178 inches if Setpoint Setdown is actuated) using HPCS as appropriate (If still lined up to CST, some injection may be available; with min flow failed open some water will be diverted to the Suppression Pool). ■ If reactor pressure is not being maintained with the Bypass Valves, manually operate SRV's in the order labeled on 1H13-P601 as necessary to maintain reactor pressure within the desired band. ■ Inform Unit Supervisor of systems being used for current level and pressure control. ■ If any SRV has lifted or any relief setpoint is being approached, evacuate the containment. ■ If manpower is available, place the Hydrogen Analyzers in service per SOI-M51/56. <p>PEI-B13, RPV CONTROL (NON-ATWS)</p> <ul style="list-style-type: none"> ■ Verifies automatic initiations and isolations ■ RPV LEVEL CONTROL <ul style="list-style-type: none"> ■ Attempts to maintain RPV Level with HPCS ■ When directed, maximizes CRD Injections in accordance with PEI-SPI 4.1 ■ When directed, coordinates with field operators to inject demin water with SLC pumps in accordance with PEI-SPI 4.5. ■ When directed, ensures 2 or more injection systems (LPCS; LPCI A, B, or C) lined up and running. ■ When directed, opens all ADS valves. ■ When directed, injects at maximum with operating injection systems ■ RPV PRESSURE CONTROL <ul style="list-style-type: none"> ■ Stabilizes RPV Pressure below 1000 psig using SRVs ■ When directed, initiates controlled depressurization

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: 6/7 Page 5 of 5

Event Description: Third earthquake resulting in failure of a CW Expansion joint and subsequent loss of CW/loss of vacuum. After the reactor scram CRD Pump Discharge Filters clog and HPCS Min Flow Valve fails open resulting in loss of high pressure injection except for SLC.

Time	Position	Applicant's Actions or Behavior
		PEI-T23, CONTAINMENT CONTROL <ul style="list-style-type: none"> ■ DRYWELL TEMPERATURE CONTROL <ul style="list-style-type: none"> ■ When directed, operates all available cooling ■ When directed, restores NCC to Drywell ■ DRYWELL AND CONTAINMENT PRESSURE CONTROL <ul style="list-style-type: none"> ■ When directed, initiates Containment Sprays ■ Terminates Containment Sprays to when Containment Pressure cannot be maintained above 0 psig. ■ SUPPRESSION POOL TEMPERATURE CONTROL <ul style="list-style-type: none"> ■ When directed, operates all RHR Loops not needed to maintain adequate core cooling in Suppression Pool Cooling (Both loops should be available)

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: N/A Page 1 of 1

Event Description: Scenario Termination Criteria

Time	Position	Applicant's Actions or Behavior
		<ol style="list-style-type: none">1. Emergency Depressurization completed.2. RPV water level has been restored above -25 inches.

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: N/A Page 1 of 1

Event Description: Critical Task No. 1: Emergency Depressurizes the Reactor when RPV level cannot be restored and maintained above -25 inches.

Time	Position	Applicant's Actions or Behavior
		<p>1. Safety Significance</p> <p>Emergency depressurization is not performed while RPV water level is above the top of the active fuel because:</p> <ul style="list-style-type: none"> ■ The core will remain adequately cooled as long as RPV water level remains above the Minimum Steam Cooling RPV Water Level. ■ The time before RPV water decreases to the top of the active fuel can best be used to line up additional injection sources. If the decreasing RPV water level trend can be reversed, emergency depressurization may not be required. <p>The emergency depressurization requirement in this step is predicated upon three conditions:</p> <ul style="list-style-type: none"> ■ RPV water level has dropped at least to the top of the active fuel. ■ At least one injection source is available. ■ The available injection sources cannot restore and maintain RPV water level above the MSCRWL if a blowdown is not performed. <p>2. Cues</p> <ul style="list-style-type: none"> – Procedural Compliance – Decreasing RPV Water Level Trend <p>3. Measurable Performance Indicator</p> <p>At or before a RPV Water Level of -25 inches, at least 5 Safety Relief Valves (preferably all 8 Automatic Depressurization Valves)</p> <p>4. Performance Feedback</p> <p>Decreasing Reactor Pressure Trend</p>

Op-Test No.: 2004-01 Scenario No.: 2 Event No.: N/A Page 1 of 1

Event Description: Critical Task No. 2: After Emergency Depressurizing the RPV, water level is restored and maintained above -25 inches.

Time	Position	Applicant's Actions or Behavior
		<ol style="list-style-type: none"> 1. Safety Significance <p>The core is expected to remain adequately cooled as long as RPV water level remains above the Minimum Steam Cooling RPV Water Level (-25").</p> 2. Cues <ul style="list-style-type: none"> - Procedural Compliance - Decreasing RPV Water Level Trend 3. Measurable Performance Indicator <p>The operator maximizes injection flow from two or more injection sources and restores RPV Level above -25 inches.</p> 4. Performance Feedback <p>RPV water level above -25 inches and rising.</p>

Facility: <u>Perry U1</u>	Scenario No.: <u>3</u>	Op-Test No.: <u>2004301</u>
Examiners: <u>D. McNeil (D. Reeser - Cert)</u>	Operators: _____	
<u>M. Bielby</u>	_____	
<u>C. Phillips</u>	_____	
<p>Initial Conditions: Mode 1, approximately 45% RTP. Div 3 Diesel Generator tags are being cleared. Normal plant lineup in accordance with IOI-3.</p>		
<p>Turnover: Plant start-up in progress (complete through IOI-3, step 4.5.6). Power at ~45%, plant stable. Startup is stopped until Div II DG post maintenance testing is complete. Surveillance run is already started (all prerequisites are complete). Division III Diesel Generator tags are ready to be issued, replacing an air start motor.</p>		

Event No.	Malf. No.	Event Type*	Event Description
1	n/a	N	Parallel and load Div II DG per surveillance procedure.
2	n/a	R	Continue up power in accordance with IOI-3, step 4.5.7.
3	RD03	C	Sticky Control Rod
4	ZD1B33 K0603A INC	C	Recirc FCV A Failure
5	CN02:1P41 R0032	I	TBCCW Temperature Controller for MLO Temperature Control Valve Fails Low (Oil Temp High)
6	FP03B	C	After Div II DG has been loaded and operating for several minutes, fuel oil leak causes a fire.
7	ED04A CB05	M	Loss of 13.8 KV Bus L10 and 4.16 KV Bus EH12(XH12); Alternate supply breaker EH1215 will not close, overspeed on start - Diesel Generator 3
8	TC02/4	M	Turbine trip without bypass valves
9	bat ms/losslevel2	C	Failure of remaining vessel level instruments requiring ED

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No.: 2004301 Scenario No.: 3 Event No.: 1 Page 2 of 13Event Description: Parallel and load Div II DG per surveillance procedure.

Time	Position	Applicant's Actions or Behavior
	SRO	Directs BOP to implement SOI-R43, Division 1 and 2 Diesel Generator System for Diesel Generator 2, Section 7.1, Remote-Paralleling the Div 1(2) Diesel Generator to the Grid
	SO	Monitors control room panels.
	BOP	Places sync selector sw in TH1.
		Adjusts diesel generator governor control such that the diesel generator synchroscope is rotating slowly in the fast direction.
		Adjusts diesel generator voltage control such that diesel generator and incoming volts are matched.
		At the "2 minutes to 12" synchroscope position, closes diesel generator output breaker. Holds diesel generator speed control in raise until approximately 200 Kw load is achieved.
		Places sync selector switch in OFF.
		Continues to Section 7.2, Remote Operating in Parallel with the Grid.
		Raises generator load using diesel generator speed control to 2500Kw. Maintains Kw(0.5) = KVARs.

Op-Test No.: 2004-301 Scenario No.: 3 Event No.: 3 Page 4 of 13Event Description: Sticky Control Rod (Rod number ??-?? to be filled in at validation)

Time	Position	Applicant's Actions or Behavior
	RO	<p>Withdraw control rods as directed in accordance with the approved rod withdrawal sequence</p> <p>Recognize Control Rod ??-?? will not move and inform SRO</p> <p>Acknowledge report of immovable Control Rod ??-??</p>
	SRO	<p>Enter and execute SOI-C11 (RCIS), Section 7.9.2:</p> <ul style="list-style-type: none"> - Directs RO to raise CRDH drive water differential pressure in 50 psid increments until control rod motion is achieved
	RO	<p>Raise CRDH drive water d/p as directed, attempts Control Rod motion</p> <p>Reports Control Rod movement to SRO</p> <p>Return CRDH drive water d/p to normal band</p>

Op-Test No.: 2004301 Scenario No.: 3 Event No.: 4 Page 5 of 13Event Description: Recirc FVC A Failure

Time	Position	Applicant's Actions or Behavior
	SRO	Provides SRO oversight for power increase.
	RO	Increases reactor power using Recirc Loop Flow Control
		Maintains Recirc loop flows matched within 10%
		Reports an unplanned change in reactor power (increasing)
		Recognizes Recirc FCV A is slowly opening with no operator action
		Arms and depresses the HPU A Shutdown in order to stop further movement of Recirc FCV A
	SRO	Enter ONI-C51, Unplanned Change in Reactor Power or Reactivity
		Direct RO/BOP to evaluate subsequent actions
		Notify Reactor Engineering to determine if any power distribution limits have been exceeded
	SRO/BOP	Requests Responsible System Engineer and I&C assistance in the Control Room to support troubleshooting
	SRO	Notify Operations Management and NRC Resident of ONI-C51 entry due to drifting Recirc FCV A

Op-Test No.: 2004301 Scenario No.: 3 Event No.: 5 Page 6 of 13Event Description: TBCCW Temperature Controller for MLO Temperature Control Valve Fails Low (Oil Temp High)

Time	Position	Applicant's Actions or Behavior
	RO	Responds to, reports, and references ARI for Alarm H13-P680-15 (A3), MAIN TURB OIL TEMP HIGH
		Determines MAIN LUBE OIL TEMPERATURE CONTROL, 1P41-R032, has failed in the Auto mode
	SRO	Acknowledges alarm report and MAIN LUBE OIL TEMPERATURE CONTROL failure in the Auto mode
	RO	Performs either one of the following actions: Places the MAIN LUBE OIL TEMPERATURE CONTROL, 1P41-R032, in Manual and increases cooling water flow to restore Main Lube Oil temperature to 110°F to 120°F, or Throttles open TURB LUBE OIL TEMP CONT V BYPASS VLV, 1P41-F350, and increases cooling water flow to restore Main Lube Oil temperature to 110°F to 120°F.
		Informs SRO that 1P41-R032 has been placed in Manual, or that 1P41-F350 has been throttled, and Main Lube Oil temperature has been restored to 110°F to 120°F
	SRO	In accordance with Operations Expectations: - Assigns RO as clear "owner" to closely monitor Main Lube Oil temperature - Considers placing an Information Tag or OPS Admin Tag on MAIN LUBE OIL TEMPERATURE CONTROL, 1P41-R032
	RO	Closely monitors Main Lube Oil temperature, Requests I&C and Responsible System Engineer assistance in the Control Room to support troubleshooting

Op-Test No.: 2004301 Scenario No.: 3 Event No.: 7 Page 9 of 13

Event Description: Loss of 13.8 KV Bus L10 and 4.16 KV Bus EH12(XH12); Alternate supply breaker EH1215 will not close, overspeed on start - Diesel Generator 3

Time	Position	Applicant's Actions or Behavior
	SRO	Diagnoses loss of bus L10. Enters ONI-R22-2.
		Diagnoses loss of bus EH12 & EH13. Enters ONI-R22-1.
		Refers to PDB-H006 for a list of 13.8 KV and 4.16 KV loads. Enters SOI-1R10 to attempt to re-energize buses.
		If a feedwater pump trips, refers to ONI-N27, Feedwater Pump Trip. If a recirc pump trips, refers to ONI-C51, Unplanned Change in Reactor Power or Reactivity. Notifies SCC in accordance with PAP-0102, that power is lost to the Transmission Station Load Center.
	BOP	Refers to the applicable SOI and places the following alternate components in service as available: <ul style="list-style-type: none"> • CVCW CHILLER • TBCW CHILLER
	RO	Places/Takes the following components to OFF/STOP/TRIP to open the supply breaker: <ul style="list-style-type: none"> • LFMG A SUPPLY BRKRS • HOTWELL PUMP • CBPs • RFBPs • TBCW CHILLERS • CVCW CHILLERS

Op-Test No.: 2004301 Scenario No.: 3 Event No.: 9 Page 12 of 13Event Description: Failure of remaining vessel level instruments requiring ED

Time	Position	Applicant's Actions or Behavior
	SO/BOP	Recognizes loss of all level indication and informs the SRO
	SRO	Determines that RPV level cannot be determined and transitions to: PEI-B13, RPV Flooding - Verifies all Control Rods inserted - Verifies Suppression Pool level greater than 5.25 feet - Directs eight (8) ADS SRVs to be opened
	RO/BOP	Open eight (8) ADS SRVs, when directed
	SRO	Directs actions to isolate the reactor vessel
	RO/BOP	Closes MSIVs, MSL drains and RCIC steam valves
	SRO	Directs RO/BOP to inject to establish RPV pressure 60 psig greater than Containment pressure and at least five (5) SRVs
	RO/BOP	Operates designated systems and injects to vessel when directed: - Low pressure ECCS Systems are available
		Maintains RPV pressure 60 psig greater than Containment pressure and at least five (5) SRVs open
	SRO	Enters PEI-M51/56, Hydrogen Control, due to RPV level unknown
		Directs PEI-M51/56, Hydrogen Control - Start Hydrogen Igniters

Op-Test No.: <u>2004301</u> Scenario No.: <u>3</u> Event No.: <u>9</u> Page <u>13</u> of <u>13</u>		
Event Description: <u>Failure of remaining vessel level instruments requiring ED</u>		
	RO/BOP	Execute PEI-M51/56, Hydrogen Control actions per SRO direction - Energize Hydrogen Igniters

Critical Tasks:

- Trip EDG 2 after report of fire.
- Emergency Depressurizes
- Vessel Flood