
Scenario Event Description

NRC Scenario 1

Ginna 2007 NRC Scenario #1

The plant is at approximately 48% power (BOL), with both A and B MFW Pumps operating. Load was reduced due to 'A' MFW pump vibration. Pump repairs have been made, the pump has been tested and restarted, and a Load Ascension is anticipated.

The following equipment is Out-Of-Service: A EDG (Expected back in 4 hours), and Containment Pressure channel PT-945 (The channel has been defeated per ER-INST.1, "Reactor Protection Bistable Defeat After Instrumentation Loop Failure.")

Following turnover the SRO directs the RO to swapover Letdown Orifice valves from AOV-202 to AOV-200B in accordance with S-3.2P, "Swapping CVCS Letdown Orifice Valves."

Shortly afterwards, seat leakage will develop from PORV PCV-430. The operator will respond in accordance with AR-F-19, "Przr PORV outlet Hi Temp 145°F." The operator will address AP-PRZR.1, "Abnormal Pressurizer Pressure," and close Block Valve MOV-516. The SRO will address Technical Specifications 3.4.11, "Pzr Power Operated Relief Valves," and 3.4.13, "RCS Operational Leakage," as well as Technical Requirements Manual section 3.4.3, "ATWS Mitigation."

Shortly after the PORV isolation, the Energy Control Center notifies the Control Room that the Post-Contingency Low Voltage Alarm has been received for the Off-Site Power System. The operator will enter O-6.9, "Operating Limits for Ginna Station Transmission," and address Technical Specification 3.8.1, "AC Sources Modes 1-4." (LER 2006-02) The operator will expedite restoration of the A EDG.

Shortly after this, VCT Level Transmitter LT-112 will fail low. The operator will respond in accordance with AR-A-2, "VCT Level 14%86," and control the Reactor Makeup System manually.

Following this an Electrical Ground Fault occurs on Safeguards Bus 16, and the bus deenergizes. The operator will respond in accordance with AR-L-5, "Safeguards Bus Main Breaker Overcurrent Trip," and AR-L-7, "Bus 16 Undervoltage Safeguards," And ultimately respond in accordance with AP-ELEC.14/16, "Loss of Safeguards Bus 14/16." Technical Specification 3.8.1, "AC Sources Modes 1-4," will be addressed, as will Technical Specification 3.8.9, "Distribution Systems Modes 1-4." At this point, Plant Management will make a decision to conduct a plant shutdown at 1%/Minute. The crew will start a shutdown in accordance with AP-TURB.5, "Rapid Load Reduction."

During the load decrease, a Control Rod will drop into the Reactor core. The operator will respond in accordance with AR-E-28, "Power Range Rod Drop Rod Stop -5%/5sec," and transition to AP-RCC.3, "Dropped Recovery." Once the plant is stabilized a second Control Rod will drop into the Reactor core. The operator will manually trip the reactor, and enter E-0, "Reactor Trip or Safety Injection." The operator will transition to ES-0.1, "Reactor Trip Response."

While in ES-0.1 recovering the plant a total loss of Off-Site Power will occur. The operator will need to transition to ECA 0.0, "Loss of All AC Power," and respond to a station blackout. The TDAFW Pump will fail to auto start. The operator will need to open these valves to restore AFW flow.

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With AFW flow restored the Work Control Center will call and indicate that the "A" EDG is now ready for service. The operator will start the "A" EDG and restore power to Bus 14 and 18.

The scenario will end with the "A" EDG powering busses 14 and 18, and the operator has returned to ES-0.1, "Reactor Trip Response."

Critical Tasks:

CT ECA-0.0--B

- Establish greater than 200 gpm AFW flow before both S/G's levels decrease to < 35" wide range level.

CT ECA-0.0

- Restore AC Power to at least one Emergency Bus prior to placing pump control switches in Pull-Stop in ECA-0.0.

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Simulator Malfunction List

At Start:

IC # 171

Place Hold Tags on:

- Bus 14 Emergency Feeder Breaker
- Bus 18 Emergency Feeder Breaker
- A EDG Control Switch
- A EDG Pushbutton

Place Protected Equipment Tags on:

- Bus 16 Emergency Feeder Breaker
- Bus 17 Emergency Feeder Breaker
- B EDG Control Switch
- B EDG Pushbutton

Malf.	GEN04A	"A" EDG Failure
Malf.	IND-MIS36	PT-945 Failure
Malf.	RPS-07M	TDAFW Pump Failure
Malf.	RPS-07N	TDAFW Pump Failure

Event #1	NONE
Event #2	Malf. Pzr 0 5 A @ 2% on Trigger #1
Event #3	E-MIS 10 to 1.0 (Ramp in over 60 sec.) On Trigger #2
Event #4	Malf. CVC10A to 0% on Trigger #3
Event #5	Malf. EDS04B on Trigger #4
Event #6	NONE
Event #7	Malf. ROD02-J4 on Trigger #5
Event #8	Malf. ROD02-J10 on Trigger #6
Event #9	Malf. EDS06 1 (FAST) on Trigger #7
Event #10	NONE
Event #11	Clear Malf. GEN04A

Scenario Event Description

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Shift Turnover:

The plant is at approximately 48% power (BOL), with both A and B MFW Pumps operating. Load was reduced due to 'A' MFW pump vibration. Pump repairs have been made, the pump has been tested and restarted, and a Load Ascension is anticipated.

Power history is as follows: Power reduced from 100% Steady-State conditions 48 hours ago. Stable since then while MFW Pump repairs were made.

The following equipment is Out-Of-Service: A EDG (Expected back in 4 hours), and Containment Pressure channel PT-945 (The channel has been defeated per ER-INST.1, "Reactor Protection Bistable Defeat After Instrumentation Loop Failure.").

Hold Tags have been placed on:

- Bus 14 Emergency Feeder Breaker
- Bus 18 Emergency Feeder Breaker
- A EDG Control Switch
- A EDG Pushbutton

Protected Equipment Tags have been placed on:

- Bus 16 Emergency Feeder Breaker
- Bus 17 Emergency Feeder Breaker
- B EDG Control Switch
- B EDG Pushbutton

Chemistry has requested you to swapover Letdown Orifice valves from AOV-202 to AOV-200B.

Scenario Event Description
NRC Scenario 1

A-52.4

Equipment	Date	Time	Reason	Required Actions	Required Completion Date/Time	Required Action not met
PT-945	_/_/07	0330	Failed Channel	<p>ITS 3.3.2 Condition A Enter Condition referenced on Table 3.3.2-1 (1c, 2c, 4c) immediately.</p> <p>Condition F (From 4c) – Place Channel in Trip within 6 hours.</p> <p>Condition J (From 1c, 2c) – Place Channel in Trip within 6 hours.</p>	TRACKING ONLY	<p>Condition G – Be in Mode 3 within 6 hours, and Mode 4 within 12 hours.</p> <p>Condition K – Be in Mode 3 within 6 hours, and Mode 5 within 36 hours.</p>
'A' Emergency Diesel Generator	_/_/07	_____	Breaker maintenance	<p>ITS 3.8.1 Condition B</p> <ul style="list-style-type: none"> • Perform SR 3.8.1.1 for the Offsite Circuit within 1 hour and Once per 8 hours thereafter. • Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable within 4 hours of the discovery of Condition B concurrent with inoperability of required redundant features. • Determine operable DG is not inoperable due to a common cause failure; OR, Perform SR3.8.1.2 for operable DG within 24 hours. • Restore DG to operable within 7 days. 	_/_/07 _____	

Op Test No.: 1 Scenario # 1 Event # 1 Page 7 of 33Event Description: **Swap Letdown Orifice Valves**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions:**Indications Available:****S-3.2P "Swapping CVCS Letdown Orifice Valves."**

5.2 Decreasing Letdown Flow from 60 gpm to 40 gpm.

NOTE: PCV-135 should be adjusted to control Letdown pressure at - 300 psig to accommodate the pressure decrease when swapping from a 60 gpm orifice to a 40 gpm orifice.

RO

Place PCV-135 to MANUAL AND adjust as necessary to control Low Pressure Letdown pressure at approximately 300 psig.

RO

Place TCV-130 to MANUAL if desired and adjust as necessary. N/A if not desired.

NOTE: The next step requires two actions, ensure AOV-202 closed prior to opening AOV-200A or AOV-200B.

RO

Close 60 gpm orifice valve, THEN immediately open 40 gpm orifice valve (N/A 40 gpm orifice valve not opened).

RO

Adjust PCV-135 to achieve Letdown pressure of - 250 psig on PI-135.

RO

Ensure PCV-135 controller signal is nulled/balanced and then Place PCV-135 to AUTO, if desired.

RO

Place or ensure TCV-130 is in AUTO, if desired.

Op Test No.: 1 Scenario # 1 Event # 1 Page 8 of 33Event Description: **Swap Letdown Orifice Valves**

Time	Position	Applicant's Actions or Behavior
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	RO	Monitor Charging/Letdown mismatch. IF desired, THEN place charging in manual. IF not desired, THEN N/A this step.

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>2</u>	Page	<u>9</u>	of	<u>33</u>
Event Description:		PORV Leakage on PCV-430							
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:			Enter Malf. PZR 05A @ 2% on Trigger #1.
Indications Available:			
		PPCS Alarm (PORV Mid-position)/F-19	
AR-F-19 PRZR PORV Outlet HI Temp 145°F.			
	SRO	IF Pressurizer pressure is decreasing, THEN GO TO AP-PRZR.1.	
		NOTE: SRO may carry out AP-PRZR.1 and AR-F-19 simultaneously.	
AP-PRZR.1 "Abnormal Przr Pressure"			
	RO	Check PRZR Pressure:	
		<ul style="list-style-type: none"> All 4 narrow range channels – APPROXIMATELY EQUAL All 4 narrow range channels – TRENDING TOGETHER 	
	RO	Check reactor Power – STABLE	
	RO	Check PRZR Pressure:	
		<ul style="list-style-type: none"> Pressure – LESS THAN 2235 PSIG Pressure – GREATER THAN 2000 PSIG 	
	RO	Check PRZR Heater Status:	
		<ul style="list-style-type: none"> PRZR proportional heater breaker – CLOSED. PRZR heater backup group - ON 	
	RO	Verify Normal PRZR Spray Valves - CLOSED	
NOTE:			
With PRZR pressure controller 431K in manual, PORV-431C will not operate in the automatic mode (refer to TR 3.4.3).			

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>2</u>	Page	<u>10</u>	of	<u>33</u>
Event Description:		PORV Leakage on PCV-430							
Time	Position	Applicant's Actions or Behavior							

	RO	Check PRZR Pressure Controller, 431K, Demand – LESS THAN 50%.
NOTE: The Reactor Operator will attempt to close the PORV without direction, and upon discovering that the PORV will not close, attempt to close Block valve MOV-516. Once this action is complete, or during the process that it is occurring the RO will report this to the SRO.		
	RO	Check PRZR PORVs:
		<ul style="list-style-type: none"> PORVs – CLOSED. (Note: PCV 430 is indication mid-position)
	RO	Manually close PORVs.
	RO	IF any valve can NOT be closed, THEN manually close the associated block valve.
		<ul style="list-style-type: none"> MOV-516 for PCV-430.
	RO	Annunciator F-19, PRZR PORV OUTLET HI TEMP 145oF Extinguished. (This annunciator will not be extinguished)
		If PORV leakage is indicated, then perform the following:
		<ul style="list-style-type: none"> Close PORV Block Valve one at a time and check if Pressure stabilizes.
		<ul style="list-style-type: none"> If leaking PRZR PORV is identified, then open any non-leaking PORV Block Valve and go to step 8.
		NOTE: It is expected that MOV 516 will be closed upon arrival of this action. The SRO will note this and move on to step 8.
	RO	Attempt to reseal any leaking PORV
		<ul style="list-style-type: none"> Verify affected PORV Block Valve closed.
		<ul style="list-style-type: none"> Cycle the leaking PORV open and closed.
		<ul style="list-style-type: none"> Verify leakage has stopped.
		<ul style="list-style-type: none"> If leakage continues Then:

Op Test No.: 1 Scenario # 1 Event # 2 Page 11 of 33Event Description: **PORV Leakage on PCV-430**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Reclose leaking PORV Block Valve.
		<ul style="list-style-type: none"> Refer to ITS section 3.4.11 and TR 3.4.3.
		<ul style="list-style-type: none"> Go to Step 11.
	RO	Check PRZR Pressure Control Restored:
		<ul style="list-style-type: none"> Pressure – TRENDING TO 2235 PSIG
	RO	Check PRT Indications:
		<ul style="list-style-type: none"> Level – BETWEEN 61% AND 84%
		<ul style="list-style-type: none"> Pressure – APPROXIMATELY 1.5 PSIG AND STABLE
		<ul style="list-style-type: none"> Temperature – AT CNMT AMBIENT TEMPERATURE AND STABLE
	RO	Establish PRZR Pressure Control In Auto:
		<ul style="list-style-type: none"> Verify 431K in AUTO
		<ul style="list-style-type: none"> Verify PRZR spray valves in AUTO.
		<ul style="list-style-type: none"> Verify PRZR heaters restored:
	Crew	Evaluate MCV Annunciator Status
	SRO	Notify Higher Supervision
	SRO	Notify Reactor Engineer for Transient Monitoring Program
AR-F-19 PRZR PORV Outlet HI Temp 145°F.		
		NOTE: SRO may carry out AP-PRZR.1 and AR-F-19 simultaneously.
	RO	Check PRZR PORV Outlet temperature, TI-438.
	RO	Check PRT parameters.

Op Test No.: 1 Scenario # 1 Event # 2 Page 12 of 33Event Description: **PORV Leakage on PCV-430**

Time	Position	Applicant's Actions or Behavior		
	RO	Check Containment temperature.		
	SRO/RO	Start OR swap Containment Recirc Fans per Shift Supervisor directions.		
	SRO	Refer to ITS LCO 3.4.11 and 3.4.13.		
	SRO	LCO 3.4.11		
		Each PORV and associated block valve shall be OPERABLE.		
		<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
		One PORV Inoperable.	B.1 Close associated block valve.	1 hour
			AND	
			B.2 Remove power from associated block valve.	1 hour
			AND	
			B.3 Restore PORV to OPERABLE status.	72 hours
	SRO	LCO 3.4.13		
		RCS operational LEAKAGE		
		NOTE: SRO will check and determine insufficient data to quantify leakage/no entry.		
	TRM	TRM		
		Anticipated Transients Without Scram (ATWS) Mitigation		
		<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
		A. One or more PORV automatic flow path inoperable.	A.1 Declare ATWS mitigating capability inoperable.	Immediately

Op Test No.: 1 Scenario # 1 Event # 3 Page 13 of 33Event Description: **Post Contingency Low Voltage Alarm Occurs**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Set E-MIS10 to 1.0 and ramp in over 60 seconds. (Trigger #2)

Booth Operator Instructions: Call Control Room with Energy Operations phone. Tell SRO that the Ginna Post Contingency Low Voltage Alarm has occurred due to the system load. You will inform him when it has cleared.

Indications Available:

0-6.9 "Operating Limits for Ginna Station Transmission."

	SRO	6.3 Low Voltage Condition at 13A With Generator Output Breaker(s) Closed
	SRO	IF RG&E ECC informs the Control Room that a Ginna Post Contingency Low Voltage Alarm has occurred THEN DECLARE offsite power inoperable (Refer to ITS 3.8.1).

NOTE: RG&E ECC will be taking action to clear the Post Contingency Low Voltage Alarm. WHEN the alarm has cleared, THEN RG&E ECC will inform the Control Room that the alarm has cleared and the post-contingency voltage is above the minimum required voltage.

	SRO	LCO 3.8.1												
		AC Sources – MODES 1, 2, 3, and 4												
		<table> <thead> <tr> <th>CONDITION</th> <th>REQUIRED ACTION</th> <th>COMPLETION TIME</th> </tr> </thead> <tbody> <tr> <td>C. Offsite power to one or more 480V safeguards bus(es) inoperable.</td> <td>C.1 Restore required offsite circuit to OPERABLE status.</td> <td>12 hours</td> </tr> <tr> <td>AND</td> <td>OR</td> <td></td> </tr> <tr> <td>One DG inoperable.</td> <td>C.2 Restore DG to OPERABLE status.</td> <td>12 hours</td> </tr> </tbody> </table>	CONDITION	REQUIRED ACTION	COMPLETION TIME	C. Offsite power to one or more 480V safeguards bus(es) inoperable.	C.1 Restore required offsite circuit to OPERABLE status.	12 hours	AND	OR		One DG inoperable.	C.2 Restore DG to OPERABLE status.	12 hours
CONDITION	REQUIRED ACTION	COMPLETION TIME												
C. Offsite power to one or more 480V safeguards bus(es) inoperable.	C.1 Restore required offsite circuit to OPERABLE status.	12 hours												
AND	OR													
One DG inoperable.	C.2 Restore DG to OPERABLE status.	12 hours												

Op Test No.:	1	Scenario #	1	Event #	3	Page	14	of	33
Event Description: Post Contingency Low Voltage Alarm Occurs									
Time	Position	Applicant's Actions or Behavior							

	SRO	TR 3.8.1		
		<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
		B. Two Off-Site Power Circuits inoperable.	B.1 Enter LCO 3.8.1.	Immediately
	SRO	Contact Maintenance Department and check on availability of A EDG. Ask that work be expedited.		

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>4</u>	Page	<u>15</u>	of	<u>33</u>
Event Description:		VCT Level Transmitter (LT-112) Fails Low							
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:			Enter malf. CVC10A @ 0%. (Trigger #3)
Indications Available:			
		A-2 VCT LEVEL 14% 86	
AR-A-2, "VCT LEVEL 14% 86."			
	SRO	IF channel failure is indicated, THEN refer to Attachment 1 and Figure 1 to respond to VCT level transmitter failure.	
		LT-112 FAILED LOW	
	SRO/RO	<ul style="list-style-type: none"> Notify AO to monitor LI-139 in valve alley, and report reading. 	
	RO	<ul style="list-style-type: none"> Auto makeup will start and operate continuously. Upon verification from AO that VCT level as indicated on LI-139 is greater than 30%, secure auto makeup by taking control switch to OFF. 	
	RO	<ul style="list-style-type: none"> Inform AO to notify Control Room for makeup requirement when LI-139 indicates approximately 20%. 	
NOTE: Booth Operator should verify and report VCT Level from LI-139 using VCT Screen Drawing VCT 1.			
	RO	<ul style="list-style-type: none"> Perform makeup by one of the following methods: 	
		<ul style="list-style-type: none"> Rearm auto makeup to start the auto makeup, then disarm when LI-139 is greater than 30%. 	

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>5</u>	Page	<u>16</u>	of	<u>33</u>
Event Description: An Electrical Ground Fault Occurs on Safeguards Bus 16									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:			Insert malif. EDS04B. (Trigger #4)
Indications Available:			
		L-5 SAFEGUARD BUS MAIN BREAKER OVERCURRENT TRIP	
		L-7 BUS 16 UNDER VOLTAGE SAFEGUARDS	
AR-L-5, "SAFEGUARD BUS MAIN BREAKER OVERCURRENT TRIP."			
		NOTE: Operator may diagnose no voltage on Bus 16 and immediately enter AP-ELECT.14/16.	
NOTE:		DO NOT attempt to reset affected Safeguards bus normal feed breaker until overcurrent condition has been identify and isolated.	
	RO	To prevent the D/G from loading on the affected Safeguards bus while troubleshooting is in progress, PULL STOP the affected D/G supply breaker.	
	SRO	Notify the following:	
		• Electricians	
		• Scheduling	
		• Operations Supervision	
	SRO	Refer to ITS LCO 3.8.1 OR 3.8.2.	
	SRO	Direct Electricians to investigate cause of overcurrent condition.	
AR-L-7, "BUS 16 UNDER VOLTAGE SAFEGUARDS"			
		NOTE: Operator may diagnose no voltage on Bus 16 and immediately enter AP-ELECT.14/16.	
	SRO	Refer to ITS LCO 3.8.1 OR 3.8.2.	

Op Test No.: 1 Scenario # 1 Event # 5 Page 17 of 33Event Description: **An Electrical Ground Fault Occurs on Safeguards Bus 16**

Time	Position	Applicant's Actions or Behavior
		AP-ELEC.14/16, "Loss of Safeguards Bus 14/16"
	RO	Monitor Tavg.
		Place Rods in Manual.
		Manually move Control Rods to control Tavg.
	RO	Verify that Emergency D\G associated with affected bus is running. (NOTE: B EDG is running)
	BOP	Verify Both Trains of Emergency Busses Energized to at least 420 volts.
	RO	If one train deenergized Then:
		• Ensure D\G is aligned for Unit Operation
		• Mode Switch in UNIT.
		• Voltage Control Selector in AUTO.
		• Check D\G running.
		NOTE: Crew will note that the procedure step cannot be carried out because of the overcurrent lockout on Bus 16.
	RO	Verify CCW Pump Status
		At least one CCW Pump running.
		Annunciator A-22, CCW Pump Discharge LO Press 60 PSIG-Extinguished.
	RO	Verify Charging Pump Status – Atr Least one pump running.
	BOP	Check MFW Regulating Valves – Restoring S/G Level to 52% in AUTO.
	BOP	Verify Bus 14 – Energized to at least 420 volts.

Op Test No.: 1 Scenario # 1 Event # 5 Page 18 of 33Event Description: **An Electrical Ground Fault Occurs on Safeguards Bus 16**

Time	Position	Applicant's Actions or Behavior
	BOP	Verify Bus 16 – Energized to at least 420 volts.
		NOTE: Bus 16 will be deenergized and incapable of being restored.
	RO/BOP	Ensure the following equipment is running:
		CCW Pump A
		Charging Pump A
		PRZR Proportional Heaters
		Containment Recirc Fans A and D
		Boric Acid Pump A
		RMW Pump A
		Reactor Compartment Cooling Fan A
		Penetration Cooling Fan A
		SFP Cooling
	SRO	Direct AO to swap Aux Bldg lighting to MCC C.
	SRO	Provide alternate room cooling for D/G B
	SRO	Cross Connect D/G A Fuel Oil transfer pump to D/G B.
	RO	Check VCT Makeup System
		NOTE: Crew must recognize that LT 112 is failed low and the system must be maintained in accordance with AR-A-2.
	RO	Check Charging Pump suction aligned to VCT.
		VCT Level > 20%
		Align Charging Pumps to VCT
		LCV-112C Open
		LCV-112B Closed

Op Test No.: 1 Scenario # 1 Event # 5 Page 19 of 33Event Description: **An Electrical Ground Fault Occurs on Safeguards Bus 16**

Time	Position	Applicant's Actions or Behavior
	RO	Check CVCS Operation
		Charging Pumps – At least one running.
		Charging line flow > 20 gpm.
		Check Letdown indications:
		Przr level > 13%
		Letdown Flow approximately 40 gpm.
		Letdown flow stable.
		Adjust Charging Pump speed and HCV-142 to restore Przr level and labyrinth seal DPs.
	RO	Verify Przr Heaters restored
		Przr Proportional Heaters Breaker closed.
		Przr Backup Heater Breaker - Reset, in AUTO.
	RO	Verify normal Rod Control restored.
		Annunciator D-5, PPCS Rod Sequence or Rod Deviation – Extinguished.
		Annunciator E-28, Power Range Rod Drop Rod Stop – Extinguished.
		Annunciator F-15, RCS TAVG DEV 4°F – Extinguished.
		Place Rods in AUTO if desired.
	SRO	Establish Stable Plant Conditions
		Check Tavg Trending to Tref.
		Check Przr Pressure – Trending to 2235 psig in AUTO.
		Check Przr Level – Trending to program in AUTO control.
	BOP	Restore normal Electric System Alignment.
		Verify all AC Bus Breakers closed.
		NOTE: The Bus 16 Breakers will not be able to be closed.

Op Test No.: 1 Scenario # 1 Event # 5 Page 20 of 33Event Description: **An Electrical Ground Fault Occurs on Safeguards Bus 16**

Time	Position	Applicant's Actions or Behavior
	SRO	If normal power is not restored, go to step 17.
	SRO	Establish normal plant conditions.
	RO	Verify two charging pumps running.
		Verify at least two Containment Recirc Fans running.
		Check CCW pumps – Only one running.
		Check radiation monitors:
		<ul style="list-style-type: none"> • CNMT Sample Pump running.
		<ul style="list-style-type: none"> • Plant Vent Sample Pump running.
		<ul style="list-style-type: none"> • All area and process monitors operating as required.
	BOP	Check Status of DC System loads.
		Verify the TDAFW pump DC oil pump Off in AUTO.
	BOP	Check status of battery chargers.
		Battery chargers A or A1 energized.
		Battery chargers B or B1 energized.
	SRO	Restore Equipment alignment.
		Verify Annunciator L-1, Aux Bldg. Vent System Control Panel – Extinguished.
		Restore Affected Bus equipment as power supply permits.
		Evaluate MCB Annunciators status
		Verify control board valve alignment – normal.
	SRO	Establish control systems in AUTO.
	Crew	Evaluate MCB Annunciator status.

Op Test No.: 1 Scenario # 1 Event # 5 Page 21 of 33Event Description: **An Electrical Ground Fault Occurs on Safeguards Bus 16**

Time	Position	Applicant's Actions or Behavior						
	SRO/BOP	Verify Emergency AC Bus normal feeder breakers closed.						
		NOTE: Recognize that Bus 16 cannot be energized and that procedure loop is in effect until Bus is restored.						
		LCO 3.8.1						
	SRO	AC Sources – MODES 1, 2, 3, and 4						
		CONDITION						
		Offsite power to one or more 480 V safeguards bus(es) inoperable.						
		AND						
		One DG inoperable.						
		Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems – MODES 1, 2, 3, and 4," when Condition C is entered with no AC power source to one distribution train.						
		LCO 3.8.9						
		Distribution Systems – MODES 1, 2, 3, and 4						
		<table border="0"> <thead> <tr> <th><u>CONDITION</u></th> <th><u>REQUIRED ACTION</u></th> <th><u>COMPLETION TIME</u></th> </tr> </thead> <tbody> <tr> <td>E. Two trains with inoperable electrical power distribution subsystems that result in a loss of safety function.</td> <td>E.1 LCO 3.0.3.</td> <td>Immediately</td> </tr> </tbody> </table>	<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>	E. Two trains with inoperable electrical power distribution subsystems that result in a loss of safety function.	E.1 LCO 3.0.3.	Immediately
<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>						
E. Two trains with inoperable electrical power distribution subsystems that result in a loss of safety function.	E.1 LCO 3.0.3.	Immediately						
NOTE: This event leaves the plant with the B EDG running unloaded.								

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>6</u>	Page	<u>22</u>	of	<u>33</u>
Event Description: Load Decrease at 1%/Minute									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:		Call SRO as plant management a direct load decrease @ 1%/minute.
Indications Available:		
AP-TURB.5, "Rapid Load Reduction."		
	SRO	Initiate a Load Reduction
	RO	Verify rods in AUTO
	BOP	Reduce Turbine Load in AUTO.
	RO	Initiate boration at ≈ 2 gal/% load reduction.
	RO	Place Przr Backup Heaters to ON.
	RO	Monitor RCS Tavg
		Tavg > 545°F
		Tavg < 579°F
	RO	Adjust boric acid addition rate as necessary to:
		Maintain rods above RIL.
		Match Tavg and Tref.
		Compensate for Xenon.
	RO	Monitor Przr Pressure – Trending to 2235 psig in AUTO.
	BOP	Monitor MFW Regulating Valves – restoring S/G level to 52% in AUTO.
	RO	Monitor Przr Level – Trending to program in Auto Control.
	RO	Check Instrument Air to Containment

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>6</u>	Page	<u>23</u>	of	<u>33</u>
Event Description: Load Decrease at 1%/Minute									
Time	Position	Applicant's Actions or Behavior							

		IA Pressure > 60 psig.
		IA to CNMT Isolation Valve AOV 5392 open.
	RO	Check Steam Dump Status
		Annunciator G-15, Steam Dump Armed - Lit
		Steam Dump operating properly in AUTO.
	BOP	Check Hotwell Level
		Hotwell level controller in Auto.
		Controller demand < 60%.
		Hotwell level at setpoint.
BOOTH OPERATOR'S NOTE:		Wait until load has been decreased 30 MW before proceeding to Event 7.

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>7, 8</u>	Page	<u>24</u>	of	<u>33</u>
Event Description: Dropped Rods									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:			Insert malf. ROD02-J4. (Trigger #5)
Indications Available:			
		E-28 POWER RANGE ROD DROP ROD STOP – 5% /5 SEC	
	SRO	Refer to AP-RCC.3	
NOTE: Booth Operator should note discussion among the crew. If there is decision to Trip reactor that is imminent, move to Event 8 and drop second Control Rod immediately.			
AP-RCC.3, "DROPPED ROD RECOVERY."			
	RO	Verify Only One Rod has Dropped.	
	RO	Place Rods to MANUAL.	
CAUTION: Bank Rod Withdrawal should not be performed until the dropped rod is recovered.			
	RO	Check Tavg – STABLE AT PROGRAM	
	BOP	Perform the following:	
		<ul style="list-style-type: none"> Place EH control in MNAUAL. 	
		<ul style="list-style-type: none"> Manually adjust turbine load to match Tavg and Tref. 	
	RO/BOP	Verify Annunciator G-15, STEAM DUMP ARMED – EXTINGUISHED	
	BOP	Check Main Generator Load – GREATER THAN 15 MW	

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>7, 8</u>	Page	<u>25</u>	of	<u>33</u>
Event Description: Dropped Rods									
Time	Position	Applicant's Actions or Behavior							

	RO	Establish Stable Plant Conditions:
		<ul style="list-style-type: none"> Tavg – TRENDING TO TREF
	RO	If Tavg greater than Tref. THEN restore Tavg to Tref by one or more of the following:
		<ul style="list-style-type: none"> Insert control rods
		<ul style="list-style-type: none"> Boration
	RO/BOP	IF Tavg less than Tref, THEN restore Tavg to Tref by one or more of the following:
		<ul style="list-style-type: none"> Reduce turbine load
		<ul style="list-style-type: none"> Dilution of RCS
	RO	PRZR pressure – TRENDING TO 2235 PSIG IN AUTO
	RO	PRZR level – TRENDING TO PROGRAM IN AUTO CONTROL
	BOP	MFW Regulating Valves – RESTORING S/G LEVEL TO 52% IN AUTO

NOTE: If not done already, Booth Operator should move to Event 8 and drop second Control Rod immediately.

Op Test No.: 1 Scenario # 1 Event # 7, 8 Page 26 of 33Event Description: **Dropped Rods**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Insert malf. ROD02-J10. (Trigger #6)**Indications Available:**

	RO	Verify Only One Rod Has Dropped
	SRO	IF 2 or more rods dropped, THEN trip the reactor AND go to E-0, REACTOR TRIP OR SAFETY INJECTION.
E-0, "REACTOR TRIP OR SAFETY INJECTION."		
	RO	Verify Reactor Trip:
	BOP	Verify Turbine Stop Valves – CLOSED
	BOP	Verify Both Trains of AC Emergency Busses Energized To At Least 420 VOLTS:
	RO/BOP	Check if SI is Actuated:
		<ul style="list-style-type: none"> Any SI Annunciator - LIT
		IF any of the following conditions are met, THEN manually actuate SI and CI:
		<ul style="list-style-type: none"> PRZR pressure less than 1750 psig
		OR
		<ul style="list-style-type: none"> Steamline pressure less than 514 psig
		OR
		<ul style="list-style-type: none"> CNMT pressure greater than 4 psig
		OR
		<ul style="list-style-type: none"> SI sequencing started
		OR

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>7, 8</u>	Page	<u>27</u>	of	<u>33</u>
Event Description: Dropped Rods									
Time	Position	Applicant's Actions or Behavior							

		<ul style="list-style-type: none"> Operator determines SI required
		IF SI is NOT required, THEN go to ES-0.1, REACTOR TRIP RESPONSE, Step 1.
ES-0.1, "REACTOR TRIP RESPONSE"		
CAUTION: If SI Actuation occurs during this procedure, THEN E-0, Reactor Trip Or Safety Injection, should be performed.		
	RO	Monitor RCS Tavg – STABLE AT OR TRENDING TRO 547°F
	RO	Check PRZR Level Control:
		<ul style="list-style-type: none"> Verify charging pumps – ANY RUNNING
		<ul style="list-style-type: none"> PRZR LEVEL – greater than 13%
		<ul style="list-style-type: none"> Verify letdown – IN SERVICE
		<ul style="list-style-type: none"> PRZR level – TRENDING TO 20%
		<ul style="list-style-type: none"> Check PRZR heaters - ENERGIZED
		<ul style="list-style-type: none"> PRZR proportional heaters
		<ul style="list-style-type: none"> PRZR heater backup group
NOTE: Booth Operator may move to event 9 at any time from this point, on cue of Lead Examiner, if necessary for time control of scenario.		
	BOP	Check S/G Feed Flow Status:
		<ul style="list-style-type: none"> Check RCS Tavg – LESS THAN 554°F
		<ul style="list-style-type: none"> Verify MFW flow control valves - CLOSED
		<ul style="list-style-type: none"> MFW regulating valves
		<ul style="list-style-type: none"> MFW bypass valves
		<ul style="list-style-type: none"> Verify total AFW flow – GREATER THAN 200 GPM
		<ul style="list-style-type: none"> Close MFW pump discharge valves

Op Test No.: 1 Scenario # 1 Event # 7, 8 Page 28 of 33Event Description: **Dropped Rods**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> • MOV-3977, A MFW pump
		<ul style="list-style-type: none"> • MOV-3976, B MFW pump
		<ul style="list-style-type: none"> • Stop MFW pumps and place in PULL STOP
		<ul style="list-style-type: none"> • WHEN both MFP pumps are stopped, THEN depress MANUAL pushbuttons for A and B MFW regulating valve and bypass valve controllers AND adjust to 0% demand.
		<ul style="list-style-type: none"> • S/G A. HCV-466 and HCV-480
		<ul style="list-style-type: none"> • S/G B. HCV-476 and HCV-481
	RO	Verify MRPI Indicates – ALL CONTROL AND SHUTDOWN RODS ON BOTTOM
NOTE: Booth Operator may move to event 9 at this time.		

Op Test No.: 1 Scenario # 1 Event # 9 Page 29 of 33Event Description: **A Total Loss of Off-Site Power Occurs**

Time	Position	Applicant's Actions or Behavior
Booth Operator Instructions: Insert malf. EDS06 1 (FAST). (Trigger #7)		
Indications Available:		
EVALUATOR'S NOTE: "B" EDG now running without Service Water. SI signal occurs because two Containment Pressure fails have failed (PT-945 initial conditions, PT-___ on LOP from Instrument Bus B).		
	SRO	IF Bus 14 AND Bus 16 are deenergized, THEN go to ECA-0.0, LOSS OF ALL AC POWER, Step 1.
ECA-0.0, "LOSS OF ALL AC POWER."		
CAUTION: Due to potentially extreme environmental conditions. Caution should be used when entering the intermediate building for local actions.		
NOTE: <ul style="list-style-type: none"> CFSTs should be monitored for information only. PR procedures should not be implemented. Local actions may require portable lighting and communication devices. 		
	RO	Verify Reactor Trip:
	BOP	Verify Turbine Stop Valves - CLOSED
NOTE: FOLDOUT page should be open and monitored periodically.		
	BOP	Adjust S/G ARVs To Control Tavg At Approximately 547°F
	RO	Stop Both RCPs

Op Test No.: <u>1</u> Scenario # <u>1</u> Event # <u>9</u> Page <u>30</u> of <u>33</u>		
Event Description: A Total Loss of Off-Site Power Occurs		
Time	Position	Applicant's Actions or Behavior

	RO	Check If RCS Is Isolated:
		<ul style="list-style-type: none"> • PRZR PORVs – CLOSED
		<ul style="list-style-type: none"> • Verify RCS isolation valves closed:
		<ul style="list-style-type: none"> • Place letdown orifice valve switches to CLOSE
		<ul style="list-style-type: none"> • AOV-200A
		<ul style="list-style-type: none"> • AOV-200B
		<ul style="list-style-type: none"> • AOV-202
		<ul style="list-style-type: none"> • Place letdown isolation valve switches – to CLOSE
		<ul style="list-style-type: none"> • AOV-371
		<ul style="list-style-type: none"> • AOV-427
		<ul style="list-style-type: none"> • Place excess letdown isolation valve switch to CLOSE (AOV-310)

Op Test No.: 1 Scenario # 1 Event # 10 Page 31 of 33Event Description: **TDAFW Pump Failure**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions:**Indications Available:**

	BOP	Verify Adequate TDAFW Flow:
		<ul style="list-style-type: none"> Verify TDAFW pump – RUNNING
	BOP	Verify governor valve, V-3652, latched.
	BOP	Manually or locally open at least one TDAFW pump steam supply valve.
		<ul style="list-style-type: none"> MOV-3505A MOV-3504
Critical Task (ECA-0.0-B) Establish greater than 200 gpm AFW flow before both S/G's levels decrease to < 35" wide range level.		
	BOP	Verify TDAFW pump flow – GREATER THAN 200 GPM

Bill
 //

Op Test No.:	1	Scenario #	1	Event #	11	Page	32	of	33
Event Description: A EDG is restored to service.									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions: Clear malf. GEN04A.		
Indications Available:		
NOTE:		<ul style="list-style-type: none"> Conditions should be evaluated for Site Contingency Reporting (Refer to EPIP-1.0, GINNA STATION EVENT EVALUATION AND CLASSIFICATION). AO should frequently monitor the TDAFW pump until AC power is restored.
BOOTH OPERATOR'S NOTE: Call SRO as work control center and inform that "A" EDG is available and the clearance may be lifted.		
	SRO/RO	Try To Restore Power to Any Train of AC Emergency Busses:
		<ul style="list-style-type: none"> Verify emergency D/G aligned for unit operation
		<ul style="list-style-type: none"> Mode switch in UNIT
		<ul style="list-style-type: none"> Voltage control selector in AUTO
	RO	Manually align switches on rear of MCB.
	SRO/RO	<ul style="list-style-type: none"> Check emergency D/Gs – BOTH D/G RUNNING.
	RO	WHEN non-running D/G available for starting, THEN perform the following:
		<ul style="list-style-type: none"> Depress D/G FIELD RESET pushbutton
		<ul style="list-style-type: none"> Depress D/G RESET pushbutton
		<ul style="list-style-type: none"> Start D/G
		<ul style="list-style-type: none"> IF D/G starts, THEN go to Step 7.c.
	RO	<ul style="list-style-type: none"> CHECK D/G voltage and frequency
		<ul style="list-style-type: none"> Voltage – APPROXIMATELY 480v

Op Test No.:	<u>1</u>	Scenario #	<u>1</u>	Event #	<u>11</u>	Page	<u>33</u>	of	<u>33</u>
Event Description: A EDG is restored to service.									
Time	Position	Applicant's Actions or Behavior							

		<ul style="list-style-type: none"> Frequency – APPROXIMATELY 60 Hz
	RO/BOP	<ul style="list-style-type: none"> Verify adequate D/G cooling
		<ul style="list-style-type: none"> Bus 17 and/or Bus 18 – ENERGIZED
		<ul style="list-style-type: none"> One SW Pump running for each running D/G
		<ul style="list-style-type: none"> Verify at least one train of AC emergency busses - ENERGIZED
		<ul style="list-style-type: none"> Bus 14 and Bus 18
Critical Task (ECA-0.0)		Restore AC Power to at least one Emergency Bus prior to placing pump control switches in Pull-Stop in ECA-0.0.
	SRO	Return to procedure and step in effect.
		SRO goes to ES-0.1, and then transition to E-0 based on SI having actuated.
BOOTH OPERATOR:		Freeze simulator.
EAL 6.1.3 (Alert) EDG A only AC Source for > 15 minutes. Or 6.1.4 (SAE) Loss of both Trains of AC Power for > 15 minutes		

Scenario Event Description

NRC Scenario 2

Ginna 2007 NRC Scenario #2

The Plant is at 100% power Steady-State (BOL), and been for the last 9 days following Refueling Outage.

The following equipment is Out-Of-Service: A MDAFW Pump (Expected back in 24 hours), Steam Flow channel FT-475 (The channel has been defeated per ER-INST.1, "Reactor Protection Bistable Defeat After Instrumentation Loop Failure.") and MCB Annunciator J-8 has alarmed spuriously several times over the last hour (I&C is investigating).

Shortly after turnover, R-12 (Containment Gas Monitor) will fail high. The operator will respond in accordance with AR-A-25, "Containment Ventilation Isolation," and/or AR-RMS-12.2, "Cnmt Gas Fail Alarm." The operator will address Technical Specifications 3.3.5, "Containment Ventilation Isolation Instrumentation," 3.4.15, "RCS Leakage Detection Instrumentation," and 3.6.3, "Containment Isolation Boundaries."

Shortly after this, a Small SG Tube Leak (.4 gpm) develops on B SG. The operator will respond in accordance with AR-PPCS-1, "SGTL Indicated," and AP-SG.1, "Steam Generator Tube Leak." The operator will address Technical Specification 3.7.14, "Secondary Specific Activity," and 3.4.13, "RCS Operational Leakage." With the SG Tube Leak at >150 GPD, the Operations Manager will decide to shutdown the plant. The Operator will commence a plant shutdown to Hot Standby at 10%/hour in accordance with O-2.1, "Normal Shutdown to Hot Shutdown."

Following the start of the shutdown, uncontrolled rod motion will occur. The operator will respond in accordance with AP-RCC.1, "Continuous Control Rod Withdrawal/Insertion," and place rods in manual.

Once AP-RCC.1 is complete, the shutdown will recommence. During the shutdown, Pressurizer Level Channel LT-428 will slowly fail high. The operator will respond in accordance with AR-F-4, "Pressurizer Level Deviation -5 Normal +5," and AR-F-28, "Pressurizer High Level Channel Alert 87%," and then address ER-INST.1, "Reactor Protection Bistable Defeat After Instrumentation Loop Failure." The operator will take manual control of the Charging Pumps and control Pzr Level.

Shortly after this, the SG Tube Leak will degrade to approximately 10 gpm. The operator will return to AP-SG.1, "Steam Generator Tube Leak," and re-evaluate for the degraded conditions. The procedure will start the crew on a rapid downpower at 3%/minute.

After about 10-15% power reduction, an inadvertent Safety Injection signal will occur (The Automatic Reactor Trip is blocked). The operator will perform a manual reactor trip and enter E-0, "Reactor Trip or Safety Injection."

The B MDAFW Pump will fail to automatically start. When started by the operator, the pump will trip within 60 seconds. Upon start up of the TDAFW Pump, the pump will trip on overspeed and be damaged to the point that it can no longer be used. This will eventually cause a Red Path on Heat Sink and the operator will transition to FR-H.1, "Response to Loss of Secondary Heat Sink."

The operator will attempt to start the SAFW system to provide flow to one SG, however, both Flow Transmitters (FT-4084 and 4085) will have been isolated from Shutdown, and the SAFW pumps when started will reach runout conditions and trip on overcurrent within 60 seconds. (LER 2006-4)

Scenario Event Description

NRC Scenario 2

Feed flow will be restored to one Steam Generator using a Condensate and a Main Feedwater Pump. Once feed flow is restored to one Steam Generator the operator will transition back to ES-0.1, "Reactor Trip Response."

Critical Tasks:

E-0-A Trip the reactor before both Steam Generator Wide Range Levels decrease to less than 35". *Consequence?*

FR-H.1-A Establish Feedwater flow into at least one Steam Generator before Bleed and Feed Criteria is met in FR-H.1. *Base?*

Scenario Event Description

NRC Scenario 2

Simulator Set Up

IC-172

Place Hold Tags on:

- A MDAFW Pump Control Switch
- Close and Tag MOV 4007 Control Switch

Place Protected Equipment Tags on:

- B MDAFW Pump Control Switch

Insert:

FDW11A – A MDAFW Trip, (Pull/Stop, Hold Tag, Close MOV-4007, Protective Covers on B MDAFW Pump)

FDW12 (0 RPM) – TDAFW Pump Overspeed

RPS05A – Fail A Rx Trip Bkr (Manual Available)

RPS05B – Fail B Rx Trip Bkr (Manual Available)

STM01B (0) – Fail SF FT-475 (Perform Defeat per ER-INST.1)

RPS07L – B MDAFW Pump fails to auto start

Ino/ovr IND-FW31 (SAFW Flow) to "0"

Ino/ovr IND-FW33 (SAFW Flow) to "0"

Events:

1	Trigger 1 – Malf. RMS02B ($1e^{+007}$)
	Trigger 2 – Malf. SGN04B (.4gpm)
2	When requested – LOA SGN24 (0) (Close V-996A)
3	None
4	Trigger 3 – Malf. ROD1A-66 (Insert prior to commencing boration and Load Reduction)
5	Trigger 4 – Malf. PZR03C (100% @30second ramp)
6	Increase Malf. SGN04B (10gpm)
7	None
8	Trigger 5 - Malf. SIS01 (0) Train A
9	None (RPS05A and B set at T0)
10	(RPS07L – B MDAFW Pump fails to auto start at T0), once started trip 2 minutes later by inserting FWD11B on Trigger 30.
11	None (FDW12 (0 RPM) – TDAFW Pump Overspeed at T0)
12	Trigger 29 – FWD15A – 60 delay (Initiated when C SAFW Pump is manually started).
	Trigger 28 – FWD15B – 60 delay (Initiated when D SAFW Pump is manually started).

Scenario Event Description

NRC Scenario 2

Shift Turnover:

The Plant is at 100% power Steady-State (BOL), and been for the last 9 days following Refueling Outage.

The following equipment is Out-Of-Service: A MDAFW Pump (Expected back in 24 hours), Steam Flow channel FT-475 (The channel has been defeated per ER-INST.1, "Reactor Protection Bistable Defeat After Instrumentation Loop Failure.") and MCB Annunciator J-8 has alarmed spuriously several times over the last hour (I&C is investigating).

Hold Tags have been placed on:

- A MDAFW Pump Control Switch
- Close and Tag MOV 4007 Control Switch

Protected Equipment Tags have been placed on:

- B MDAFW Pump Control Switch

Scenario Event Description

NRC Scenario 2

A-52.4

Equipment	Date	Time	Reason	Required Actions	Required Completion Date/Time	Required Action not met
FT-475 (Steam Flow Channel, B SG)	_/_/07	_____	Failed Channel	ITS 3.3.2 Condition A Enter Condition referenced on Table 3.3.2-1 (4d, 4e) immediately. Condition F (From 4d, e) – Place Channel in Trip within 6 hours.	TRACKING ONLY	Condition G – Be in Mode 3 within 6 hours, and Mode 4 within 12 hours.
A MDAFW Pump	_/_/07	_____	Bearing replacement	ITS 3.7.5 Condition B Restore MDAFW train to operable status within 7 days.	_/_/07 _____	Condition G – Required action and associated completion time for Condition B not met, be in Mode 3 within 6 hours, and Mode 4 within 12 hours.

Op Test No.: 1 Scenario # 2 Event # 1 Page 7 of 30Event Description: **R-12 Failure**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Operates Trigger #1.**Indications Available:**

		A-25 CONTAINMENT VENTILATION ISOLATION
AR-A-25, "CONTAINMENT VENTILATION ISOLATION."		
	RO	Monitor Area Radiation Monitors – R-2, R-7.
	SRO	Refer to ITS LCO 3.3.5.
	SRO	Notify RP to sample CNMT.
AR-RMS-12.2 CNMT GAS FAIL ALARM		
	SRO/RO	Evaluate the cause of the alarm.
	SRO	Perform the following:
		• Initiate an A-52.4.
		• Notify RP.
		• Notify I&C.
		• Submit WO.
	SRO	REFER TO ITS 3.3.5, 3.4.15, 3.6.3.
	SRO	LCO 3.3.5
		CONTAINMENT VENTILATION ISOLATION INSTRUMENTATION

Op Test No.: 1 Scenario # 2 Event # 1 Page 8 of 30Event Description: **R-12 Failure**

Time	Position	Applicant's Actions or Behavior
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		<u>CONDITION</u> A. One radiation monitoring channel inoperable.	<u>REQUIRED ACTION</u> A.1 Restore the affected channel to OPERABLE status.	<u>COMPLETION TIME</u> 4 hours
	SRO	LCO 3.4.15		
		RCS LEAKAGE DETECTION INSTRUMENTATION		
		<u>CONDITION</u> B. Gaseous containment atmosphere radioactivity monitor inoperable.	<u>REQUIRED ACTION</u> B.1 Verify particulate containment atmosphere radioactivity monitor OPERABLE.	<u>COMPLETION TIME</u> 1 hour
	SRO	LCO 3.6.3		
		CONTAINMENT ISOLATION BOUNDARIES		
		(Not affected)		

Op Test No.: 1 Scenario # 2 Event # 2 Page 9 of 30Event Description: **B Steam Generator Tube Leak**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Operates Trigger #2.

		AR-PPCS-1
AR-PPCS-1, "SGTL INDICATED."		
	RO	Trend PPCS points R1545A5G.
	SRO	Notify RP/Chemistry to IMMEDIATELY obtain and analyze an air ejector grab sample per CH-SAMP-SG-LEAKRATE.
	RO	Determine the estimated leak rate using the R15A5G.
	SRO	IF any condition below is met, THEN go to AP-SG.1:
		<ul style="list-style-type: none"> R15A5G (PPCS) greater than 5 gpd AND INCREASING for greater than one (1) minute.
AP-SG.1, "STEAM GENERATOR TUBE LEAK."		
	RO	Monitor PRZR Level.
	RO	Monitor S/G Tube Leak Rate:
		<ul style="list-style-type: none"> PPCS Point R15A5G
	RO/BOP	Trend S/G Leak Rate:
		<ul style="list-style-type: none"> While continuing with this procedure, perform Part A of ATT-16.1, ATTACHMENT SGTL
		<ul style="list-style-type: none"> Determine S/G leak rate:
		<ul style="list-style-type: none"> PPCS point R15A5G

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>2</u>	Page	<u>10</u>	of	<u>30</u>
Event Description:		B Steam Generator Tube Leak							
Time	Position	Applicant's Actions or Behavior							

ATT-16.1, "ATTACHMENT SGTL."		
	SRO	Primary to secondary leakage in at least one S/G ≥ 5 gpd
		<ul style="list-style-type: none"> Request RP perform a second sample
		<ul style="list-style-type: none"> Notify RP to implement procedure CH-SAMP-SG-LEAKRATE.
		<ul style="list-style-type: none"> Refer to ITS LCO 3.7.14
		<ul style="list-style-type: none"> Notify Chemistry to determine desired S/G blowdown flowpath.
	RO	<ul style="list-style-type: none"> Check operability of the following monitors.
		<ul style="list-style-type: none"> R-15
		<ul style="list-style-type: none"> R-15A
		<ul style="list-style-type: none"> R-19
		<ul style="list-style-type: none"> R-31
		<ul style="list-style-type: none"> R-32
	SRO	<ul style="list-style-type: none"> Dispatch an AO to perform T-35H, Nuclear House Heating Steam To Boiler Steam Supply change Over.
	RO	<ul style="list-style-type: none"> IF the leaking S/G has NOT been identified, THEN perform the following to identify the leaking S/G. (Valves located in IB hot side, outside sample room).
	RO	<ul style="list-style-type: none"> Direct an AO to close V-996A, inlet block valve to FI-2027 (S/G blowdown Hx A outlet flow)
BOOTH OPERATOR'S NOTE: LOA SGN 24 to "0" to CLOSE V-996A.		
	RO	Monitor R-19 for approximately two (2) minutes.
		<ul style="list-style-type: none"> IF R-19 increases, THEN leakage is in S/G B.
	RO	Open V-996A, inlet block valve to FI-2027 (S/G blowdown Hx A outlet flow).

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>2</u>	Page	<u>11</u>	of	<u>30</u>
Event Description:		B Steam Generator Tube Leak							
Time	Position	Applicant's Actions or Behavior							

BOOTH OPERATOR'S NOTE:		LOA SGN024 to 100% to OPEN V-996A.
AP-SG.1, "STEAM GENERATOR TUBE LEAK."		
	SRO	Determine If Shutdown Required:
		<ul style="list-style-type: none"> S/G tube leak rate GREATER THAN OR EQUAL TO 75 GPD
		<ul style="list-style-type: none"> S/G tube leak rate – STABLE OR RISING
		<ul style="list-style-type: none"> Go to Step 6.
	SRO	Confirm S/G Leak Rate:
		<ul style="list-style-type: none"> Notify higher supervision
		<ul style="list-style-type: none"> While continuing with this procedure, perform Parts A AND B of ATT-16.1, ATTACHMENT SGTL
ATT-16.1, "ATTACHMENT SGTL."		
	SRO	Primary to secondary leakage in at least one S/G \geq 75 gpd
		<ul style="list-style-type: none"> Refer to ITS LCO 3.4.13
		<ul style="list-style-type: none"> Refer to ITS LCO 3.7.14
		<ul style="list-style-type: none"> Refer to EPIP-1.0, Ginna Station Event Evaluation and Classification.
		<ul style="list-style-type: none"> Refer to 0-9-3, NRC IMMEDIATE NOTIFICATION.
	BOP	Place Hotwell level controller in Manual at 50% position.
	RO	Start the A and B CNMT Auxiliary Charcoal Filter Fans.
	SRO	Consult with R/P Chemistry.

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>2</u>	Page	<u>12</u>	of	<u>30</u>
Event Description: B Steam Generator Tube Leak									
Time	Position	Applicant's Actions or Behavior							

	BOP/AO	Shift Support Heating Steam Trap Outlet Valves from the trap header to Blowdown Tank.
	BOP/AO	Request identification of leaking S/G from the Control Room.
	BOP/AO	Close trap drain isolation valve upstream of MSIV on the leaking S/G.
	BOP/AO	Verify Blowdown Tank discharge valve V-5714 is closed (at S/G Blowdown Tank).
	BOP/AO	Isolate Blowdown from the leaking S/G.
	SRO	Refer to ITS LCO 3.7.5.
	SRO	Refer to TRM 3.4.3.
	BOP	PULL STOP the TDAFW Pump Steam Admission valve from the leaking S/G.
	SRO	Notify RP to survey.
	SRO	Notify RPs to verify that airborne contaminants that may be discharging from steam reliefs OR the Air Ejector are NOT being pulled into the supply air handling units.
AP-SG.1, "STEAM GENERATOR TUBE LEAK."		
	SRO	Initiate Plant Shutdown
		<ul style="list-style-type: none"> Determine S/g leak rate every 15 minutes
		<ul style="list-style-type: none"> Check S/G leak rate – RISING LESS THAN 30 GPD/HR

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>2</u>	Page	<u>13</u>	of	<u>30</u>
Event Description: B Steam Generator Tube Leak									
Time	Position	Applicant's Actions or Behavior							

		<ul style="list-style-type: none"> Check R15A5 – OPERABLE 						
		<ul style="list-style-type: none"> Check S/G leak rate – HAS REMAINED LESS THAN 144 GPD SINCE LEAK INITIATION 						
	SRO	Be in Mode 3 within 6 hours of exceeding 144 gpd. (Refer to 0-2.1, NORMAL SHUTDOWN TO HOT SHUTDOWN)						
	SRO	<ul style="list-style-type: none"> Refer to ITS 						
		<ul style="list-style-type: none"> LCO 3.4.13 						
		<ul style="list-style-type: none"> LCO 3.4.16 						
		<ul style="list-style-type: none"> LCO 3.7.14 						
	SRO	Check following Tech Specs						
	SRO	LCO 3.7.14						
		SECONDARY SPECIFIC ACTIVITY						
	SRO	LCO 3.4.16						
		RCS SPECIFIC ACTIVITY						
	SRO	LCO 3.4.13						
		RCS OPERATIONAL LEAKAGE						
		RCS operation LEAKAGE shall be limited to 150 gallons per day primary to secondary leakage through any one SG.						
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;"><u>CONDITION</u></th> <th style="width: 33%;"><u>REQUIRED ACTION</u></th> <th style="width: 33%;"><u>COMPLETION TIME</u></th> </tr> </thead> <tbody> <tr> <td>A. RCS LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE.</td> <td>A.1 Reduce LEAKAGE to within limits.</td> <td>4 hours</td> </tr> </tbody> </table>	<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>	A. RCS LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>						
A. RCS LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours						

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>3</u>	Page	<u>14</u>	of	<u>30</u>
Event Description:		Plant Shutdown to Hot Standby Required By Tech Specs							
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:		Operate Trigger #3 (Note that this will cause the Continuous Rod Withdrawl malfunction to occur as soon as Rods receive a signal to move in Automatic).
Indications Available:		
O-2.1, "Normal Shutdown to Hot Shutdown."		
	SRO	EVALUATE whether the following surveillances will be performed during this procedure.
	SRO	NOTIFY RG&E Energy Control Center of impending load reduction.
	SRO	CHECK that Scheduling has notified CPS Generation Dispatch of impending lowering of load including rate of load reduction and expected power level at which plant will stabilize.
	RO	PLACE PRZR BACKUP HEATERS control switch to the ON position.
	RO	ADJUST ONE Pressurizer SPRAY VALVE controller setpoint to 50%.
	SRO	IF load reduction is necessary due to unusual plant condition, THEN:
		<ul style="list-style-type: none"> NOTIFY the following personnel of the unusual plant conditions requiring load reductions:
		<ul style="list-style-type: none"> Plant Manager
		<ul style="list-style-type: none"> Manager, Operations
		<ul style="list-style-type: none"> Assistant Operations Manager
		<ul style="list-style-type: none"> Outage Director
		<ul style="list-style-type: none"> NOTIFY Shift Manager to commence investigation of

Op Test No.: 1 Scenario # 2 Event # 3 Page 15 of 30Event Description: **Plant Shutdown to Hot Standby Required By Tech Specs**

Time	Position	Applicant's Actions or Behavior
		unusual plant condition.
	SRO	ENSURE Shift Manager (on duty) has conducted a shift briefing, with onsite Operations and Scheduling Supervision included, on Power reduction.
	BOP	PLACE the Metal Impact Monitoring System (MIMS) ALARM ENABLE/INHIBIT switch on the Master Control Module in the ALARM INHIBIT position.
		(Note: Not Simulated)
	SRO	Start of Load Reduction
	RO	ENSURE the ROD CONTROL BANK SELECTOR switch is in the desired A (Automatic) OR M (Manual) position AND MARK position NOT used N/A.
	RO	REFER to S-3.1, Boron Concentration Control, AND INITIATE Boric Acid additions to the Reactor Coolant System, as necessary.
	BOP	START the load reduction at the EH Control Panel as follows:
		<ul style="list-style-type: none"> IF the IMP PRESS OUT pushbutton back light is illuminated, THEN PERFORM the following: <ul style="list-style-type: none"> DEPRESS the IMP PRESS in pushbutton. VERIFY the IMP PRESS IN pushbutton back light is illuminated. IF the EH Control Panel is in OPER PAN. Control, THEN PERFORM the following: <ul style="list-style-type: none"> LOWER the SETTER setpoint using the ▼ pushbutton. DEPRESS the GO pushbutton.

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>4</u>	Page	<u>16</u>	of	<u>30</u>
Event Description: Uncontrolled Automatic Rod Motion Occurs									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:		
Indications Available:		
AP-RCC.1, "CONTINUOUS CONTROL ROD WITHDRAWAL/INSERTION."		
	RO/BOP	Evaluate Rod Control System Operability:
		• Check turbine load – STABLE
		• Place Rods to MANUAL
		• Verify control rod motion STOPS
	RO	Monitor Tavg:
		Check Tavg – TRENDING TO Tref
		Check RCS Tavg Channel Indications:
	BOP	Check Turbine 1 st Stage Pressure Channel, PI-485 – APPROXIMATELY EQUAL TO PI-486
	RO	Check NIS PR Indication:
		All Power Range Channels approximately equal.
		All ΔI Indicators approximately equal.
	RO	Establish Stable Plant Conditions:
		Tavg Trending to Tref.
		Przr Pressure Trending to 2235 psig in Auto.
		Przr Level trending to Program in Auto control.
		RIL Alarms – Extinguished.
		NIS PR ΔI within desired operating band.
	RO	Verify Control Rods Operable In Manual:
		• Insert/withdraw control rods to MRPI transition

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>4</u>	Page	<u>17</u> of <u>30</u>
Event Description:		Uncontrolled Automatic Rod Motion Occurs					
Time	Position	Applicant's Actions or Behavior					

		<ul style="list-style-type: none"> • Verify MRPI indicates control rod motion
		<ul style="list-style-type: none"> • Restore control rods to desired position
	RO	Establish Control Systems In Auto:
		Control Rods in Auto.
		Przr Pressure in Auto.
		Spray Valves in Auto.
		Przr Heaters restored.
		Verify one Charging Pump in Auto.
	Crew	Evaluate MCB Annunciator Status
	SRO	Notify Higher Supervision

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>5</u>	Page	<u>18</u>	of	<u>30</u>
Event Description: Przr Level Instrument Malfunction									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions: Operate Trigger #4.		
Indications Available:		
NOTE:	The downpower should recommence with Control Rods in MANUAL.	
		F-4, PRESSURIZER LEVEL DEVIATION – 5 NORMAL + 5
		F-28, PRESSURIZER HIGH LEVEL CHANNEL ALERT 87%
AR-F-4, PRESSURIZER LEVEL DEVIATION – 5 NORMAL + 5		
	RO	Perform a channel check.
	RO	Verify Backup Heaters on at + 5%.
	RO	Check charging pump speed and controls.
	RO	Check Letdown in service.
	RO	Control Charging and Letdown as necessary to control level.
		• ER-INST.1 for failed channel.
AR-F-28, "PRESSURIZER HIGH LEVEL CHANNEL ALERT 87%."		
	RO	Perform a channel check.
	RO	Check charging and letdown.
	SRO	For failed channel go to ER-INST.1.

Op Test No.: 1 Scenario # 2 Event # 5 Page 19 of 30Event Description: **Przr Level Instrument Malfunction**

Time	Position	Applicant's Actions or Behavior
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ER-ISNT.1, "Reactor Protection Bistable Defeat After Instrumentation Loop Failure."

	SRO/RO	Identify the failed instrument channel by observation of the bistable status light board, MCB annunciators, and the MCB metering indication.
	SRO	PRZR LEVEL CHANEL FAILURE
	SRO	IF PRZR low level heater cut and has occurred, THEN monitor PRZR pressure AND DEFEAT failed channel in a timely manner to allow restoration of PRZR heaters.

Op Test No.: 1 Scenario # 2 Event # 6, 7 Page 20 of 30Event Description: **Rapid Downpower due to increased Steam Generator Tube Leak**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Once RO has effectively controlled charging and letdown, increase SGN04B to 10 gpm.

Indications Available:

AP-SG.1, "STEAM GENERATOR TUBE LEAK."		
	RO	Monitor PRZR Level
	RO/BOP	Monitor S/G Tube Leak Rate:
		<ul style="list-style-type: none"> Estimate S/G tube leak rate:
		<ul style="list-style-type: none"> PPCS Point R15A5G
		<ul style="list-style-type: none"> Check total RCS to secondary leak rate – LESS THAN 1 GALLON PER MINUTE (1440 GPD)
	SRO	Go to Step 8.
	SRO	Initiate Load Reduction
	BOP	<ul style="list-style-type: none"> Reduce turbine load in Auto as follows:
		<ul style="list-style-type: none"> Place Turbine EH Control in OPER Pan. IMP PRESS IN. if desired.
		<ul style="list-style-type: none"> Select rate of 3%/min on thumbwheel.
		<ul style="list-style-type: none"> Reduce the setter to zero.
		<ul style="list-style-type: none"> Depress the GO button.
	RO	<ul style="list-style-type: none"> Initiate boration at ~2 gal/%.
		<ul style="list-style-type: none"> Place PRZR backup heaters switch to ON.
	BOP	<ul style="list-style-type: none"> Transfer 4160V Auxiliary load from #11 Transformer.
	RO	Monitor RCS Tavg.
	RO	Adjust Boric Acid Addition Rate As Necessary to:

Op Test No.: <u>1</u> Scenario # <u>2</u> Event # <u>6, 7</u> Page <u>21</u> of <u>30</u>		
Event Description: Rapid Downpower due to increased Steam Generator Tube Leak		
Time	Position	Applicant's Actions or Behavior

		<ul style="list-style-type: none"> Maintain control rods above insertion limits
		<ul style="list-style-type: none"> Match Tavg and Tref
		<ul style="list-style-type: none"> Compensate for Xenon

NOTE: Ensure load decreases at least 30 MW before the initiation of Event 8.

Op Test No.: 1 Scenario # 2 Event # 8, 9, 10, & 11 Page 22 of 30

Event Description: **Inadvertent Safety Injection Occurs Causing an ATWS; Automatic Reactor Trip is Blocked – Manual Trip Received; B MDAFW Pump Fails to Auto Start and then Trips Shortly After Manual Start; TDAFW Pump Trips on Overspeed**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Operate trigger #5.

Indications Available:

E-0, "REACTOR TRIP OR SAFETY INJECTION."

	RO	Verify Reactor Trip
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NOTE: Reactor does not trip on Inadvertent SI and must be tripped manually.

	RO	Manually trip reactor.
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Critical Task (E-0-A) Trip the reactor before both Steam Generator Wide Range Levels decrease to less than 35".

	BOP	Verify Turbine Stop Valves – CLOSED.
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	BOP	Verify Both Trains of AC Emergency Busses Energized To At Least 420 VOLTS:
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	RO/BOP	Check if SI is Actuated:
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- SI sequencing – BOTH TRAINS STARTED.

	RO	Manually actuate SI and CI.
--	----	-----------------------------

	RO	Verify CNMT Spray Not Required:
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	SRO	Direct Operator to Perform ATT-27.0, ATTACHMENT AUTOMATIC ACTION VERIFICATION
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	BOP	Verify Both MDAFW Pumps Running
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Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>8, 9, 10, & 11</u>	Page	<u>23</u>	of	<u>30</u>
Event Description:		Inadvertent Safety Injection Occurs Causing an ATWS; Automatic Reactor Trip is Blocked – Manual Trip Received; B MDAFW Pump Fails to Auto Start and then Trips Shortly After Manual Start; TDAFW Pump Trips on Overspeed							
Time	Position	Applicant's Actions or Behavior							

	BOP	Manually start both MDAFW pumps.
		NOTE: A MDAFW Pump OOS and B MDAFW will fail to Auto Start. It must be started manually.
	BOP	IF less than 2 MDAFW pump are running, THEN manually open TDAFW pump steam supply valves.
	BOP	Verify AFW Valve Alignment:
	BOP	Manually align valves as necessary.
BOOTH OPERATOR'S NOTE: Trip "B" MDAFW Pump 2 minutes after pump start. (Trigger #30)		
	BOP	Monitor Heat Sink:
		<ul style="list-style-type: none"> Check S/G narrow range level – GREATER THAN 7%.
	BOP	Verify total AFW flow – GREATER THAN 200 GPM
	SRO	IF total AFW is less than 200 gpm, THEN manually start pumps and align valves to establish greater than 200 gpm AFW flow. IF AFW flow greater than 200 gpm can NOT be established. THEN go to FR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK, Step 1.
FR-H.1, "RESPONSE TO LOSS OF SECONDARY HEAT SINK."		
	RO/BOP	Check If Secondary Heat Sink Is Required:
		<ul style="list-style-type: none"> RCS pressure – GREATER THAN ANY NON-FAULTED S/G PRESSURE
		<ul style="list-style-type: none"> Check RCS cold leg temperature – GREATER THAN 350°F

Op Test No.: 1 Scenario # 2 Event # 8, 9, 10, & 11 Page 24 of 30

Event Description: **Inadvertent Safety Injection Occurs Causing an ATWS; Automatic Reactor Trip is Blocked – Manual Trip Received; B MDAFW Pump Fails to Auto Start and then Trips Shortly After Manual Start; TDAFW Pump Trips on Overspeed**

Time	Position	Applicant's Actions or Behavior
	BOP	Monitor Secondary Heat Sink:
		<ul style="list-style-type: none"> Verify either S/G level – WIDE RANGE GREATER THAN 50 inches.
		<ul style="list-style-type: none"> Verify PRZR pressure – LESS THAN 2335 PSIG.
	BOP	Try to Establish AFW Flow To At Least One Intact S/G:
		<ul style="list-style-type: none"> Verify 2 MDAFW pumps – AVAILABLE
		NOTE: Both MDAFW Pumps are unavailable.
	BOP	Verify TDAFW pump available.
		NOTE: The TDAFW Pump has undergone an Overspeed Trip and cannot be reset.
	RO	Stop Both RCPs.

Op Test No.: 1 Scenario # 2 Event # 12 Page 25 of 30Event Description: **SAFW Flow Transmitters are Isolated Resulting in Pump Run Out of SAFW Pump. (Pumps Trips < 60 Seconds After Start)**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Operate trigger #29 at the start of SAFW pump C.

Indications Available:

	RO	Reset SI If Actuated
	RO	Try To Establish SAFW Flow To At Least One Intact S/G:
		<ul style="list-style-type: none"> Align SAFW system for operation (Refer to ATT-5.1.

ATT-5.1, "ATTACHMENT SAFW."

	RO	Align SAFW Pump C to selected S/G as follows:
		<ul style="list-style-type: none"> Ensure SI Reset
		<ul style="list-style-type: none"> Ensure the following valves open:
		<ul style="list-style-type: none"> MOV-9701A, SAFW PUMP C DISCHARGE VLV
		<ul style="list-style-type: none"> MOV-4616, AUX BLDG SW ISOL VLV
		<ul style="list-style-type: none"> MOV-9704A, SAFW PUMP C ISOL VLV
		<ul style="list-style-type: none"> Open MOV-9629A, SAFW PUMP C SUCTION VLV.
	BOP	<ul style="list-style-type: none"> Verify at least 1 SW pump running.
		<ul style="list-style-type: none"> To feed S/G A.
		<ul style="list-style-type: none"> Restore SAFW flow as directed by procedure in effect.
		<ul style="list-style-type: none"> Determine SAFW flow requirements per ATT-22.0, ATTACHMENT RESTORING FEED FLOW

ATT-22.0, "ATTACHMENT RESTORING FEED FLOW."

	SRO/BOP	Initiate Feed flow as follows:

Op Test No.: 1 Scenario # 2 Event # 12 Page 26 of 30Event Description: **SAFW Flow Transmitters are Isolated Resulting in Pump Run Out of SAFW Pump. (Pumps Trips < 60 Seconds After Start)**

Time	Position	Applicant's Actions or Behavior
	SRO/BOP	IF feedwater flow to affected S/G greater than 50 gpm OR affected SG level greater than 50 inches (100 inches adverse CNMT). THEN fill as desired to restore narrow range greater than 7% (25% adverse CNMT) and go to step 2 of this attachment.
	SRO/BOP	IF NOT, THEN establish less than or equal to 100 gpm feed flow to affected S/G. WHEN S/G level greater than 50 inches (100 inches adverse CNMT), THEN fill as desired to restore narrow range greater than 7% (25% adverse CNMT) and go to step 2 of this attachment.
	RO	<ul style="list-style-type: none"> Start selected SAFW pump(s).
NOTE: Pump will start and trip 60 seconds later. Crew will return to Step 6 and attempt to start D SAFW pump.		
	RO	Try to Establish SAFW Flow To At Least One Intact S/G:
		<ul style="list-style-type: none"> Perform the following: <ul style="list-style-type: none"> Align SAFW system for operation (Refer to ATT-5.1 ATTACHMENT SAFW)
ATT-5.1, "ATTACHMENT SAFW."		
	RO	Align SAFW Pump D to selected S/G as follows:
		<ul style="list-style-type: none"> Ensure SI Reset
		<ul style="list-style-type: none"> Ensure the following valves open: <ul style="list-style-type: none"> MOV-9701B, SAFW PUMP D DISCHARGE VLV MOV-4615, AUX BLDG SW ISOL VLVS MOV-9704B, SAFW PUMP D ISOL VLV MOV-9746, SAFW PMP D EMERG DISCH VLV
		<ul style="list-style-type: none"> Open MOV-9629B, SAFW PUMP D SUCTION VLV.

Op Test No.: 1 Scenario # 2 Event # 12 Page 27 of 30Event Description: **SAFW Flow Transmitters are Isolated Resulting in Pump Run Out of SAFW Pump. (Pumps Trips < 60 Seconds After Start)**

Time	Position	Applicant's Actions or Behavior
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	BOP	<ul style="list-style-type: none"> Verify at least 1 SW pump running.
	RO	<ul style="list-style-type: none"> To feed S/G A, perform the following: <ul style="list-style-type: none"> Close MOV-9704B, SAFW PUMP D ISOL VLV Open either SAFW CROSSOVER VLV: <ul style="list-style-type: none"> MOV-9703A
		OR
		<ul style="list-style-type: none"> MOV-9703B
		<ul style="list-style-type: none"> Verify open MOV-9704A, SAFW PUMP C ISOL VLV
	RO	<ul style="list-style-type: none"> Restore SAFW flow as directed by procedure in effect.
		<ul style="list-style-type: none"> Determine SAFW flow requirements per ATT-22.0 ATTACHMENT RESTORING FEED FLOW
ATT-22.0, "ATTACHMENT RESTORING FEED FLOW."		
	SRO/BOP	Initiate Feed flow as follows:
	SRO/BOP	IF feedwater flow to affected S/G greater than 50 gpm OR affected SG level greater than 50 inches (100 inches adverse CNMT). THEN fill as desired to restore narrow range greater than 7% (25% adverse CNMT) and go to step 2 of this attachment.
	SRO/BOP	IF NOT, THEN establish less than or equal to 100 gpm feed flow to affected S/G. WHEN S/G level greater than 50 inches (100 inches adverse CNMT), THEN fill as desired to restore narrow range greater than 7% (25% adverse CNMT) and go to step 2 of this attachment.
	RO	Start selected SAFW pump(s)

Op Test No.:	<u>1</u>	Scenario #	<u>2</u>	Event #	<u>12</u>	Page	<u>28</u>	of	<u>30</u>
Event Description:		SAFW Flow Transmitters are Isolated Resulting in Pump Run Out of SAFW Pump. (Pumps Trips < 60 Seconds After Start)							
Time	Position	Applicant's Actions or Behavior							

	SRO	IF greater than 235 gpm total SAFW flow can NOT be established, THEN go to Step 7
BOOTH OPERATOR NOTE: Operate trigger #28 at the start of SAFW D.		
FR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK		
	BOP	Try to Establish MFW Flow to at Least One S/G
		<ul style="list-style-type: none"> Check any MFW pump AVAILABLE
		<ul style="list-style-type: none"> Check condensate system:
		<ul style="list-style-type: none"> Condensate pump – CNY RUNNING
		<ul style="list-style-type: none"> MFW pump suction pressure GREATER THAN 200 PSIG
	BOP	<ul style="list-style-type: none"> Establish MFW flow:
		<ul style="list-style-type: none"> Check MFW pump discharge valves – CLOSED
		<ul style="list-style-type: none"> Verify MFW regulating or bypass valves – OPERABLE
		<ul style="list-style-type: none"> Depress MANUAL pushbuttons for A and B MFW regulating valve and bypass valve controllers AND adjust to 0% demand.
		<ul style="list-style-type: none"> Open MFIV's for both S/G's:
		<ul style="list-style-type: none"> S/G A, AOV-3995
		<ul style="list-style-type: none"> S/G B, AOV-3994
		<ul style="list-style-type: none"> Dispatch AO to restore MFW pump SW cooling
		<ul style="list-style-type: none"> Verify S/G blowdown key switches in NORMAL
		<ul style="list-style-type: none"> Ensure Annunciator H-4, MAIN FEED PUMP OIL SYSTEM – EXTINGUISHED
		<ul style="list-style-type: none"> Close Condensate Bypass valve, AOV-3959.
		<ul style="list-style-type: none"> Ensure Annunciator H-11, FEED PUMP SEAL WATER LO DIFF PRESS 15 PSI – EXTINGUISHED
		<ul style="list-style-type: none"> Ensure one MFW pump recirc valve – OPEN

Op Test No.: 1 Scenario # 2 Event # 12 Page 29 of 30Event Description: **SAFW Flow Transmitters are Isolated Resulting in Pump Run Out of SAFW Pump. (Pumps Trips < 60 Seconds After Start)**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Start Selected MFW pump
		<ul style="list-style-type: none"> Open MFW pump discharge valve
		<ul style="list-style-type: none"> Open MFW regulating or bypass valves to control MFW flow per requirements of ATT-22.0, ATTACHMENT RESTORING FEED FLOW
ATT-22.0, ATTACHMENT RESTORING FEED FLOW		
	SRO/BOP	Initiate Feed flow as follows:
	SRO/BOP	IF feedwater flow to affected S/G greater than 50 gpm OR affected SG level greater than 50 inches (100 adverse CNMT), THEN fill as desired to restore narrow range greater than 7% (25% adverse CNMT) and go to step 2 of this attachment.
	SRO/BOP	IF NO, THEN establish less than or equal to 100 gpm feed flow to affected S/G. WHEN S/G level greater than 50 inches (100 inches adverse CNMT), THEN fill as desired to restore narrow range greater than 7% (25% adverse CNMT) and go to step 2 of this attachment.
Critical Task (FR-H.1-A) Establish Feedwater flow into at least one Steam Generator before Bleed and Feed Criteria is met in FR-H.1.		
	RO	Check RCS Loop Hot Legs - BOTH HOT LEG TEMPERATRUES DECREASING
	BOP	Verify affected S/G is not faulted or ruptured.
		NOTE: The SG with the higher level is the B SG with a Tube Leak. Efforts should be made to feed this generator regain a Heat Sink, and then continue to feed the A SG.

Op Test No.: 1 Scenario # 2 Event # 12 Page 30 of 30Event Description: **SAFW Flow Transmitters are Isolated Resulting in Pump Run Out of SAFW Pump. (Pumps Trips < 60 Seconds After Start)**

Time	Position	Applicant's Actions or Behavior
FR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK		
	SRO	Go to Step 11.
	BOP	Check S/G Levels:
		<ul style="list-style-type: none"> Narrow range level in at least one S/G – GREATER THAN 7% (25% adverse CNMT)
	SRO	<ul style="list-style-type: none"> Return to procedure and step in effect.
Booth Instructor: Freeze the Simulator		
EAL 1.3.1 (SAE) Red Path on Heat Sink Modes 1-4.		

Scenario Event Description

NRC Scenario 3

Ginna 2007 NRC Scenario #3

The Plant is critical at 10^{-8} amps in the process of starting up after a short duration shutdown (MOL). The Electrical Distribution System is in a 50/50 Alignment. The startup procedure (O-1.2) is complete through step 6.3.4, and now it is intended to proceed to the POAH.

The following equipment is Out-Of-Service: Pressurizer Pressure channel PT-449 (The channel has been defeated per ER-INST.1) and MCB Annunciator E-16, "RMS Process Monitor High Activity," has failed and is "Locked In" (I&C is investigating).

The Reactor Operator completes the startup to the POAH in accordance with O-1.2, "Plant Startup From Hot Shutdown to Full Load." Upon arrival at the POAH the compensating voltage to IR N-35 is lost. The operator will stabilize and respond in accordance with AR-E-9, "IR N-35 Loss of Compensating Voltage," and ER-NIS.2, "IR Malfunction." The operator will address Technical Specification 3.3.1, "Reactor Trip System Instrumentation," and respond to the Technical Specification Action. This will require that the crew stabilize power at 10^{-8} amps while I&C investigates and completes repairs.

Upon insertion of the Control Rods to lower power to 10^{-8} , one Control Rod Individual Rod Position Indicator (MRPI) will fail. The operator will respond in accordance with AP-RCC.2, "RCC/RPI Malfunction," and address Technical Specifications 3.1.4, "Rod Group Alignment Limits," and 3.1.7, "Rod Position Indication." I&C will repair both the IR and MRPI failures.

Shortly afterwards, the Letdown Pressure Controller fails causing Control Valve PCV-135 to close. The operator will respond in accordance with AR-A-11, "Letdown Line Hi Press 400 PSI," and take manual control of PCV-135.

Shortly afterwards, a leak will develop on the discharge expansion joint of the C Service Water Pump. The operator will respond in accordance with AP-SW.2, "Loss of Service Water," and AP-SW.1, "Service Water Leak," and because of water spray onto the C Service Water Pump, the pump will trip. The operator will address Technical Specification 3.7.8, "Service Water System."

Upon restoration of the Service Water System, a Large Break LOCA will occur. The plant will trip and SI will actuate. Both trains of CI will fail to actuate requiring the operator to manually isolate the Containment. The operator will enter E-0, "Reactor Trip or Safety Injection," RCPS will be stopped and transition will be made to E-1, "Loss of Reactor or Secondary Coolant."

After SI/CI is reset a loss of Circuit 767 will occur such that the B EDG will start and re-power Bus 16, however the feeder breaker from Bus 17 will fail to reclose (SW Pumps B and D are de-energized) (LER 2005-003).

The operator should transition to ES-1.3, "Transfer to Cold Leg Recirculation," and align the RHR System for Cold Leg Recirculation, using Attachment 2.1, "Attachment Min SW," for guidance on minimum Service Water.

Critical Tasks:

CT E-0-O

Initiate CNMT isolation such that at least one valve is closed in each flowpath which is passing fluid out of containment.

Scenario Event Description

NRC Scenario 3

CT ES-1.3-A

Transfer to cold leg recirculation on at least one train of RHR pump(s) prior to cavitating SI pumps taking suction from the RWST.

Scenario Event Description

NRC Scenario 3

Simulator Set Up

IC-173

Ensure Electrical Distribution is in 50/50 Lineup.

Insert:

PZR02D (0) – Fail PZR Pressure PT-465 (Perform Defeat per ER-INST.1)

Fail Annunciator E-16 “On”

RPS06 – Fail Containment Isolation (Both Auto and Manual)

Events:

1	None
2	Trigger 1 – Malf. NIS05A ($1e^{-008}$)
3	Trigger 2 (ROD11-G3 (230) Fail MRPI at T0)
4	Trigger 3 – Malf. CVC07A set at “0” (Manual Available)
5	Trigger 4 – Malf. CLG01C (SW Pump C Trip) and Malf. CLG08E (SW Leak @ 200 gpm). A-EDS33 (L-8 on).
6	Trigger 5 – Malf. RCS03D (LBLOCA)
7	None (RPS06 – Fail Containment Isolation (Both Auto and Manual) at T0)
8	Trigger 6 - Malf. EDS01B
9	None (Malf. GEN06D – Bus 17 Feeder Breaker Failure at T0)

Scenario Event Description

NRC Scenario 3

Shift Turnover:

The Plant is critical at 10^{-8} amps in the process of starting up after a short duration shutdown (MOL). The Electrical Distribution System is in a 50/50 Alignment. The startup procedure (O-1.2) is complete through step 6.3.4, and now it is intended to proceed to the POAH.

The following equipment is Out-Of-Service: Pressurizer Pressure channel PT-449 (The channel has been defeated per ER-INST.1) and MCB Annunciator E-16, "RMS Process Monitor High Activity," has failed and is "Locked In" (I&C is investigating).

After turnover you have been directed to continue with the startup and proceed to the POAH.

Scenario Event Description
NRC Scenario 3

A-52.4

Equipment	Date	Time	Reason	Required Actions	Required Completion Date/Time	Required Action not met
PT-449 (Przr Pressure)	_/_/07	_____	Failed Channel	<p>ITS 3.3.1 Condition A One or more functions with one channel inoperable, enter the Condition referenced by Table 3.3.1-1 immediately.</p> <p>Condition D (F5) – As required by Required Action A.1 and referenced by Table 3.3.1-1, place the channel in trip in 6 hours.</p> <p>Condition K (F7a) – As required by Required Action A.1 and referenced by Table 3.3.1-1, place the channel in trip in 6 hours.</p> <p>ITS 3.3.3 Condition A (F1, f6) One or more functions with one channel inoperable, restore required channel to operable status within 30 days.</p>	TRACKING ONLY	<p>Condition G (F5) – Required Action D.1 and associated completion time not met, be in Mode 3 in 6 hours.</p> <p>Condition L (F7a) – Required Action and associated completion time of Condition K not met, reduce thermal power to < 8.5% RTP in 6 hours.</p> <p>Condition F (F1, F6) As required by reference in Table 3.3.3-1, be in Mode 3 in 6 hours, and Mode 4 in 12 hours.</p>

Op Test No.: 1 Scenario # 3 Event # 1 Page 7 of 37Event Description: **Raise Reactor Power to POAH**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions:**Indications Available:****O-1.2, "Plant Startup From Hot Shutdown to Full Load."**

	RO	RAISE Reactor Power to approximately 1.0×10^{-8} as follows:
		<ul style="list-style-type: none"> WITHDRAW the controlling bank of rods to establish approximately a one DPM startup rate.
	RO	WHEN Reactor Power is approaching 1.0×10^{-8} AMPS, THEN PERFORM the following:
		<ul style="list-style-type: none"> INSERT rods to level off at 1.0×10^{-8} _____ RECORD Actual Critical Rod Position _____ RECORD Bank _____ RECORD Estimated Critical Rod Position _____ RECORD Bank _____ RECORD Boron Concentration _____ ppm RECORD Reactor Coolant Tavg _____
	RO	WITHDRAW controlling bank of Rods and raise Reactor Power to the point of adding heat without exceeding the capacity of one AFW Pump.
	BOP	VERIFY one of the following is operating to control RCS Tavg
		<ul style="list-style-type: none"> SG ARVs Condenser Steam Dumps

Op Test No.: 1 Scenario # 3 Event # 1 Page 8 of 37Event Description: **Raise Reactor Power to POAH**

Time	Position	Applicant's Actions or Behavior
	BOP	ENSURE FW Pump Ventilation is in automatic PER T-4G, Main Feedwater Pump Motor Ventilation System.

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>2</u>	Page	<u>9</u>	of	<u>37</u>
Event Description:		N35 IR Failure							
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:		When Reactor Power at the POAH, Operate Trigger #1.
Indications Available:		
		E-9, IR N-35 LOSS OF COMPENSATION VOLTAGE
AR-E-9, "IR N-35 LOSS OF COMPENSATION VOLTAGE."		
	SRO	Refer to ER-NIS.2
ER-NIS.2, "IR MALFUNCTION."		
	RO	Defeat the reactor trip and rod stop function for the affected channel by placing the level trip switch in the BYPASS position.
	SRO	Notify I&C to repair the faulty channel.
	SRO	Refer to ITS Section 3.3.1, Table 3.3.1-1, Function #3 and Function #16a for NIS intermediate range channel operability requirements.
	SRO	The SRO will address the following Tech Specs:
	SRO	LCO 3.3.1
		REACTOR TRIP SYSTEM (RTS) INSTRUMENTATION
	SRO	Table 3.3.1-1
		3. Intermediate Range Neutron Flux E, G
		16. Reactor Trip System Interlocks
		a. Intermediate Range Neutron Flux, P-6 S, V

Op Test No.: 1 Scenario # 3 Event # 2 Page 10 of 37Event Description: **N35 IR Failure**

Time	Position	Applicant's Actions or Behavior		
		<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
		A. One or more Functions with one channel inoperable.	A.1 Enter the Condition referenced in Table 3.3.1-1 for the channel(s)	Immediately
		<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
		E. As required by Required Action A.1 and referenced by Table 3.3.1-1.	E.1 Reduce THERMAL POWER to < 5E-11 amps.	2 hours
			OR	
			E.2 Increase THERMAL POWER TO $\geq 8\%$ RTP.	2 hours
		G. Required Action and associated Completion Time of Condition D, E, or F is not met.	G.1 Be in MODE 3.	6 hours
		S. As required by Required Action A.1 and referenced by Table 3.3.1-1.	S.1 Verify interlock is in required state for existing plant conditions.	1 hour
			OR	
			S.2 Declare associated RTS Function channel(s) inoperable.	1 hour
		V. Required Action and associated Completion Time of Condition R, S, T, or U not met.	V.1 Be in MODE 3.	6 hours
	SRO	Recognize that THERMAL POWER must be reduced to < 5E-11 amps or increased to $\geq 8\%$ RTP within 2 hours.		
	SRO	Contacts Operations Manager for guidance.		

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>2</u>	Page	<u>11</u>	of	<u>37</u>
Event Description:		N35 IR Failure							
Time	Position	Applicant's Actions or Behavior							

Booth Operator: When asked, cue SRO as Operations Management:

SRO should reduce power and stabilize at 10^{-8} amps, do not approach or exceed a negative one-third Startup Rate, and await further instructions.

The intention is to have I&C investigate the failure and if possible repair the voltage supply on N35. If this cannot be accomplished, the reactor will be shutdown.

	RO	Drive rods in to stabilize reactor power at 10^{-8} amps while not approaching or exceeding a negative one-third Startup Rate.

Note: Once RO has started driving rods inward to stabilize power at 10^{-8} amps, move on to event 3.

Op Test No.: 1 Scenario # 3 Event # 3 Page 12 of 37Event Description: **MRPI Failure**

Time	Position	Applicant's Actions or Behavior
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Booth Operator Instructions: Operate Trigger #2.**Indications Available:**

		C-5, PPCS ROD SEQUENCE OR ROD DEVIATION/PPCS LTOP HI-LOW TEMPERATURE
		MRPI

AR-C-5, "PPCS ROD SEQUENCE OR ROD DEVIATION/PPCS LTOP HI-LOW TEMPERATURE."

	SRO	IF rod position deviation, THEN
	SRO	• GO TO AP-RCC.2
	RO	• Check PPCS for operability
	RO	• Check PPCS for Fail Over
	SRO	• Refer to ITS 3.1.4 and ITS 3.1.6

AP-RCC.2, "RCC/RPI MALFUNCTION."

	RO	Place Rods to Manual
	RO	Check Dropped Rod Indication:
		• Annunciator E-28, POWER RANGE ROD DROP ROD STOP 5%/5 SECONDS – EXTINGUISHED
		• Annunciator C-14, ROD BOTTOM ROD STOP – EXTINGUISHED
	RO	Check Tav _g – STABLE AT PROGRAM
	RO	Verify Annunciator G-15, STEAM DUMP ARMED – EXTINGUISHED
	BOP	Check Main Generator Load – GREATER THAN 15 MW

Op Test No.: 1 Scenario # 3 Event # 3 Page 13 of 37Event Description: **MRPI Failure**

Time	Position	Applicant's Actions or Behavior
		NOTE: Turbine is NOT latched.
	SRO	Establish Stable Plant Conditions:
	RO	<ul style="list-style-type: none"> Tavg – TRENDING TO TREF PRZR pressure – TRENDING TO 2235 PSIG IN AUTO PRZR level – TRENDING TO PROGRAM IN AUTO CONTROL
	BOP	<ul style="list-style-type: none"> MFW Regulating Valves – RESTORING S/G LEVEL TO 52% IN AUTO
	RO	Check Control Rod Alignment:
		<ul style="list-style-type: none"> Verify all rods in affected group – WITHIN ± 12 STEPS OF ASSOCIATED GROUP STEP COUNTER
	SRO	Refer to ITS Section 3.1.4.
	RO	Check QPTR – LESS THAN 1.02
	RO	Verify All Individual Rod Position Indication Per Bank Operable:
		<ul style="list-style-type: none"> MRPI system – NO MRPI SYSTEM ALARMS MRPI system – NO KNOWN PROBLEMS WITH MRPI SYSTEM THAT COULD RENDER ROD POSITION INDICATION INOPERABLE
	SRO	Perform the following:
		<ul style="list-style-type: none"> Refer to ITS section 3.1.7 for required action. Consult Reactor engineer and plant staff to evaluate MRPI. Go to Step 11.
	RO	Verify Affected Group Step counters Operable:

Op Test No.: 1 Scenario # 3 Event # 3 Page 14 of 37Event Description: **MRPI Failure**

Time	Position	Applicant's Actions or Behavior		
		<ul style="list-style-type: none">Affected bank group step counter movement – CONSISTENT WITH MRPI TRANSITIONS (Evaluate affected bank using PT-1, ROD CONTROL SYSTEM)		
		<ul style="list-style-type: none">Group step counters for affected bank – WITHIN 1 STEP OF EACH OTHER		
	RO	Check Reactor Conditions:		
		<ul style="list-style-type: none">Rod insertion limit alarms – EXTINGUISHED		
		<ul style="list-style-type: none">NIS PR ΔI – WITHIN DESIRED OPERATING BAND		
BOOTH INSTRUCTOR'S NOTE:				
Report to Control Room as I&C.				
After some investigation, report that blown fuse is suspect.				
Allow delay for repair and for SRO to check Technical Specifications.				
Remove Malf ROD11-G3. Report (As I&C) that MRPI failure has been repaired.				
If asked, express awareness of the N35 malfunction.				
Report that power supply failure is suspect and that a Technician is obtaining another power supply.				
		The SRO will address the following Tech Spec:		
	SRO	LCO 3.1.4		
		ROD GROUP ALIGNMENT LIMITS		
		<u>CONDITION</u> B. One rod not within alignment limits.	<u>REQUIRED ACTION</u> B.1.1 Verify SDM is within the limits specified in the COLR.	<u>COMPLETION TIME</u> 1 hour
	SRO	LCO 3.1.7		
		ROD POSITION INDICATION		

Op Test No.: 1 Scenario # 3 Event # 3 Page 15 of 37Event Description: **MRPI Failure**

Time	Position	Applicant's Actions or Behavior		
		<u>CONDITION</u>	<u>REQUIRED ACTION</u>	<u>COMPLETION TIME</u>
		8 One MRPI per group inoperable for one or more groups.	A.1 Verify the position of the rods with inoperable position indicators by using movable incore detectors.	Once per 8 hours
			OR	
			A.2 Reduce THERMAL POWER TO $\leq 50\%$ RTP.	8 hours
	SRO	Evaluate Plant Conditions:		
		<ul style="list-style-type: none"> Rod/MRPI malfunction – REPAIRED 		
		<ul style="list-style-type: none"> Verify control rod operability – OPERABILITY RESTORED (Refer to PT-1, ROD CONTROL SYSTEM) 		
	RO	Establish Control Systems In Auto		
		<ul style="list-style-type: none"> Verify 431K in AUTO 		
		<ul style="list-style-type: none"> Verify PRZR spray valves in AUTO 		
		<ul style="list-style-type: none"> Verify PRZR heaters restored: <ul style="list-style-type: none"> PRZR proportional heaters breaker – CLOSED PRZR backup heaters breaker – RESET, IN AUTO 		
		<ul style="list-style-type: none"> Verify one charging pump in AUTO 		
	BOP	<ul style="list-style-type: none"> Verify MFW regulating valves in AUTO 		
	BOP	Place MFW regulating valves in AUTO, if desired.		
		NOTE: MFW System is not operating at this point in the Startup.		
	BOP	<ul style="list-style-type: none"> Restore EH controls <ul style="list-style-type: none"> Place in OP PAN. IMP OUT Place load rate thumbwheel to 10%/hr March setter and reference 		

Op Test No.: 1 Scenario # 3 Event # 3 Page 16 of 37Event Description: **MRPI Failure**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Verify annunciator G-15, STEAM DUMP ARMED – EXTINGUISHED
	RO	<ul style="list-style-type: none"> Verify rods in AUTO
	RO	Place rods in Auto, if desired.
		Note: Rod will not be in auto at low power.
	SRO	Evaluate MCB Annunciator Status (Refer to AR Procedures)
	SRO	Notify Higher Supervision
	SRO	Return to Procedure or Guidance in Effect
BOOTH INSTRUCTOR'S NOTE: Remove Malf NIS05A. Report (As I&C) that IR Compensating Voltage Power Supply has been repaired.		
BOOTH INSTRUCTOR'S NOTE: As Operation Manager direct SRO to continue with the startup and proceed to the POAH.		

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>4</u>	Page	<u>17</u>	of	<u>37</u>
Event Description: Letdown Pressure Controller Fails Low									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions:			When Reactor Operator begins to withdraw control rods, Operate Trigger #3.
Indications Available:			
		A-3, "LO PRESS LTDN RELIEF VLV HI TEMP 130°F."	
		A-11, "LETDOWN LINE HI PRESS 400 PSI."	
AR-A-3, "LO PRESS LTDN RELIEF VLV HI TEMP 130°F."			
	RO	Check PI-135; IF greater than 500 PSI, reduce letdown pressure.	
	RO	Check operation of PCV-135.	
	RO	Verify AOV-371 is open.	
	RO	Monitor PRT for the following:	
		• Pressure (PI-440)	
		• Level (LI-442)	
		• Temperature (TI-439)	
AR-A-11, "LETDOWN LINE HI PRESS 400 PSI."			
	RO	Adjust PCV-135 controller to lower setting.	
	RO	Transfer PCV-135 controller to manual if necessary.	
	RO	Verify letdown flow (FI-134) is consistent with letdown orifice in service.	

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>5</u>	Page	<u>18</u>	of	<u>37</u>
Event Description: Service Water Leak/Pump Trip									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions: Operate Trigger #4.		
Indications Available:		
		L-8, "480 Volt Ground."
		C Service Water Pump Trips
AP-SW.2, "Loss of Service Water."		
	BOP	Verify 480V AC Emergency Busses 17 and 18 - ENERGIZED
	BOP	Verify At Least One SW Pump Running in Each Loop:
		• A or B pump in loop A
		• C or D pump in loop B
	BOP	Manually start SW pumps as necessary (257 kw each).
	SRO	If at least two pumps can be started go to step 8.
	SRO	Notify Higher Supervision.
	BOP	Select Operable Service Water Pumps for Auto Start.
	SRO	Evaluate MCB Annunciator Status
	SRO	Return to Procedure or Guidance in effect.

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>5</u>	Page	<u>19</u>	of	<u>37</u>
Event Description: Service Water Leak/Pump Trip									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Note:		Contact Control Room as AO and report: <ul style="list-style-type: none"> • A Service Water Leak in the Screenhouse. • At the discharge of the C Service Water Pump, near the expansion joint. • Estimate about 200 gpm leak. • Report that the leak can be isolated.
AP-SW.1, "Service Water Leak."		
	BOP	Verify 480V AC Emergency Busses 17 and 18 - ENERGIZED
	BOP	Verify At Least One SW# Pump Running in Each Loop:
		<ul style="list-style-type: none"> • A or B pump in loop A • C or D pump in loop B
	RO/BOP	Check SW System Status:
		<ul style="list-style-type: none"> • Check SW loop header pressures: • Pressure in both loops – APPROXIMATELY EQUAL • PPCS SW low pressure alarm status – NOT LOW • Pressure in both loops – STABLE OR RISING • Check SW loop header pressures – GREATER THAN 55 PSIG
	RO	Check For SW Leakage In CNMT:
		<ul style="list-style-type: none"> • Check Sump A indication • Sump A level – RISING
		OR
		<ul style="list-style-type: none"> • Sump A pump start frequency – RISING (Refer to RCS Daily Leakage Log)

Op Test No.: 1 Scenario # 3 Event # 5 Page 20 of 37Event Description: **Service Water Leak/Pump Trip**

Time	Position	Applicant's Actions or Behavior
	SRO	IF the SW leak is NOT in the CNMT, THEN go to Step 6.
	SRO	Dispatch AO to Screenhouse to Perform the following:
		<ul style="list-style-type: none"> Verify idle SW pump check valve CLOSED.
		<ul style="list-style-type: none"> Idle pump shaft stopped
		<ul style="list-style-type: none"> Idle pump discharge pressure – ZERO (unisolated and check local pressure indicator)
		<ul style="list-style-type: none"> Investigate for SW leak in Screenhouse – NO EXCESSIVE LEAKAGE INDICATED
		Perform the following:
		<ul style="list-style-type: none"> Identify leak location.
		<ul style="list-style-type: none"> Notify Control Room of leak location.
BOOTH INSTRUCTOR'S NOTE: Report SW leak form "C" SW Pump Expansion Joint, and that he is in the process of isolating the leak.		
	SRO	Refer to ATT-2.2, ATTACHMENT SW ISOLATION for a list of the major non-safeguards loads supplied by each service water header.
		The SRO will address the following Technical Specifications:
		LCO 3.7.8
		SERVICE WATER (SW) SYSTEM
Booth Instructor's Note: Remove Malfunction CLG08E.		
Report to the Control Room, as the AO, that the SW Leak is isolated.		

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>6 & 7</u>	Page	<u>21</u>	of	<u>37</u>
Event Description: A Large Break LOCA Occurs; CI Trains A/B Fail to Actuate									
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions: Operate Trigger #5.		
Indications Available:		
E-0, "REACTOR TRIP OR SFETY INJECTION."		
	RO	Verify Reactor Trip:
		<ul style="list-style-type: none"> At least one train of reactor trip breakers – OPEN
		<ul style="list-style-type: none"> Neutron flux – LOWERING
		<ul style="list-style-type: none"> MRPI indicates – ALL CONTROL AND SHUTDOWN RODS ON BOTTOM
	BOP	Verify Turbine Stop Valves – CLOSED
	BOP	Verify Both Trains of AC Emergency Busses Energized To At Least 420 VOLTS:
		<ul style="list-style-type: none"> Bus 14 and Bus 18
		<ul style="list-style-type: none"> Bus 16 and Bus 17
	BOP/RO	Check if SI is Actuated:
		<ul style="list-style-type: none"> Any SI Annunciator - LIT
		<ul style="list-style-type: none"> SI sequencing – BOTH TRAINS STARTED
	RO	Verify CNMT Spray Not Required:
		<ul style="list-style-type: none"> Annunciator A-27, CNMT SPRAY – EXTINGUISHED
		<ul style="list-style-type: none"> CNMT pressure – LESS THAN 28 PSIG
	RO	Verify CNMT spray initiated.
	RO	Direct Operator to Perform ATT-27.0, ATTACHMENT AUTOMATIC ACTION VERIFICATION

Op Test No.: 1 Scenario # 3 Event # 6 & 7 Page 22 of 37Event Description: **A Large Break LOCA Occurs; CI Trains A/B Fail to Actuate**

Time	Position	Applicant's Actions or Behavior
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ATT-27.0, "ATTACHMENT AUTOMATIC ACTION VERIFICATION."

RO

Verify SI and RHR Pumps Running:

- All SI pumps – RUNNING
- Both RHR Pumps – RUNNING

RO

Verify CNMT RECIRC Fans Running:

- All fans – RUNNING
- Charcoal filter dampers green status lights - EXTINGUISHED

RO

Check If Main Steamlines Should Be Isolated:

- Any MSIV – OPEN
- Check CNMT pressure – LESS THAN 18 PSIG

RO

Ensure BOTH MSIVs closed and go to Step 4.

RO

Verify MFW Isolation:

- MFW pumps - TRIPPED
- MFW Isolation valves - CLOSED
- S/G blowdown and sample valves – CLOSED

RO

Verify At Least Two SW Pumps - RUNNING

RO

Verify CI and CVI (NOTE: CI did Not actuate)

- CI and CVI annunciators - LIT

RO

Depress manual CI pushbutton.

Op Test No.: 1 Scenario # 3 Event # 6 & 7 Page 23 of 37Event Description: **A Large Break LOCA Occurs; CI Trains A/B Fail to Actuate**

Time	Position	Applicant's Actions or Behavior
	RO	<ul style="list-style-type: none"> Verify CI and CVI valve status lights – BRIGHT
	RO	Manually close affected CI and CVI valve(s).
Critical Task (E-0-O) Initiate CNMT isolation such that at least one valve is closed in each flowpath which is passing fluid out of containment.		
	RO	<ul style="list-style-type: none"> CNMT RECIRC fan coolers SW outlet valve status lights – BRIGHT
	RO	Dispatch AO to locally fail open valves.
	RO	<ul style="list-style-type: none"> Letdown orifice valves – CLOSED
	RO	Place affected valve switch to CLOSE.
	RO	Check CCW System Status:
		<ul style="list-style-type: none"> Verify CCW pump – AT LEAST ONE RUNNING
		<ul style="list-style-type: none"> Place switch for excess letdown AOV-310 to CLOSE
		<ul style="list-style-type: none"> Place switch for CCW from excess letdown, AOV-745 to CLOSE
	RO	Verify SI and RHR Pump Flow:
		<ul style="list-style-type: none"> SI flow indicators – CHECK FOR FLOW
		<ul style="list-style-type: none"> RHR flow indicator – CHECK FOR FLOW
	RO	Verify SI Pump And RHR Pump Emergency Alignment:
		<ul style="list-style-type: none"> RHR pump discharge to Rx vessel deluge – OPEN
		<ul style="list-style-type: none"> Verify SI pump C – RUNNING
		<ul style="list-style-type: none"> Verify SI pump A - RUNNING

Op Test No.: 1 Scenario # 3 Event # 6 & 7 Page 24 of 37Event Description: **A Large Break LOCA Occurs; CI Trains A/B Fail to Actuate**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Verify SI pump B – RUNNING
		<ul style="list-style-type: none"> Verify SI pump C discharge valves – OPEN
	RO	Verify CREATS Actuation:
		<ul style="list-style-type: none"> At least one damper in each flowpath – CLOSED
		<ul style="list-style-type: none"> CREATS fans – BOTH RUNNING
E-0, "REACTOR TRIP OR SAFETY INJECTION."		
	BOP	Verify AFW Valve Alignment:
		<ul style="list-style-type: none"> AFW flow – INDICATED TO BOTH S/G(s)
		<ul style="list-style-type: none"> AFW flow from each MDAFW pump – LESS THAN 230 GPM
	BOP	Monitor Heat Sink:
		<ul style="list-style-type: none"> Check S/G narrow range level – GREATER THAN 7% (25% adverse CNMT) in any S/G
		<ul style="list-style-type: none"> Check S/G narrow range level – BOTH S/G LESS THAN 50%.
		<ul style="list-style-type: none"> Control feed flow to maintain S/G narrow range level between 7% (25% adverse CNMT) and 50%.
	BOP	Check if TDAFW Pump Can Be Stopped:
		<ul style="list-style-type: none"> Both MDAFW pumps – RUNNING
		<ul style="list-style-type: none"> PULL STOP TDAFW pump steam supply valves
		<ul style="list-style-type: none"> MOV-3504A
		<ul style="list-style-type: none"> MOV-3505A
	BOP	Check CCW Flow to RCP Thermal Barriers:
		<ul style="list-style-type: none"> Annunciator A-7, RCP 1A CCW RETURN HI TEMP OR LO FLOW – EXTINGUISHED

Op Test No.: 1 Scenario # 3 Event # 6 & 7 Page 25 of 37Event Description: **A Large Break LOCA Occurs; CI Trains A/B Fail to Actuate**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Annunciator A-15, RCP 1B CCW RETURN HI TEMP OR LOW FLOW EXTINGUISHED
	BOP	Monitor RCS Tavg – STABLE AT OR TRENDING TO 547°F
	BOP	IF temperature less than 547°F and lowering, THEN perform the following: <ul style="list-style-type: none"> Stop dumping steam. Ensure reheater steam supply valves are closed. IF cooldown continues, THEN control total feed flow between 200 gpm to 230 gpm until narrow range level greater than 7% [25% adverse CNMT] in at least one S/G. WHEN S/G level greater than 7% [25% adverse CNMT] in one S/G, THEN limit feed flow to that required to maintain level in at least one S/G. IF cooldown continues, THEN close both MSIVs.
	BOP	Check PRZR PORVs and Spray Valves: <ul style="list-style-type: none"> PORVs – CLOSED Auxiliary spray valve (AOV-296) – CLOSED Check PRZR pressure – LESS THAN 2260 PSIG Normal PRZR spray valves - CLOSED <ul style="list-style-type: none"> PCV-431A PCV-431B
	RO/BOP	Monitor RCP Trip Criteria: <ul style="list-style-type: none"> RCP status – ANY RCP RUNNING SI pumps – AT LEAST TWO RUNNING RCS pressure minus maximum S/G pressure – LESS THAN 210 psi [240 psi adverse CNMT] Stop both RCPs.

Op Test No.: 1 Scenario # 3 Event # 6 & 7 Page 26 of 37Event Description: **A Large Break LOCA Occurs; CI Trains A/B Fail to Actuate**

Time	Position	Applicant's Actions or Behavior
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	RO/BOP	Check if S/G Secondary Side is Intact:
		<ul style="list-style-type: none"> Pressure in both S/Gs – STABLE OR RISING
		<ul style="list-style-type: none"> Pressure in both S/Gs – GREATER THAN 110 PSIG
	RO/BOP	Check if S/G Tubes are Intact:
		<ul style="list-style-type: none"> Air ejector radiation monitors (R-15 or R-15A) – NORMAL
		<ul style="list-style-type: none"> S/G blowdown radiation monitor (R-19) – NORMAL
		<ul style="list-style-type: none"> Steamline radiation monitors (R-31 and R-32) - NORMAL
	RO/BOP	Check If RCS is Intact:
		<ul style="list-style-type: none"> CNMT area radiation monitors - NORMAL
		<ul style="list-style-type: none"> R-2
		<ul style="list-style-type: none"> R-7
		<ul style="list-style-type: none"> R-29
		<ul style="list-style-type: none"> R-30
		<ul style="list-style-type: none"> CNMT pressure – LESS THAN 0.5 PSIG
		<ul style="list-style-type: none"> CNMT sump B level – LESS THAN 8 INCHES
		<ul style="list-style-type: none"> CNMT sump A level
		<ul style="list-style-type: none"> Level – STABLE
		<ul style="list-style-type: none"> Annunciator C-19, CONTAINMENT SUMP A HIGH LEVEL - EXTINGUISHED
	SRO	Go to E-1, LOSS OF REACTOR OR SECONDARY COOLANT, Step 1.
E-1, "LOSS OF REACTOR OR SECONDARY COOLANT."		
	RO	Monitor RCP Trip Criteria:
		<ul style="list-style-type: none"> RCP status – ANY RCP RUNNING

Op Test No.: 1 Scenario # 3 Event # 6 & 7 Page 27 of 37Event Description: **A Large Break LOCA Occurs; CI Trains A/B Fail to Actuate**

Time	Position	Applicant's Actions or Behavior
	SRO	Go to Step 2.
	RO/BOP	Check If S/G Secondary side is Intact:
		<ul style="list-style-type: none"> • Pressure in both S/Gs – STABLE OR RISING
		<ul style="list-style-type: none"> • Pressure in both S/Gs – GREATER THAN 110 PSIG
	RO/BOP	Monitor Intact S/G Levels:
		<ul style="list-style-type: none"> • Narrow range level – GREATER THAN 7% [25% adverse CNMT]
		<ul style="list-style-type: none"> • Control feed flow to maintain narrow range level between 17% [25% adverse CNMT] and 50%.
Booth Operator Note: Operate Trigger #6 and go to Event 8. (This Trigger Must be Operated Prior to Reset of SI)		

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>8 & 9</u>	Page	<u>28</u>	of	<u>37</u>
Event Description:		Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)							
Time	Position	Applicant's Actions or Behavior							

Booth Operator Instructions: Operate Trigger #6.		
Indications Available:		
E-1, "LOSS OF REACTOR OR SECONDARY COOLANT."		
	SRO	Recognize loss of Circuit 767 and continue on in same procedure path.
		(NOTE: Bus 17 did not reenergize, and the A SW Pump is the only operating Pump)
	RO	Monitor If Secondary Radiation Levels Are Normal
		• Steamline radiation monitor (R-31 and R-32)
		• Request RP sample S/Gs for activity
	RO	Monitor PRZR PORV Status:
		• Power to PORV block valve – AVAILABLE
		• PORVs – CLOSED
		• Block valves – AT LEAST ONE OPEN
	RO	Reset SI
	RO	Reset CI:
		• Depress CI reset pushbutton
		• Verify annunciator A-26, CNMT ISOLATION – EXTINGUISHED
	BOP	Verify Adequate SW Flow:
		• Check at least two SW pumps – RUNNING
		• Dispatch AO to establish normal shutdown alignment (Refer to ATT-17.0, ATTACHMENT SD-1)

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>8 & 9</u>	Page	<u>29</u>	of	<u>37</u>
Event Description:		Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)							
Time	Position	Applicant's Actions or Behavior							

	RO	Establish IA to CNMT:
		<ul style="list-style-type: none"> Verify non-safeguards busses energized from offsite power
		<ul style="list-style-type: none"> Bus 13 normal feed – CLOSED
		OR
		<ul style="list-style-type: none"> Bus 15 normal feed - CLOSED
		<ul style="list-style-type: none"> Verify turbine building SW isolation valves - OPEN
		<ul style="list-style-type: none"> MOV-4613 and MOV-4670
		<ul style="list-style-type: none"> MOV-4614 and MOV-4664
		<ul style="list-style-type: none"> Verify adequate air compressors – RUNNING
		<ul style="list-style-type: none"> CHECK IA supply:
		<ul style="list-style-type: none"> Pressure – GREATER THAN 60 PSIG
		<ul style="list-style-type: none"> Pressure – STABLE OR RISING
		<ul style="list-style-type: none"> Reset both trains of XY relays for IA to CNMT AOV-5392
		<ul style="list-style-type: none"> Verify IA to CNMT AOV-5392 - OPEN
	RO	Check Normal Power Available To charging Pumps:
		<ul style="list-style-type: none"> Bus 14 normal feed breaker – CLOSED
		<ul style="list-style-type: none"> Bus 16 normal feed breaker - CLOSED
	RO	Check If Charging Flow Has Been Established:
		<ul style="list-style-type: none"> Charging pumps – ANY RUNNING
		<ul style="list-style-type: none"> Charging pump suction aligned to RWST:
		<ul style="list-style-type: none"> LCV-112B OPEN
		<ul style="list-style-type: none"> LCV-112C - CLOSED
		<ul style="list-style-type: none"> Start charging pumps and adjust charging flow as necessary to restore PRZR level.
	RO	Check If Emergency D/Gs Should Be Stopped:

Op Test No.: 1 Scenario # 3 Event # 8 & 9 Page 30 of 37Event Description: **Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Verify AC emergency busses energized by offsite power:
	BOP	Perform the following:
		<ul style="list-style-type: none"> Close non-safeguards bus tie breakers as necessary: <ul style="list-style-type: none"> Bus 13 to Bus 14 tie Bus 15 to Bus 16 tie Place the following pumps in PULL STOP: <ul style="list-style-type: none"> EH pumps Turning gear oil pump HP seal oil backup pump Ensure condenser steam dump mode control in MANUAL Restore power to MCCs: <ul style="list-style-type: none"> A from Bus 13 B from Bus 15 E from Bus 15 F from Bus 15 Start HP seal oil backup pump. Ensure D/G load within limits. WHEN bus 15 restored, THEN reset control room lighting breaker. Refer to Att-8.4, ATTACHMENT SI/UV for other equipment lost with loss of offsite power. Try to restore offsite power (Refer to ER-ELEC.1. RESTORATION OF OFFSITE POWER).
	RO	CNMT spray pumps running – EQUAL TO NUMBER REQUIRED
	RO	Start or stop CNMT spray pumps as necessary to meet table requirements.

Op Test No.: 1 Scenario # 3 Event # 8 & 9 Page 31 of 37Event Description: **Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)**

Time	Position	Applicant's Actions or Behavior
	RO	Verify CNMT pressure – STABLE OR LOWERING
	RO	Monitor If CNMT Spray Should Be Stopped:
		<ul style="list-style-type: none"> • CNMT spray pumps – ANU RUNNING • Determine number of CNMT spray pumps required from table:
	RO	Check If SI Should Be Terminated:
		<ul style="list-style-type: none"> • RCS pressure: • Pressure – GREATER THAN 1625 psig [1825 psig adverse CNMT]
	SRO	Do NOT stop SI pumps. Go to Step 13.
	RO	Verify CNMT Sump Recirculation Capability:
		<ul style="list-style-type: none"> • Check RHR and Support systems: • At least one recirculation flowpath, including required power supplies, from Sump B and back to RCS available per ATT-14.5, ATTACHMENT, RHR SYSTEM • At least one SW pump available. • At least one CCW pump available. • At least one CCW Hx available. • Check SW pumps – AT LEAST 2 PUMPS AVAILABLE
	SRO	Attempt to restore at least 2 SW pumps to operable.
	SRO	IF only 1 SW pump available, THEN refer to ATT-2.1, ATTACHMENT MIN SW for additional guidance.

Op Test No.: 1 Scenario # 3 Event # 8 & 9 Page 32 of 37Event Description: **Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Dispatch AO to check AUX BLDG sub-basement for RHR system leakage (AUX BLDG sub-basement key may be required)
	RO	Monitor If RHR Pumps Should Be Stopped:
		<ul style="list-style-type: none"> Check RCS pressure: <ul style="list-style-type: none"> Pressure – GREATER THAN 250 psig [465 psig adverse CNMT]
	SRO	Go to Step 16.
	RO	Check If Emergency D/Gs Should Be Stopped:
		<ul style="list-style-type: none"> Verify AC emergency busses energized by offsite power:
	BOP	Perform the following:
		<ul style="list-style-type: none"> Close non-safeguards bus tie breakers as necessary: <ul style="list-style-type: none"> Bus 13 to Bus 14 tie Bus 15 to Bus 16 tie Place the following pumps in PULL STOP: <ul style="list-style-type: none"> EH pumps Turning gear oil pump HP seal oil backup pump Ensure condenser steam dump mode control in MANUAL. Restore power to MCCs: <ul style="list-style-type: none"> A from Bus 13 B from Bus 15 E from Bus 15 F from Bus 15 Start HP seal oil backup pump.

Op Test No.: 1 Scenario # 3 Event # 8 & 9 Page 33 of 37Event Description: **Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> Ensure D/G load within limits.
		<ul style="list-style-type: none"> WHEN bus 15 restored, THEN reset control room lighting breaker.
		<ul style="list-style-type: none"> Refer to ATT-8.4 ATTACHMENT SI/UV for other equipment lost with loss of offsite power.
		<ul style="list-style-type: none"> Try to restore offsite power (Refer to ER-ELEC.1, RESTORATION OF OFFSITE POWER).
	RO	Check If RCS Cooldown And Depressurization is Required:
		<ul style="list-style-type: none"> RCS pressure – GREATER THAN 250 psig [465 psig adverse CNMT]
	SRO	IF RHR pump flow greater than 475 gpm, THEN go to Step 20.
	SRO	Establish Adequate SW Flow:
		<ul style="list-style-type: none"> Verify at least two SW pumps – RUNNING
		<ul style="list-style-type: none"> Verify AUX BLDG SW isolation valves - OPEN
		<ul style="list-style-type: none"> MOV-4615 and MOV-4734
		<ul style="list-style-type: none"> MOV-4616 and MOV-4735
		<ul style="list-style-type: none"> Determine required SW flow to CCW HXs per table:
		<ul style="list-style-type: none"> Direct AO to adjust SW flow to required value
		<ul style="list-style-type: none"> IF on normal SW discharge:
		<ul style="list-style-type: none"> V-4619, CCW HX A
		<ul style="list-style-type: none"> V-4620, CCW HX B
		OR
		<ul style="list-style-type: none"> IF on alternate SW discharge:
		<ul style="list-style-type: none"> V-4619C, CCW HX A
		<ul style="list-style-type: none"> V-4620B, CCW HX B

Op Test No.:	<u>1</u>	Scenario #	<u>3</u>	Event #	<u>8 & 9</u>	Page	<u>34</u>	of	<u>37</u>
Event Description:		Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)							
Time	Position	Applicant's Actions or Behavior							

	SRO	IF the required SW flow can NOT be obtained, THEN perform the following:
		<ul style="list-style-type: none"> Isolate SW to screehouse and air conditioning headers.
		<ul style="list-style-type: none"> MOV-4609/MOV-4780 – AT LEAST ONE CLOSED
		<ul style="list-style-type: none"> MOV-4663/MOV-4733 – AT LEAST ONE CLOSED
		<ul style="list-style-type: none"> Direct AO to locally adjust SW flow to required value.
		<ul style="list-style-type: none"> Direct AO to locally close SW return from SFP Hx 8 (V8689)
		<ul style="list-style-type: none"> Verify SW portions of ATT-17.0, ATTACHMENT SD-1 are complete.
	RO	Establish CCW flow to RHR Hxs:
		<ul style="list-style-type: none"> Check both CCW pumps - RUNNING
		<ul style="list-style-type: none"> Manually open CCW valves to RHR Hxs
		<ul style="list-style-type: none"> MOV-738A
		<ul style="list-style-type: none"> MOV-738B
	RO	Check If Transfer to Cold Leg Recirculation Is Required:
		<ul style="list-style-type: none"> RWST level – LESS THAN 28%
	SRO	<ul style="list-style-type: none"> Go to ES-1.3, TRANSFERT TO COLD LEG RECIRCULATION, Step 1
ES-1.3, "TRANSFER TO COLD LEG RECIRCULATION."		
	RO	Verify RWST level – GREATER THAN 15%
	RO	Verify CNMT Sump B Level – AT LEAST 113 INCHES
	RO	Reset SI

Op Test No.:	1	Scenario #	3	Event #	8 & 9	Page	35	of	37
Event Description:		Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)							
Time	Position	Applicant's Actions or Behavior							

	RO	Check If Unnecessary Pumps Can Be Stopped:
		<ul style="list-style-type: none"> • Three SI pumps – RUNNING
		<ul style="list-style-type: none"> • Stop SI pump C and place both switches in PULL STOP
		<ul style="list-style-type: none"> • Stop both RHR pumps and place in PULL STOP
		<ul style="list-style-type: none"> • Both CNMT spray pumps – RUNNING
		<ul style="list-style-type: none"> • Pull stop one CNMT spray pump
		<ul style="list-style-type: none"> • Check CNMT pressure – LESS THAN 28 PSIG.
	SRO	Go to Step 5.
	SRO	Establish Adequate SW Flow:
		<ul style="list-style-type: none"> • Verify at least two SW pumps - RUNNING
		Start additional SW pumps as power supply permits (257 kw each). IF only 1 SW pump operable, THEN perform the following:
		<ul style="list-style-type: none"> • Ensure SW aligned to one CCW Hx per ATT-2.1, ATTACHMENT MIN SW.
		<ul style="list-style-type: none"> • Go to Step 6.
	RO	Establish CCW flow to RHR Hxs:
		<ul style="list-style-type: none"> • Check both CCW pumps – RUNNING.
		<ul style="list-style-type: none"> • Open CCW valves to RHR Hxs
		<ul style="list-style-type: none"> • MOV-738A
		<ul style="list-style-type: none"> • MOV-738B
	RO	Verify RHR System Alignment:
		<ul style="list-style-type: none"> • Verify the following valves - CLOSED
		<ul style="list-style-type: none"> • RHR suction valves from loop A hot leg
		<ul style="list-style-type: none"> • MOV-700

Op Test No.: 1 Scenario # 3 Event # 8 & 9 Page 36 of 37Event Description: **Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)**

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> • MOV-701
		<ul style="list-style-type: none"> • RHR discharge valves to loop B cold leg
		<ul style="list-style-type: none"> • MOV-720
		<ul style="list-style-type: none"> • MOV-721
		<ul style="list-style-type: none"> • Verify RHR pump suction crosstie valves - OPEN
		<ul style="list-style-type: none"> • MOV-704A
		<ul style="list-style-type: none"> • MOV-704B
		<ul style="list-style-type: none"> • Verify the following valves - OPEN
		<ul style="list-style-type: none"> • RHR pump discharge to Rx vessel deluge valves
		<ul style="list-style-type: none"> • MOV-852A
		<ul style="list-style-type: none"> • MOV-852B
		<ul style="list-style-type: none"> • RHR suction from sump B (inside CNMT)
		<ul style="list-style-type: none"> • MOV-851A
		<ul style="list-style-type: none"> • MOV-851B
		<ul style="list-style-type: none"> • Verify RCDT pump suction valves from sump B - CLOSED
		<ul style="list-style-type: none"> • MOV-1813A
		<ul style="list-style-type: none"> • MOV-1813B
	RO	Initiate RHR Sump Recirculation:
		<ul style="list-style-type: none"> • Close RWST outlet valve to RHR pump suction, MOV-856 (turn on DC power key switch)
		<ul style="list-style-type: none"> • Open both RHR suction valves from sump B (outside CNMT)
		<ul style="list-style-type: none"> • MOV-850A - OPEN
		<ul style="list-style-type: none"> • MOV-850B - OPEN
		<ul style="list-style-type: none"> • Check MOV-738A AND MOV-738B - BOTH OPEN
		<ul style="list-style-type: none"> • Start one RHR pump - ONE RHR PUMP RUNNING

Op Test No.: 1 Scenario # 3 Event # 8 & 9 Page 37 of 37Event Description: **Loss of Circuit 767; Bus 17 Feeder Breaker Fails to Re-Close (Loss of Bus 17)**

Time	Position	Applicant's Actions or Behavior
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Critical Task (ES-1.3-A) Transfer to cold leg recirculation on at least one train of RHR pump(s) prior to cavitating SI pumps taking suction from the RWST.

	RO	Check RWST Level - LESS THAN 15%
	RO	Stop All Pumps Supplied From RWST:
		<ul style="list-style-type: none"> Stop operating CNMT spray pump and place in PULL STOP
		<ul style="list-style-type: none"> Check CNMT pressure – LESS THAN 28 PSIG
		<ul style="list-style-type: none"> Reset CNMT spray if necessary
		<ul style="list-style-type: none"> Close CNMT spray pump discharge valves
		<ul style="list-style-type: none"> MOV-860A
		<ul style="list-style-type: none"> MOV-860B
		<ul style="list-style-type: none"> MOV-860C
		<ul style="list-style-type: none"> MOV-860D
		<ul style="list-style-type: none"> Stop all charging pumps
		<ul style="list-style-type: none"> Stop all SI pumps and place in PULL STOP

Booth Instructor: Freeze the Simulator.

EAL 3.1.3 (SAE) RVLIS cannot be maintained >77% with no RCPs running.
Or

4.1.3 (SAE) CI/CVI valves not closed when required following a confirmed LOCA.