

Form 3.3-1 Scenario Outline

NRC FINAL

Facility:	<u>E. I Hatch</u>	Scenario No.:	<u>15-1</u>
Scenario Source:	<u>NEW</u>	Op-Test No.:	<u>2023-301</u>
Examiners:	_____	Applicants/:	_____
	_____	Operators	_____
	_____		_____
			SRO
			RO
			BOP
Initial Conditions: Unit 2 is operating at 72% RTP. 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written. 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written.			
Turnover: After turnover restore to Normal Hydrogen Seal Oil System Lineup starting at step 4.3.3.2.e of 34SO-N42-001-2 (2-hour PM on MSOP). Once complete raise reactor power with Recirc flow to 75% RTP.			
Critical Tasks:			
1. Failure of high Drywell scram/Man required (Event 9)			
2. RCIC fails to Auto start/Man required (Event 10)			
Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP)	Restoration To Normal Hydrogen Seal Oil System Lineup starting at step 4.3.3.2.e of 34SO-N42-001-2.
2	mfC11_299	MCC (ATC)	CRD Flow Controller fails in Auto requiring manual operation to re-establish CRD flow.
3	mf70022416 (ON)	C (BOP)	Instrument Air System Prefilter Diff Press High. Place the standby Prefilter in service.
4	mfE41_103	MCC (ATC) TS (SRO)	HPCI Inadvertent Initiation with Aux Oil pump failure after HPCI is secured.
5	loE11-C001AG1 loE11-C001AR3 diE11-C001A	TS (SRO)	RHRSW pump 2A DC breaker tripped and cannot be reclosed.
6	mf65031541 mfN61_73	C (BOP)	RFPT loop seal failure requiring manual opening of bypass valve to prevent Main Turbine trip on low vacuum.
7	mfP64_193C mfP64_193D	C (BOP) TS (SRO)	Loss of Drywell Chillers; vent the Drywell.
8	N/A	R (ATC)	Lower Reactor power to 50% using Control Rods & Recirc flow IAW 34GO-OPS-005-2.
9	mfN21_87A mfN21_87B	M (ALL)	Drywell leak with failure to automatically scram on high Drywell Pressure (Critical Task) , Dual RFPT trip.
10	diE51_S33 mfE51_109	MCC (BOP)	RCIC fails to Auto start on low level with RCIC Manual Initiation PB failing. Manual actions required for injection. (Critical Task)
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS)Tech Spec, (MC)Manual Control			

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 1

Event Description: Restoration To Normal Hydrogen Seal Oil System Lineup starting at step 4.3.3.2.e of 34SO-N42-001-2. This is for a PM that will last approximately 3 hours.

Time	Position	Applicant's Actions or Behavior
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10 Mins		<p><i>SIMULATOR OPERATOR, IF contacted as SO, report the following:</i></p> <ul style="list-style-type: none"> • Seal Oil Vacuum Pump Separator Tank oil level is between the High AND Low Oil Level on 2N42-LG-R306, Separator Tank Sight Glass • 2N42-F042, Vacuum Tank Inlet Valve, open • Oil level in the Vacuum Tank is above the bottom of the lower observation window • Seal Oil Vacuum Pump shaft has been manually rotated.
	BOP	<ul style="list-style-type: none"> • Enters Restoration To Normal Hydrogen Seal Oil System Lineup at step 4.3.3.2.e. <ul style="list-style-type: none"> • Starts 2N42-C001, H₂ Seal Oil Vacuum Pump, (2H11-P651). <p><i>SIMULATOR OPERATOR, WHEN contacted as SO, 2N42-R302, Vacuum Tank Pressure, is 26.5 in. Hg and steady.</i></p> <ul style="list-style-type: none"> • Checks 2N42-R302, Vacuum Tank Pressure, stabilizes above 26 in. Hg. by contacting SO locally. • Starts 2N42-C003, Recirc H₂ Seal Oil Pump. • Starts 2N42-C004, Main H₂ Seal Oil Pump. • Secure 2N42-C002, Emergency Seal Oil Pump, as follows: <ul style="list-style-type: none"> • Holds control switch for ESOP in OFF Pull To Lock position until pump stops as indicated by its extinguished red AND green lights • AFTER pump stops, releases control switch. <p><i>SIMULATOR OPERATOR, WHEN contacted to reset local annunciators, DELETE mf65121574, EMERGENCY SEAL OIL PUMP RUNNING (ANNUNCIATOR ON) to clear EMERG SEAL OIL PUMP RUNNING, (651-216).</i></p> <ul style="list-style-type: none"> • Dispatches SO to reset annunciators at local panel 2N43-P001. • Checks EMERG SEAL OIL PUMP RUNNING, (N43-105) is CLEARED after the SO resets the local panel. • Checks EMERG SEAL OIL PUMP RUNNING, (651-216) is CLEARED after the SO resets the local panel. • Checks its green light is illuminated.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 1

Event Description: Restoration To Normal Hydrogen Seal Oil System Lineup starting at step 4.3.3.2.e of 34SO-N42-001-2. This is for a PM that will last approximately 3 hours.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, when contacted as SO, report the following:</i></p> <ul style="list-style-type: none"> • <i>2N42-R300, Seal Oil Pump Disch Press, is 105 psig</i> • <i>2N42-R301, Seal Oil / Machine Gas dP, Seal Oil pressure is 8 psig above generator gas pressure.</i> • <i>If asked, inform BOP the Emergency Seal Oil Pump shaft has stopped rotating.</i>
		<p><i>SIMULATOR OPERATOR, at the Chief Examiner's request, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 2

Event Description: CRD Flow Controller fails in Auto requiring manual operation to re-establish CRD flow.

Time	Position	Applicant's Actions or Behavior
10 Min		<i>At the Chief Examiner's direction, SIMULATOR OPERATOR DEPRESS (RB-2), mfC11_299.</i>
	ATC	<ul style="list-style-type: none"> • Receives CRD HYD TEMP HIGH, (603-140) alarm. • Determines that the CRD Flow Control Valve A has closed. • Determines 2C11-R600, CRD Flow Controller, output is at minimum and has failed. • Notifies SRO that the CRD Flow Controller has failed downscale. • Notifies I & C (if SRO does NOT) to investigate 2C11-R600.
		<p><i>NOTE: The ATC may immediately place the controller in manual IAW NMP-OS-007-001, Conduct of Operations Standards and Expectations, responding to a failed controller.</i></p> <p><i>SIMULATOR OPERATOR: If the CRD High Temp Alarm is still lit, report that 1 CRD drive (26-35) is >270°F and slowly rising. (If asked peak temperature was 275°F) The crew may enter 34SO-C11-005-2, CRD, for Actions to take for Hi Temps, for CRD Hi Temp Alarm. If the CRD High Temp Alarm is NOT lit, report that all temps are < 250°F.</i></p>
	ATC	<ul style="list-style-type: none"> • Enters: <ul style="list-style-type: none"> • CRD HYD TEMP HIGH, (603-140). • 34AB-C11-001-2, Loss Of CRD System. • Places 2C11-R600 controller in Manual. • Increases output of controller until CRD flow is approximately 50 gpm.
	SRO	<ul style="list-style-type: none"> • Dispatches I & C to investigate 2C11-R600. • Dispatches a SO to monitor CRD drive temperatures. • Directs operator to perform actions of the ARP and 34AB-C11-001-2.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 2

Event Description: CRD Flow Controller fails in Auto requiring manual operation to re-establish CRD flow.

Time	Position	Applicant's Actions or Behavior
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Excerpt from 34SO-C11-005-2, CRD System

NOTES

This listing provides the NORMAL operating ranges for several key parameters in the CRD system.

- System Flow:
 - with return line, (normally 59 gpm) ≤65 gpm 2C11-R019
 - without return line, (normally 50 gpm) ≤59 gpm
- Drive Water Header Pressure:
 - set at 260 psig above RPV pressure 220-280 psi 2C11-R006
- Cooling Water Header Differential Pressure:
 - with return line (normally 8-25) ≤25 psi above RPV Pressure 2C11-R007
 - without return line (normally 15-25) ≤25 psi above RPV Pressure
- Charging Water Header Pressure
 - (< drive wtr hdr. Hi press. annun. setpoint) 1380-1480 psig 2C11-R016
- Drive Water Flow:
 - NOT driving 0 gpm 2C11-R003
 - on insert 3-5 gpm
 - on withdraw 1-3 gpm
- Cooling Water Flow:
 - with return line, (normally 50 gpm) ≤50 gpm: 2C11-R605
 - without return line, (normally 50 gpm) ≤50 gpm:
 - same as system flow
- Stabilizing Valve Flow:
 - total 4-8 g m 2C1-R004
 - insert (4 gpm ideally) 3-5 gpm
 - withdraw (2 gpm ideally) 1-3 gpm
- Pump Suction Pressure:
 - from CST 5-40 psig 2C11-R017
 - from Condensate System 30-40 psig
 - (trip at 12 in. Hg Vacuum)
- Pump Discharge Pressure 1220 - 1550 psig 2C11-R008
- Suction Filter Differential Pressure 0-9 psid 2C11-N015A / 2C11-N015B
- Drive Water Filter Differential Pressure 0-20 psid 2C11-N002

	<i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i>
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Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 3

Event Description: Instrument Air System Prefilter dP Hi – swap Prefilters.

Time	Position	Applicant's Actions or Behavior
7 Mins		<i>SIMULATOR OPERATOR, at the Chief Examiner's direction, DEPRESS (RB-3) mf70022416, Instr Air Prefltr D103A Diff Press High (On).</i>
	ALL	Recognize and respond to the following alarms: <ul style="list-style-type: none"> • PANEL 2H11-P700 SYSTEM TROUBLE, (650-225) • INSTR AIR PREFLTR D103A DIFF PRESS HIGH, (700-225)
	BOP	Enters ARP 34AR-700-225-2: <ul style="list-style-type: none"> • Dispatches a SO locally to confirm Prefilter dP on 2P52-dPIS-N301A • IF filter ΔP is high, notify Maintenance to replace the filter cartridge and initiate a Condition Report • Dispatches a SO to inspect system for leak downstream of 2P52-D103A
		<i>SIMULATOR OPERATOR, two (2) minutes after being dispatched to check Prefilter dP, inform the BOP that 2P52-dpis-N301A indicates 6 psid and that NO air leaks exist.</i>
	SRO	<ul style="list-style-type: none"> • If necessary, notifies Maintenance to change out the prefilter cartridge and initiates a condition report. • Directs the BOP to swap Prefilters IAW 34AR-700-225-2.
		<i>SIMULATOR OPERATOR, WHEN the BOP swaps Prefilters, ENSURES EVENT TRIGGER EGP52-1 & EGP52-2 ACTIVATES: deleting malfunction mf70022416 – INSTRU AIR PREFLTR D103A DIFF PRESS HIGH (ANNUNCIATOR ON) and simulates correct light arrangement.</i>
	BOP	<ul style="list-style-type: none"> • At panel 2H11-P700, places the standby filter in service: <ul style="list-style-type: none"> • Places control switch to ON for Turb Bldg Inst Air PreFltr/Afterfilter 2P52-D103B/2P52-D102B Inlet Isol, 2P52-F002B/2P52-F011B. • Places control switch to OFF for Turb Bldg Inst Air PreFltr/Afterfilter 2P52-D103A/2P52-D102A Inlet Isol, 2P52-F002A/2P52-F011A. • Notifies Maintenance to replace the filter cartridge and initiate a condition report • Notifies the SRO that the standby filter has been placed in service.
		<i>SIMULATOR OPERATOR, WHEN the BOP is at the P700 panel swapping the pre/afterfilters, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 4

Event Description: HPCI Inadvertent Initiation with Aux Oil pump failure after HPCI is secured.

Time	Position	Applicant's Actions or Behavior
15 Mins		<p><i>SIMULATOR OPERATOR:</i></p> <ul style="list-style-type: none"> • <i>At the Chief Examiner's direction, IF BOP operator is NOT at the back panel, NOTIFY the BOP operator and as Maintenance, request, the MPL # for the Main H₂ Seal Oil Pump and with the BOP on the phone,</i> • <i>DEPRESS (RB-4)</i> • <i>mfE41_103, HPCI auto start</i>
	ALL	<p>Recognize and respond to the following alarm:</p> <ul style="list-style-type: none"> • SEC SYSTEM AUTO INITIATION SIGNAL PRESENT, (650-234) <p>Recognize HPCI has auto started from an invalid initiation signal</p>
	ATC	<p>IAW 34AB-E10-001-2, Inadvertent Initiation of ECCS/RCIC:</p> <ul style="list-style-type: none"> • Verifies RWL and Drywell Pressure are normal • Determines the initiation signal is NOT valid and secures HPCI
		<p><i>SIMULATOR OPERATOR ensure EVENT TRIGGER EGE41-2 ACTIVATES when the HPCI Aux Oil pump switch is placed to PTL. EGE41-2 removes light indication and prevents the pump from running.</i></p>
	ATC	<p>Secures HPCI IAW 34SO-E41-001-2, HPCI System:</p> <ul style="list-style-type: none"> • Depresses and holds the HPCI Turbine Trip push-button • When HPCI turbine has stopped, places the HPCI Aux Oil Pump, 2E41-C002-3, in Pull-To-Lock. • When HPCI TURBINE BRG OIL PRESS LOW, (601-112) alarm is received, releases the HPCI Turbine Trip push-button. • Notifies the SRO that the HPCI Aux Oil pump does NOT have light indication • Refer to 34SO-E41-001-2 System Shutdown.
	ATC/BOP	<p>Contacts Maintenance to investigate the HPCI inadvertent start and HPCI Aux Oil Pump Breaker trip.</p>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 4

Event Description: HPCI Inadvertent Initiation with Aux Oil pump failure after HPCI is secured.

Time	Position	Applicant's Actions or Behavior
	ATC/BOP	<p>IF injection occurs from HPCI, the following alarms occur:</p> <ul style="list-style-type: none"> • FEEDWATER CONTROL SYSTEM TROUBLE, (603-132) • After HPCI is shutdown, returns Feedwater Control Mode select switch to 3-ELEM by placing FEEDWATER CONTROL MODE SELECT to 1 ELEM and then back to 3 ELEM. • APRM UPSCALE, (603-219), ROD OUT BLOCK, (603-238) and REACTOR VESSEL WATER LEVEL HIGH/LOW, (603-141) may come in and then clear.
	BOP/ATC	<p>IF injection occurs from HPCI and when injection from HPCI is terminated, the following alarms may be received:</p> <ul style="list-style-type: none"> • If RECIRC A FLOW LIMIT, (602-134) and RECIRC B FLOW LIMIT, (602-234) are received: <ul style="list-style-type: none"> • Notifies SRO of Recirc A and B runback • When directed, resets A flow limit by performing the following: <ul style="list-style-type: none"> • Confirms initiating conditions have cleared • Confirms plant conditions are stable • Depresses “Recirc A Runback” Reset pushbutton, P602 • Verify Recirc A speed AND flow remain stable • Informs SRO the runback has been reset • When directed, resets B flow limit by performing the following: <ul style="list-style-type: none"> • Confirms initiating conditions have cleared • Confirms plant conditions are stable • Depresses “Recirc B Runback” Reset pushbutton, P602 • Verify Recirc B speed AND flow remain stable • Informs SRO the runback has been reset

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 4

Event Description: HPCI Inadvertent Initiation with Aux Oil pump failure after HPCI is secured.

Time	Position	Applicant's Actions or Behavior
		<i>SIMULATOR OPERATOR, AFTER SRO declares HPCI inoperable, as I&C Tech called to resolve the HPCI problem, inform the SRO that the HPCI initiation logic appears to be causing the inadvertent start signal and that you will be investigating the problem further.</i>
	SRO	<p>Enters TS 3.5.1, ECCS - Operating and declares HPCI inoperable,</p> <ul style="list-style-type: none"> • IAW Condition E, Required Action E.1, Verify by administrative means RCIC is OPERABLE within 1 hour, AND • Required Action E.2, Restore HPCI to OPERABLE status within 14 days OR IAW the Risk Informed Completion Time Program (<i>evaluation process of the Risk Informed Completion Time Program will NOT be evaluated</i>) <p>Contacts Maintenance to investigate the HPCI inadvertent start and HPCI Aux Oil Pump Breaker trip.</p> <p>If 602-134 & 602-234, Recirc A & B Flow Limits are received, directs operator to reset IAW 34SO-B31-001-2.</p>
		<i>SIMULATOR OPERATOR, at the Chief Examiner's direction, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 5

Event Description: RHRSW pump 2A DC breaker tripped and cannot be reclosed.

Time	Position	Applicant's Actions or Behavior
11 min		<i>SIMULATOR OPERATOR, with Chief Examiner's direction, DEPRESS RB-5 (turns green light off to RHRSW 2A & places pump switch to off), then NOTIFIES the Shift Supervisor, as the SO on Outside rounds, that the DC Control power breaker for RHRSW pump 2A is tripped.</i>
	SRO	<ul style="list-style-type: none"> • Directs BOP/ATC to confirm RHRSW 2A light status on 2H11-P601 panel. • Notifies Maintenance to investigate tripped breaker.
	SRO	<ul style="list-style-type: none"> • Refers to TS for RHRSW 2A being INOP. <ul style="list-style-type: none"> • 3.7.1 Residual Heat Removal Service Water (RHRSW) System <p>Enters a 30-day RAS per TS 3.7.1.A.1 to RHRSW pump to OPERABLE status.</p>
		<i>SIMULATOR OPERATOR, if directed to reclose DC Control Power breaker for RHRSW 2A, REPORT the DC Control Power breaker will NOT stay closed.</i>
		<i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 6

Event Description: RFPT loop seal failure.

Time	Position	Applicant's Actions or Behavior
10 Min		<p><i>SIMULATOR OPERATOR: At the direction of the Chief Examiner, NOTIFY ATC as Maintenance and report the RHRSW pump 2A DC breaker is failed and will have to be replaced.</i></p> <p><i>With the ATC on the phone, ACTIVATE (RB-6)</i></p> <ul style="list-style-type: none"> • <i>mf65031541 "RFP Loop Seal Level Low (Annunciator On)"</i> • <i>mfN61_73 "Main Condenser Air In-leakage"</i> <p><i>NOTE: It takes approximately 15 minutes for vacuum to degrade to 22.3 inches.</i></p>
	BOP	<ul style="list-style-type: none"> • Recognize RFP LOOP SEAL LEVEL LOW, (650-319), annunciator.
	BOP	<ul style="list-style-type: none"> • Respond to annunciator RFP LOOP SEAL LEVEL LOW, (650-319) <ul style="list-style-type: none"> • Dispatches a SO to 2H21-P216 to confirm 2N22-F398, RFP Bracket Drain Loop Seal Fill Valve is open. • Monitors vacuum at 2H11-P650, on 2N21-R602. • Dispatches a SO to confirm seal water lineup and pressures IAW 34SO-N21-007-2, Condensate and Feedwater System. <p><i>SIMULATOR OPERATOR: When requested NOTIFY the BOP that "Seal water pressures are normal AND at 2H21-P216, 2N22-F398, RFP Bracket Drain Loop Seal Fill Valve is open."</i></p>
	ATC/BOP	<p>Recognize PRETREATMENT O/G RADIATION DOWNSCALE/INOP, (601-428), annunciator and MAY perform step 5.2.3 of ARP (swapping Pre-treatment rad monitor which are both downscale.</p>
	ATC/BOP	<ul style="list-style-type: none"> • Monitors Inlet Flow to Stack on 2N62-P600. <ul style="list-style-type: none"> • Receives INLET FLOW TO STACK HIGH, (600-020). • Monitors Inlet flow to Stack at 2N62-P600, on 2N21-R604.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 6

Event Description: RFPT loop seal failure.

Time	Position	Applicant's Actions or Behavior
	SRO	May direct entry into 34AB-N61-002-2, Main Condenser Vacuum Low, abnormal.
	ATC	If directed, may REDUCE reactor power per 34GO-OPS-005-2, Power Changes, to establish and maintain vacuum greater than 25 in. Hg.
		<i>SIMULATOR OPERATOR: ENSURE Event Trigger EGN21-2 deletes mfN61_73 when</i> <ul style="list-style-type: none"> • <i>2N21-F265 is closed</i> <i>Then 45 seconds later, DELETES mf65031541.</i>
		<i>SIMULATOR OPERATOR: If requested NOTIFY the BOP that no water is observed at the weep holes.</i>
	BOP	<ul style="list-style-type: none"> • With seal water pressures normal, will be required to close 2N21-F265, RFP Loop Seal Outlet Isol Vlv after 5 minutes of alarm RFP LOOP SEAL LEVEL LOW, (650-319), being received. • With vacuum degrading may close 2N21-F265 sooner to reverse degrading vacuum condition.
	BOP	<ul style="list-style-type: none"> • May open 2N21-F265 when RFP LOOP SEAL LEVEL LOW, (650-319) clears.
	BOP	<p>May receive the following alarms due to Flow to Stack high on 2N62-P600 and will clear when Flow to Stack returns to normal:</p> <ul style="list-style-type: none"> • PREFILTER DIFF PRESS HIGH, (600-031) • AFTER FILTER DIFF PRESS HIGH, (600-040)

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 6

Event Description: RFPT loop seal failure.

Time	Position	Applicant's Actions or Behavior
	BOP	<ul style="list-style-type: none"> Alarm INLET FLOW TO HOLDUP LINE HIGH, (600-020), clears when flow returns to normal.
		<p><i>SIMULATOR OPERATOR; At Chief Examiners direction, proceed to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 7

Event Description: Loss of Drywell Chillers.

Time	Position	Applicant's Actions or Behavior
10 Min		<i>At the Chief Examiner's direction, SIMULATOR OPERATOR DEPRESS (RB-7), (mfP64_193C, Drywell Chiller Compressor A Safety System Shutdown) and ENSURES Event Trigger EGP64-2 enters malfunction mfP64_193D, Drywell Chiller Compressor B Safety System Shutdown, 15 seconds after Drywell Chiller B red light is illuminated.</i>
	ALL	<ul style="list-style-type: none"> • The following alarms will be received: <ul style="list-style-type: none"> • DRYWELL/TORUS RCDR R627 TEMP HIGH, (650-204) • DRWL CHILLED WTR B006A SAFETY S/D, (700-105) • MULTIPOINT TEMP RCDR 2T47-R626 TEMP HIGH, (657-025) • MULTIPOINT TEMP RCDR 2T47-R620 TEMP HIGH, (654-004) • PANEL 2H11-P654 SYSTEM TROUBLE, (650-214) • PANEL 2H11-P657 SYSTEM TROUBLE, (650-224)
		<i>NOTE: With the loss of both DW chillers, the BOP/SS may address 34AB-T47-001-2, Loss of DW Coolers, first.</i>
	SRO	<ul style="list-style-type: none"> • When venting is required; directs Operator to vent the drywell.
	BOP (Placard)	<p>Enters 34SO-T46-001-2, Standby Gas Treatment System procedure or uses placard at the 2H11-P657/P654 panel to start SGBT 2A or 2B.</p> <ul style="list-style-type: none"> • Opens 2T46-F001 (A or B) or 2T46-F003 (A or B) for the subsequent train. • Places SGBT Fan (2A or 2B) control switch to RUN. • Receives alarm 2B (or 2A) SGBT Switch Not In Auto (654-076) (or 657-091) • Confirms 2T46-F002 (A or B) OPENS • Confirms SGBT Heater red light illuminates.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 7

Event Description: Loss of Drywell Chillers.

Time	Position	Applicant's Actions or Behavior
	BOP (Placard)	<ul style="list-style-type: none"> • Enters 34SO-T48-002-2, Containment Atmosphere Dilution System or uses placard to vent the Drywell. • Opens 2T48-F334A or 2T48-F334B (both valves may be opened) • Receives alarm DW Vent Exh Bypass Vlv Open (654-002) or (657-008) • Receives alarm DRWL/Torus N2 M/U 2 Inch Isol Valves Open (654-035) or (657-042) • Opens 2T48-F335A or 2T48-F335B(both valves may be opened) • Opens 2T48-F336A or 2T48-F336B. (both valves may be opened) (Monitors DW pressure)
		<p><i>NOTE: Caution in 34SO-T48-002-2 states 2-inch valves will be used first prior to the 18-inch valves.</i></p>
	SRO	<ul style="list-style-type: none"> • May direct the operator to fast vent the Drywell IAW 34SO-T48-002-2. • Dispatches Maintenance to investigate. • If Drywell temperature exceeds 150°F, performs the following: <ul style="list-style-type: none"> • Enters TS 3.6.1.5 Drywell Air Temperature, <ul style="list-style-type: none"> • IAW Condition A, Required Action A.1, Restore drywell average air temperature to within limit within 8 hours. • Enters PC flowchart • Directs entry into 34AB-T47-001-2, Loss of Drywell Cooling
		<p><i>SIMULATOR OPERATOR, after dispatched to investigate the Drywell Chillers, wait 2 minutes (using Time Compression) report that initial investigation does NOT reveal the cause of the trips. Further investigation is needed, and NO estimated repair time is available.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 7

Event Description: Loss of Drywell Chillers.

Time	Position	Applicant's Actions or Behavior
	ATC	<p>Enters 34AB-T47-001-2, Loss of Drywell Cooling and performs the following:</p> <ol style="list-style-type: none"> 1. Ensures the following valves are OPEN at panel 2H11-P654: 2P64-F045, Drwl Chill Wtr Supply Isol 2P64-F047, Drwl Chill Wtr Return Isol 2. Check a Drywell Chiller is RUNNING at panel 2H11-P700 or locally. 3. IF a Drywell Chiller is NOT running, start a Drywell Chiller in accordance with 34SO-P64-001-2, Primary Containment Chilled Water System. 4. If a Drywell Chiller cannot be started immediately, THEN reduce reactor power to 50% in accordance with 34GO-OPS-005-2, Power Changes. (See Event 8 for power reduction)
	BOP	<p>Receives DRYWELL PRESS HIGH, 602-210, alarm. Confirms that NONE of the following alarms are illuminated:</p> <ul style="list-style-type: none"> • SBTG/DRYWELL AND TORUS RADIATION HIGH (601-402) • FISSION PRODUCT PARTIC RADN HIGH/INOP (602-406) • FISSION PRODUCT IODINE RADN HIGH/INOP (602-412) • FISSION PRODUCT GAS HIGH/INOP (602-418) • CONTAINMENT RADIATION HIGH/INOP (602-436)
		<ul style="list-style-type: none"> • Opens 2T48-F319, Drywell Vent Vlv (2H11-P602). • Opens 2T48-F320, Drywell Vent Vlv (2H11-P601). • WHEN Drywell pressure is < 0.5 PSIG on 2T48-R607A OR 2T48-R607B, closes 2T48-F320, Drywell Vent Vlv. • Closes 2T48-F319, Drywell Vent Vlv. <p>(May maintain Drywell pressure at a higher band than 0.5 psig)</p> <p><i>NOTE: The SRO may set a critical parameter on Drywell pressure at a higher band than 0.5 psig IAW NMP-OS-007-001, Conduct of Operations Standards and Expectations.</i></p>
		<p><i>SIMULATOR OPERATOR, PROCEEDS to the next event when Drywell Fast venting is secured.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 8

Event Description: Lower Reactor power to 50% using Control Rods & Recirc flow IAW 34GO-OPS-005-2.

Time	Position	Applicant's Actions or Behavior
10 Min	SRO	Directs ATC to lower reactor power to 50% by inserting control rods in reverse order and decreasing Recirc flow. Power decreases may exceed 10 MWe/min.
		<p><i>NOTE: During the control rod movement, the operator may flag the RBM DOWNSCALE, (603-211) and ROD OUT BLOCK, (603-238) alarms.</i></p> <p><i>NOTE: During the control rod movement, the operator will stop insertion when Feedwater flow is <7 Mlbm/hr or out of the RPI.</i></p> <p><i>NOTE: The crew may use the Emergent Load Reduction Contingency plan "Rapid Load Reduction" or "Slow Transient" to insert control rods, either is acceptable.</i></p>
	ATC	<p>Inserts control rods per 34GO-OPS-065-0, Control Rod Movement:</p> <ul style="list-style-type: none"> • Inserts control rods per the Reactivity Briefing Sheet and rod pull sheets starting with (Rapid Load Reduction Step 24, Control rod 34-27) or (Slow Transient, Step 26 Control rod 18-11). • Selects the Control rod and inserts by performing the following: <ul style="list-style-type: none"> • Places Control Rod movement switch to the IN position. • Verifies Rod moves using Rod display information and Rx and Generator power lowering. • Releases Rod movement switch so that the control rod stops 1 position before the insert limit unless the insert limit is 00. • Initials Rod movement Sheet. • Verifier, if available, Initials Rod movement sheet. • Repeats above with next Control rod • Notifies the SRO when they are below the 78% Load Line. • If required, adjust 2C11-F003 to get 220 – 280 psid drive water dp

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 8

Event Description: Lower Reactor power to 50% using Control Rods & Recirc flow IAW 34GO-OPS-005-2.

Time	Position	Applicant's Actions or Behavior
		<p><i>NOTE: May get the RBM UPSCALE, (603-202) and ROD OUT BLOCK, (603-238) alarm, if a peripheral control rod is NOT selected. This is expected and the operator may select a peripheral rod at this time.</i></p> <p><i>May also get Alarm FWHLIC/MSR LOW PRIORITY, (650-134), alarm. This is expected at this power level.</i></p>
	ATC	<ul style="list-style-type: none"> • IAW 34SO-B31-001-2 (step 4.1.9) & 34GO-OPS-005-2, the ATC may decrease Recirc pump speed, may exceed 10 MWE per minute by depressing the LOWER SLOW or LOWER MEDIUM or FAST LOWER pushbuttons on the Master (P603 panel) or Individual controls (P602 panel) until reactor power is 50%. • If using Individual Controls, pump speed decreases will alternate between the “A” & “B” Recirc pumps to prevent excessive flow mismatches. • Monitors power decrease by observing APRM and generator output indications.
	ATC	<ul style="list-style-type: none"> • Complies with 34SO-B31-001-2 , Limitation 5.2.15, which states: WHEN changing Recirc pumps speed while in Two Loop operation maintain pump speeds to limit recirculation loop jet pump mismatch within the following limits: <ul style="list-style-type: none"> • <10% of rated core flow (7.7 E6 lbm/hr) WHEN operating < 70% of rated core flow; AND • <5% of rated core flow (3.85 E6 lbm/hr) WHEN operating at > 70% of rated core flow.
	ATC	Notifies the SRO that reactor power has been decreased to 50%.
		<i>SIMULATOR OPERATOR, at the Chief Examiner’s request, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 9

Event Description: Drywell leak with failure to automatically scram on high Drywell Pressure (**Critical Task**), Dual RFPT trip.

Time	Position	Applicant's Actions or Behavior
10 Min		<i>SIMULATOR OPERATOR, at the Chief Examiner's DEPRESS: (RB-9) malfunction mfG31 242, RWCU Non-Isol Leak (0-10000 gpm), f:6.0 r:1000.</i>
	ALL	<ul style="list-style-type: none"> • Notices Drywell pressure rising rapidly. • Receives the following alarms: <ul style="list-style-type: none"> • PRIMARY CNMT PRESSURE HIGH, 603-115 • PRIMARY CNMT HIGH PRESSURE TRIP, 603-106 • May diagnose the High Drywell Pressure RPS trip did NOT occur.
	SRO	<ul style="list-style-type: none"> • Assigns the ATC to perform RC-1. • Assigns the BOP operator to perform RC-2 and RC-3. • Enters 31EO-EOP-010-2, RC EOP flow chart if RWL decreases below 3 inches. • Directs RWL Band of 3 to 50 inches. • May direct Maximize CRD flow IAW 34SO-C11-005-2.
	ATC	<ul style="list-style-type: none"> • Performs RC-1 consisting of: <ul style="list-style-type: none"> • Inserts manual scram. • Places mode switch to SHUTDOWN. (Critical Task) <i>(Critical Task Failure is when the SRO is directing actions from either C5/P, C5/L or C5/Q of CP-3 ATWS RPV Control flowchart.) This results in changes to the mitigative strategy for an event, such as transitions to contingency procedures or functional recovery procedures ES 3.3 page 15 of 17.</i> • If NOT tripped, places the Recirc pumps at minimum speed. • Checks all rods are inserted by observing full in lights, SPDS, or the RWM display. • Notifies SRO of rod position check. • Inserts SRMs and IRMs. • Places SDV isolation valve switch to "isolate" & ensures closed. • Shifts recorders to read IRMS, when required. • Ranges IRMS to bring reading on scale. • Notifies the SRO when the above actions are complete.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 9

Event Description: Drywell leak with failure to automatically scram on high Drywell Pressure (**Critical Task**), Dual RFPT trip.

Time	Position	Applicant's Actions or Behavior
	BOP	Performs RC-2 actions consisting of: <ul style="list-style-type: none"> • Confirms proper Level Control response: <ul style="list-style-type: none"> • Checks ECCS Injection Systems (will NOT be in service if RWL >-35 inches) • Ensures FW Master Controller setpoint reduces to 9 inches and output reduces to 25% of previous value • If Set down does NOT auto function, manually reduces FW Master Controller setpoint to approximately 9 inches. • May NOT complete RC-2 since both RFPTs are tripped. <ul style="list-style-type: none"> • As time allows, confirms/Opens 2N21-F125. • As time allows, confirms/places 2C32-R619, FW S/U level control valve controller, in Auto, set at approximately 9 inches. • As time allows, confirms/closes 2N21-F110. • Informs SRO of loss of both RFPTs.
	BOP	Performs RC-3 consisting of: <ul style="list-style-type: none"> • Monitor RPV pressure. • Confirm proper operation of pressure control system (LLS and SRVs). • If necessary, allows RPV pressure to exceed 1074 psig then cycles any SRV to initiate LLS. • Maintain RPV pressure between 1074 and 800 psig. • Notify SRO that LLS is the pressure control system.
		<p><i>NOTE: The SRO may select an RPV pressure band which will lower the driving head of the leak while maintaining <100°F/hr RPV cool down (typically between 500 psig & 920 psig).</i></p>
	SRO	As time allows, may: <ul style="list-style-type: none"> • Direct the ATC to decrease reactor pressure to reduce the driving head of the leak using EHC pressure set. • Remove RWCU from service IAW 34AB-T23-002-2, Small Pipe Break in Primary Containment.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 9

Event Description: Drywell leak with failure to automatically scram on high Drywell Pressure (**Critical Task**), Dual RFPT trip.

Time	Position	Applicant's Actions or Behavior
	ATC	<p>Enters Attachment 11 of 34SO-N30-001-2, Main Turbine, or 34GO-OPS-013-2, Normal Plant Shutdown, and at the DEHC panel computer, performs ONE of the following:</p> <ol style="list-style-type: none"> 1. Throttle Pressure Set <ul style="list-style-type: none"> • Selects the Control → psi-load screen. • Selects the *Ramp Rate* button. • Enters a ramp rate. • Selects the *Pressure* button. • Enters desired target pressure. 2. Bypass Valve Jack Positioning. <ul style="list-style-type: none"> • Control BPV position by intermittently using the *Raise* / *Lower* buttons until BYPASS VALVE JACK STATUS changes to *ACTIVE* <u>AND</u> desired cooldown rate is established.
	ATC	Notifies the SRO that RPV Pressure is at the target psig.
	SRO	Per the PC flowchart, verifies Torus level is <285 inches and directs an operator to place Torus Sprays in service.
	ATC	<ul style="list-style-type: none"> • Sprays the Torus per 34SO-E11-010-2 placard on the 2H11-P601 Panel as follows: <ul style="list-style-type: none"> • Places Cnmt Spray Vlv Cntl switch in the MANUAL position. • Starts RHR pump(s) in loop A/B, (already running). • Opens 2E11-F028A/B. • Throttles Open 2E11-F027A/B. • Notifies SRO that RHR is in Torus Sprays.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 9

Event Description: Drywell leak with failure to automatically scram on high Drywell Pressure (**Critical Task**), Dual RFPT trip.

Time	Position	Applicant's Actions or Behavior
		<i>NOTE: Only one loop of RHR will be placed in Torus Sprays. The flow is only ~450 gpm.</i>
	SRO	<ul style="list-style-type: none"> When Torus pressure exceeds 11 psig, verifies that Torus Level is <215 inches, in the safe area of Graph 8 (DWSIL) and directs an operator to: <ul style="list-style-type: none"> Place all DW cooling fans to OFF. Place both Recirc pumps to PTL OFF.
	ATC	<ul style="list-style-type: none"> Places Recirc pumps to PTL OFF on panel 2H11-P602. Places the following DW cooling fans control switches to OFF on panels 2H11-P654 & P657: <ul style="list-style-type: none"> 2T47-B007B, Drywell Cooling Top Head Area Unit. 2T47-B008B, Drywell Cooling Pedestal/Annular Area Unit. 2T47-B009B, Drywell Cooling Recirc Pump Area Unit. 2T47-C001B, Drywell Cooling Return Air Fan. 2T47-C002B, Drywell Cooling Return Air Fan. 2T47-B010B, Drywell Cooling EL 114 Unit. <ul style="list-style-type: none"> 2T47-B007A, Drywell Cooling Top Head Area Unit. 2T47-B008A, Drywell Cooling Pedestal/Annular Area Unit. 2T47-B009A, Drywell Cooling Recirc Pump Area Unit. 2T47-C001A, Drywell Cooling Return Air Fan. 2T27-C002A, Drywell Cooling Return Air Fan. 2T47-B010A, Drywell Cooling EL 114 Unit.
	SRO	<ul style="list-style-type: none"> When all DW cooling fans are OFF <u>AND</u> both Recirc pumps are PTL OFF: <ul style="list-style-type: none"> Directs an operator to spray the Drywell.

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 9

Event Description: Drywell leak with failure to automatically scram on high Drywell Pressure (**Critical Task**), Dual RFPT trip.

Time	Position	Applicant's Actions or Behavior
	ATC	<ul style="list-style-type: none"> • Sprays the Drywell per 34SO-E11-010-2 placard on the 2H11-P601 Panel as follows: <ul style="list-style-type: none"> • Places Cnmt Spray Vlv Cntl switch in the Manual position. • Starts RHR pump(s) in loop A/B, (already running). • Opens 2E11-F021A or B. • Throttles Open 2E11-F016A(B) to ≥ 5000 gpm. • Confirms Drywell pressure is reducing. • Notifies SRO that RHR is in Drywell Sprays.
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 10

Event Description: RCIC fails to Auto start on low level with RCIC Manual Initiation PB failing. Manual actions required for injection. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
		<i>SIMULATOR OPERATOR, RCIC malfunctions/overrides were inserted at the beginning mfE51_109 (RCIC Failure to Auto Start) & diE51-S33 (RCIC Manual Initiation to OFF).</i>
	SRO	May direct an operator to INHIBIT ADS.
	ATC/BOP	<ul style="list-style-type: none"> If directed, 2H11-P602, Places the following switches to INHIBIT: <ul style="list-style-type: none"> ADS Channel A / C Auto Logic Inhibit switch (2B21C-S7A) ADS Channel B / D Auto Logic Inhibit switch (2B21C-S7B)
	SRO	<ul style="list-style-type: none"> Directs BOP control RWL +3 inches to +50 inches. As time allows, directs BOP to verify Isolations and ECCS initiations.
	BOP	May report failure of RCIC to auto initiate at – 35”.
	BOP	WHEN RCIC injection is attempted: <ul style="list-style-type: none"> Depresses RCIC Manual Initiation P/B (failed) Opens 2E51-F046 Starts Barom Cndsr Vac Pmp Opens 2E51-F045 Confirms open 2E51-F019 Confirms closed 2E51-F019 at flow > 79.3 gpm Opens 2E51-F013 Adjusts controller for desired flow (Critical Task) <i>(Critical Task Failure is when less than 5 SRVs are open with RWL less than -205 inches.) Approximately 23 minutes to TAF & 35 minutes to -205”. ES 3.3, Emergency Depress criteria.</i>

Op-Test No.: 2023-301 Scenario No.: 15-1 Event No.: 10

Event Description: RCIC fails to Auto start on low level with RCIC Manual Initiation PB failing. Manual actions required for injection. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
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		<p><i>NOTE: The following is written from 34SO-E21-001-2, Attachment 13, Core Spray Manual Startup, Placard.</i></p>
	BOP	<p>If Emergency Depress is directed, performs the following for RPV injection panel 2H11-P601:</p> <ul style="list-style-type: none"> • Starts 2E21-C001A (2E21-C001B), Core Spray Pump, (already running) • Ensures Core Spray Pump discharge pressure is > 265 PSIG • When RPV pressure is less than or equal to 425 PSIG, fully opens 2E21-F005A and/or (2E21-F005B), Inbd Discharge Valve. • WHEN Core Spray System flow rises above 950 GPM, ensures 2E21-F031A and/or (2E21-F031B), Min Flow Valve closes. • Throttles 2E21-F005A and/or (2E21-F005B), Inbd Discharge Valve • Maintains level +3 inches to +50 inches
		<p><i>NOTE: The following is written from 34SO-E11-010-2, Attachment 17, LPCI Initiation Placard.</i></p>
	BOP	<ul style="list-style-type: none"> • Starts RHR Pumps, (already running) • When RPV pressure is less than or equal to 425 PSIG, fully opens 2E11-F015A and/or 2E11-F015B, RHR Inbd Discharge Valve (valves won't open). • Notifies SRO that neither 2E11-F015A and/or 2E11-F015B will OPEN. • May notify Maintenance to investigate failure
		<p><i>With Chief Examiners Permission, the Scenario will be terminated when RWL is being controlled +3 to +50 inches or approaching, Primary Containment parameters (Drywell pressure/Torus pressure) are addressed or as directed by the Chief Examiner.</i></p>

NRC FINAL SUMMARY

Facility: E. I Hatch **Scenario No.:** 15-1 **Op-Test No.:** 2023-301

Examiners: _____ **Operators:** _____ **SRO**
 _____ **RO**
 _____ **BOP**

Initiating Conditions:	Unit 2 is operating at 72% RTP. 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written. 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written.
Turnover	Hydrogen Seal Oil System is currently aligned with the Emergency Seal Oil pump in service. After turnover restore to Normal Hydrogen Seal Oil System Lineup starting at step 4.3.3.2.e of 34SO-N42-001-2. Once complete raise reactor power with Recirc flow to 75% RTP.
<p>Summary:</p> <ul style="list-style-type: none"> • Event 1: Normal; The BOP will return Hydrogen Seal Oil to a Normal lineup IAW the system operating procedure. • Event 2 Component; CRD Flow Controller fails closed causing a loss of normal CRD flow. The ATC will place the controller in manual and restore CRD flow. • Event 3: Component; Instrument Air System Prefilter dP Hi – swap Prefilters. The operator will dispatch a SO locally to determine dP. Report back will require BOP swapping Prefilters to restore normal system flow/pressure. (OE) • Event 4: Component/TS; HPCI Inadvertent Initiation with Aux Oil pump failure after HPCI is secured. • Event 5: TS Only; RHRSW pump 2A DC breaker tripped and cannot be reclosed. • Event 6: Component; The RFPT loop seal will experience a low-level condition causing condenser vacuum to degrade. The BOP operator will isolate the loop seal drain which stops condenser vacuum decreasing. Once the loop seal level is restored, the operator returns the loop seal system to normal lineup. • Event 7: Component/TS; Loss of DW Chillers requiring the Drywell to be vented. The SRO addresses Tech Specs for Drywell Average Air Temperature >150°F. • Event 8: Reactivity; Lower Reactor power to 50% using Control Rods &/or Recirc flow IAW 34GO-OPS-005-2. • Event 9: Major; Drywell leak with failure to automatically scram on high Drywell Pressure (Critical Task), Dual RFPT trip. • Event 10: Component; RCIC fails to Auto start on low level with RCIC Manual Initiation PB failing. RCIC must be manually initiated prior to RWL reaching –205” or an ED is performed and manually injecting with Core Spray to restore RWL. (Critical Task) 	

Critical Tasks & Qualitative Attributes

NRC FINAL


Facility: E. I Hatch
Scenario No.: 15-1 **Op-Test No.:** 2023-301

Critical Tasks

- Inserting a manual scram/placing Reactor Mode switch to Shutdown prior to the SRO directing actions from either C5/P, C5/L or C5/Q of CP-3 ATWS RPV Control flowchart. **(Event 9)**
- RCIC must be manually initiated prior to RWL reaching –205 inches OR an Emergency Depressurization (ED) (at least 5 SRVs open) is performed prior to RWL <-205 inches & then if ED, manually inject with the Core Spray System. **(Event 10)**

	Form 2.3-2 Attributes	Required	Actual	Items
1.	Total Malfunctions	5-8	7	1. CRD Flow Controller fails closed (Event 2) 2. Instrument Air Prefilter dP Hi (Event 3) 3. HPCI Inadvertent Initiation (Event 4) 4. RFPT Loop Seal failure (Event 6) 5. Loss of DW Chillers/start SBTG (Event 7) 6. DW leak/RPS DW/Dual RFPT trip (Event 9) 7. RCIC fails Auto start/Man required (Event 10)
2.	Malfunctions After EOP Entry	1-2	1	1. RCIC fails Auto start/Man required (Event 10)
3.	Abnormal Events	2-4	4	1. CRD Flow Controller fails closed (Event 2) 2. HPCI Inadvertent Initiation (Event 4) 3. RFPT Loop Seal failure (Event 6) 4. Loss of DW Chillers/start SBTG (Event 7)
4.	Major Transients	1-2	1	1. DW leak/RPS DW/Dual RFPT trip (Event 9)
5.	EOPs entered, requiring substantive actions	1-2	2	1. RC 2. PC
6.	EOPs contingencies entered with substantive actions	0-2	0	1. NONE
7.	Preidentified Critical Tasks	≥ 2	2	1. DW leak/RPS DW/Dual RFPT trip (Event 9) 2. RCIC fails Auto start/Man required (Event 10)

**ILT 15 NRC FINAL Scenario 1
SHIFT TURNOVER**

	Safety Focus
UNIT 1 STATUS	
Plant Conditions:	Unit 1 is operating at 100% power Activities in progress: Maintain RTP.
UNIT 2 STATUS	
Plant Conditions:	<ul style="list-style-type: none"> Unit 2 is operating at 72% RTP. 2B21-F013D is inoperable for Low-Low Set, RAS written. 2D11-K615B, Offgas Post treatment radiation monitor, failed Downscale, RAS written.
<p align="center"><u>Protected Train:</u></p> <p> <input checked="" type="checkbox"/> Division I <input type="checkbox"/> Division II </p>	<p align="center"><u>Risk Profile:</u></p> <p> <input checked="" type="checkbox"/> Green <input type="checkbox"/> Yellow <input type="checkbox"/> Orange <input type="checkbox"/> Red </p>
<p><u>Protected Equipment:</u> None</p>	
Scheduled evolutions:	<input type="checkbox"/> Hydrogen Seal Oil System is currently aligned with the Emergency Seal Oil pump in service. After turnover restore to Normal Hydrogen Seal Oil System Lineup starting at step 4.3.3.2.e of 34SO-N42-001-2. Once complete raise reactor power with Recirc flow to 75% RTP.
Surveillances due this shift:	<input type="checkbox"/> None
Inop Equipment:	<input type="checkbox"/> 2B21-F013D is inoperable for Low-Low Set, RAS written. <input type="checkbox"/> 2D11-K615B, Offgas Post Treatment Radiation monitor has failed Downscale. IAW TS/TRM, I&C has placed 2D11-K615B in the trip condition while maintaining the function of 602-405, Post Treatment O/G Radiation Hi-Hi-Hi/Inop. A Caution Tag is attached to 2D11-K615B switch.
Active tagouts:	<input type="checkbox"/> None
Rod Configuration:	<input type="checkbox"/> See RWM Step 26

Form 3.3-1 Scenario Outline

NRC FINAL

Facility:	<u>E. I Hatch</u>	Scenario No.:	<u>15-2</u>
Scenario Source:	<u>NEW</u>	Op-Test No.:	<u>2023-301</u>
Examiners:	_____	Applicants/:	_____
	_____	Operators	_____
	_____		_____
			SRO
			RO
			BOP

Initial Conditions. Unit 2 is operating at 61% RTP. 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written. 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written. RCIC is inoperable, RAS written.

Turnover: Perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic only, starting at step 4.1. Once surveillance is complete raise reactor power to 75% RTP using Recirc.

Critical Tasks:

1. HPCI steam line break **(Event 4)**
2. ADS Valves fail close **(Event 8)**

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP)	Perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic only, starting at step 4.1.
2	mf60311325	C (ATC)	CRD 2A pump experiences an Overload condition requiring swapping to standby pump.
3	svoN40260 mf65111604	C (BOP)	UAT 2B Hi temperature / swap house loads / remove from service.
4	mfE41_249 svoE41072 svoE41073 EGE41-3	MCC (ATC) TS (SRO)	HPCI Steam Line breaks in the Rx Bldg. HPCI isolation valves fail to auto close (Critical Task)
5	mfP41_292 mfP41_67B loP41-C001BA3 loP41-C001BG1 loP41-C001BR2	MCC (BOP) TS (SRO)	PSW Pump 2B sheared shaft, Standby PSW pump 2D fails to auto start and must be manually started.
6	mf65702209 mf65702227 mf65321987	R (ATC)	Earthquake with a loss of Unit 1 SAT 1D. Reduce reactor power to between 40% & 50% due to earthquake.
7	svoT48140(70/.75) svoT48142(50/10) svoT48143(50/10) svoT48147(50/10) svoT48148(50/10)	M (ALL)	Earthquake requiring an Emergency Depress prior to Torus level reaches 98 inches.
8	mfB21_129A mfB21_129E mfB21_129L svoN37225 svoN37226 svoN37227	C (ATC)	3 Main Turbine Bypass valves failed closed. ADS valves (3) fail to open when Emergency Depress is required. (Critical Task)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS)Tech Spec, (MC)Manual Control

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 1

Event Description: Perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic only, starting at step 4.1.

Time	Position	Applicant's Actions or Behavior
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10 Min.	SRO	Directs BOP to perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic starting at step 4.1.
		<p><i>NOTE: At Chief Examiner’s request, Event 2 can be started before surveillance is complete.</i></p> <p><i>NOTE: SIMULATOR OPERATOR, If Independent Verification is requested, INFORM BOP that Independent Verification has been performed.</i></p>
	BOP	<p>IAW 34SV-C71-004-2, performs the following:</p> <ul style="list-style-type: none"> • On panel 2H11-P603, depresses 2C71-S3A, Manual Reactor Scram Channel A1 pushbutton, • Checks the following: <ul style="list-style-type: none"> • 2C71-S3A, Manual Reactor Scram Channel A1 pushbutton, light ILLUMINATES. • Annunciator 603-117, REACTOR AUTO SCRAM SYSTEM A TRIP, ALARMS • Annunciator 603-126, REACTOR MANUAL SCRAM SYSTEM A TRIP, ALARMS. • Scram Group A Solenoid lights 1, 2, 3, AND 4, panel 2H11-P603, EXTINGUISH.
	BOP	<ul style="list-style-type: none"> • Resets Manual RPS Trip System A1, using 2C71-S5, Reactor Scram Reset switch. • Checks AND independently verify the following: <ul style="list-style-type: none"> • 2C71-S3A, Manual Reactor Scram Channel A1 pushbutton, light EXTINGUISHES. • Annunciator 603-117, REACTOR AUTO SCRAM SYSTEM A TRIP, CLEARS • Annunciator 603-126, REACTOR MANUAL SCRAM SYSTEM A TRIP, CLEARS. • Scram Group A Solenoid lights 1, 2, 3, AND 4, panel 2H11-P603, ILLUMINATE. • Obtains a computer printout of control rod position Rod Pattern Log (OD7). • Checks AND independently verifies that these control rod positions exactly match the positions obtained in step 4.1.4 (Prerequisites).

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 1

Event Description: Perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic only, starting at step 4.1.

Time	Position	Applicant's Actions or Behavior
	BOP	IAW 34SV-C71-004-2, performs the following: <ul style="list-style-type: none"> ● On panel 2H11-P603, depresses 2C71-S3C, Manual Reactor Scram Channel A2 pushbutton, ● Checks the following: <ul style="list-style-type: none"> ● 2C71-S3C, Manual Reactor Scram Channel A1 pushbutton, light ILLUMINATES. ● Annunciator 603-117, REACTOR AUTO SCRAM SYSTEM A TRIP, ALARMS ● Annunciator 603-126, REACTOR MANUAL SCRAM SYSTEM A TRIP, ALARMS. ● Scram Group A Solenoid lights 1, 2, 3, AND 4, panel 2H11-P603, EXTINGUISH.
	BOP	<ul style="list-style-type: none"> ● Resets Manual RPS Trip System A2, using 2C71-S5, Reactor Scram Reset switch. ● Checks AND independently verify the following: <ul style="list-style-type: none"> ● 2C71-S3C, Manual Reactor Scram Channel A2 pushbutton, light EXTINGUISHES. ● Annunciator 603-117, REACTOR AUTO SCRAM SYSTEM A TRIP, CLEARS ● Annunciator 603-126, REACTOR MANUAL SCRAM SYSTEM A TRIP, CLEARS. ● Scram Group A Solenoid lights 1, 2, 3, AND 4, panel 2H11-P603, ILLUMINATE. ● Obtains a computer printout of control rod position Rod Pattern Log (OD7). ● Checks AND independently verifies that these control rod positions exactly match the positions obtained in step 4.1.4 (Prerequisites).
	BOP	Notifies the SRO that 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic is complete.
		<i>SIMULATOR OPERATOR enters the next event after surveillance is complete OR at the Chief Examiner’s request.</i>

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 2

Event Description: CRD 2A pump experiences an Overload condition requiring swapping to standby pump.

Time	Position	Applicant's Actions or Behavior
10 Min		<i>At the Chief Examiner's direction, SIMULATOR OPERATOR ENTERS (RB-2) mf60311325, CRD Pump A Overload, alarm.</i>
	ATC	<ul style="list-style-type: none"> • Receives CRD PUMP A OVERLOAD, 603-137, alarm. • Determines that the CRD 2A pump is still in service. • Dispatches SO locally to Bus 2R22-S005, Frame 8, to check the following: <ul style="list-style-type: none"> • Overcurrent relay targets tripped • Amperage reading on all three phases
		<p><i>SIMULATOR OPERATOR, AFTER 2 minutes from being dispatched, report to the SRO/ATC, as a SO, that one (1) Overcurrent relay target is tripped AND the HIGHEST Amperage reading is 45 amperes.</i></p> <p><i>NOTE: IAW 603-137, CRD pump must be swapped if Amperage is >40 amperes.</i></p>
	SRO	<ul style="list-style-type: none"> • Dispatches Maintenance to investigate CRD pump 2A overload condition. • After SO report, directs ATC to shift CRD pumps IAW 34SO-C11-005-2.
		<p><i>NOTE: The ATC may direct the CRD pump room coolers to be swapped or may elect to leave the 2T41-B001B cooler in service. Both are acceptable.</i></p>
	ATC	<ul style="list-style-type: none"> • IAW 34SO-C11-005-2, 4.1.3, Shifting CRD Pumps, performs the following: <ul style="list-style-type: none"> • Dispatches SO to confirm cooling water valves listed in step 4.1.3.1.b are open. • Confirms a CRD Room Cooler is in operation per 34SO-T41-002-2, CRD Pump Room Ventilation System by performing the following: <ul style="list-style-type: none"> • Confirms 2T41-B001B is in Run (may direct BOP to confirm) • OR • Places control switch for 2T41-B001A, in Run (P657) (may direct BOP to perform). • Places 2T41-B001B, CRD Pump Room Cooler, in Off (P654) (may direct BOP to perform). • Places 2T41-B001B, CRD Pump Room Cooler, in Auto (P654) (may direct BOP to perform).

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 2

Event Description: CRD 2A pump experiences an Overload condition requiring swapping to standby pump.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, when dispatched to vent the CRD pump 2B, WAIT 2 minutes and NOTIFY the ATC the CRD pump 2B has been vented and the vent valves are closed.</i></p> <p><i>Also ENSURE Event Trigger EGC11-3 DELETES CRD 2A Overload alarm when CRD pump 2A is secured and INSERTS EGC11-7 which INSERTS CRD 2A Overload alarm if CRD pump 2A is re-started.</i></p>
	<p>ATC</p>	<ul style="list-style-type: none"> • Dispatches SO to confirm open the following valves and to vent the 2B CRD pump: <ul style="list-style-type: none"> • 2C11-F118B, CRD Pump 2B Suction Valve • 2C11-F114B, Suction Filter 2B Outlet Isolation • 2C11-F115B, Suction Filter 2B Inlet Isolation • Starts 2C11-C001B, CRD Pump 2B, at P603. • Confirms flow control valve responds properly by controlling system flow between 30 gpm to 50 gpm. • Stops 2C11-C001A, CRD Pump 2A, at P603. • Dispatches SO to confirm closed 2C11-F117, CRD Suction Crosstie. <ul style="list-style-type: none"> • Confirms system parameters are in their normal ranges per NOTE in System Startup section of 34SO-C11-005-2.
		<p><i>SIMULATOR OPERATOR enters the next event at the Chief Examiner's request.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 3

Event Description: UAT 2B Hi temperature / swap house loads / remove from service.

Time	Position	Applicant's Actions or Behavior
15 Min		<i>SIMULATOR OPERATOR at Lead Examiner's direction, DEPRESS: (RB-3), mf65111604, Unit Aux Xfmr "2B" Misc Alarm (Annunciator On) svoN40260, UAT 2B Winding temp, final of 230, ramp 100</i>
	ALL	UNIT AUX XMFR 2B MISC ALARM, (651-116), annunciates One minute later, UNIT AUX XMFR 2B WINDING TEMP HIGH, (651-117) annunciates.
	BOP	<ul style="list-style-type: none"> • Responds to alarm UNIT AUX XMFR 2B MISC ALARM, (651-116) • Notifies GCC of the alarm. • Dispatches an operator to check the transformer local panel in the Low Voltage Switchyard, 2H21-P214. • Responds to alarm UNIT AUX XMFR 2B WINDING TEMP HIGH, (651-117). • Notifies the SRO that per the ARPs reduce load on transformer with winding temperature rising and to Transfer the loads to Startup Transformer (SUT) 2C, if the oil temperature is high.
		<p><i>SIMULATOR OPERATOR:</i></p> <ul style="list-style-type: none"> • <i>3 minutes from being dispatched, call the control room as the operator dispatched to the 2B UAT and report that the 2B UAT oil temperature is 93°C and that the winding temperature is 106°C and both are slowly rising.</i> • <i>If asked, Transformer fans and oil pumps are running.</i> • <i>DO NOT PROMPT TO TRANSFER LOADS</i> • <i>If more updates of temperature are required, raise both temps 1°C/min EACH UPDATE, until load is transferred.</i> • <i>Temps will eventually stabilize above the setpoints.</i> <p><i>When the UAT is unloaded, temps will slowly lower, however the afore mentioned alarms will NOT clear until locally reset.</i></p>
	SRO	<ul style="list-style-type: none"> • Directs BOP operator to enter 34SO-R22-001-2 for transferring 4160VAC buses 2A & 2B from Unit Aux Transformer (UAT) 2B to Start-Up transformers (SAT) 2C & 2D.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 3

Event Description: UAT 2B Hi temperature / swap house loads / remove from service.

Time	Position	Applicant's Actions or Behavior
	BOP	Enters 34SO-R22-001-2, 4160 VAC System.
	BOP	Swapping of 2A 4160VAC from the UAT to the SAT. <ul style="list-style-type: none"> • Confirms power is available to Startup Aux XFmr 2C as indicated by the potential lights on panel 2H11-P651. • Confirms OPEN ACBs 135544, 135564 and 135584 (2H11-P652).
	BOP	<ul style="list-style-type: none"> • Places 135434/135454 Station Svc Interlock Cutout switch in OFF-(DOWN). • Places Sync Switch (SSW) ACB 135454 in ON. • Confirms the sources of power to 4160V Bus 2A are synchronized and voltage is normal on Start-Up Aux Transformer 2C.
	BOP	<ul style="list-style-type: none"> • Closes ACB 135454, 4160V Bus 2A Alternate Supply, AND confirms that current rises from Startup Auxiliary Transformer 2C. • Trips ACB 135434, 4160V Bus 2A Normal Supply. • Places Sync Switch (SSW) ACB 135454 in OFF. • Places 135434/135454 Station Svc Interlock Cutout switch in NORMAL-(UP).
	BOP	Swapping of 2B 4160VAC from the UAT to the SAT <ul style="list-style-type: none"> • Confirms power is available to Startup Aux Transformer 2D as indicated by the potential lights on panel 2H11-P651. • Confirms OPEN ACBs 135544, 135564 and 135584 (2H11-P652).
		<ul style="list-style-type: none"> • Places 135444/135464 Station Svc Interlock Cutout switch in OFF-(DOWN). • Places Sync Switch (SSW) ACB 135464 in ON. • Confirms the sources of power to 4160V Bus 2B are synchronized and voltage is normal on Start-Up Aux Transformer 2D.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 3

Event Description: UAT 2B Hi temperature / swap house loads / remove from service.

Time	Position	Applicant's Actions or Behavior
	BOP	<ul style="list-style-type: none"> • Closes ACB 135464, 4160V Bus 2B Alternate Supply, AND confirms that current rises from Startup Auxiliary Transformer 2D. • Trips ACB 135444, 4160V Bus 2B Normal Supply. • Places Sync Switch (SSW) ACB 135464 in OFF. • Places 135444/135464 Station Svc Interlock Cutout switch in NORMAL-(UP). • Notifies the SRO that 4160 VAC 2A and 2B buses have been transferred from the UAT to SUT 2C & 2D.
		<p><i>SIMULATOR OPERATOR, after UAT 2B is removed from service, Event Trigger EGR22-1 MODIFIES Override svoN40260 to a Final of 125 with a ramp rate of 5.</i></p>
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 4

Event Description: HPCI Steam Line breaks in the Rx Bldg. with failure to auto isolate requiring manual closure of isolation valves. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
10 Min	ALL	<p><i>At the Chief Examiner's direction, SIMULATOR OPERATOR, ENTER (RB-4) m/E41 249, HPCI Steam Line, break 11/1.25.</i></p> <ul style="list-style-type: none"> • The following annunciators start being received 45 seconds later: <ul style="list-style-type: none"> • LEAK DET DIFF TEMP HIGH, (601-321) • LEAK DET AMBIENT TEMP HIGH, (601-327) • HPCI TURBINE TRIP SOLENOID ENERGIZED, (601-109) • HPCI ISOLATION TRIP LOGIC A INITIATED, (601-115) • HPCI ISOL TIMER INITIATED, (601-105) • HPCI ISOLATION TRIP LOGIC B INITIATED, (601-121) • SEC SYSTEM AUTO INITIATION SIGNAL PRESENT, (650-234) • The following annunciators start being received ~85 seconds later: <ul style="list-style-type: none"> • DRYWELL/TORUS RCDR R627 TEMP HIGH, (650-204) • PANEL 2H11-P654 SYSTEM TROUBLE, (650-214) • MULTIPOINT TEMP RCDR 2T41-R620 TEMP HIGH, (654-004) • MULTIPOINT TEMP RCDR 2T41-R626 TEMP HIGH, (657-025)

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 4

Event Description: HPCI Steam Line breaks in the Rx Bldg. with failure to auto isolate requiring manual closure of isolation valves. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
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		<i>SIMULATOR OPERATOR; ENSURE Event Trigger EGE41-3 deletes HPCI F002 override open when 2E41-F002 control switch is placed to close.</i>
	ATC	<p>Responds to the following annunciators:</p> <ul style="list-style-type: none"> HPCI STEAM LINE DIFF PRESS HIGH, (601-104) HPCI TURBINE TRIP SOLENOID ENERGIZED, (601-109) HPCI ISOLATION TRIP LOGIC A INITIATED, (601-115) HPCI ISOLATION VLV F002/F003 NOT FULLY OPEN, (601-217), when 2E41-F002 is not full open. <p>Time: _____</p> <p>Responds to failure of HPCI Auto Isolation:</p> <ul style="list-style-type: none"> Places 2E41-F002 control switch to CLOSE. Places 2E41-F003 control switch to CLOSE (Critical Task) <p><i>Critical Task Failure is NOT placing 2E41-F002 control switch close prior to exceeding Maximum Safe Operating Temperature in more than one area as indicated on 2G31-R608 Pt. 109 and Pt. 118 (~ 8.5 minutes to reach two (2) Maximum Safe Operating Temperatures).</i></p> <p>NOTE: <i>May close 2E41-F002 prior to receiving 601-115 and/or 601-121 listed above OR exceeding Maximum Safe Operating Temperature.</i></p> <p>Time: _____</p> <ul style="list-style-type: none"> Informs SRO of failure of 2E41-F003 to close.

Excerpt from 34AB-T22-003-2, Secondary Containment Control, Attachment 9

SECONDARY CONTAINMENT TEMP on 2H11-P614, 2G31-R608	MAX NORMAL °F	MAX SAFE °F	NORM	RDG 1	RDG 2	RDG 3
HPCI ROOM AREA						
109 Pump Rm (2E41-N024)	167.5	245	93			
TORUS ROOM AREA						
118 Torus vent air DIFF (2E51-N027C/2E51-N026C)	42	98	9			

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 4

Event Description: HPCI Steam Line breaks in the Rx Bldg. with failure to auto isolate requiring manual closure of isolation valves. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
	SRO	<ul style="list-style-type: none"> • Orders BOP to evaluate leak detection alarms on 2H11-P601. • Orders HPCI to be isolated. • Orders ATC/BOP to evacuate the Reactor Building. • May notify Maintenance for assistance in closing HPCI valve if ATC/BOP does NOT.
	ATC	<ul style="list-style-type: none"> • May enter 34AB-T22-001-2, Primary Coolant System Pipe Break Reactor Building, to confirm auto actions and notifications. • May enter 34AB-T22-003-2, Secondary Containment Control • May notify Maintenance for assistance in closing HPCI valve if SRO/BOP does NOT. • Dispatches SO/Maintenance to investigate the leak.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 4

Event Description: HPCI Steam Line breaks in the Rx Bldg. with failure to auto isolate requiring manual closure of isolation valves. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
	SRO	<p>Enters TS 3.6.1.3, Primary Containment Isolation Valves, and declares 2E41-F003 inoperable;</p> <ul style="list-style-type: none"> • IAW Condition A, Required Action A.1, 2E41-F002 must be closed and deactivated (breaker open) within 4 hours or IAW the Risk Informed Completion Time Program (<i>evaluation process of the Risk Informed Completion Time Program will NOT be evaluated</i>) AND • Required Action A.3, 2E41-F002/F003 penetration must be verified ISOLATED every 31 days <p>May contact the Shift Support Supervisor to draft a Danger Tagout for 2E41-F002.</p> <p>Enters TS 3.5.1, ECCS and declares HPCI inoperable;</p> <ul style="list-style-type: none"> • IAW Condition E, Required Action E.1, Verify by administrative means RCIC is OPERABLE within 1 hour, AND • Required Action E.2, Restore HPCI to OPERABLE status within 14 days OR IAW the Risk Informed Completion Time Program (<i>evaluation process of the Risk Informed Completion Time Program will NOT be evaluated</i>) <p>Enters 31EO-EOP-014-2, SC/RR EOP flowchart</p>
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 5

Event Description: PSW Pump 2B shaft shears, PSW pump 2D fails to auto start and must be manually started.

Time	Position	Applicant's Actions or Behavior
8 Min		<p><i>SIMULATOR OPERATOR, when the ATC is away from the 2H11-P650 panel, ENTER: (RB-5)</i></p> <ul style="list-style-type: none"> • <i>mfP41_292</i> • <i>mfP41_67B,</i> • <i>loP41_C001BR2 (ON),</i> • <i>loP41_C001BG1 (OFF),</i> • <i>loP41_C001BA3 (OFF)</i> • <i>mf65013433 (OFF)</i> • <i>mf65023482 (OFF)</i>
	BOP	<p>When PSW pump 2B fails, responds to the following alarm:</p> <ul style="list-style-type: none"> • PSW MAIN HDR DIV II PRESS LOW, (650-156)
	BOP	<p>Acknowledges 650-156 alarm and informs the SRO that the PSW system pressure is low and that the PSW 2D pump did NOT auto start. (PSW pump 2D may be started manually prior to recognizing failure to auto start. There is NOT an obvious reason for the pressure being low.</p>
	BOP	<ul style="list-style-type: none"> • Manually starts the PSW pump 2D IAW 34AR-650-156-2 or 34AB-P41-001-2, Loss of PSW. (May NOT pull procedures until after the pump has been started.) • Monitors for increasing system pressure (>90psig). • Dispatches SO/Maintenance to investigate the cause of the PSW Low system pressure.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 5

Event Description: PSW Pump 2B shaft shears, PSW pump 2D fails to auto start and must be manually started.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR: ENSURE PSW TRIGGER EGP41-1 is ACTIVATED, THEN</i></p> <p><i>After 2 minutes of being sent to investigate the PSW system low pressure AND after the BOP has started PSW pump 2D, report that the PSW pump 2B motor is running, but the pump shaft is NOT turning.</i></p> <p><i>SIMULATOR OPERATOR, As Maintenance, reports (with Time Compression) that only the Low-Pressure Auto Start Switch had a dirty contact that has now been cleaned and functioning properly.</i></p>
	SRO	<p>Confirms/sends SO/Maintenance to investigate PSW Low system pressure.</p> <p>Directs the operator to place the PSW Pump 2B to PTL off.</p> <p>Enters TS 3.7.2, Plant Service Water (PSW) System and Ultimate Heat Sink (UHS), and declares PSW Pump 2B inoperable;</p> <ul style="list-style-type: none"> IAW Condition A, Required Action A.1, Restore PSW Pump 2B to OPERABLE status within 30 days.
	BOP	<p>Places 2P41-C001B control switch to PTL OFF position and reports this to the SRO.</p>
		<p><i>SIMULATOR OPERATOR, PROCEEDS to the next event at the Chief Examiner's direction.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 6

Event Description: Earthquake with a loss of Unit 1 SAT 1D. Reduce reactor power to between 40% & 50% due to earthquake.

Time	Position	Applicant's Actions or Behavior
10 Min		<p><i>SIMULATOR OPERATOR, at Chief Examiners direction, ACTIVATE (RB-6)</i></p> <p><i>(Earthquake – malfunctions to (ON):</i></p> <p><i>mf65702209 Window 30 SEISMIC PEAK SHOCK RECORDER HIGH G LEVEL & mf65702227 Window 48 SEISMIC INSTRUMENTATION TRIGGERED.</i></p> <p><i>SIMULATOR OPERATOR, ENSURE Event Triggers EGS40-440 & EGS40-450 trip open PCBs 179440 & 179450 de-energizing SAT 1D.</i></p>
	ALL	<p>The following annunciators are received:</p> <ul style="list-style-type: none"> • 2H11-P657 SYSTEM TROUBLE, (650-224). • SEISMIC PEAK SHOCK RECORDER HIGH G LEVEL, (657-030). • SEISMIC INSTRUMENTATION TRIGGERED, (657-048). • 230 KV BREAKER TRIP, (653-218).
	BOP	<ul style="list-style-type: none"> • 2H11-P657 SYSTEM TROUBLE, (650-224), alarm on 2H11-P650 panel. • 230 KV BREAKER TRIP, (653-218) on 2H11-P653 panel. • Communicates both alarms to the SRO.
	SRO	<p>Dispatches the BOP to Panel 2H11-P653 and 2H11-P657.</p>
	BOP	<ul style="list-style-type: none"> • Enters 230 KV BREAKER TRIP, 653-218, on 2H11-P653 panel and informs the SRO that PCBs 179440 & 179450 supplying power to SAT 1D have tripped open. • As time permits, may notify GCC of tripped PCBs.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 6

Event Description: Earthquake with a loss of Unit 1 SAT 1D. Reduce reactor power to between 40% & 50% due to earthquake.

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Informs the SRO of the Seismic alarms and enters ARPs: 34AR-657-030-2 and 34AR-657-048-2 to perform the following actions:</p> <p><i>NOTE: Actions for both ARPs are the same, except for checking the power supply.</i></p>
		<ul style="list-style-type: none"> • Dispatches Unit 1 RO to panel 1H11-P701 to check for further indication of a seismic event by monitoring Peak Shock Annunciator, 1L51-R620, for 12.7 Hz amber lights (> 0.08g, OBE) and 12.7 Hz red lights (> 0.15g, DBE).
		<i>SIMULATOR OPERATOR, after one minute, NOTIFIES Unit 2 Control Room that you were in the Reactor Building and felt the floor vibrating.</i>
	BOP	<ul style="list-style-type: none"> • May have the Unit 1 RO check the following: <ul style="list-style-type: none"> • Peak Shock Annunciator, 1L51-VDC-R620, plugged in on panel 1H11-P701. • BRKR 3 on 120/208V Essential AC Cab., 1R25-S065. • May have I & C refer to Seismic Instrumentation Earthquake Response Manual, SX-18271, for guidance in analyzing seismic data. • Enters 34AB-Y22-002-0, Naturally Occurring Phenomenon. • May inform the Shift Manager to evaluate an Emergency Classification.
	SRO	Directs the BOP to enter 34AB-Y22-002-0, Naturally occurring Phenomenon, if not already entered.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 6

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Event Description: Earthquake with a loss of Unit 1 SAT 1D. Reduce reactor power to between 40% & 50% due to earthquake.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, immediately after being dispatched to check the Shock recorder on 1H11-P701 panel, inform the team that the following lights are illuminated:</i></p> <ul style="list-style-type: none"> • <i>12.7 Hz Amber lights (> 0.08g, OBE)</i> <p><i>AND</i></p> <ul style="list-style-type: none"> • <i>12.7 Hz Red lights (> 0.15g, DBE)</i> <p><i>(Immediately is appropriate since this indicator is on Unit 1, but right next to the Unit 2 SRO desk. It is NOT simulated in the Simulator since it is a Unit 1 only instrument.)</i></p> <p><i>NOTE: With SAT 1D de-energized, 34GO-OPS-013-2, Normal Plant Shutdown, should NOT be entered.</i></p>
	SRO	<ul style="list-style-type: none"> • Determines that all electrical power is NOT available. • Directs the crew to reduce reactor power to between 40% and 50% RTP per 34GO-OPS-005-2, Power Changes. Contacts switchyard maintenance to assist in switchyard damage assessment . • Contacts Maintenance to inspect Independent Spent Fuel Storage Installation (ISFSI) for damage. • Within one hour, dispatches personnel to locally close or confirmed closed the following valves (if not performed by the BOP): <ul style="list-style-type: none"> • 1P11-F167, CST Sump to Radwaste Drain. • 1P11-F3002, Condensate Transfer Pumps and Sample Sink Drain Line to Yard. • 2P11-F051, Retaining Wall Drain. • 2P11-F100, Transfer Pump Wall Drain. • Dispatches personnel to inspect the plant for damage.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 6

Event Description: Earthquake with a loss of Unit 1 SAT 1D. Reduce reactor power to between 40% & 50% due to earthquake.

Time	Position	Applicant's Actions or Behavior
		<i>NOTE: These actions are redundant to the SRO's and either can perform.</i>
	BOP	<ul style="list-style-type: none"> • Enters 34AB-Y22-002-0 and performs the following actions: • Determines that all electrical power is available. • Informs SRO of the requirement to enter 34GO-OPS-005-2, Power Changes, and reduce reactor power to between 40% and 50% RTP per 34GO-OPS-005-2, Power Changes. Contacts switchyard maintenance to assist in switchyard damage assessment. • Contacts Maintenance to inspect Independent Spent Fuel Storage Installation (ISFSI) for damage. • Within one hour, dispatches personnel to locally close or confirmed closed the following valves (if not performed by the SRO): <ul style="list-style-type: none"> • 1P11-F167, CST Sump to Radwaste Drain. • 1P11-F3002, Condensate Transfer Pumps and Sample Sink Drain Line to Yard. • 2P11-F051, Retaining Wall Drain. • 2P11-F100, Transfer Pump Wall Drain. • Dispatches personnel to inspect the plant for damage.
	SRO	<ul style="list-style-type: none"> • Directs ATC to decrease reactor power to 40% to 50% by decreasing Recirc flow and/or inserting control rods. CRAM plan is available. Power decreases should be made as recommended by the STA/Reactor Engineering at a rate exceeding 10 MWe/min.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 6

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Event Description: Earthquake with a loss of Unit 1 SAT 1D. Reduce reactor power to between 40% & 50% due to earthquake.

Time	Position	Applicant's Actions or Behavior
		<p><i>NOTE: During the control rod movement, the operator may flag the RBM DOWNSCALE, (603-211) and ROD OUT BLOCK, (603-238) alarms.</i></p> <p><i>NOTE: The crew may use the Emergent Load Reduction Contingency plan "Rapid Load Reduction" or "Slow Transient" to insert control rods.</i></p> <p><i>Either is acceptable.</i></p>
	ATC	<ul style="list-style-type: none"> • Inserts control rods per 34GO-OPS-065-0, Control Rod Movement: <ul style="list-style-type: none"> • Inserts control rods per the Reactivity Briefing Sheet and rod pull sheets starting with (Rapid Load Reduction Step 24, Control rod 34-27) or (Slow Transient, Step 25 Control rod 42-35). • Selects first Rod to be inserted. • Places Control Rod movement switch to the IN position. • Verifies Rod moves using Rod display information and Rx and Generator power decreasing. • Releases Rod movement switch so that the control rod stops 1 position before the insert limit, unless the insert limit is 00. • Initials Rod movement Sheet. • Verifier, if available, Initials Rod movement sheet. • Continues Control Rod movement until reactor power is between 40%-50% RTP • Notifies SRO of attaining 40% to 50% reactor power.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 6

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Event Description: Earthquake with a loss of Unit 1 SAT 1D. Reduce reactor power to between 40% & 50% due to earthquake.

Time	Position	Applicant's Actions or Behavior
		<p><i>NOTE: May get the RBM UPSCALE, (603-202) and ROD OUT BLOCK, (603-238) alarm, if a peripheral control rod is not selected. This is expected and the operator may select a peripheral rod at this time.</i></p> <p><i>May also get Alarms FWHLC/MSR LOW PRIORITY, (650-134) & FWHLC/MSR HIGH PRIORITY, (650-135), alarm. This is expected at this power level.</i></p>
	ATC	<p>May stop reactor power lowering with control rods and perform the following:</p> <ul style="list-style-type: none"> • IAW 34SO-B31-001-2 & 34GO-OPS-005-2, the ATC decreases Recirc pump speed, exceeding 10 MWE per minute by depressing the LOWER SLOW, LOWER MEDIUM or LOWER FAST pushbuttons on the Master (P603 panel) or Individual controls (P602 panel) until reactor power is 40 – 50%. • If using Individual Controls, pump speed decreases will alternate between the “A” & “B” Recirc pumps to prevent excessive flow mismatches.
		<p><i>SIMULATOR OPERATOR, PROCEEDS to the next event at the Chief Examiner’s direction.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 7

Event Description: Earthquake requiring an Emergency Depress prior to Torus level reaches 98 inches. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, after reactor power is reduced between 40-50% RTP and at Chief Examiners direction, ACTIVATE (RB-7)</i></p> <p><i>Torus leak at (1.0") 1.0"/min) svoT48140 (70/1.0), svoT48142 (50/10), svoT48143 (50/10), svoT48147 (50/10), svoT48148 (50/100)</i></p> <p><i>LOOK ahead, this leak will be modified at 142 inches in the Torus (EGT48-1).</i></p> <p><i>SIMULATOR OPERATOR: After one minute, Notifies Unit 2 Control Room that you were in the Reactor Building and felt the floor vibrating.</i></p>
	ALL	<p>The following annunciators are received:</p> <ul style="list-style-type: none"> • 650-224, PANEL 2H11-P657 SYSTEM TROUBLE. • 657-086, TORUS S-W AREA INSTR SUMP LVL HIGH. • 657-087, TORUS N-W AREA INSTR SUMP LVL HIGH. • 657-088, TORUS N-E AREA INSTR SUMP LVL HIGH. • 657-089, TORUS S-E AREA INSTR SUMP LVL HIGH. • 657-104, TORUS S-W AREA INSTR SUMP LVL HIGH-HIGH. • 657-105, TORUS N-W AREA INSTR SUMP LVL HIGH-HIGH. • 657-106, TORUS N-E AREA INSTR SUMP LVL HIGH-HIGH. • 657-107, TORUS S-E AREA INSTR SUMP LVL HIGH-HIGH. • 657-013, TORUS N-E AREA INSTR SUMP LVL HIGH-HIGH-HIGH. • 657-031, TORUS S-E AREA INSTR SUMP LVL HIGH-HIGH-HIGH. • 657-049, TORUS N-W AREA INSTR SUMP LVL HIGH-HIGH-HIGH. • 657-067, TORUS S-W AREA INSTR SUMP LVL HIGH-HIGH-HIGH.
	BOP	<ul style="list-style-type: none"> • Reports multiple alarms to SRO indicating a break in the Reactor Building. • Directs SO/Maintenance to investigate the leak.
	SRO	<ul style="list-style-type: none"> • Directs BOP to 2H11-P657 panel. • When above alarms are reported, directs operator to monitor Torus water level and then if lowering, enter 34AB-T23-004-2, Torus Water Level.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 7

Event Description: Earthquake requiring an Emergency Depress prior to Torus level reaches 98 inches. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR: Three (3) minutes after being dispatched to check for leaks in the Torus section of the Reactor Building, report to the crew:</i></p> <p><i>A leak has been identified on the "2A" RHR line between the Torus and the first RHR isolation valve.</i></p>
	ALL	<ul style="list-style-type: none"> 602-235, TORUS WATER LEVEL HIGH/LOW, annunciates Recognizes that Torus level is decreasing.
	SRO	<ul style="list-style-type: none"> Dispatches personnel to determine the location of the Torus leak. If not already directed, directs NPO to enter 34AB-T23-004-2, Torus Water Level, and to monitor Torus water level. Enters the PC EOP Flowchart when Torus level decreases to 146 inches. May determine that water will not be added to the Torus until the cause of the low Torus level is identified and controlled. Enter SC EOP flowchart for SC area water levels being high.
	BOP	<ul style="list-style-type: none"> If NOT already performed, dispatches personnel to the Torus area <u>AND</u> the Reactor Building diagonals to determine the source of the water loss (if the leak location has not already been reported).
		<p><i>NOTE: Once the leak has been identified on the "2A" RHR line, the operators may stop isolating other systems in an attempt to isolate valve on leaking line.</i></p>
	ATC	<ul style="list-style-type: none"> Enters 34AB-T23-004-2, Torus Water Level, and performs the following: <ul style="list-style-type: none"> Dispatches personnel to the Torus to determine source of leakage Notifies SRO of ECCS TS requirements when closing valves. Closes 2E21-F019B, Torus Suction Vlv. Closes 2E11-F065B, Torus Suction Vlv. Closes 2E11-F065D, Torus Suction Vlv.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 7

Event Description: Earthquake requiring an Emergency Depress prior to Torus level reaches 98 inches. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
	ATC	<ul style="list-style-type: none"> • Checks Torus water level and determines the Torus level is continuing to decrease with the above valves closed • Closes 2E41-F051, HPCI Torus Suction Vlv. • Opens 2E21-F019B, Torus Suction Vlv. • Opens 2E11-F065B, Torus Suction Vlv. • Opens 2E11-F065D, Torus Suction Vlv.
	ATC	<ul style="list-style-type: none"> • Enters 34AB-T23-001-2, Loss of Primary Containment Integrity, AND 34AB-T22-003-2, Secondary Containment Control. • Checks Torus water level and determines the Torus level is continuing to decrease, and performs the following valves: <ul style="list-style-type: none"> • Opens 2E41-F051, HPCI Torus Suction Vlv. • Closes 2E51-F003, RCIC Torus Suction Vlv.
	ATC	<ul style="list-style-type: none"> • Checks Torus water level and determines the Torus level is continuing to decrease, and performs the following valves: <ul style="list-style-type: none"> • Opens 2E51-F003, RCIC Torus Suction Vlv. • Closes 2E21-F019A, Torus Suction Vlv. • Closes 2E11-F065A, Torus Suction Vlv. • Closes 2E11-F065C, Torus Suction Vlv.
	ATC	<ul style="list-style-type: none"> • Checks Torus water level and determines the Torus level is continuing to decrease, and opens the following valves: <ul style="list-style-type: none"> • 2E21-F019A, Torus Suction Vlv. • 2E11-F065A, Torus Suction Vlv. • 2E11-F065C, Torus Suction Vlv.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 7

Event Description: Earthquake requiring an Emergency Depress prior to Torus level reaches 98 inches. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
	SRO	<ul style="list-style-type: none"> • IAW the PC flowchart, prior to water level reaching 98 inches, determines that the reactor is required to be shutdown and enters the RC flowchart at point A. • Assigns the ATC to perform RC-1. • Assigns the BOP operator to perform RC-2 and RC-3. • Enters 31EO-EOP-010-2, RC EOP flow chart if RWL decreases below 3 inches. • Directs RWL Band of 3 to 50 inches.
	ATC	<ul style="list-style-type: none"> • Performs RC-1 consisting of: <ul style="list-style-type: none"> • Inserts manual scram. • Places mode switch to SHUTDOWN. • If NOT tripped, places the Recirc pumps at minimum speed. • Checks all rods are inserted by observing full in lights, SPDS, or the RWM display. • Notifies SRO of rod position check. • Inserts SRMs and IRMs. • Places SDV isolation valve switch to "isolate" & ensures closed. • Shifts recorders to read IRMS, when required. • Ranges IRMS to bring reading on scale. <ul style="list-style-type: none"> • Notifies the SRO when the above actions are complete.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 7

Event Description: Earthquake requiring an Emergency Depress prior to Torus level reaches 98 inches. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
	BOP	<ul style="list-style-type: none"> • Performs RC-2 actions consisting of: <ul style="list-style-type: none"> • Confirms proper Level Control response: <ul style="list-style-type: none"> • Checks ECCS Injection Systems. • Ensures FW Master Controller setpoint reduces to 9 inches and output reduces to 25% of previous value (will not due to low power). • Set down does not auto function (low power), manually reduces FW Master Controller setpoint to approximately 9 inches. • When feed flow is less than the capacity of the S/U level control valve (≈ 1.5 mlbm/hr), then: <ul style="list-style-type: none"> • Opens 2N21-F125. • Places 2C32-R619, FW S/U level control valve controller, in Auto, set at approximately 9 inches. • Closes 2N21-F110. • Will control RWL and with SRO permission will raise RWL to 32 to 42 inches.
	BOP	<ul style="list-style-type: none"> • Performs RC-3 consisting of: <ul style="list-style-type: none"> • Monitor RPV pressure. • Confirm proper operation of pressure control system (TBV, LLS, etc.). • If necessary, allow RPV pressure to exceed 1074 psig then cycle any SRV to initiate LLS. • Maintain RPV pressure between 1074 and 800 psig. • Notify SRO of pressure control system operation.
		<p><i>GO TO EVENT 8 FOR ANTICIPATE EMERGENCY DEPRESSURIZATION ACTIONS</i></p>
	SRO	<p>If the need to Emergency Depressurize is recognized in time, then Anticipates Emergency Depressurization.</p> <ul style="list-style-type: none"> • Assign an operator to fully open all Main Turbine Bypass Valves. • Directs ATC/BOP to place HPCI in Pull To Lock prior to 110 inches Torus level.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 7

Event Description: Earthquake requiring an Emergency Depress prior to Torus level reaches 98 inches. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
	ATC/BOP	Places HPCI Aux Oil pump in the Pull To Lock position on 2H11-P601 panel.
	ATC	<ul style="list-style-type: none"> Provides periodic updates on Torus level to the SRO.
	SRO	<ul style="list-style-type: none"> Transitions to CP-1 and orders 7 ADS valves open for Emergency Depress.
		<i>SIMULATOR OPERATOR, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 8

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Event Description: 3 Main Turbine Bypass valves failed closed. ADS valves (3) fail to open when Emergency Depress is required

Time	Position	Applicant's Actions or Behavior
5 Min		<p><i>NOTE: The following actions will be performed if the SRO orders an "ANTICIPATE EMERGENCY DEPRESS" IAW 31EO-EOP-010-2, RC RPV CONTROL for Hot Conditions, flowchart.</i></p>
		<p><i>SIMULATOR OPERATOR, ENSURE the following is INSERTED by Event Trigger EGC71-11 when the Rx Mode Switch was placed to SHUTDOWN:</i></p> <p><i>svoN37225 to a Final value of "0"</i> <i>svoN37226 to a Final value of "0"</i> <i>svoN37227 to a Final value of "0"</i> <i>mfb21_129A</i> <i>mfb21_129E</i> <i>mfb21_129L</i></p>
	ATC/BOP	<ul style="list-style-type: none"> • On the DEHC panel; <ul style="list-style-type: none"> • Selects the Control > Bypass Valve screen. • Inserts a ramp rate of 100, then press OK. • Inserts a bypass valve position of 100, then press OK. • Checks that the Bypass Valve Jack status is active. • Recognizes that 3 Bypass Valves have failed closed and will NOT open. • Reports to the SRO Bypass Valve status.

Op-Test No.: 2023-301 Scenario No.: 15-2 Event No.: 8

Event Description: 3 Main Turbine Bypass valves failed closed. ADS valves (3) fail to open when Emergency Depress is required

Time	Position	Applicant's Actions or Behavior
	ATC/BOP	<ul style="list-style-type: none"> • Places the switches for 7 ADS valves in the open position. • Determines that three ADS valves did not open. (May initially only discover 2 failed valves, if one of the failed valves has lifted earlier in the scenario and the amber light is still lit, but SPDS will show ONLY 4 valves open.) • Informs SRO and as directed continues opening SRVs until 7 SRVs are open, then notifies SRO of 7 SRVs open and failure of 3 SRVs to open. (Critical Task) <i>(Critical Task Failure is less than five (5) SRVs open when Torus water level goes below 98 inches. (Approximately 25 minutes to reach 98 inches in Torus)</i> • The amber lights for the SRVs will not illuminate if pressure has been reduced to below approximately 300 psig. In this case the operator must use 2H11-P614 recorder indication to monitor tail pipe temperatures for the SRVs to verify the valves actually opened (Recorder 2B21-R614). • Depending on RWL prior to opening ADS valves, RWL may swell to above 60 inches, requiring the operator to enter 34AB-C32-001-2, Reactor Water Level Above 60 inches. • Operator secures all injection other than CRD.
	ATC/BOP	<ul style="list-style-type: none"> • Depending on Reactor Water Level prior to opening ADS valves, RWL may swell to above 60 inches, requiring the operator to enter 34AB-C32-001-2, Reactor Water Level Above 60 inches.
		<p><i>SIMULATOR OPERATOR, with Chief Examiners Permission, the Scenario will be terminated when RWL is being controlled following the Emergency Depressurization, with RPV pressure below 50 psig or as directed by the Chief Examiner.</i></p>

NRC DRAFT SUMMARY

Facility: E. I Hatch **Scenario No.:** 15-2 **Op-Test No.:** 2023-301

Examiners: _____ **Operators:** _____ **SRO**
 _____ **RO**
 _____ **BOP**

Initiating Conditions:	Unit 2 is operating at 61% RTP. 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written. 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written. RCIC is inoperable, RAS written.
Turnover	Perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic only, starting at step 4.1. Once surveillance is complete raise reactor power to 75% RTP using Recirc.
<p>Summary:</p> <ul style="list-style-type: none"> • Event 1: Normal; Perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, “A1/A2” Logic only, starting at step 4.1. • Event 2: Component: CRD 2A pump experiences an Overload condition requiring swapping to standby pump IAW System Operating procedure. • Event 3: Component; UAT 2B will experience a Hi temperature requiring the removal from service. • Event 4: Component/TS; A HPCI steam line will break outside of Primary Containment. The outboard isolation valve is failed open and cannot be closed. Both isolation valves fail to automatically close on an automatic isolation signal and must be manually closed. (Critical Task) The SRO addresses Tech Specs for inoperable Primary Containment Isolation Valve & ECCS. • Event 5: Component/TS; PSW Pump 2B will experience a sheared shaft and the standby PSW pump will NOT automatically start. The operator will manually start the standby PSW pump 2D to restore system flow/pressure to normal. LCO 3.7.2 Required Action. • Event 6: Reactivity; Earthquake, the ATC will lower Reactor power to between 40% to 50% RTP due to earthquake. • Event 7: Major; Emergency Depress prior to 98 inches in the Torus. • Event 8: Component; Three (3) ADS valves fail to open when Emergency Depress is required. The ATC will open an additional (3) valves to establish seven (7) SRVs open. (at least 1 more SRV opened to meet the Minimum Number for Emergency Depress of 5 open) (Critical Task) 	

Critical Tasks & Qualitative Attributes

NRC DRAFT

Facility: E. I Hatch
Scenario No.: 15-2 **Op-Test No.:** 2023-301

Critical Tasks

- Manually isolate the HPCI isolation valve (2E41-F002) before exceeding Maximum Safe Operating Temperature in two (2) areas. (~ 8.5 minutes to reach Max Safe Temp) **(Event 4)**
- At least 5 SRVs (MNSRVED) have been opened prior to Torus water level lowering below 98 inches. **(Event 8)**

	Form 2.3-2 Attributes	Required	Actual	Items
1.	Total Malfunctions	5-8	6	1. High amps on CRD pump 2A (Event 2) 2. UAT 2B Hi temperature (Event 3) 3. HPCI steam line break (Event 4) 4. PSW 2B sheared shaft, start PSW 2D (Event 5) 5. Earthquake (Event 6) 6. 3 ADS Valves fail to open (Event 8)
2.	Malfunctions After EOP Entry	1-2	1	1. 3 ADS Valves fail to open (Event 8)
3.	Abnormal Events	2-4	3	1. HPCI steam line break (Event 4) 2. PSW 2B sheared shaft, start PSW 2D (Event 5) 3. Earthquake (Event 6)
4.	Major Transients	1-2	1	1. Earthquake (Event 6)
5.	EOPs entered/requiring substantive actions	1-2	2	1. RC 2. PC
6.	EOPs contingencies entered with substantive actions	> 1	1	1. CP-1
7.	Preidentified Critical Tasks	≥ 2	2	1. HPCI steam line break (Event 4) 2. 3 ADS Valves fail to open (Event 8)

**ILT 15 NRC FINAL Scenario 2
SHIFT TURNOVER**



Safety Focus

UNIT 1 STATUS

Plant Conditions:

Unit 1 is operating at 100% power
Activities in progress: Maintain RTP.

UNIT 2 STATUS

Plant Conditions:

- Unit 2 is operating at 61% RTP.
- 2B21-F013D is inoperable for Low-Low Set, RAS written.
- 2D11-K615B, Offgas Post treatment radiation monitor, failed Downscale, RAS written.

Protected Train:

- Division I
- Division II

Risk Profile:

- Green
- Yellow
- Orange
- Red

Protected Equipment:

None

Scheduled evolutions:

- After turnover perform 34SV-C71-004-2, Reactor Manual Scram Functional Test, "A1/A2" Logic only, starting at step 4.1.
- Once surveillance is complete raise reactor power to 75% RTP using Recirc.

Surveillances due this shift:

None

Inop Equipment:

- 2B21-F013D is inoperable for Low-Low Set, RAS written.
- 2D11-K615B, Offgas Post Treatment Radiation monitor has failed Downscale. IAW TS/TRM, I&C has placed 2D11-K615B in the trip condition while maintaining the function of 602-405, Post Treatment O/G Radiation Hi-Hi-Hi/Inop. A Caution Tag is attached to 2D11-K615B switch.

Active tagouts:

None

Rod Configuration:

See RWM Step 26

Form 3.3-1 Scenario Outline

NRC FINAL

Facility:	<u>E. I Hatch</u>	Scenario No.:	<u>15-3</u>
Scenario Source:	<u>NEW</u>	Op-Test No.:	<u>2023-301</u>
Examiners:	_____	Applicants/:	_____
	_____	Operators	_____
	_____		_____
			SRO
			RO
			BOP
<p>Initial Conditions. Unit 2 is operating at 5% RTP. 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written. 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written. RHR Loop B is operating in Torus Cooling Mode due to a recently performed HPCI surveillance.</p> <p>Turnover: IAW 34SO-E11-010-2, lower Torus water level to 147.5 inches and then once surveillance is complete, continue with the Startup IAW 34GO-OPS-001-2 at step 4.4.2.</p> <p>Critical Tasks:</p> <ol style="list-style-type: none"> 1. ADS System inadvertent initiation (Event 6) 2. ARI manually initiated (Event 8) 3. CRD, HPCI & RFPT fail, use RCIC manually (Event 9) 			
Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP)	Lower Torus level to 147.5 inches using RHR Loop 2B IAW 34SO-E11-010-2, Step 4.4.5.1.
2	N/A	R (ATC)	Withdraw control rods to ~9% power.
3	mfC51_9A	C (ATC)	IRM A Fails Upscale - BYPASS to move rods.
4	mfN33_154	MCC (BOP)	Turbine Gland Seal Reg Fails Closed (must be in chest warming).
5	mfE51_65 loE51_F010G1 loE51_F010R2 mf60231261	MCI (ATC) TS (SRO)	RCIC Torus Level Sensor Fails High; with failure of CST valve 2E51-F010 auto close/must be manually closed /overload trying to close, reset breaker valve closes.
6	mfB21_131	I (BOP) TS (SRO)	ADS Inadvertent initiation/Inhibit used. (Critical Task)
7	mfN71_70	M (ALL)	Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum
8	mfC71_60B mfC71_234	MCC (ATC)	RPS Manual pushbuttons, Reactor Mode Switch & ARI automatic fails requiring manual initiation of ARI. (Critical Task)
9	rfE51_234	MCC (BOP)	Loss of CRD, HPCI 2E41-F001 stuck closed, RCIC 2E51-F013 Fails to Auto Open requiring manual operation of 2E51-F013 to inject prior to RWL reaching -205 inches (Critical Task)
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS)Tech Spec, (MC)Manual Control			

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 1

Event Description: Lower Torus water level to 147.5 inches using RHR Loop 2B
IAW 34SO-E11-010-2, Step 4.4.5.1.

Time	Position	Applicant's Actions or Behavior
12 Min	SRO	Directs the operator to lower Torus water level to 147.5” using B loop of RHR.
		<i>SIMULATOR OPERATOR, when requested, INFORM as the Radwaste Operator that the Waste Surge Tank level is 6% and is available to receive Torus water level.</i>
	BOP	<ul style="list-style-type: none"> • Enters 34SO-E11-010-2, Residual Heat Removal System, at step 4.4.5.1. • Confirms Radwaste can receive the water to be transferred. • Confirms the RHR discharge water temperature is < 200°F, 2T47-R627, point 3. • Opens 2E11-F049, RHR to Radwaste Valve. • Monitors Torus level on 2T48-R607A (B), 2H11-P602 (2H11-P654). • Throttles OPEN, 2E11-F040, RHR to Radwaste Valve.
	BOP	<ul style="list-style-type: none"> • Monitors Torus water level and once level has been lowered to approximately 147.5” secures the flow path. • Closes 2E11-F040, RHR to Radwaste Valve. • Closes 2E11-F049, RHR to Radwaste Valve. • Notifies SRO 2E11-F040 & 2E11-F049 are now closed. • Reports to the SRO that Torus water level has been lowered to 147.5”. • As time allows, notifies Radwaste Operator that Torus lowering is complete.
		<i>SIMULATOR OPERATOR, the Crew PROCEEDS to the next event when Torus level lowering is complete.</i>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 2

Event Description: Withdraw control rods to ~9% power.

Time	Position	Applicant's Actions or Behavior
12 Min	SRO	Directs ATC to continue rod withdrawal (30-07) to approximately 9% power
		<i>NOTE: SEE EVENT 3 FOR IRM FAILURE AFTER CONTROL ROD 38-39 IS SELECTED AND MOVED.</i>
	ATC	<ul style="list-style-type: none"> • Starting at RWM Step 14, withdraws all control rods within step to the withdraw limit IAW 34GO-OPS-065-0 & provided control rod movement sheets. • Initials for control rod withdrawal. • Dates for control rod withdrawal. • Notifies SRO that reactor power is approximately 9%.
	SRO	Directs: <ul style="list-style-type: none"> • ATC confirm all APRMs indicate between 7% AND 10%. • BOP confirm operable APRM DOWNSCALE trips are clear.
	ATC	Reports all APRMs indicate between 7% AND 10%.
	BOP	Confirms operable APRM DOWNSCALE trips are clear by performing the following at the APRM ODAs at 2H11-P608: <ul style="list-style-type: none"> • Depress the “ETC” key. • UNTIL “TRIP STATUS” option ILLUMINATES. • Depress “TRIP STATUS” key, THEN confirm “APRM FLUX DOWNSCALE ALARM” is NOT active.
	SRO	Directs BOP or ATC to confirm all IRMs are NOT Upscale.

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 2

Event Description: Withdraw control rods to ~9% power.

Time	Position	Applicant's Actions or Behavior
	BOP/ATC	Confirms no IRMs are UPSCALE by observing: <ul style="list-style-type: none"> • 2H11-P606 upscale lights not illuminated OR • 2H11-P603 upscale lights not illuminated OR • 2H11-P603 annunciator 603-221, IRM UPSCALE, NOT illuminated.
	SRO	Confirms APRM/OPRM Operability: <ul style="list-style-type: none"> • at least three APRM channels per RPS Trip System are OPERABLE. AND <ul style="list-style-type: none"> • at least 2 "APRM TWO-OUT-OF-FOUR-VOTER-CHANNELS" per RPS Trip System are OPERABLE. AND <ul style="list-style-type: none"> • at least 3 OPRM channels per RPS Trip System are OPERABLE.
		<p><i>NOTE: APRM status can be confirmed by the turnover sheet or by directing STA to confirm operability.</i></p> <p><i>SIMULATOR OPERATOR: If contacted for APRM status, inform the SRO all APRMs are operable.</i></p>
	SRO	Directs the ATC (or observes) the following annunciators are CLEAR: <ul style="list-style-type: none"> • MAIN STEAM LINE PRESS A LOW, (603-232), • MAIN STEAM LINE PRESS B LOW, (603-233)
	ATC	If directed, reports annunciators 603-232 and 603-233 are clear.
		<p><i>NOTE TO EXAMINER:</i> <i>DO NOT ALLOW THE Reactor Mode Switch to be placed to the RUN position due to Major Event. PROCEED to next event before Reactor Mode Switch is positioned.</i></p>
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 3

Event Description: IRM A Fails Upscale - BYPASS to move rods.

Time	Position	Applicant's Actions or Behavior
8 Min		<i>SIMULATOR OPERATOR, SEVEN (7) seconds AFTER Control Rod 38-39 is moved, ENSURES Event Trigger EGC12-16 INSERTS malfunction mfC51 9A f:1, IRM A Upscale.</i>
	ALL	<ul style="list-style-type: none"> • Address receiving the following alarms: <ul style="list-style-type: none"> • REACTOR NEUTRON MONITOR SYS TRIP, (603-109) • REACTOR AUTO SCRAM SYSTEM A TRIP, (603-117) • IRM BUS A UPSCALE TRIP OR INOP, (603-203) • IRM UPSCALE, (603-221) • ROD OUT BLOCK, (603-238)
	ATC	<ul style="list-style-type: none"> • Addresses annunciator REACTOR NEUTRON MONITOR SYS TRIP, 603-109. • Checks validity of the alarm by checking the neutron monitoring indicators on panel 2H11-P603, 2H11-P606, and 2H11-P608. • Identifies IRM A has failed upscale and observes the HIGH/INOP red LED is illuminated. • Reports the information to the SRO.
	ATC	<ul style="list-style-type: none"> • Addresses annunciator REACTOR AUTO SCRAM SYSTEM A TRIP, 603-117. • Checks scram group A 1 2 3 4 lights for Trip System A on panel 2H11-P603 are extinguished. • Determines the cause of the trip is IRM "A". • Requests OD-7 Option 2 is run to determine whether control rod movement has occurred. • Bypasses IRM "A".

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 3

Event Description: IRM A Fails Upscale - BYPASS to move rods.

Time	Position	Applicant's Actions or Behavior
	ATC	<ul style="list-style-type: none"> • Addresses annunciator IRM BUS A UPSCALE TRIP OR INOP, 603-203 and Checks: <ul style="list-style-type: none"> • One <u>OR</u> more of A, C, E or G IRM Upscale Trip <u>OR</u> Inop lights are illuminated on Panel 2H11-P603. • Channel A Scram Group lights are extinguished. • REACTOR NEUTRON MONITORING SYS TRIP, (603-109) is alarmed. • REACTOR AUTO SCRAM SYSTEM A TRIP, (603-117) is alarmed. • White Rod Out light is EXTINGUISHED. • ROD OUT BLOCK, (603-238) is alarmed. • IRM Mode Switch is in the OPERATE position. • Notifies the Shift Supervisor the IRM is failed, and when directed, Bypasses the IRM on 2H11-P603 if not previously done. • Notifies SRO of the following TS/TRM: <ul style="list-style-type: none"> • TS 3.3.1.1 Item 1 RPS Inst IRMs • TRM T3.3.2 Item 2 Control Rod Block Instr IRMs
	ATC	<ul style="list-style-type: none"> • Acknowledges the following annunciators clear: <ul style="list-style-type: none"> • REACTOR NEUTRON MONITORING SYS TRIP, (603-109) • IRM BUS A UPSCALE TRIP OR INOP, (603-203) • IRM UPSCALE, (603-221) • ROD OUT BLOCK, (603-238) • Resets RPS Channel A using 2C71-S5, Reactor Scram Reset Switch • Acknowledge annunciator REACTOR AUTO SCRAM SYSTEMA TRIP, (603-126) clears.

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 3

Event Description: IRM A Fails Upscale - BYPASS to move rods.

Time	Position	Applicant's Actions or Behavior
	ATC	<ul style="list-style-type: none"> • Addresses annunciator IRM UPSCALE, 603-221, and Checks: <ul style="list-style-type: none"> • One or more of the IRM Upscale Alarm lights are illuminated, 2H11-P603. • IRM indicates greater than 80/125 of full scale. • White Rod Out light is extinguished. • ROD OUT BLOCK, (603-238) Is Alarmed • Notifies the Shift Supervisor the IRM is failed, and when directed, Bypasses the IRM if not previously done.
	ATC	<ul style="list-style-type: none"> • Addresses annunciator ROD OUT BLOCK, 603-238, and Checks: <ul style="list-style-type: none"> • White Rod Out light is extinguished, 2H11-P603 • Cause of the rod block • Attempt to correct or bypass • If alarm is due to a change in Recirc flow and is concurrent with the "RBM DOWNSCALE" annunciator, with SRO permission, selects a different central control rod. (NO)
	SRO	<ul style="list-style-type: none"> • Notifies I&C/maintenance to troubleshoot failure of IRM "A". • Directs ATC to bypass IRM "A" and reset the ½ scram.
	SRO	<ul style="list-style-type: none"> • Addresses Tech Specs section 3.3.1.1, "RPS Instrumentation" and determines that with the failure of IRM 'A' that sufficient IRMs are still operable at this time. • Addresses TRM T3.3.2, "Control Rod Block Instrumentation", and determines that with the failure of IRM 'A' that sufficient IRMs are still functional at this time.
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 4

Event Description: Main Turbine Gland Seal Regulator valve fails closed.

Time	Position	Applicant's Actions or Behavior
5 Min		<p><i>SIMULATOR OPERATOR: At the direction of the Chief Examiner, ENTER malfunction mfN33_154 (RB-4).</i></p> <p><i>NOTE: If the F004 valve is NOT opened, it takes approximately 8 minutes for the turbine & RFPTs to trip on low vacuum.</i></p>
	ALL	<p>Receives STEAM SEAL PRESS LOW, (650-125) annunciator. PRETREATMENT O/G RADIATION DOWNSCALE/INOP, (601-428) is already in.</p>
	BOP	<p>Responds to STEAM SEAL PRESS LOW, (650-125) annunciator</p> <ul style="list-style-type: none"> • Checks 2N33-R601A, Steam Seal Hdr Pressure Indicator, is below 1.5 psig, panel 2H11-P650. • Ensures OPEN 2N33-F003, Steam Seal Main Steam Feed Vlv. • Ensures CLOSED 2N33-F005, Unloading Bypass Vlv. • Ensures CLOSED 2N33-F008, Aux Steam Feed Vlv. • Throttles OPEN 2N33-F004, Steam Seal Feed Vlv Bypass, to bring steam seal pressure to between 2.5 PSIG and 4.5 PSIG.
	BOP	<ul style="list-style-type: none"> • Sends a SO to the Steam Seal Feed Valve Controller to check > 20 # Air Inlet Pressure AND < 15 # Air Outlet Pressure. • Acknowledges annunciators received: <ul style="list-style-type: none"> • PRETREATMENT O/G RADIATION DOWNSCALE/INOP, (601-428) • INLET FLOW TO STACK HIGH, (N62-020) with recorder 2N62-R604 indicating flow increasing. • May isolate the following valves on 2N62-P600 if O/G pressure increases to > 6 psig on 2N62-R600 IAW 34SO-N61-001-2: <ul style="list-style-type: none"> • 2N62-F085, Holdup Line Drain • 2N62-F030A, Cndsr/Sep A Drain • 2N62-F030B, Cndsr/Sep B Drain • Reopens valves when pressure is <6 psig
		<p><i>SIMULATOR OPERATOR: If sent as the SO to check on Steam Seal Feed Valve Controller air pressure, wait 2 minutes and report air inlet is 2 psig and air outlet is 0.5 psig.</i></p>
		<p><i>SIMULATOR OPERATOR, at the direction of the Chief Examiner, PROCEEDS to next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 5

Event Description: RCIC Torus Level Sensor Fails High; with failure of CST valve indication position.

Time	Position	Applicant's Actions or Behavior
15 Min		<i>At the Chief Examiner's direction, SIMULATOR OPERATOR ENTERS: (RB-5) mfE51 65, loE51-F010R2 f:1 AND loE51-F010G1 f:0.</i>
	ALL	TORUS LEVEL HIGH RCIC, (602-230) alarm is received on P601.
	SRO	Directs an operator to enter 34AR-602-230-2
		<i>SIMULATOR OPERATOR ENSURE Event Trigger EGE51-30 inserts the following WHEN 2E51-F010 control switch is placed to close:</i>
		<i>loE51-F010R2 f:0,</i>
		<i>loE51-F010G1 f:0,</i>
		<i>mf60231261, RCIC VALVES MOTOR OVERLOAD (ANNUNCIATOR ON)</i>
		<i>svoT48140 f:160 r: 0.1, Torus Level</i>
		<i>EGE51-31, E51-F010 red light deletes alarm (mf60231261)</i>
	ATC	<ul style="list-style-type: none"> • Enters TORUS LEVEL HIGH RCIC, (602-230); <ul style="list-style-type: none"> • Determines that RCIC Suction has aligned to the Torus <ul style="list-style-type: none"> • Ensures 2E51-F003, 2E51-F031 and 2E51-F029 are open. • Ensures that 2E51-F010 is closed. Valve is still open • Closes 2E51-F010 (Cannot perform this step because when control switch placed to CLOSE, 2E51-F010 light indication de-energizes) • RCIC VALVES OVERLOAD, (602-309) alarm is received on P602 • Determines that Torus level is NOT high but is slowly going up. • Determines that RCIC should NOT have auto swapped to the Torus. • Notifies SRO that RCIC suction valve, 2E51-F010, has no light indication. • Notifies SRO of the following TS (found in Section 8.0 of ARP); <ul style="list-style-type: none"> • 3.6.2.2, Suppression Pool Water Level • 3.3.5.3, RCIC System Instrumentation • 3.5.3, RCIC System
	ATC	<ul style="list-style-type: none"> • Enters 602-309 <ul style="list-style-type: none"> • Determines that 2E51-F010 has NO lights illuminated. • Dispatches operator/Maintenance to reset the thermal overload for 2E51-F010 (MCC 2R24-S021 Breaker # 2B)

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 5

Event Description: RCIC Torus Level Sensor Fails High; with failure of CST valve indication position.

Time	Position	Applicant's Actions or Behavior
	SRO	<ul style="list-style-type: none"> • Dispatches operator/Maintenance to reset the thermal overload for 2E51-F010 (MCC 2R24-S021 Breaker # 2B) (ATC may do this also) • Directs operator to monitor suction pressure on RCIC. • Directs operator to enter 34AB-T23-004-2, Torus Water Level
		<p><i>SIMULATOR OPERATOR, if dispatched to ATTS panels, report all Torus level indicators are slowly rising.</i></p> <p><i>Also, 3 minutes after Maintenance is sent to investigate, NOTIFY the control room that local level switch, 2E51-LS-N062B, has failed.</i></p>
	ATC	<ul style="list-style-type: none"> • Reports to the SRO that 2E51-LS-N062B has failed • Enters 34AB-T23-004-2, Torus Water Level, and performs the following: <ul style="list-style-type: none"> • Informs SRO of the need to address system operability prior to isolating valves. <p><i>NOTE: This is a Caution in the procedure</i></p> <ul style="list-style-type: none"> • Verify that 2E51-F029, 2E51-F031 (RCIC Torus suction valves) and 2E51-F010 (RCIC CST suction valves) are NOT open simultaneously. • Confirm RCIC is not in operation • Closes the 2E51-F029 (will not remain close) • Closes the 2E51-F031 (will not remain close) • Closes the 2E51-F010 (no light indication) • Closes 2E51-F003, Torus Suction AOV (will not close) • Since torus water level increase has NOT stopped, dispatches an SO to unlock AND close 2E51-F009. <p><i>NOTE: This condition will exist until the breaker for 2E51-F010 is reset.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 5

Event Description: RCIC Torus Level Sensor Fails High; with failure of CST valve indication position.

Time	Position	Applicant's Actions or Behavior
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		<p><i>NOTE: Chief Examiner, if SRO evaluates a different TS call, provide follow-up question on TS determination.</i></p>
	SRO	<p>Enters Tech Specs 3.3.5.3, RCIC System Instrumentation, and declares 2E51-LS-N062B inoperable;</p> <ul style="list-style-type: none"> • IAW Condition A, Required Action A.1, Enter Condition referenced in Table 3.3.5.3-1 (Condition D) immediately, AND • IAW Condition D, Required Action D.2.1, Place the channel in trip within 24 hours OR IAW the Risk Informed Completion Time Program <i>(evaluation process of the Risk Informed Completion Time Program will NOT be evaluated).</i> OR • Required Action D.2.2, Align RCIC suction to the Suppression pool within 24 hours. <p>If Torus water level exceeds 150 inches, performs the following:</p> <ul style="list-style-type: none"> • Enters TS 3.6.2.2, Suppression Pool Water Level, <ul style="list-style-type: none"> • IAW Condition A, Required Action A.1, Restore Torus water level in 2 hours • Enters 31EO-EOP-012-2, PC flowchart and directs operator to lower Torus water level IAW 34SO-E11-010-2.

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 5

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Event Description: RCIC Torus Level Sensor Fails High; with failure of CST valve indication position.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, after 2 minutes from being dispatched to the breaker, REPORT the following;</i></p> <p><i>IF sent ONLY to investigate the breaker, REPORT;</i> <i>“The thermal overload on breaker Frame 2B on 2R24-S021 for 2E51-F010 has tripped.” (DO NOT ASK TO RESET, WAIT TO BE DIRECTED)</i></p> <p><i>IF sent to RESET the thermal overload on the breaker, perform the following:</i></p> <p><i>MODIFY override loE51-F010R2 to ON AND ENSURE Event Trigger EGE51-31 PERFORMS the following:</i></p> <p><i>DELETES: mf60231261, RCIC Motor Overload, alarm & inserts Event Trigger EGE51-32.</i></p> <p><i>Event Trigger EGE51-32. MODIFIES svoT48140 rate to 0, MODIFIES override loE51-F010G1 to ON and MODIFIES/then DELETES loE51-F010R2 & override loE51-F010G1.</i></p> <p><i>SIMULATOR OPERATOR; NOTIFIES the control room that the breaker for 2E51-F010 has been reset.</i></p>
	ATC	<ul style="list-style-type: none"> • Ensures 2E51-F010 has traveled full closed by placing 2E51-F010 switch to close. • Informs SRO that 2E51-F010 is full closed. • Alarm RCIC VALVES MOTOR OVERLOAD, (602-309), clears. • Torus level has stopped rising.
		<p><i>SIMULATOR OPERATOR; At Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 6

Event Description: ADS Inadvertent initiation/Inhibit used. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
10 Mins		<i>At the Chief Examiner's direction, SIMULATOR OPERATOR, phone the ATC and inform that more investigation is needed to determine the failure of the RCIC suction swap logic AND enters (RB-6) malfunction mfb21_131 Inadvertent ADS Initiation.</i>
	ALL	<ul style="list-style-type: none"> • Identifies ADS is about to initiate and observe the following alarms: <ul style="list-style-type: none"> • AUTO BLOW DOWN TIMERS INITIATED, (602-306) • AUTO BLOW DOWN RELAYS ENERGIZED, (602-318)
	BOP	<ul style="list-style-type: none"> • Acknowledges the alarms and reports them to the SRO.
	SRO	<ul style="list-style-type: none"> • May observe the ADS timer on SPDS begin counting down. • Directs ATC to enter the following: <ul style="list-style-type: none"> • AUTO BLOW DOWN TIMERS INITIATED, (602-306) • AUTO BLOW DOWN RELAYS ENERGIZED, (602-318) • 34AB-E10-001-2, Inadvertent Initiation of ECCS/RCIC • May direct ATC to inhibit ADS
		<i>NOTE: The SRO may direct the ATC to inhibit ADS prior to pulling the 34AB-E10-001-2, Inadvertent Initiation of ECCS/RCIC.</i>
	BOP	<ul style="list-style-type: none"> • Enters 34AB-E10-001-2 • Monitors plant parameters to determine extent of ECCS/RCIC actuations. • Inhibits ADS using 2B21C-S7A & S7B, ADS Auto Logic Inhibit Switches, on 2H11-P602. (Critical Task) <i>(Critical Task Failure is any ADS valves automatically opening and exceeding 110°F Torus temperature or RPV cooldown rate >100°F.)</i>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 6

Event Description: ADS Inadvertent initiation/Inhibit used. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
	BOP	<ul style="list-style-type: none"> If ADS Timer on SPDS is approaching “Zero” (0), the BOP may depress the ADS Logic Timer pushbuttons prior to inhibiting ADS.
	SRO	<ul style="list-style-type: none"> Dispatches Maintenance to determine problem with ADS logic.
		<p><i>SIMULATOR OPERATOR, when dispatched using Time Compression, REPORT to the SRO that the ADS Instrumentation logic for Trip System “A” has failed. ALL of the functional units of ADS Trip System “A” have failed.</i></p> <p><i>NOTE: The SRO enters TS 3.3.5.1. F & G and declare all ADS valves inoperable if the ADS instrumentation is NOT repaired in one hour. Without more information on failed instruments, a follow-up question to the SRO may be required to determine this TS call.</i></p>
	SRO	<p>Enters TS 3.5.1, ECCS, and declares ALL ADS valves inoperable;</p> <ul style="list-style-type: none"> IAW Condition H, Required Action H.1, Be in Mode 3 in 12 hours AND Required Action H.2, Reduce RPV pressure to <150 psig in 36 hours Once information of instrument failures is made, enters TS 3.3.5.1 ADS Instrumentation, Condition F & G, <ul style="list-style-type: none"> Required Action F.1 - Declare Automatic Depressurization System (ADS) valves inoperable 1 hour from discovery of loss of ADS initiation capability in both trip systems. Required Action F.2 - places Channel in trip 96 hours from discovery of inoperable channel concurrent with HPCI or Reactor Core Isolation Cooling (RCIC) inoperable AND 8 days
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 7

Event Description: Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum.

Time	Position	Applicant's Actions or Behavior
15 min		<i>SIMULATOR OPERATOR: At Lead Evaluator's direction, press (RB-7) to ACTIVATE: mfN71_70, Circulation Water System Leak (0 – 100,000 gpm), Final 100, Ramp 1000 and mfC71_60B, Reac Prot System Fails to Scram Complete.</i>
	ALL	May recognize that Condenser Water Box A R602A dP is approaching 0.
	SRO	As time allows, dispatches a SO to locally investigate the reduced Circ Water dP and for a possible leak.
		<i>SIMULATOR OPERATOR, ENSURE EGR22-2 INSERTS mfN21_87B when ACB 135454 (4160V 2A Alt) OR ACB 135464 (4160V 2B Alt) Green light is illuminated.</i>
		<i>NOTE: It takes approximately three (3) minutes for alarm 650-164 to be received.</i>
	SRO	<ul style="list-style-type: none"> • When 650-164, Condenser Room Flooding, alarm is received, directs the ATC enter 34AB-C71-001-2, Scram Procedure, and scram the reactor. • Assigns the ATC to perform RC-1. • Assigns the BOP operator to perform RC-2 and RC-3. • Enters 31EO-EOP-010-2, RC EOP flow chart. • Assigns a RWL band between 3 inches and 50 inches.
		<i>NOTE: GO TO EVENT 8 FOR RC-1 ACTIONS</i>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 7

Event Description: Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum.

Time	Position	Applicant's Actions or Behavior
	BOP	<ul style="list-style-type: none"> • Performs RC-2 actions consisting of: • Confirms proper Level Control response: • Checks ECCS Injection Systems (will not be in service if RWL >-35 inches) • Ensures FW Master Controller setpoint reduces to 9 inches and output reduces to 25% of previous value • IF set down does not auto function, then manually reduces FW Master Controller setpoint to approximately 9 inches. • May not complete RC-2 since both RFPTs are tripped. • As time allows, confirms/Opens 2N21-F125. • As time allows, confirms/places 2C32-R619, FW S/U level control valve controller, in Auto, set at approximately 9 inches. • As time allows, confirms/closes 2N21-F110. • Informs SRO of loss of both RFPTs.
		<i>EXAMINER NOTE: After the Group 1 isolation valves are all closed, SRVs actuate in LLS at 1120 psig and then control pressure between 850 - 990 psig.</i>
	BOP	<ul style="list-style-type: none"> • Performs RC-3 consisting of: <ul style="list-style-type: none"> • Monitor RPV pressure. • If necessary, allow RPV pressure to exceed 1074 psig then cycles any SRV to initiate LLS. • If necessary, verifies LLS actuates at 1120 psig. • Maintain RPV pressure between 1074 and 800 psig. • Notify SRO of pressure control system operation.
	SRO	<ul style="list-style-type: none"> • Enters 31EO-EOP-010-2, RC EOP flow chart. • If time permits, directs the ATC to reset the scram.
	ATC	<ul style="list-style-type: none"> • If directed, resets the scram IAW 34AB-C71-001, Scram Procedure.
		<i>NOTE: GO TO EVENT 9 FOR RCIC ACTIONS</i>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 7

Event Description: Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum.

Time	Position	Applicant's Actions or Behavior
	SRO	<ul style="list-style-type: none"> Per the PC flowchart, verifies Torus level is <285 inches and directs an operator to place Torus Sprays in service.
	ATC	<ul style="list-style-type: none"> Sprays the Torus per 34SO-E11-010-2 placard on the 2H11-P601 Panel as follows: <ul style="list-style-type: none"> Places Cnmt Spray Vlv Cntl switch in the MANUAL position. Starts RHR pump(s) in loop A/B, if NOT already running. Opens 2E11-F028A/B. Throttles Open 2E11-F027A/B. Notifies SRO that RHR is in Torus Sprays.
		<p><i>NOTE: Only one loop of RHR will be placed in Torus Sprays. The flow is only 700 gpm.</i></p>
	SRO	<ul style="list-style-type: none"> When Torus pressure exceeds 11 psig, verifies that Torus Level is <215 inches, in the safe area of Graph 8 (DWSIL) and directs an operator to: <ul style="list-style-type: none"> Place all DW cooling fans to OFF. Place both Recirc pumps to PTL OFF.

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 7

Event Description: Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum.

Time	Position	Applicant's Actions or Behavior
	ATC	<ul style="list-style-type: none"> • Places both Recirc pumps to PTL OFF on panel 2H11-P602. • Places the following DW cooling fans control switches to OFF on panels 2H11-P654 & P657: <ul style="list-style-type: none"> • 2T47-B007B, Drywell Cooling Top Head Area Unit. • 2T47-B008B, Drywell Cooling Pedestal/Annular Area Unit. • 2T47-B009B, Drywell Cooling Recirc Pump Area Unit. • 2T47-C001B, Drywell Cooling Return Air Fan. • 2T47-C002B, Drywell Cooling Return Air Fan. • 2T47-B010B, Drywell Cooling EL 114 Unit. • 2T47-B007A, Drywell Cooling Top Head Area Unit. • 2T47-B008A, Drywell Cooling Pedestal/Annular Area Unit. • 2T47-B009A, Drywell Cooling Recirc Pump Area Unit. • 2T47-C001A, Drywell Cooling Return Air Fan. • 2T27-C002A, Drywell Cooling Return Air Fan. • 2T47-B010A, Drywell Cooling EL 114 Unit.
	SRO	<ul style="list-style-type: none"> • When all DW cooling fans are OFF <u>AND</u> both Recirc pumps are PTL OFF: <ul style="list-style-type: none"> • Directs an operator to spray the Drywell.
	ATC	<ul style="list-style-type: none"> • Sprays the Drywell per 34SO-E11-010-2 placard on the 2H11-P601 Panel as follows: <ul style="list-style-type: none"> • Places Cnmt Spray Vlv Cntl switch in the Manual position. • Starts RHR pump(s) in loop A (B), if NOT already running. • Opens 2E11-F021A or B. • Opens 2E11-F016A or B • Throttles Open 2E11-F016A(B) to ≥ 5000 gpm. • Confirms Drywell pressure is reducing. • Notifies SRO that RHR is in Drywell Sprays.

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 7

Event Description: Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum.

Time	Position	Applicant's Actions or Behavior
	ATC	<p><i>NOTE: The operator may place torus cooling in service by using the Placard that's available or using the appropriate section of the procedure. These steps assume the Placard is used. The A and/or B loop of RHR may be used depending on Torus temperature. The following steps are written assuming "B" loop and "B" pump is used. If/When "A" loop is used, substitute "A" for "B" for valves and if "B" pump is not used substitute "A", "C", or "D" for "B" pump.</i></p>
	ATC	<ul style="list-style-type: none"> • Enters 34SO-E11-010-2, Residual Heat Removal • Places RHRSW in service. <ul style="list-style-type: none"> • Overrides 2E11-F068B (A) Low Discharge Pressure Interlock. • Positions 2E11-F068B (A) to 45% OPEN. • Starts RHRSW pump B (A). • Places 2E11-F068B (A) Low Discharge Pressure Interlock switch to normal position. • Positions 2E11-F068B (A) to obtain < 4400 gpm AND < 450 psig.
	ATC	<ul style="list-style-type: none"> • IF desired to start a SECOND RHRSW pump, <ul style="list-style-type: none"> • Throttles 2E11-F068B (A) to achieve max flow rate (not to exceed 4400 GPM). • Opens 2E11-F068B (A) an additional 5%. • Starts second RHRSW Pump. • Positions 2E11-F068B (A) to obtain < 8800 gpm AND < 450 psig.

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 7

Event Description: Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum.

Time	Position	Applicant's Actions or Behavior
	ATC	<ul style="list-style-type: none"> • Places RHR B (A) Loop in Torus cooling per the placard by performing the following steps: <ul style="list-style-type: none"> • Opens 2E11-F048B (A). • Closes 2E11-F047B (A). • Opens 2E11-F003B (A). • Starts RHR Loop B (A) pump. • Opens 2E11-F028B (A). • Receives annunciator Auto Blowdown CS OR RHR Press. • Receives annunciator "SEC System Auto Initiation Signal Present." • Throttles OPEN 2E11-F024B (A). • Opens 2E11-F047B (A). • Ensures RHR flow is < 11,500 GPM, THEN Closes 2E11-F048B. • Notifies the SRO that RHR "B" (A) loop is in service. • May place the second pump in service.
		<i>SIMULATOR OPERATOR; PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 8

Event Description: RPS Manual pushbuttons, Reactor Mode Switch & ARI automatic fails requiring manual initiation of ARI. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
5 Mins		<p><i>SIMULATOR OPERATOR, malfunction mfC71_234, ARI Failure To Auto Initiate, has been inserted from the beginning.</i></p> <p><i>ENSURE EGC71-1 INSERTS mfN61-73 when mode switch is taken to SHUTDOWN, (Final of 100, Ramp 1000).</i></p>
	ATC	<ul style="list-style-type: none"> • Performs RC-1 consisting of: <ul style="list-style-type: none"> • Inserts a manual scram • Places the mode switch to SHUTDOWN • Confirms BLUE Scram Lights are NOT ILLUMINATED • Manually initiates ARI by rotating both ARI collars and then depressing both ARI pushbuttons (Critical Task) <i>(Critical Task Failure is when ARI has NOT been manually initiated prior to exceeding BIIT – 110°F). (Approximately 17.5 minutes to reach BIIT)</i> • Confirms BLUE Scram Lights are ILLUMINATED • If NOT tripped, places the Recirc pumps at minimum speed • Confirms all rods are inserted by observing full in lights, SPDS, or the RWM display • Notifies SRO of rod position check • Inserts SRMs and IRMs • Places SDV isolation valve switch to "isolate" & confirms closed • Shifts recorders to read IRMS, when required • Ranges IRMS to bring reading on scale • Notifies the SRO when the above actions are complete.
	ALL	<p>Receives the following alarms:</p> <ul style="list-style-type: none"> • GROUP 1 SYSTEM A TRIP, 603-208 • GROUP 1 SYSTEM B TRIP, 603-209

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 8

Event Description: RPS Manual pushbuttons, Reactor Mode Switch & ARI automatic fails requiring manual initiation of ARI. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
	ATC/BOP	Enters 603-208 & 603-209 and performs the following: <ul style="list-style-type: none"> • Ensures 2B21-F022A, F022B, F022C & F022D, Inboard MSIVs are closed • Ensures 2B21-F028A, F028B, F028C, & F028D, Outboard MSIVs are closed • Ensures 2B21-F016 and 2B21-F019, MSL Drain Vlvs) are closed • Ensures 2B31-F019 and 2B31-F020, Rx Water Sample Vlvs are closed • Places the following control switches to CLOSE: <ul style="list-style-type: none"> • 2B21-F022A, F022B, F022C & F022D, Inboard MSIVs (P602) • 2B21-F028A, F028B, F028C, & F028D, Outboard MSIVs (P601)
	SRO	As time allows, directs entry into 34AB-N71-001-2, Circulating Water System Failure
	BOP	<ul style="list-style-type: none"> • Ensures Closed MSIVs. • Ensures Closed MSL Drains. • Ensures Closed 2N11-F004A and 2N11-F004B, RSSV's.
		<i>SIMULATOR OPERATOR; at the Chief Examiners direction, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-3 Event No.: 9

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Event Description: Loss of RFPTS/HPCI 2E41-F001 stuck closed, RCIC 2E51-F013 Fails to Auto Open requiring manual operation of 2E51-F013 to inject prior to RWL reaching -205” (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, ENSURES Event Trigger EGC71-26, ACTIVATES: malfunctions mfG31_242 RWCU Non-Isol Leak, f:2.0 r:100, diC11B-S3A f:1 d:0 & diC11B-S3B, f:1 d:0 CRD Pumps, after the Mode switch is placed to SHUTDOWN.</i></p> <p><i>The malfunction for this event was in at the beginning of the scenario (rfE51_234 Final Value of BYPASS). The operator may start RCIC OR HPCI first; either is acceptable, however 2E41-F001 is stuck closed (mfE41_107 f:1), making HPCI unavailable.</i></p>
	BOP	<ul style="list-style-type: none"> Starts RCIC for level control by performing the following at 2H11-P602 panel:
		<ul style="list-style-type: none"> Depresses RCIC Manual Initiation P/B. Ensures Open 2E51-F046. Ensures Operating/Start Barom Cndsr Vac Pump. Ensures Open 2E51-F045. Realizes 2E51-F013 did not auto open. Opens 2E51-F013 (Critical Task) <i>(Critical Task Failure is when RCIC Injection does not exist and RWL lowering to less than -205 inches RWL). (Approximately 35 minutes to reach -205 inches).</i> Ensures Open 2E51-F019. Ensures Close 2E51-F019 at flow > 79.3 gpm. Adjusts controller for desired flow and with SRO permission will raise RWL to 32 to 42 inches.
	BOP	<ul style="list-style-type: none"> Starts HPCI for level control by performing the following at 2H11-P602 panel: <ul style="list-style-type: none"> Opens 2E41-F059, Lube Oil Cooling Wtr Vlv. Starts 2E41-C002-2, Barometric Condenser Vacuum Pump. Realizes 2E41-F001, Turbine Steam Supply Vlv, will not open. Takes 2E41-C002-3, Aux Oil Pump, control switch to the START position. (May place switch in Pull To Lock Off) As time allows, notifies Maintenance of 2E41-F001 failure. Informs SRO of 2E41-F001 failure.
		<p><i>SIMULATOR OPERATOR, the Scenario will be terminated when RWL is controlled with a RCIC and either in band or approaching band, or as directed by the Chief Examiner.</i></p>

NRC FINAL SUMMARY

Facility: E. I Hatch **Scenario No.:** 15-3 **Op-Test No.:** 2023-301

Examiners: _____ **Operators:** _____ **SRO**
 _____ **RO**
 _____ **BOP**

Initiating Conditions:	Unit 2 is operating at 5% RTP. 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written. 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written. RHR Loop B is operating in Torus Cooling Mode due to a recently performed HPCI surveillance.
Turnover	IAW 34SO-E11-010-2, lower Torus water level to 147.5 inches and then once surveillance is complete, continue with the Startup IAW 34GO-OPS-001-2 at step 4.4.2.

Summary:

- **Event 1:** Normal; Lower Torus level to 147.5 inches using RHR Loop 2B IAW 34SO-E11-010-2, Step 4.4.5.1.
- **Event 2:** Reactivity; Withdraw control rods to ~9% power.
- **Event 3:** Component; IRM A fails upscale. Performance of ARP actions will bypass the failed IRM and allow control rod withdrawal to continue. SRO will address TS and only a Tracking RAS will exist.
- **Event 4:** Component; Turbine Gland Seal Reg Fails Closed resulting in a degrading condenser vacuum. The BOP will operate the bypass valve to restore steam seals on the Main Turbine prior to the reactor scrambling on low RWL.
- **Event 5:** Instrument/TS; The RCIC Torus Level Sensor Fails High; with failure of CST valve to auto close. When BOP attempts to close the CST valve, the breaker trips (Valve overload). The breaker must be reset to allow the CST valve to close. The SRO will address the TS instrument.
- **Event 6:** Instrument/TS; The ADS System will experience an inadvertent initiation which will require the BOP to place the ADS Inhibit switches to INHIBIT prior to the valves opening to prevent exceeding 100°F/hr cooldown rate or 110°F Torus water temperature. **(Critical Task)** The SRO will declare ADS INOPERABLE.
- **Event 7:** Major; Circ Water Leak Causing Con Bay Flooding/Loss of Vacuum.
- **Event 8:** Component; RPS Manual pushbuttons, Reactor Mode Switch & ARI automatic fails requiring manual initiation of ARI. **(Critical Task)**
- **Event 9:** Component; Small leak in Drywell which requires transition to RCIC for RWL control since CRD, HPCI, & RFPTs have failed. RCIC injection valve must be manually open. **(Critical Task)**

Critical Tasks & Qualitative Attributes

NRC FINAL

Facility: E. I Hatch
Scenario No.: 15-3 **Op-Test No.:** 2023-301

Critical Tasks

- The ADS System will experience an inadvertent initiation which will require the BOP to place the ADS Inhibit switches to INHIBIT prior to the valves opening to prevent exceeding >100°F cooldown rate or 110°F Torus temperature. **(Event 6)**
- RPS Manual pushbuttons, Reactor Mode Switch & ARI automatic fails requiring manual initiation of ARI prior to reaching BIIT. **(Event 8)**
- Small leak in Drywell which requires transition to RCIC for RWL control since CRD, HPCI, & RFPTs have failed. RCIC injection valve must be manually open prior to -205 inches. **(Event 9)**

	Form 2.3-2 Attributes	Required	Actual	Items
1.	Total Malfunctions	5-8	7	1. IRM Upscale (Event 3) 2. Turbine Gland Seal Reg Fails (Event 4) 3. RCIC Torus suction valves (Event 5) 4. ADS System inadvertent initiation (Event 6) 5. Condenser Bay flooding (Event 7) 6. RPS, ARI auto failures, manual ARI (Event 8) 7. CRD, HPCI & RFPT fail, use RCIC (Event 9)
2.	Malfunctions After EOP Entry	1-2	2	1. RPS, ARI auto failures, manual ARI (Event 8) 2. CRD, HPCI & RFPT fail, use RCIC (Event 9)
3.	Abnormal Events	2-4	3	1. Turbine Gland Seal Reg Fails (Event 4) 2. ADS System inadvertent initiation (Event 6) 3. Condenser Bay flooding (Event 7)
4.	Major Transients	1-2	1	1. Condenser Bay flooding (Event 7)
5.	EOPs entered/requiring substantive actions	1-2	1	1. RC
6.	EOPs contingencies entered with substantive actions	> 1	0	1. NONE
7.	Preidentified Critical Tasks	≥ 2	3	1. ADS System inadvertent initiation (Event 6) 2. RPS, ARI auto failures, manual ARI (Event 8) 3. CRD, HPCI & RFPT fail, use RCIC (Event 9)

**ILT 15 NRC FINAL Scenario 3
SHIFT TURNOVER**



Safety Focus

UNIT 1 STATUS

Plant Conditions:

Unit 1 is operating at 100% power
Activities in progress: Maintain RTP.

UNIT 2 STATUS

Plant Conditions:

- Unit 2 is operating at ~5% RTP.
- 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written.
- 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written.
- RWCU is in service rejecting to the Main Condenser.
- RFPT 2B is in service.
- CRD pump 2A is in service.
- APRM Gains have been adjusted.
- RHR Loop B is operating in Torus Cooling Mode due to a recently performed HPCI surveillance.

Protected Train:

- Division I
- Division II

Risk Profile:

- Green
- Yellow
- Orange
- Red

Protected Equipment:

None

Scheduled evolutions:

- IAW 34SO-E11-010-2, lower Torus water level to 147.5 inches.
- After Torus water level is lowered to 147.5 inches, continue with the Startup IAW 34GO-OPS-001-2 at step 4.4.2.

Surveillances due this shift:

- None

Inop Equipment:

- 2B21-F013D is inoperable for Low-Low Set, RAS written.
- 2D11-K615B, Offgas Post Treatment Radiation monitor has failed Downscale. IAW TS/TRM, I&C has placed 2D11-K615B in the trip condition while maintaining the function of 602-405, Post Treatment O/G Radiation Hi-Hi-Hi/Inop. A Caution Tag is attached to 2D11-K615B switch.

Active tagouts:

- None

Rod Configuration:

- See RWM Step 14

Form 3.3-1 Scenario Outline

NRC FINAL

Facility:	<u>E. I Hatch</u>	Scenario No.:	<u>15-4</u>
Scenario Source:	<u>NEW</u>	Op-Test No.:	<u>2023-301</u>
Examiners:	_____	Applicants/:	_____
	_____	Operators	_____
	_____		_____
			SRO
			RO
			BOP
<p>Initial Conditions. Unit 2 is operating at 90% RTP. 2D11-K615B, Off gas Post treatment radiation monitor, failed Downscale, RAS written. 2B21-F013D, SRV 2D, is inoperable for LLS, RAS written. RCIC is inoperable, RAS written.</p> <p>Turnover: Remove RWCU System from service and isolate for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5. After RWCU is removed from service, raise reactor power to 96% RTP using Recirc System.</p> <p>Critical Tasks:</p> <ol style="list-style-type: none"> SRV 2B21-F013G opens (Event 5) EDG 2A trips and must be manually reset to re-start (Event 8) 			
Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP)	Remove RWCU System from service and isolate for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5.
2	N/A	R (ATC)	Raise reactor power using Recirc to 96% RTP.
3	mfR13_164A	MCC (ATC)	2R13-C008A Isophase Bus Duct Fan trips requiring the ATC to manually start 2R13-C008B.
4	mf70022407	C (BOP)	SSAC 2C high temp condition SSACs 2A & 2B are manually started by BOP
5	mfB21_130G EGB21-16	C (ATC) TS (SRO)	SRV 2B21-F013G opens. The SRV will close & lights will extinguish after the BOP depresses the LLS Reset PB IAW AB section. (Critical Task)
6	mfR25_186	C (BOP) TS (SRO)	Instrument Bus 2B breaker trips open, reclose breaker to return to service.
7	mfS11_161 mfR43_49B mfR43_49C	M (ALL)	Loss of Offsite Power with EDG 1B & 2C failure, EDG 2A starts & ties.
8	mfR43_49A	MCC (ATC)	Fifteen (15) seconds after EDG 2A starts & ties, EDG 2A trips and must be manually reset to re-start (Critical Task)
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS)Tech Spec, (MC)Manual Control			

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 1

Event Description: Remove RWCU System from service and isolate for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5.

Time	Position	Applicant's Actions or Behavior
15 Mins	SRO	Directs the BOP to remove RWCU System from service for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5.
		<p><i>SIMULATOR OPERATOR, When requested to remove RWCU Demins from service use the following information:</i></p> <p><i>7.7.1.5.2 IF 2G31-FIC-N054A, Controller, is in AUTO, from the 2G31 Outlet Flow Control Overview Screen "SF11", perform the following:</i></p> <p><i>7.7.1.5.2.1 Then slowly, at Control Room Operators direction, adjust the SET PT as needed. DEPRESS RB-1</i></p> <p><i>7.7.1.5.2.2 In the Main Control Room, THROTTLE OPEN 2G31-F044, Demin Bypass Valve, as the controller closes the effluent valve.</i></p> <p><i>7.7.1.5.2.3 WHEN RWCU F/D flow reaches ~ 77 gpm, confirm the Hold Pump STARTS. (IF ASKED, INFORM HOLD PUMP STARTS)</i></p> <p><i>7.8.1.5.2 IF 2G31-FIC-N054B, Controller, is in AUTO, from the 2G31 Outlet Flow Control Screen {SF11} perform the following:</i></p> <p><i>7.8.1.5.2.1 Then slowly, at Control Room Operators direction, adjust the SET PT as needed. DEPRESS RB-9</i></p> <p><i>7.8.1.5.2.2 In the Main Control Room, THROTTLE OPEN 2G31-F044, Demin Bypass Valve, as the controller closes the effluent valve.</i></p> <p><i>7.8.1.6 Confirm: Holding Pump STARTS AND 2G31-F071B, Holding Valve, OPENS, WHEN RWCU F/D flow reaches approximately 77 gpm. (IF ASKED, INFORM HOLD PUMP STARTS)</i></p>
	BOP	<p>Enters 34SO-G31-003-2, Reactor Water Cleanup System, Section 7.5 and performs the following:</p> <ul style="list-style-type: none"> • Removes both RWCU F/Ds from service (subsection 7.7 OR 7.8) • IAW Section 7.7.1 , performs the following: <ul style="list-style-type: none"> • Establishes communications with the SO at the RWCU Panel • Throttles 2G31 F044, Demin Bypass, to maintain 230 to 260 gpm as the SO lowers RWCU Demin A flow • IAW Section 7.8.1 , performs the following: <ul style="list-style-type: none"> • Throttles 2G31 F044, Demin Bypass, to maintain 230 to 260 gpm as the SO lowers RWCU Demin B flow

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 1

Event Description: Remove RWCU System from service and isolate for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5.

Time	Position	Applicant's Actions or Behavior
	BOP	When both RWCU Demineralizers have been removed from service, transitions back to Step 7.5.3: <ul style="list-style-type: none"> • Adjusts 2G31-F044, RWCU Demin Bypass, to reduce RWCU System flow to 140-150 gpm • Takes Operating RWCU Pump, control switch to STOP • Notifies the Shift Supervisor to address TSR 3.4.1.1 for continuous monitoring of Rx coolant conductivity (TRACKING RAS) • Notifies Chemistry personnel to remove the (Durability) Mitigating Monitoring (2P73) System (MMS) from service • Close 2G31-F001 (2H11-P602). AND/OR 2G31-F004 (2H11-P601) • Notifies SO to control pump cooldown rate to <140°F/hr (2.33 °F/min)
		<p><i>SIMULATOR OPERATOR, at the Chief Examiner's direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 2

Event Description: Raise reactor power to 96% using Recirc System.

Time	Position	Applicant's Actions or Behavior
10 Min	SRO	Directs ATC to raise reactor power to 96% RTP by increasing Recirc flow. Power increases are NOT to exceed 10 MWe/min.
		<p><i>NOTE: May get the RBM UPSCALE, (603-202) and ROD OUT BLOCK, (603-238) alarm, if a peripheral control rod is NOT selected. This is expected, and the operator MAY select a peripheral rod at this time.</i></p> <p><i>May also get Alarm FWHL/MSR LOW PRIORITY, (650-134), alarm. This is expected at this power level.</i></p>
	ATC	<ul style="list-style-type: none"> IAW 34SO-B31-001-2 & 34GO-OPS-005-2, the ATC increases Recirc pump speed, NOT to exceed 10 MWE per minute by depressing the RAISE SLOW or RAISE MEDIUM pushbuttons on the Master (P603 panel) or Individual controls (P602 panel) until reactor power is 96%. If using Individual Controls, pump speed increases will alternate between the "A" & "B" Recirc pumps to prevent excessive flow mismatches. Monitors power increase by observing APRM and generator output indications.
	ATC	<ul style="list-style-type: none"> Complies with 34SO-B31-001-2, Limitation 5.2.15, which states: WHEN changing Recirc pumps speed while in Two Loop operation maintain pump speeds to limit recirculation loop jet pump mismatch within the following limits: <ul style="list-style-type: none"> <10% of rated core flow (7.7 E6 lbm/hr) WHEN operating < 70% of rated core flow; AND <5% of rated core flow (3.85 E6 lbm/hr) WHEN operating at > 70% of rated core flow.
	ATC	Notifies the SRO that reactor power has been raised to 96%.
		<i>SIMULATOR OPERATOR, at the Chief Examiners direction OR after power has been increased to 96% RTP, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 3

Event Description: 2R13-C008A Isophase Bus Duct Fan trips requiring the ATC to manually start 2R13-C008B

Time	Position	Applicant's Actions or Behavior
10 Mins		<i>SIMULATOR OPERATOR, at Chief Examiners direction, NOTIFY BOP and request, as RP, the control room indication for 2D21-K601A, Reactor Head Laydown Area. When BOP is around back DEPRESS (RB-3), mfr13_164A, LOSS OF ISO PHASE BUS DUCT BLOWER A.</i>
	ALL	The following annunciator is received: <ul style="list-style-type: none"> • GENERATOR BUS COOLING ALARM, (651-107)
	ATC	<ul style="list-style-type: none"> • Acknowledges GENERATOR BUS COOLING ALARM, (651-107) alarm • Notifies the SRO
	ATC	Enters GENERATOR BUS COOLING ALARM, (651-107) alarm and performs the following: <ul style="list-style-type: none"> • Confirms Isobus Clg Unit 2A, 2R13-C008A, is not running on panel 2H11 P651. • Starts the standby unit 2R13 C008B. • Confirms GENERATOR BUS COOLING ALARM, (651-107) alarm clears. • Dispatches Maintenance/SO to check breakers and control power fuses at bus 2R23-S001 Frames 1AM and 1AT. • Dispatches SO to coolers to confirm the following: <ul style="list-style-type: none"> • Fan drive belts are in place and fan is rotating properly • PSW valves open with proper flow • Duct temperatures indicated by multiple indicators (13) by viewing through duct viewing windows
	SRO	Directs ATC to start standby unit 2R13 C008B. Notifies Maintenance of 2R13-C008A failure, if not performed by ATC.

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 3

Event Description: 2R13-C008A Isophase Bus Duct Fan trips requiring the ATC to manually start 2R13-C008B

Time	Position	Applicant's Actions or Behavior
		<i>SIMULATOR OPERATOR: After three minutes of being dispatched, NOTIFIES Unit 2 Control Room, as a SO, that local duct temperatures were less than 165°F and trending down.</i>
		<i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 4

Event Description: SSAC 2C high temp condition and secured. SSACs 2A & 2B are manually started.

Time	Position	Applicant's Actions or Behavior
5 Min.		<p><i>SIMULATOR OPERATOR:</i></p> <p><i>At the direction of the Chief Examiner DEPRESS (RB-4)</i></p> <ul style="list-style-type: none"> • <i>mf70022407 Control Bldg Aftclr B001C Disch Temp High (Alarm On)</i> • <i>aoP52-R600 Service Air Pressure</i> • <i>aoP51-R600 Control Air Pressure</i> <p><i>NOTE: SSAC 2B will fail to auto start on lowering pressure. Event Trigger (EGP51-2) will remove this failure when SSAC 2B is manually started.</i></p>
		<p><i>SIMULATOR OPERATOR:</i></p> <p><i>When the operator dispatches a SO locally , wait 2 minutes, then NOTIFY operator that local temp on 2P51-R312C is 125°F and 2P51-R302C is reading 385°F.</i></p> <p><i>If requested by operator, report standby SSAC oil levels are normal and Aftercooler/Intercooler drains have been cycled.</i></p>
	BOP	<p>Responds to annunciator CONTROL BLDG AFTCLR B001C DISCH TEMP HIGH, (700-216):</p> <ul style="list-style-type: none"> • Sends SO to locally confirm temperature is > 120 degrees F on 2P51-R312C and 2P51-R302C. • Starts the 2A and/or 2B Service Air Compressor. • Secures the 2C Service Air Compressor by placing its control switch in Pull-to-Lock when the local report is given or earlier as directed by the SRO • If not previously performed, starts 2A Service Air Compressor • Dispatches SO/Maintenance to investigate high temperature alarm.

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 4

Event Description: SSAC 2C high temp condition and secured. SSACs 2A & 2B are manually started.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR: When the operator secures the 2C Service Air Compressor, ENSURE Event Trigger (EGP51-1) is ACTIVATED: DELETES the following:</i></p> <ul style="list-style-type: none"> <i>• aoP52-R600 'Service Air Pressure'</i> <i>• aoP51-R600 'Control Air Pressure'</i> <p><i>mf70022407 'Control Bldg Aftclr B001C Disch Temp High' (Annunciator On) 30 seconds later.</i></p>
	BOP	Annunciator CONTROL BLDG AFTCLR B001C DISCH TEMP HIGH, (700-216) clears.
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 5

Event Description: SRV 2B21-F013G opens. The SRV will close after the ATC depresses the LLS Reset PB IAW AB section. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
8 Min		<p><i>SIMULATOR OPERATOR: To ensure the ATC operator gets the next malfunction, wait until the BOP is away from panel OR as Shift Manger, REQUEST the BOP to get some Off-Gas panel reading.</i></p> <p><i>SIMULATOR OPERATOR: At the direction of the Chief Examiner, DEPRESS: (RB-5) mfb21_130G.</i></p>
	ALL	<ul style="list-style-type: none"> • Recognize annunciators: <ul style="list-style-type: none"> • SAFETY BLOWDOWN VALVE LEAKING, (602-311) • SAFETY BLOWDOWN PRESSURE HIGH, (603-122)
		<p><i>The BOP may enter the abnormal procedure first before addressing the ARPs.</i></p>
	ATC	<ul style="list-style-type: none"> • Enters 602-311 and 603-122 annunciators <ul style="list-style-type: none"> • Confirms which safety relief valve has opened using the amber valve leakage indicator • Directs BOP to check back panel tail pipe temperatures • Reports to the SRO that SRV 2G is open
		<p><i>SIMULATOR OPERATOR: When the operator depresses the LLS pushbutton, ENSURE EVENT TRIGGER EGB21-16 removes the failure and de-energizes SRV 2G.</i></p>
	ATC	<ul style="list-style-type: none"> • Enters 34AB-B21-003-2, Failure of Safety/Relief Valves <ul style="list-style-type: none"> • Confirms the green AND amber lights are illuminated for SRV 2G • Cycles SRV 2G control switch several times between Open/Close • May depress the ADS Logic A Timer Reset pushbutton (2B21-S2A) • May depress the ADS Logic B Timer Reset pushbutton (2B21-S2B) • Depresses the LLS Channel A / C Reset pushbutton (2B21-S15A) • Depresses the LLS Channel B / D Reset pushbutton (2B21-S15B) • Critical Task; (<i>Critical Task Failure if LLS Channel B / D Reset pushbutton (2B21-S15B) is NOT depressed or SRV 2G fuses are NOT pulled prior to causing a condition that REQUIRES an emergency depress, in approximately 45 Minutes</i>) • Notifies SRO that SRV 2G closed when LLS pushbutton is depressed and is now de-energized.

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 5

Event Description: SRV 2B21-F013G opens. The SRV will close after the ATC depresses the LLS Reset PB IAW AB section. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
		<i>SIMULATOR OPERATOR: If the LLS Channel B / D Reset pushbutton (2B21-S15B) is NOT depressed and the BOP requests the fuses to be pulled for SRV 2G, WAIT UNTIL Torus temperature is >95°F and then DEPRESS RB-11, rFB21_306 (SRV G Fuse).</i>
	ATC	<ul style="list-style-type: none"> • May notify the SSS to remove fuses for SRV 2G IAW 34AB-B21-003-2.
	ATC	<p>Confirms that SRV 2G is closed by monitoring one or more of the following:</p> <ul style="list-style-type: none"> • SRV tailpipe temperature decrease (Directs BOP to P614 panel) • Torus level stabilizing • Torus Temp stabilizing • Reactor and Generator power returns to the pre-event level • Resets the SRV leak detection by placing the Leak Detection Logic A Reset key lock switch and Leak Detection Logic B Reset key lock switch to Reset position and back to Normal position • Confirms that the Amber SRV indicating lights have Extinguished • SAFETY BLOWDOWN PRESSURE HIGH, (602-311), clears • Informs the SRO that SRV 2G is closed and does not have light indication • May notify Maintenance to investigate SRV 2G
	SRO	<p>If not performed by ATC, informs the crew that operability of the Suppression Chamber-Drywell Vacuum Breakers must be performed within 12 hours per 34SV-T48-002-2, Suppression Chamber To Drywell Vacuum Breaker System Operability.</p> <p>If not performed by ATC, notifies Chemistry and initiates a CR to initiate increased monitoring of vessel moisture content carryover per 64CH-SAM-025-0.</p> <p>Enters TS 3.6.1.6, Low-Low Set (LLS) Valves, and declares SRV 2G inoperable;</p> <ul style="list-style-type: none"> • IAW Condition A, Required Action A.1, Be in Mode 3 in 12 hours, AND Mode 4 in 36 hours

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 5

Event Description: SRV 2B21-F013G opens. The SRV will close after the ATC depresses the LLS Reset PB IAW AB section. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
		<p><i>If the ATC depresses the LLS Channel B / D Reset pushbutton (2B21-S15B), Torus temperature will still be below 95°F, therefore RHR is NOT required to be placed into Torus Cooling. The SRO may elect to place Torus Cooling in service, since steam was admitted to the Torus. The following steps are written IF the SRO elects to place Torus Cooling in service.</i></p> <p><i>If the LLS Channel B / D Reset pushbutton (2B21-S15B) is NOT depressed and the ATC requests the fuses to be pulled for SRV 2G, the following steps are written to place Torus Cooling in service.</i></p>
		<p>NOTE: <i>The operator may place Torus Cooling in service by using the Placard that's available or using the appropriate section of the procedure. These steps assume the Placard is used. The A or B loop of RHR may be used. The following steps are written assuming "B" loop and "B" pump is used. If "A" loop is used, substitute "A" for "B" for valves and if "B" pump is NOT used substitute "A", "C", or "D" for "B" pump.</i></p>
	ATC	<p>Enters 34SO-E11-010-2, Residual Heat Removal and places RHRSW in service</p> <ul style="list-style-type: none"> • Overrides 2E11-F068B Low Discharge Pressure Interlock • Positions 2E11-F068B to 45% OPEN • Receives alarm, RHR HX B DIFF PRESS LOW, (601-215) • Starts RHRSW pump B • Places 2E11-F068B Low Discharge Pressure Interlock switch to normal position. • Positions 2E11-F068B to obtain < 4400 gpm AND < 450 psig
	ATC	<ul style="list-style-type: none"> • IF desired to start a SECOND RHRSW pump, • Throttles 2E11-F068B to achieve max flow rate (not to exceed 4400 GPM). • Opens 2E11-F068B an additional 5%. • Starts second RHRSW Pump. • Positions 2E11-F068B to obtain < 8800 gpm AND < 450 psig

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 5

Event Description: SRV 2B21-F013G opens. The SRV will close after the ATC depresses the LLS Reset PB IAW AB section. **(Critical Task)**

Time	Position	Applicant's Actions or Behavior
	ATC	<p>Places RHR B Loop in Torus cooling per the placard by performing the following steps:</p> <ul style="list-style-type: none"> • Opens 2E11-F048B • Closes 2E11-F047B. • Opens 2E11-F003B. • Starts RHR Loop B pump • Receives alarm, RHR LOW FLOW, (601-222) • Opens 2E11-F028B • Receives alarm, AUTO BLOWDOWN CS OR RHR PRESS PERMISSIVE, (602-312) • Receives alarm, SEC SYSTEM AUTO INITIATION SIGNAL PRESENT, (650-234) • Throttles OPEN 2E11-F024B • Alarm, RHR LOW FLOW, (601-222), clears • Opens 2E11-F047B • Ensures RHR flow is < 11,500 GPM, THEN Closes 2E11-F048B • Notifies the SRO that RHR "B" loop is in service • May place the second pump in service.
		<p><i>SIMULATOR OPERATOR, at the Chief Examiners direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 6

Event Description: Instrument Bus 2B breaker trips open, reclose breaker to return to service.

Time	Position	Applicant's Actions or Behavior
15 Mins		<i>SIMULATOR OPERATOR, at direction of the lead examiner, ACTIVATE: (RB-6) malfunction m/R25 186, Loss Of Instrument Bus 2B.</i>
	ALL	Various alarms indicating Instrument Bus 2B has lost power.
	SRO	Directs BOP to enter 34AB-R25-002-2, Loss Of Instrument Buses, for loss of Instrument Bus 2B.
	BOP	<ul style="list-style-type: none"> • Enters 34AB-R25-002-2, Loss of Instrument Buses, and performs the following at Panel 2H11-P654, <ul style="list-style-type: none"> • May place 2B SBTG Fan control switch to “OFF” IAW 34SO-T46-001-2. • Dispatches SO to confirm CLOSE Instrument Bus 2B supply breaker 28 on 2R25-S037, Essential Cabinet 2B by dispatching a SO locally. • Dispatches SO to confirm Essential Cabinet 2B 2R25-S037 is energized by NO other alarms illuminated at 2H11-P651. • Per step 4.4, dispatches Maintenance to check fuses R25F209 F01, R25F210 F02, and R25F211 F03, in fuse panel 2R20N P002 located next to Essential Cabinet 2B (power supply to 2R25 S065, Instrument Bus 2B 6).

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 6

Event Description: Instrument Bus 2B breaker trips open, reclose breaker to return to service.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, Once TECH SPECS HAVE BEEN ADDRESSED, Call the control room, using Time Compression, as an Electrician, and report that Instrument Bus 2B supply breaker 28 on 2R25-S037, Essential Cabinet 2B, is open. As the Electrical Supervisor, Electricians have investigated breaker 28 and find no reason to leave this breaker in the open position. We recommend closing breaker 28 and a SO is standing by to reclose breaker 28.</i></p> <p><i>SIMULATOR OPERATOR, when directed, DELETE mfr25_186, THEN NOTIFIES SRO that breaker 28 on Essential Cabinet 2B is closed.</i></p>
	SRO	<p>Enters TS 3.8.7, Distribution Systems – Operating, and declares Instrument Bus 2B inoperable;</p> <ul style="list-style-type: none"> • IAW Condition C, Required Action C.1, Restore Instrument Bus 2B to OPERABLE status within 8 hours OR IAW the Risk Informed Completion Time Program (<i>evaluation process of the Risk Informed Completion Time Program will NOT be evaluated</i>), <p>Enters TS 3.4.5, RCS Leakage Detection Instrumentation, and declares primary containment atmospheric monitoring system inoperable;</p> <ul style="list-style-type: none"> • IAW Condition B, Required Action B.1, Analyze grab samples of primary containment atmosphere once per 12 hours, AND Restore required primary containment atmospheric monitoring system to OPERABLE status within 30 days. <p>After report on local actions, directs the BOP to re-energize Instrument Bus 2B by closing breaker 28 to Instrument Bus 2A.</p>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 6

Event Description: Instrument Bus 2B breaker trips open, reclose breaker to return to service.

Time	Position	Applicant's Actions or Behavior
		<p><i>NOTE: The following steps may be performed out of order, AFTER placing Group Isolation Reset Switch to the Group 1 and Group 2/5 positions, on P601.</i></p>
	BOP	<p>Once Instrument Bus 2B is energized, continues at step 4.7 and performs the following:</p> <ul style="list-style-type: none"> • Following confirmation of any group isolation(s), RESET isolation(s) by placing Group Isolation Reset Switch to the Group 1 and Group 2/5 positions, on P601. • Opens the following Fission Product Monitoring isolation valves, panel P700: <ul style="list-style-type: none"> • 2D11-F052 • 2D11-F053 • 2D11-F072 • As time allows, may open 2B31-F020, Rx Wtr Sample Otd Isol AOV, on P601.
		<p><i>IT IS NOT INTENDED FOR THE CREW TO RESTORE ALL OF THE LOADS ASSOCIATED WITH INSTRUMENT BUS 2B.</i></p> <p><i>AFTER THE OPERATOR RESTORES 2D11-F052, F053, & F072, AT THE CHIEF EXAMINER'S DIRECTION, SIMULATOR OPERATOR PROCEEDS TO THE NEXT EVENT.</i></p>
	BOP	<ul style="list-style-type: none"> • Resets and return Rx Bldg. Ventilation to normal per 34SO-T41-005-2. • Resets and return R/F Ventilation to normal per 34SO-T41-006-2 • Secures Standby Gas Treatment System and place in standby per 34SO-T46-001-2. • Restores Drywell Equipment and Floor Drain Sumps per 34SO-G11-009-2. • Returns Steam Packing Exhauster to service per 34SO-N33-001-2. • Notifies Unit 1 NPO to restore Control Room ventilation to the desired mode of operation per 34SO-Z41-001-1.

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 6

Event Description: Instrument Bus 2B breaker trips open, reclose breaker to return to service.

Time	Position	Applicant's Actions or Behavior
		<ul style="list-style-type: none"> • At SRO direction returns Rx Water Level Control to 3 element control per 34AR-603-132-2, Feedwater Control System Trouble. • Restores the Drywell Cooling Fans to normal alignment per 34SO-T47-001-2. • Alarm 650-204, Drywell/Torus RCDR R627 Temp High, may be received if Drywell Cooling Fans are not restored to a pre-event lineup.
		<p><i>It is NOT intended for the crew to restore all of the loads associated with INSTRUMENT BUS 2B.</i></p>
		<p><i>AFTER the operator restores 2D11-F052, F053 & F072, SIMULATOR OPERATOR, PROCEEDS to the next event at the Chief Examiner's direction.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 7

Event Description: Loss of Offsite Power.

Time	Position	Applicant's Actions or Behavior
15 Min		<p><i>SIMULATOR OPERATOR, at Chief Examiners permission, DEPRESS RB-7, mfs11_161, Loss of Offsite Power.</i></p> <p><i>NOTE: EDG 2A, EDG 1B & EDG 2C malfunctions were inserted during the Major 15 seconds after 4160V 2E Blue lights extinguished by Event Trigger EGR43-13.</i></p>
	ALL	Recognizes a Loss Of Offsite Power.
		<p><i>NOTE: With a Loss of Offsite Power, the pertinent operator RC-2 actions are limited to checking ECCS.</i></p>
		<p><i>NOTE: The SRO may assign one operator to perform Scram procedure placards RC-1, RC-2 and RC-3.</i></p>
	SRO	<ul style="list-style-type: none"> • Assigns the ATC to perform RC-1. • Assigns the BOP operator to perform RC-2 and RC-3. • If time allows assigns TC-1 to be performed. • Enters the RC EOP flow chart, 31EO-EOP-010-2, once reactor water level decreases to 3 inches or reactor pressure increases to 1074 psig. • Directs EOP RC level control band of +3 inches to +50 inches
	SRO	<ul style="list-style-type: none"> • Directs ATC to address the plant electrical systems and enter the Station Black abnormal procedure, 34AB-R22-003-2, and Diesel Generator Recovery abnormal, 34AB-R43-001-2. • Calls for Maintenance support in restoring all emergency 4160 VAC buses. • Enters the RC EOP flowchart and directs a RWL band of +3 - +50 inches

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 7

Event Description: Loss of Offsite Power.

Time	Position	Applicant's Actions or Behavior
	ATC	Performs RC-1 consisting of: <ul style="list-style-type: none"> • Manually SCRAMs the Reactor using the SCRAM pushbuttons. • Places Rx Mode Switch in SHUTDOWN. • If Scram blue lights are NOT illuminated, initiates Alternate Rod Insertion (ARI) by rotating the button collars and depressing both ARI pushbuttons at the same time. • Uses the Full Core Display and Rod Worth Minimizer to determine that all control rods are inserted past position 02. • Informs the SRO that all rods are fully inserted. • Inserts IRMs and SRMs. • Places SDV Isol Vlv Switch to "ISOL" and ensures closed. • Shifts recorders to read IRMS, when required. • Ranges IRMS to bring reading on scale. • Notifies SRO when above actions are complete.
		<i>The ATC may start first with any of the Diesel Generators.</i>
	ATC	Confirms appropriate Diesel Generator response to the event and evaluates the emergency buses determining: <ul style="list-style-type: none"> • 2A EDG is tripped (Emergency Engine S/D), 2E bus is de-energized (<i>Go to Event 8 for EDG 2A actions</i>) • 1B EDG is tripped (Emergency Engine S/D), 2F bus is de-energized • 2C EDG is tripped (Emergency Engine S/D), 2G bus is de-energized • Enters 34AB-R22-003-2, Station Blackout and Diesel Generator Recovery, 34AB-R43-001-2.
	ATC	<ul style="list-style-type: none"> • IAW 34AB-R43-001-2, Diesel Generator Recovery, for EDG 2C: <ul style="list-style-type: none"> • Determines the DG is NOT running • Determines the Auto Start System Operative Light is NOT lit • Depresses the Shutdown Relay Pushbutton • Determines the DG did NOT start • Sends a SO to locally start the DG • Sends a SO/Maintenance to investigate DG failure

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 7

Event Description: Loss of Offsite Power.

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR:</i> <i>When called to investigate the EDGs, as the SO, wait two minutes and report as Maintenance:</i></p> <ul style="list-style-type: none"> • <i>IF EDG 2A has NOT been RESTARTED, report that no trip condition exists.</i> • <i>EDG 1B has a break on the oil pump discharge line</i> • <i>EDG 2C has a trip signal in its Shutdown circuit.</i>
	ATC	Reviews DG 1B annunciators and determines a LUBE OIL PRESS LOW, (652-211) and EMERGENCY ENGINE SHUTDOWN, (652-229).
		<p>IAW 34AB-R43-001-2, Diesel Generator Recovery, for EDG 1B:</p> <ul style="list-style-type: none"> • Determines the DG is NOT running • Determines the Auto Start System Operative Light is NOT lit • Depresses the Shutdown Relay Pushbutton • Determines the DG did NOT start • Sends a SO to locally start the DG • Sends a SO/Maintenance to investigate DG failure
		<p><i>SIMULATOR OPERATOR, at the Chief Examiner's direction, PROCEEDS to the next event.</i></p>

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 8

Event Description: Fifteen (15) seconds after EDG 2A starts & ties, EDG 2A trips and must be manually reset to start. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
		<p><i>SIMULATOR OPERATOR, ENSURE Event Trigger EGR43-13 INSERTS the following 15 seconds after 4160V 2E Blue lights extinguished:</i> <i>mfr43_49A f:1 d:0,</i> <i>mfr43_49B f:1 d:0,</i> <i>mfr43_49C f:1 d:0, &</i> <i>Inserts Event Trigger EGR43-11 [(Deletes EDG 2A Shutdown (mfr43_49A) & inserts mfr43_62A f:1 d:0 (Manual start switch required to start EDG 2A)]</i></p>
10 Min	ATC	<p>Reviews DG 2A annunciators and determines a LUBE OIL PRESS LOW, (652-111) and EMERGENCY ENGINE SHUTDOWN, (652-129).</p>
		<ul style="list-style-type: none"> • IAW 34AB-R43-001-2, Diesel Generator Recovery, for DG 2A: • Determines the DG is NOT running. • Determines the Auto Start System Operative Light is NOT lit. • Depresses the Shutdown Relay Pushbutton. • After 100 second time delay, determines DG 2A DID NOT start and places DG 2A start switch to START to energize 4160VAC Emergency Bus 2E. (Critical Task) <i>(Critical Task Failure is NOT energizing Emergency Bus 2E within 15 minutes due to upgrading an EAL classification)</i> • Notifies SRO that 4160VAC Emergency Bus 2E is energized.
	ATC	<p>Reviews DG 1B annunciators and determines a LUBE OIL PRESS LOW, (652-211) and EMERGENCY ENGINE SHUTDOWN, (652-229).</p>
		<p>IAW 34AB-R43-001-2, Diesel Generator Recovery, for EDG 1B:</p> <ul style="list-style-type: none"> • Determines the EDG is NOT running • Determines the Auto Start System Operative Light is NOT lit • Depresses the Shutdown Relay Pushbutton • Determines the EDG restarted but tripped again • Sends a SO/Maintenance to investigate EDG 1B failure

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 8

Event Description: Fifteen (15) seconds after EDG 2A starts & ties, EDG 2A trips and must be manually reset to start. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
	ATC	Reviews DG 2C annunciators and determines a LUBE OIL PRESS LOW, (652-311) and EMERGENCY ENGINE SHUTDOWN, (652-329).
	ATC	<ul style="list-style-type: none"> • IAW 34AB-R43-001-2, Diesel Generator Recovery, for EDG 2C: <ul style="list-style-type: none"> • Determines the EDG is NOT running • Determines the Auto Start System Operative Light is NOT lit • Depresses the Shutdown Relay Pushbutton • Determines the EDG 2C restarted but tripped again • Sends a SO/Maintenance to investigate EDG 2C failure
		<p><i>SIMULATOR OPERATOR:</i></p> <p><i>When called to investigate the EDGs, as the SO, wait two minutes and report as Maintenance:</i></p> <ul style="list-style-type: none"> • <i>IF EDG 2A has NOT been RESTARTED, report that no trip condition exists.</i> • <i>EDG 1B has a break on the oil pump discharge line</i> • <i>EDG 2C has a trip signal in its Shutdown circuit.</i>
		<i>The following can be performed in any order.</i>
	ATC/BOP	<p>As time allows, directs the SSS to perform the following:</p> <ul style="list-style-type: none"> • RPS MG Set 2A - restarted • RPS Alternate Supply from 2A Essential Cabinet - restarted • 2A SSAC local breaker - reclosed • Division I Station Service Battery Chargers (may depress pushbuttons on P664 panel) • Vital AC Alternate supply returned to service • Restores RBCCW as follows: <ul style="list-style-type: none"> • Directs SO to close discharge valve 2P42-F005A, or F005C • Places RBCCW pump control switch to off and then to auto • Directs SO to slowly open discharge valve 2P42-F005A, or F005C • Starts second pump by taking control switch to off and then to run

Op-Test No.: 2023-301 Scenario No.: 15-4 Event No.: 8

Event Description: Fifteen (15) seconds after EDG 2A starts & ties, EDG 2A trips and must be manually reset to start. (**Critical Task**)

Time	Position	Applicant's Actions or Behavior
		<p><i>The following can be performed in any order. 34AB-R22-003-2, Station Blackout, will not be exited since ONLY one (1) 4160VAC Emergency Bus is energized.</i></p>
	<p>ATC</p>	<p>Enters 34AB-R22-003-2, Station Blackout, and performs Attachment 3, 4160VAC 2E Emergency Bus Restoration:</p> <ol style="list-style-type: none"> 1. Confirms Running/Starts 2P41-C001A, 2A PSW Pump 2. Closes 2P41-F316A, Division I Turbine Building PSW Isolation Valve 3. Since RCIC will control RWL, directs BOP to secure HPCI 4. Trips the following equipment control switches: <ul style="list-style-type: none"> • 2C11-C001A, CRD Pump 2A, panel 2H11-P603 (Norm) • 2E21-C001A, Core Spray Pump 2A, panel 2H11-P601 (Norm) • 2P64-B006A, Drywell Chiller 2A, panel 2H11-P700 (Off) 5. At panel 2H11-P652, resets the 600VAC Bus 2C Nonessential Load lockout pushbutton 6. Restore Division 1 Station Service Battery Chargers per the following: <ul style="list-style-type: none"> • Depresses 2R42-S026, Battery Charger 2A pushbutton, panel 2H11-P664 • Depresses 2R42-S027, Battery Charger 2B pushbutton, panel 2H11-P664 • Depresses 2R42-S028, Battery Charger 2C pushbutton, panel 2H11-P664 7. Starts 2Z41-C014, Station Service Battery Room 2A Exhaust Fan, panel 2H11-P657.
		<p><i>The scenario will be terminated when EDG 2A is restarted with 125/250 Division 1 Battery Chargers back in service, RWL in band/approaching with RCIC OR at Chief Examiner's direction.</i></p>

NRC FINAL SUMMARY

Facility: E. I Hatch **Scenario No.:** 15-4 **Op-Test No.:** 2023-301

Examiners: _____ **Operators:** _____ **SRO**
 _____ **RO**
 _____ **BOP**

Initiating Conditions:	Unit 2 is operating at 90% RTP. 2B21-F013D is inoperable for Low-Low Set, RAS written. 2D11-K615B, Offgas Post treatment radiation monitor is failed downscale, RAS written.
Turnover	Remove RWCU System from service and isolate for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5. After RWCU is removed from service, raise reactor power to 96% RTP using the Recirc System.
<p>Summary:</p> <ul style="list-style-type: none"> • Event 1: Normal; Remove RWCU System from service for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5. • Event 2: Reactivity; Raise Reactor power to 96% using Recirc. • Event 3: Component; 2R13-C008A Isophase Bus Duct Fan trips requiring the ATC to manually start 2R13-C008B. • Event 4: Component; The Station Service Air Compressor (SSAC) 2C will receive a high discharge air temp alarm. The operator will start the SSACs 2A & 2B and shutdown SSAC 2C. • Event 5: Component; SRV 2G opens. The ATC operator will attempt to close the SRV IAW the abnormal procedure for an open SRV. After the ATC operator depresses the LLS Reset pushbutton, the SRV will close. (Critical Task). If Torus temperature exceeds 95°F, an operator will place RHR in Suppression Pool Cooling. SRO addresses TS for inoperable SRV. • Event 6: Component/TS; Instrument Bus 2B supply breaker from Essential 2B will trip open de-energizing subsequent loads. Once investigated, Essential 2B breaker will be reclosed to restore Instrument Bus 2B to service. The BOP will return loads to service. SRO addresses TS for inoperable Instrument Bus 2B. • Event 7: Major; The plant will experience a Loss of Offsite Power with EDG 1B & 2C failures, 2A EDG initially starts & ties. • Event 8: Component; Fifteen (15) seconds after EDG 2A starts & ties, ALL EDGs have tripped and EDG 2A must be manually reset with pushbutton & manually started with start switch. (Critical Task) 	

Critical Tasks & Qualitative Attributes

NRC FINAL

Facility: E. I Hatch
Scenario No.: 15-4 **Op-Test No.:** 2023-301

Critical Tasks

- Depresses the LLS Reset pushbutton to close SRV 2G prior to Torus temperature exceeding 110°F (BIIT). **(Event 5)**
- Manually reset EDG 2A Emergency Shutdown & Start Switch within 15 minutes based on forcing the plant into a higher level of EAL classification when NOT required. **(Event 8)**

	Form 2.3-2 Attributes	Required	Actual	Items
1.	Total Malfunctions	5-8	6	1. Isophase fan fails (Event 3) 2. SSAC 2C High temperature (Event 4) 3. SRV 2G opens (Event 5) 4. Instrument Bus 2B breaker fails (Event 6) 5. Loss of Offsite Power (Event 7) 6. EDG 2A trips – must be reset (Event 8)
2.	Malfunctions After EOP Entry	1-2	1	1. EDG 2A trips – must be reset (Event 8)
3.	Abnormal Events	2-4	3	1. SSAC 2C High temperature (Event 4) 2. SRV 2G opens (Event 5) 3. Instrument Bus 2B breaker fails (Event 6)
4.	Major Transients	1-2	1	1. Loss of Offsite Power (Event 7)
5.	EOPs entered, requiring substantive actions	1-2	2	1. RC (Non-ATWS) 2. PC
6.	EOPs contingencies entered with substantive actions	0-2	1	1. 34AB-R22-003-2, Station Blackout
7.	Preidentified Critical Tasks	≥ 2	2	1. SRV 2G opens (Event 5) 2. EDG 2A trips – must be reset (Event 8)

**ILT 15 NRC FINAL Scenario 4
SHIFT TURNOVER**



Safety Focus

UNIT 1 STATUS

Plant Conditions:

Unit 1 is operating at 100% power
Activities in progress: Maintain RTP.

UNIT 2 STATUS

Plant Conditions:

- Unit 2 is operating at 90% RTP.
- 2B21-F013D is inoperable for Low-Low Set, RAS written.
- 2D11-K615B, Offgas Post treatment radiation monitor, failed Downscale, RAS written.

Protected Train:

- Division I
 Division II

Risk Profile:

- Green Orange
 Yellow Red

Protected Equipment:

None

Scheduled evolutions:

- Remove RWCU System from service and isolate for leak repair IAW 34SO-G31-003-2, RWCU System, Section 7.5.
- After RWCU is removed from service, raise reactor power to 96% RTP using Recirc System.

Surveillances due this shift:

None

Inop Equipment:

- 2B21-F013D is inoperable for Low-Low Set, RAS written.
- 2D11-K615B, Offgas Post Treatment Radiation monitor has failed Downscale. IAW TS/TRM, I&C has placed 2D11-K615B in the trip condition while maintaining the function of 602-405, Post Treatment O/G Radiation Hi-Hi-Hi/Inop. A Caution Tag is attached to 2D11-K615B switch.

Active tagouts:

None

Rod Configuration:

See RWM Step 34

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

FINAL
CR-SIM 1 (RO & SRO-I)

Title: INJECT SBLC (WITH A PUMP TRIP & VALVE FAILURE)		Version: 0.1
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 1	Time: 5 Minutes Before Exceeding BIIT (110°F)
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



<u>Course Number</u> N/A	<u>Program Name</u> OPERATIONS TRAINING	<u>Media Number</u> 2023-301 CR-SIM 1
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Ver. No.	Date	Reason for Revision	Author Print Initials/Name	Peer Review Print Initials/Name
00	5/26/11	Reworded initiating Cue and added 2B SBLC pump malfunction and Event Trigger to Simulator Setup. This JPM originated from LR-JP-25011.	ARB	CME
0.1	10/30/23	Updated to current procedure for use on ILT-15 NRC Exam as CR-SIM 1.	ARB Anthony Ball	JDW Derek Williams

UNIT 1 (X) UNIT 2 (X)

TASK TITLE:	INJECT SBLC (WITH A PUMP TRIP & VALVE FAILURE)
JPM NUMBER:	2023-301 CR-SIM 1
TASK STANDARD:	The task shall be successfully completed when the operator has started the 2 nd SBLC Pump for injection with the RWCU System manually isolated prior to exceeding BIIT (110°F) (approximately 6 minutes).
TASK NUMBER:	011.002
OBJECTIVE NUMBER:	011.002.C

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 211000A2.09

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.4

SRO 4.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 2
	31EO-EOP-017-2, Ver. 17.0 34SO-C41-003-2, Ver. 13.1
REQUIRED MATERIALS:	Unit 2
	34SO-C41-003-2, Ver. 13.1 Key for Standby Liquid Control Key switch (located in panel)

VALIDATION TIME: 5 Minutes; Before Exceeding BIIT (110°F)

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to one of the following:
 - **IC #108 (21%, Turbine Roll)**, and then go to step 2
 - **SNAP 611** and then go to step 4 and leave in **FREEZE**.
2. **INSERT** the following or **RUN SCENARIO FILE 2023 CR-SIM 1** (if available)

MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
mfC11_211	Scram Discharge Volume ATWS	25	10000	00000
mfB21_247A	Spurious Group I Isolation A Side			3
mfB21_247B	Spurious Group I Isolation B Side			00000
mfC41_240A	SBLC Pump 2A Failure to Start			00000
mfC41_240B	SBLC Pump 2B Failure to Start			00000
mfG31_207A	2G31-F001 Fails to Isolate on Group 5			00000
mfG31_207B	2G31-F004 Fails to Isolate on Group 5			00000

Trigger #	Description	Conditions	Expert Command
EGC41-1	Prevents 1 st pump (if “A”) attempted; deletes 2 nd pump malfunction (Simulate pump trip)		
EGC41-2	Prevents 1 st pump (if “B”) attempted; deletes 2 nd pump malfunction (Simulate pump trip)		

3. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:
 - A. Place the MSIV control switches in CLOSE.
 - B. Allow the simulator to run until Torus temperature reaches approximately 98.5 °F.
 - C. Place HPCI in PTL OFF.
 - D. Trip Recirc Pump.
 - E. Acknowledge annunciators.
4. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.
5. **ESTIMATED Simulator SETUP TIME: 15 Minutes**

NOTE: The SIMULATOR OPERATOR will act as **second verifier** for rod movement and read the pre-job brief to the Operator.

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Unit 2 Reactor scram has occurred, and control rods cannot be inserted. Reactor power is greater than 5%.
2. All MSIVs are closed.
3. 31EO-EOP-017-2 (CP-3) is in progress.
4. Pre-Job Brief is NOT required.

INITIATING CUES:

Inject boron into the Reactor with the SBLC System per 34SO-C41-003-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

NOTE: This JPM is written based on the SBLC Placard contained in 34SO-C41-003-2.

1.	UNLOCK *** the SBLC Pump Select Switch ***** (Step 1)	At 2H11-P603, the operator UNLOCKS the SBLC Pump Select switch.	
2.	*** PLACE the SBLC Pump Select Switch in the Start Sys A OR Start Sys B position. (Step 1)	At 2H11-P603, the operator PLACES SBLC Pump Select switch to either A or B position.	

ALTERNATE PATH STARTS HERE

NOTE: The 1st Standby Liquid Control System pump switch selected is failed and the SBLC System will remain in the Standby lineup.
 Event Triggers **EGC41-1 & EGC41-2** will remove the 2nd pump failure.

NOTE: If the operator does not recognize the selected SBLC Pump did not start the operator may go to Step 7 of the JPM.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	<p>CHECK the following:</p> <ul style="list-style-type: none"> 1106A and 1106B, Squib Vlv Ready, Indicating Lights, EXTINGUISHED. ***** ***** (Step 2) 	At 2H11-P603, the operator CHECKS 1106A and 1106B, Squib Vlv Ready, Indicating Lights, EXTINGUISHED.	
4.	<p>CHECK the following:</p> <ul style="list-style-type: none"> ***** SBLC LOSS OF CONTINUITY TO SQUIB VALVE (603-152) annunciator ALARMED. ***** (Step 2) 	At 2H11-P603, the operator CHECKS SBLC LOSS OF CONTINUITY TO SQUIB VALVE (603-152) annunciator ALARMED.	
5.	<p>CHECK the following:</p> <ul style="list-style-type: none"> ***** ***** Selected 2C41-C001A or 2C41-C001B, SBLC Pump, has STARTED. (Step 2) 	At 2H11-P603, the operator has OBSERVED the selected SBLC Pump A(B) is NOT RUNNING, green light ILLUMINATED, and red light EXTINGUISHED	
6.	<p>IF the selected pump fails to start, REPEAT steps 1 and 2 for the other pump. (Step 3)</p>	The operator notes this step as Applicable.	
<p>PROMPT: IF the operator notifies the Shift Supervisor of SBLC pump failure, as the Shift Supervisor, DIRECT the operator to finish the task.</p>			
**7.	Place SBLC Pump Select Switch to start system B (A) position.	At panel 2H11-P603 the operator has PLACED the SBLC PUMP SELECT SWITCH (keylock) is in START SYS B (A) position.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
8.	<p>CONFIRM the following:</p> <ul style="list-style-type: none"> 1106A and 1106B, Squib Vlv Ready, Indicating Lights, EXTINGUISHED. SBLC LOSS OF CONTINUITY TO SQUIB VALVE (603-152) annunciator ALARMED. <p>(Step 2)</p>	<p>At panel 2H11-P603, the operator has CHECKED the following:</p> <ul style="list-style-type: none"> SQUIB VLV READY amber indicating lights are EXTINGUISHED. SBLC LOSS OF CONTINUITY TO SQUIB VALVE (603-152) annunciator has ALARMED. 	
9.	<p>CONFIRM the following:</p> <ul style="list-style-type: none"> ***** ***** Selected 2C41-C001A or 2C41-C001B, SBLC Pump, has STARTED. <p>(Step 2)</p>	<p>At 2H11-P603, the operator CONFIRMS the selected SBLC Pump has STARTED, red light ILLUMINATED and by observing 2C41-R600 pressure greater than Rx pressure and 2C41-R601 Tank level slowly lowering.</p>	
**10.	<p>Ensure CLOSED 2G31-F004, RWCU valve, panel 2H11-P601.</p> <p>(Step 4)</p>	<p>At panel 2H11-P601, the operator OBSERVES 2G31-F004, RWCU valve, has NOT CLOSED, red light ILLUMINATED AND PLACED 2G31-F004, RWCU valve, switch to CLOSE position.</p>	
11.	<p>Ensure CLOSED 2G31-F004, RWCU valve, panel 2H11-P601.</p> <p>(Step 4)</p>	<p>At panel 2H11-P601, the operator VERIFIES RX WATER CLEANUP VLV, 2G31-F004, has CLOSED, green light ILLUMINATED, red light EXTINGUISHED.</p>	
12.	<p>IF the Standby Liquid Control system fails to initiate, PERFORM the SBLC PUMP CONTROL SWITCH OVERRIDE section of 31EO-EOP-100-2.</p> <p>(Step 5)</p>	<p>The operator notes this step as Not Applicable.</p>	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
13.	<u>IF</u> the SBLC system fails to initiate per 31EO-EOP-100-2, attempt a local start per the <u>Manual Initiation-Local</u> subsection of 34SO-C41-003-2. (Step 6)	The operator notes this step as Not Applicable.	
14.	NOTIFY SS when above actions are complete. (Step 7)	The operator NOTIFIES the SS that SBLC is being injected.	

NOTE: The operator may confirm SBLC is injecting by any of the following methods:

- SBLC tank level decreasing
- SBLC pressure is greater than Reactor pressure
- Reactor power is decreasing (APRMs on 2H11-P603 or SPDS)

END TIME: _____

NOTE: The terminating cue shall be given to the Operator when:

- After JPM step #14 is complete.
- The BIIT is reached (110°F approximately seven (7) minutes.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023-301 CR-SIM 1:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	4
Step 1 Unlock switch	SBLC pump control switch must be unlocked to start either SBLC pump.	
Step 2 Switch Start A /B	SBLC pump control switch must be placed to Start A or Start B to start either SBLC pump.	
Step 7 Start SBLC pump	One SBLC pump must be started to shut down the Reactor due the failure of control rods to insert while at power.	
Step 10 Isolate RWCU	Closure of at least one RWCU isolation valve is required to prevent RWCU system removal of Boron from the RPV during an ATWS.	
<u>Number of JPM Steps</u>	<30	14
<u>Time to Perform JPM</u>	<45 min	Before exceeding BIIT
<u>Normal / Faulted / Alternate Path</u>		
Alternate Path	After starting a SBLC pump to inject into the RPV, RWCU must be manually isolated by closing 2G31-F004. Neither RWCU isolation valves will auto close.	
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD "1" or "5"</u>	NO	NO

(** Indicates critical step)

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

- 1.** A Unit 2 Reactor scram has occurred, and control rods cannot be inserted. Reactor power is greater than 5%.
- 2.** All MSIVs are closed.
- 3.** 31EO-EOP-017-2 (CP-3) is in progress.
- 4.** Pre-Job Brief is NOT required.

INITIATING CUES:

Inject boron into the Reactor with the SBLC System per 34SO-C41-003-2.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL CR/SIM 2 (ALL)

Title PERFORM A MANUAL STARTUP OF THE RHR SYSTEM WITH POWER SUPPLY FAILURE		Version: 0.0
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 2	Time: 10.0 Minutes
Line Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: **PERFORM A MANUAL STARTUP OF THE RHR SYSTEM WITH POWER SUPPLY FAILURE**

JPM NUMBER: **2023-301 CR-SIM 2**

TASK STANDARD: The task shall be completed when the operator has attempted to start the 1st Loop of RHR and identifies the power failure and subsequently starts the second loop of the RHR System manually. The operator then aligns for injection to the RPV to restore RWL to +3 to +50 inches.

TASK NUMBER: 008.002

OBJECTIVE NUMBER: 008.002.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.80

SRO 3.42

K/A CATALOG NUMBER: 203000A405

K/A CATALOG JTA IMPORTANCE RATING:

RO/SRO 4.3

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 2
	34SO-E11-010-2, Ver. 45.4 31EO-EOP-010-2, Ver. 12.0
REQUIRED MATERIALS:	Unit 2
	34SO-E11-010-2, Ver. 45.4

APPROXIMATE COMPLETION TIME: 10.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR A SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to one of the following:
 - **IC #111 (75%)**, and then go to step 2
 - **SNAP 612** and then go to step 4 and leave in **FREEZE**.

2. **INSERT** the following or **RUN SCENARIO FILE 2023 CR-SIM 2** (if available)

Key #	MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
ST-0	mfB21_123A	Steam Line Break in the Drywell	1	1	00000
ST-0	mfE21_202A	Core Spray LOCA Signal Failure			00000
ST-0	mfE11_202B	RHR LOCA Signal Failure			00000
ST-0	mfN21_79A	Condensate Pump A Trip			00000
ST-0	mfN21_79B	Condensate Pump B Trip			00000
ST-0	mfN21_79C	Condensate Pump C Trip			00000
ST-0	mfE41_104	HPCI Turbine Trip			00000
ST-0	mfE51_110	RCIC Turbine Trip			00000
EGE11-16	mfR24_237	600/208 MCC (R24-S011) Fault	1	1000	9999
EGE11-17	mfR24_177	600/208 MCC (R24-S012) Fault	1	1000	9999

ACTIVATE THE FOLLOWING EVENT TRIGGERS:

Trigger #	DESCRIPTION	CONDITIONS	Expert Command
EGE11-16	600/208 MCC (R24-S011) Fault; Cancels EGE11-17 and diE11-F015B	diE11-F015A.iivPanel = 2	CET EGE11-17 DOR diE11-F015B IMF mfR24 237 f:1 d:0
EGE11-17	600/208 MCC (R24-S012) Fault; Cancels EGE11-16 and diE11-F015A	diE11-F015B.iivPanel = 2	CET EGE11-16 DOR diE11-F015A IMF mfR24 177 f:1 d:0

ORS OVERRIDES:

Activator	TAG #	S/M/L	DESCRIPTION	Final Value	Ramp Rate	Delay
ST-0	diE21-F005A	S	CS A Inboard Disch Valve	(0) Close		
ST-0	diE21-F005B	S	CS B Inboard Disch Valve	(0) Close		
ST-0	diE11-F015A	S	RHR A Inboard Disch Valve	(0) Close		
ST-0	diE11-F015B	S	RHR B Inboard Disch Valve	(0) Close		

3. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:
 - A. PLACE ADS INHIBIT SWITCHES TO INHIBIT.
 - B. Allow to run until RPV Pressure is approximately 150 psig and RWL is below -101 inches.
 - C. Acknowledge annunciators.
4. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.
5. **ESTIMATED Simulator SETUP TIME: 10 Minutes**

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 was at 75% RTP when a LOCA occurred.
2. RWL is less than -101 inches
3. RPV Pressure is less than 350 psig
4. Core Spray initiation logic has failed.
5. RHR Logic initiation logic has failed.
6. 31EO-EOP-010-2 (RC) is in progress.

INITIATING CUES:

Start RHR AND Inject to the reactor to maintain +3 to +50 inches RWL.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:

For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.

For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

NOTE: If the operator starts with the “A” Loop of RHR Injection, then the operator will start at Step 1. Steps 8, 9, 11, 25 & 26 are CRITICAL.

If the operator starts with the “B” Loop of RHR Injection, then the operator will start at Step 12. Steps 19, 20, 22, 25 & 26 are CRITICAL.

This JPM is written assuming the Operator uses the LPCI INITIATION Placard (Attachment 17 of 34SO-E11-010-2).

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34SO-E11-010-2 or Placard.	
2.	IF power is being provided by EDG, CHECK EDG loading prior to start of RHR pump(s) in “A” RHR Loop. (Placard Step 3)	At panel 2H11-P652, the Operator CONFIRMS that the EDGs are not powering their emergency bus.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**3.	Starts RHR Pump "2A." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002A, red light ILLUMINATED, and green light EXTINGUISHED	

NOTE: Critical step is met if either step 3 or step 4 is performed.

**4.	Starts RHR Pump "2C." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002C, red light ILLUMINATED, and green light EXTINGUISHED.	
5.	IF Reactor pressure is > 422 PSIG OR RHR flow is < 1945 GPM, Ensure OPEN 2E11-F007A, Min Flow Valve. (Placard step 4)	At panel 2H11-P601, operator ENSURES OPEN 2E11-F007A, Min Flow Valve, red light ILLUMINATED, and green light EXTINGUISHED.	

NOTE: When 2E11-F015A, Inbd Discharge Valve is positioned to open, Event Trigger **EGE11-16** will delete **EGE11-17** and diE11-F015B, RHR B Inboard Disch Valve, to close and inserts mFR24_237, 600/208 MCC (R24-S011) Fault.

**6.	WHEN reactor pressure is less than or equal to 425 PSIG, fully open 2E11-F015A, Inbd Discharge Valve. (Placard step 5)	At panel 2H11-P601, positions 2E11-F015A to OPEN AND recognizes various RHR Loop A valve lights are OFF (NO lights ILLUMINATED). Based on 600V BUS 2C BREAKER TRIPPED, (652-118) alarm, determines MCC 2R24-S011 has de-energized.	
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NOTE: The operator may inform the Shift Supervisor of the MCC 2R24-S011 failure at this time or may continue with placing the other loop of RHR in service and then notify the Shift Supervisor. (EITHER is acceptable)

ALTERNATE PATH STARTS HERE

PROMPT: **IF** the operator addresses placing RHR Loop 2B in service, **INFORM** the operator to finish the task.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
7.	IF power is being provided by EDG, CHECK EDG loading prior to start of RHR pump(s) in "B" RHR Loop. (Placard Step 3)	At panel 2H11-P652, the Operator CONFIRMS that the EDGs are not powering their emergency bus.	
**8.	Starts RHR Pump "2B." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002B, red light ILLUMINATED, and green light EXTINGUISHED.	

NOTE: Critical step is met if either step 8 or step 9 is performed.

**9.	Starts RHR Pump "2D." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002D, red light ILLUMINATED, and green light EXTINGUISHED.	
10.	IF Reactor pressure is > 422 PSIG OR RHR flow is < 1945 GPM, Ensure OPEN 2E11-F007B, Min Flow Valve. (Placard step 4)	At panel 2H11-P601, operator ENSURES OPEN 2E11-F007B Min Flow Valve, red light ILLUMINATED, and green light EXTINGUISHED.	
**11.	WHEN reactor pressure is less than or equal to 425 PSIG, fully open 2E11-F015B, Inbd Discharge Valve. (Placard step 5)	At panel 2H11-P601, operator opens INBD DISCH VLV, 2E11-F015B, red light ILLUMINATED, and green light EXTINGUISHED.	

NOTE: TRANSITION to JPM Step 23.

12.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as 34SO-E11-010-2 or Placard.	
13.	<u>IF</u> power is being provided by EDG, CHECK EDG loading prior to start of RHR pump(s) in "B" RHR Loop. (Placard Step 3)	At panel 2H11-P652, the Operator CONFIRMS that the EDGs are not powering their emergency bus.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**14.	Starts RHR Pump "2B." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002B, red light ILLUMINATED, and green light EXTINGUISHED.	

NOTE: Critical step is met if either step 14 or step 15 is performed.

**15.	Starts RHR Pump "2D." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002D, red light ILLUMINATED, and green light EXTINGUISHED.	
16.	IF Reactor pressure is > 422 PSIG OR RHR flow is < 1945 GPM, Ensure OPEN 2E11-F007B, Min Flow Valve. (Placard step 4)	At panel 2H11-P601, operator ENSURES OPEN 2E11-F007B, Min Flow Valve, red light ILLUMINATED, and green light EXTINGUISHED.	

NOTE: When 2E11-F015B, Inbd Discharge Valve is positioned to open, Event Trigger **EGE11-17** will delete **EGE11-16** and diE11-F015A, RHR A Inboard Disch Valve, to close and inserts mFR24_177, 600/208 MCC (R24-S012) Fault.

**17.	WHEN reactor pressure is less than or equal to 425 PSIG, fully open 2E11-F015B, Inbd Discharge Valve. (Placard step 5)	At panel 2H11-P601, positions 2E11-F015B to OPEN AND recognizes various RHR Loop B valve lights are OFF (NO lights ILLUMINATED). Based on 600V BUS 2D BREAKER TRIPPED, (652-318) alarm, determines MCC 2R24-S012 has de-energized.	
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NOTE: The operator may inform the Shift Supervisor of the MCC 2R24-S012 failure at this time or may continue with placing the other loop of RHR in service and then notify the Shift Supervisor. (EITHER is acceptable)

ALTERNATE PATH STARTS HERE

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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PROMPT: **IF** the operator addresses placing RHR Loop 2A in service, **INFORM** the operator to start RHR AND Inject into the reactor to maintain +3 to +50 inches RWL.

NOTE: Event Trigger **EGE11-17** will remove the failure of MCC 2R24-S011 & 2E11-F015A in the other loop.

18.	IF power is being provided by EDG, CHECK EDG loading prior to start of RHR pump(s) in "A" RHR Loop. (Placard Step 3)	At panel 2H11-P652, the Operator CONFIRMS that the EDGs are not powering their emergency bus.	
**19.	Starts RHR Pump "2A." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002A, red light ILLUMINATED, and green light EXTINGUISHED.	

NOTE: Critical step is met if either step 19 or step 20 is performed.

**20.	Starts RHR Pump "2C." (Placard step 2)	At panel 2H11-P601, operator starts RHR PUMP, 2E11-C002C, red light ILLUMINATED, and green light EXTINGUISHED.	
21.	IF Reactor pressure is > 422 PSIG OR RHR flow is < 1945 GPM, Ensure OPEN 2E11-F007A, Min Flow Valve. (Placard step 4)	At panel 2H11-P601, operator ENSURES OPEN 2E11-F007A Min Flow Valve, red light ILLUMINATED, and green light EXTINGUISHED.	
**22.	WHEN reactor pressure is less than or equal to 425 PSIG, fully open 2E11-F015A, Inbd Discharge Valve. (Placard step 5)	At panel 2H11-P601, operator opens INBD DISCH VLV, 2E11-F015A, red light ILLUMINATED, and green light EXTINGUISHED.	
23.	Ensure OPEN, 2E11-F048A (2E11-F048B), Hx Bypass Vlv. (Placard step 6)	At panel 2H11-P601, operator ENSURES OPEN the APPROPRIATE 2E11-F048A (2E11-F048B) Hx Bypass Vlv., red light ILLUMINATED, and green light EXTINGUISHED.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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NOTE: Valve, 2E11-F007A (2E11-F007B), auto closes when flow exceeds 1945 gpm.

24.	Ensure the 2E11-F007A (2E11-F007B), Min Flow Vlv. closes when flow is >1945 gpm. (Placard step 7)	At panel 2H11-P601, the operator ENSURES when DISCH FLOW, 2E11-R608A/B is greater than 1945 gpm, the APPROPRIATE MIN FLOW VLV, 2E11-F007A (2E11-F007B) is CLOSED, green light ONLY ILLUMINATED.	
25.	WHEN Reactor pressure is < 370 PSIG, Ensure CLOSED 2B31-F031A (2B31-F031B), Reactor Recirc A(B) Pump Disch Vlv. (Placard step 8)	At panel 2H11-P602, operator CLOSES the APPROPRIATE 2B31-F031A (2B31-F031B) Reactor Recirc A (B) Pump Disch Vlv., green light ILLUMINATED, red light EXTINGUISHED.	
**26.	Throttles 2E11-F017A (2E11-F017B), RHR Outbd Inj Vlv, as necessary. (Placard step 9)	At panel 2H11-P601, the operator throttles the APPROPRIATE 2E11-F017A (2E11-F017B) to restore RWL +3 to +50 inches.	

PROMPT: **IF** the operator addresses RWL, as the Shift Supervisor, **INFORM** the operator to maintain RWL between +3 to +50 inches.

PROMPT: **IF** the operator addresses shutting down the RHR System, as the Shift Supervisor, **INFORM** the operator that this is NOT desired at this time.

END TIME: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 26.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.
- Operator is controlling RWL and slowly bringing RWL to +3 to +50 inches.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023-301 CR-SIM 2:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	6
Step 3 or 4	Starts RHR Pumps (2A / 2C)	Provides motive force to inject into RPV.
Step 14 or 15	Starts RHR Pumps (2B / 2D)	Provides motive force to inject into RPV.
Step 6/17	Open 2E11-F015B/F015A	Aligns injection flow path to RPV.
Step 8 or 9	Starts RHR Pumps (2B / 2D)	Provides motive force to inject into RPV.
Step 19 or 20	Starts RHR Pumps (2A / 2C)	Provides motive force to inject into RPV.
Step 11/22	Open 2E11-F015B/F015A	Aligns injection flow path to RPV.
Step 26	Throttles 2E11-F017A/B	Controls & maintains RWL.
<u>Number of JPM Steps</u>	<30	26
<u>Time to Perform JPM</u>	<45 min	15 min
<u>Normal / Faulted / Alternate Path</u>		
Alternate Path	2nd RHR Loop attempted functions to restore RWL.	
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD "1" or "5"</u>	NO	NO

(** Indicates critical step)

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 was at 75% RTP when a LOCA occurred.
2. RWL is less than -101 inches
3. RPV Pressure is less than 350 psig
4. Core Spray initiation logic has failed.
5. RHR Logic initiation logic has failed.
6. 31EO-EOP-010-2 (RC) is in progress.

INITIATING CUES:

Start RHR AND Inject to the reactor to maintain +3 to +50 inches RWL.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL CR/SIM 3 (ALL)

Title: EMERGENCY DEPRESS THE REACTOR USING MAIN STEAM LINE DRAINS		Version: 0.1
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 3	Time: 10.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: **EMERGENCY DEPRESS THE REACTOR USING
MAIN STEAM LINE DRAINS**

JPM NUMBER: **2023-301 CR-SIM 3**

TASK STANDARD: The task shall be completed when the Main Steam Line Drains
have been manually lined up to emergency depress the Reactor
per 31EO-EOP-108-2 with an increase in the rate of RPV
pressure reduction.

TASK NUMBER: 014.016

OBJECTIVE NUMBER: 014.016.A

K/A CATALOG NUMBER: 295025EA1.01

K/A CATALOG JTA IMPORTANCE RATING:

3.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 2
	31EO-EOP-108-2 (Ver 5.15)

REQUIRED MATERIALS:	Unit 2
	31EO-EOP-108-2 (Ver 5.15)

APPROXIMATE COMPLETION TIME: 10.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING
PAGE

SIMULATOR A SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to one of the following:
 - **IC #113 (100%)**, and then go to step 2
 - **SNAP 613** and then go to step 4 and leave in **FREEZE**.
2. **INSERT** the following or **RUN SCENARIO FILE 2023 CR-SIM 1** (if available)
3. **RESET** the Simulator to **IC #113 (100%)** or **SNAP 613** and leave in **FREEZE**.
4. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:
 - A. Perform RC-1, RC-2, and TC-1 and restore RWL to the normal band.
 - B. Place the HPCI Aux Oil Pump in Pull-to-Lock.
 - C. Close the MSIVs.
 - D. Lower Torus Water level to approximately 115 inches using svoT48140, then **MODIFY** to **SIMULATOR VALUE OVERRIDES (SVO)** value.
 - E. Trip BOTH Circ Water Pumps.
 - F. **BREAK** Condenser Vacuum by opening 2N22-F002A & 2B until Condenser Vacuum is <10 in. Hg. then **RECLOSE** 2N22-F002A & 2B.
 - G. RESET Group 1 Isolations on P601 & P602 Panels.
 - H. Ensure Turbine Building Ventilation is in service.
 - I. Acknowledge annunciators.
5. **RUN SCENARIO FILE** and **EVENT TRIGGER 2023-CR-SIM 3** or perform the following steps 4-7.
6. **INSERT** the following **MALFUNCTIONS**:

MALF #	TITLE	FINAL VALUE	RAMP RATE	DELAY
mfB21_129A	Main Steam Relief Valve A Fails Stuck	1		00000
mfB21_129B	Main Steam Relief Valve B Fails Stuck	1		00000
mfB21_129C	Main Steam Relief Valve C Fails Stuck	1		00000
mfB21_129D	Main Steam Relief Valve D Fails Stuck	1		00000
mfB21_129E	Main Steam Relief Valve E Fails Stuck	1		00000
mfB21_129F	Main Steam Relief Valve F Fails Stuck	1		00000
mfB21_129G	Main Steam Relief Valve G Fails Stuck	1		00000
mfB21_129H	Main Steam Relief Valve H Fails Stuck	1		00000

mfB21_129K	Main Steam Relief Valve K Fails Stuck	1		00000
mfB21_129M	Main Steam Relief Valve M Fails Stuck	1		00000

7. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO)**:

Activator	SVO #	DESCRIPTION	FINAL VALUE	RAMP RATE	DELAY
ST-0	svoT48140	Water Level in Torus	75	1	0000

8. **INSERT** the following **REMOTE FUNCTIONS**:

Activator	REM #	DESCRIPTION	STATUS
ST-0	rfN61_134	Condenser Vacuum Bypass	BYPASS
ST-0	rfC71279	Group 1 Isolation Oride Jumpers	ORIDE

9. **INSERT** the following **ORS OVERRIDES**:

Activator	TAG #	S/M/L	DESCRIPTION	FINAL VALUE	RAMP RATE	DELAY
ST-0	diB21-F022A	S	Main Steam Line Isol Vlv A	CLOSE (0)		0000
ST-0	diB21-F022B	S	Main Steam Line Isol Vlv B	CLOSE (0)		0000
ST-0	diB21-F022C	S	Main Steam Line Isol Vlv C	CLOSE (0)		0000
ST-0	diB21-F022D	S	Main Steam Line Isol Vlv D	CLOSE (0)		0000
ST-0	diB21-F028A	S	Main Steam Line Isol Vlv A	CLOSE (0)		0000
ST-0	diB21-F028B	S	Main Steam Line Isol Vlv B	CLOSE (0)		0000
ST-0	diB21-F028C	S	Main Steam Line Isol Vlv C	CLOSE (0)		0000
ST-0	diB21-F028D	S	Main Steam Line Isol Vlv D	CLOSE (0)		0000

10. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.

11. **ESTIMATED Simulator A SETUP TIME: 5 Minutes**

SIMULATOR B SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #113 (100%)** or **SNAP 310** and leave in **FREEZE**.
2. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:
 - A. Perform RC-1, RC-2, and TC-1 and restore RWL to the normal band.
 - B. Place the HPCI Aux Oil Pump in Pull-to-Lock.
 - C. Close the MSIVs.
 - D. **LOWER** Torus Water level to approximately 115 inches using svt48140, then **MODIFY** to **SIMULATOR VALUE OVERRIDES (SVO)** value.
 - E. Trip BOTH Circ Water Pumps.
 - F. **BREAK** Condenser Vacuum by opening 2N22-F002A & 2B until Condenser Vacuum is <10 in. Hg. then **RECLOSE** 2N22-F002A & 2B.
 - G. Place Main Condenser Low Vacuum Trip Bypass switches on panel 2H11-P609 & P611 in BYPASS.
 - H. RESET Group 1 Isolations on P601 & P602 Panels.
 - I. Ensure Turbine Building Ventilation is in service.
 - J. Acknowledge annunciators.
3. **RUN SCENARIO FILE** and **EVENT TRIGGER CR_SIM 3 Init Conditions** or perform the following steps 4-7.
4. **INSERT** the following **MALFUNCTIONS**:

MALF #	TITLE	FINAL VALUE	H/M/S
mfB21_129A	Main Steam Relief Valve A Fails Stuck	1	0/0/0
mfB21_129B	Main Steam Relief Valve B Fails Stuck	1	0/0/0
mfB21_129C	Main Steam Relief Valve C Fails Stuck	1	0/0/0
mfB21_129D	Main Steam Relief Valve D Fails Stuck	1	0/0/0
mfB21_129E	Main Steam Relief Valve E Fails Stuck	1	0/0/0
mfB21_129F	Main Steam Relief Valve F Fails Stuck	1	0/0/0
mfB21_129G	Main Steam Relief Valve G Fails Stuck	1	0/0/0
mfB21_129H	Main Steam Relief Valve H Fails Stuck	1	0/0/0
mfB21_129K	Main Steam Relief Valve K Fails Stuck	1	0/0/0
mfB21_129M	Main Steam Relief Valve M Fails Stuck	1	0/0/0

5. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO)**:

Activator	SVO #	DESCRIPTION	FINAL VALUE	H/M/S
ST-0	svoT48140	Water Level in Torus	75	0/40/0
ST-0	svoB21_223	Main Steam Relief Valve L Position	.31	0/0/0

6. **INSERT** the following **REMOTE FUNCTIONS**:

REM #	DESCRIPTION	FINAL VALUE	H/M/S
rfC71279	Group 1 Isolation Oride Jumpers	ORIDE	0/0/0

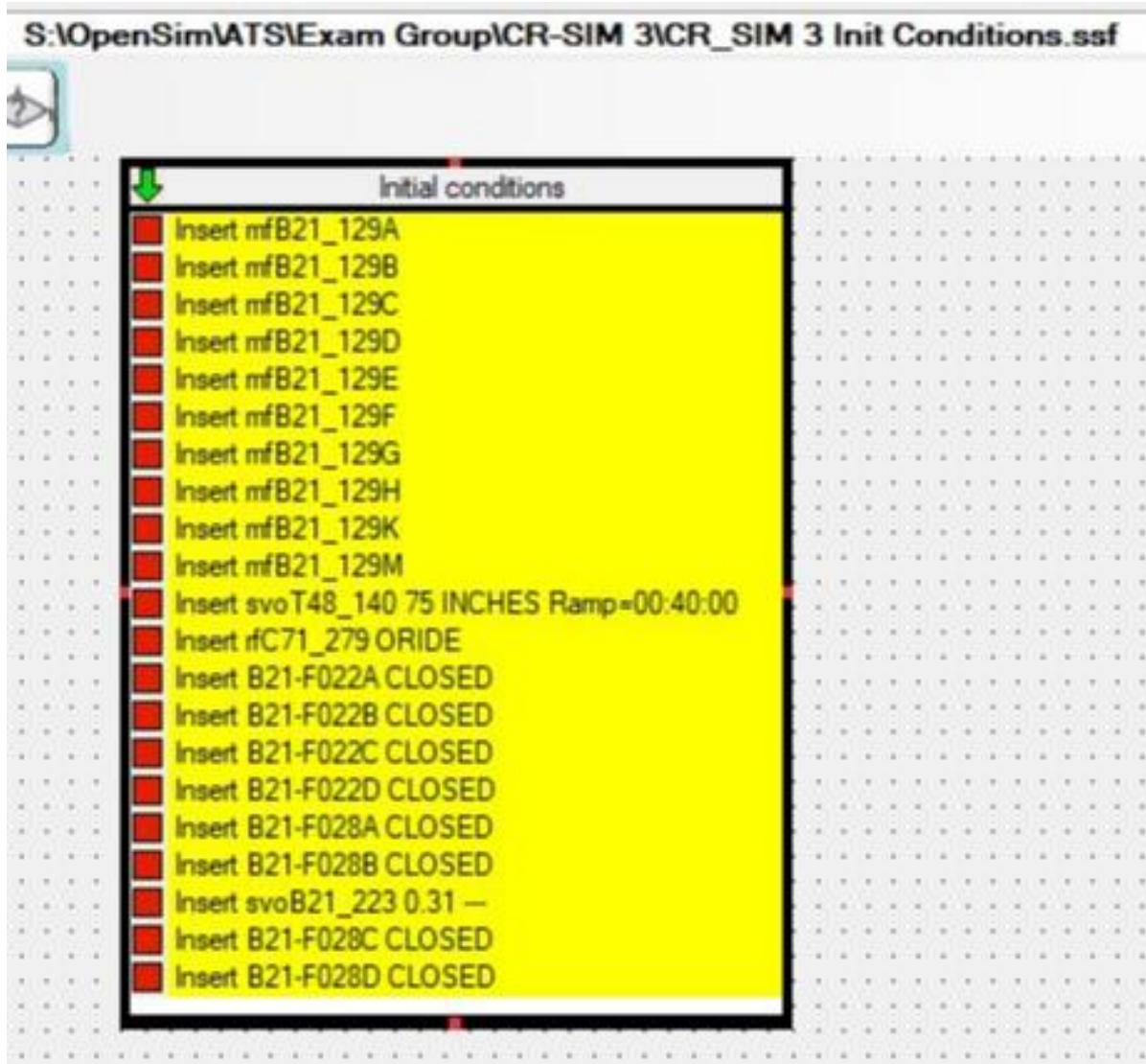
7. **INSERT** the following **ORS OVERRIDES**:

Activator	TAG #	S/M/L	DESCRIPTION	FINAL VALUE	H/M/S
ST-0	diB21-F022A	S	Main Steam Line Isol Vlv A	CLOSE	0/0/0
ST-0	diB21-F022B	S	Main Steam Line Isol Vlv B	CLOSE	0/0/0
ST-0	diB21-F022C	S	Main Steam Line Isol Vlv C	CLOSE	0/0/0
ST-0	diB21-F022D	S	Main Steam Line Isol Vlv D	CLOSE	0/0/0
ST-0	diB21-F028A	S	Main Steam Line Isol Vlv A	CLOSE	0/0/0
ST-0	diB21-F028B	S	Main Steam Line Isol Vlv B	CLOSE	0/0/0
ST-0	diB21-F028C	S	Main Steam Line Isol Vlv C	CLOSE	0/0/0
ST-0	diB21-F028D	S	Main Steam Line Isol Vlv D	CLOSE	0/0/0

8. **PLACE** the Simulator in **FREEZE** until the INITIATING CUE is given.

9. **ESTIMATED Simulator B SETUP TIME: 5 Minutes**

Simulator B Scenario File:



EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. An unisolable leak developed in the Torus.
2. Attempts to raise Torus water level have been unsuccessful.
3. 31EO-EOP-012-2, PC flowchart, is in progress.
4. The Reactor has been shutdown.
5. The Shift Supervisor has determined that the plant cannot be maintained in the SAFE Region of the Heat Capacity Temperature Limit and decided to Emergency Depress the Reactor.
6. 31EO-EOP-015-2, CP-1 flowchart, is in progress.
7. An attempt was made to Emergency Depress with the SRVs, but they have failed to open.
8. The Main Condenser is NOT available.
9. The Main Steam Line Drain isolation signals are BYPASSED.
10. Turbine Building Ventilation is in service.

INITIATING CUES:

Emergency depress the Reactor with the Main Steam Line Drains IAW 31EO-EOP-108-2, Alternate RPV Depressurization.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME: _____

NOTE: Provide the operator with a copy of 31EO-EOP-108-2.

PROMPT: **IF** addressed, **INFORM** the operator: “The Main Condenser is NOT available”.

1.	Operator has DETERMINED the correct procedure section to use.	Operator has DETERMINED the correct procedure section to use is Section 3.7 of 31EO-EOP-108-2 starting at step 3.7.1.	
2.	Align the Main Condenser for operation. (Step 3.7.1)	Operator determines the Main Condenser is NOT available.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	IF vacuum of at least 10 in. Hg vacuum can NOT be drawn on the Main Condenser: THEN ensure OPEN the Main Condenser Vacuum Breakers AND START all available Turbine Building Ventilation. (Step 3.7.2)	At panel 2H11-P650, the operator OPENS 2N22-F002A & 2B, Main Condenser Vacuum Breakers, red lights ILLUMINATED, green lights EXTINGUISHED AND The operator determines Turbine Building ventilation is in service.	
4.	Bypass the Main Steam Line Drain Valve isolation signals. (Step 3.7.3)	The operator determines from the Initial Conditions that the Main Steam Line Drain Valve isolation signals are BYPASSED.	
5.	Ensure the following valves are CLOSED: 2B21-F038 MSL Drain ***** 2B21-F021 Drain (Step 3.7.4)	At panels 2H11-P601 & P602, the operator ensures CLOSED, green lights ILLUMINATED, red lights EXTINGUISHED: 2B21-F038 MSL Drain ***** 2B21-F021 Drain	
6.	Ensure the following valves are CLOSED: ***** 2B21-F020 Drain ***** (Step 3.7.4)	At panels 2H11-P602, the operator CLOSES, green light ILLUMINATED, red light EXTINGUISHED: ***** 2B21-F020 Drain *****	
7.	Ensure the following valves are OPEN: 2B21-F016 MSL Drain *** (Step 3.7.5)	At panel 2H11-P602, the operator OPENS: 2B21-F016, MSL Drain, red light ILLUMINATED, green light EXTINGUISHED.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
8.	Ensure the following valves are OPEN: *** 2B21-F019 MSL Drain (Step 3.7.5)	At panel 2H11-P601, the operator OPENS: 2B21-F019, MSL Drain, red light ILLUMINATED, green light EXTINGUISHED.	
**9.	OPEN 2B21-F021 to reduce RPV Pressure. (Step 3.7.6)	At panel 2H11-P602, the operator OPENS: 2B21-F021, Drain Valve, red light ILLUMINATED, green light EXTINGUISHED	

PROMPT: **IF** addressed, **INFORM** the operator: “When appropriate, another operator will perform the System Restoration.”

END
TIME: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 9.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023-301 CR-SIM 3:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	3
Step 7 Open 2B21-F016	Aligns the inboard side flow path around the MSIVs to reduce RPV pressure.	
Step 8 Open 2B21-F019	Aligns the outboard side flow path around the MSIVs to reduce RPV pressure.	
Step 9 Open 2B21-F021	Aligns a flow path to the Main Condenser to reduce RPV pressure	
<u>Number of JPM Steps</u>	<30	9
<u>Time to Perform JPM</u>	<45 min	10 min
<u>Normal / Faulted / Alternate Path</u>		
Normal Path		
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD “1” or “5”</u>	NO	NO

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. An unisolable leak developed in the Torus.
2. Attempts to raise Torus water level have been unsuccessful.
3. 31EO-EOP-012-2, PC flowchart, is in progress.
4. The Reactor has been shutdown.
5. The Shift Supervisor has determined that the plant cannot be maintained in the SAFE Region of the Heat Capacity Temperature Limit and decided to Emergency Depress the Reactor.
6. 31EO-EOP-015-2, CP-1 flowchart, is in progress.
7. An attempt was made to Emergency Depress with the SRVs, but they have failed to open.
8. The Main Condenser is NOT available.
9. The Main Steam Line Drain isolation signals are BYPASSED.
10. Turbine Building Ventilation is in service.

INITIATING CUES:

Emergency depress the Reactor with the Main Steam Line Drains IAW 31EO-EOP-108-2, Alternate RPV Depressurization.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL CR/SIM 4 (ALL)

Title PERFORM TC-1, (ALTERNATE PATH FOR BYPASS VALVE FAILURE)		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 4	Time 10.0 Minutes
Line Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: **PERFORM TC-1, (ALTERNATE PATH FOR BYPASS VALVE FAILURE)**

JPM NUMBER: **2023-301 CR-SIM 4**

TASK STANDARD: The task shall be successfully completed when the NPO has completed TC-1 and isolated each Main Steam Line by closing either the Inboard AND/OR Outboard MSIV in each Main Steam Line per 34AB-C71-001-2 stopping the uncontrolled cooldown prior to the RPV cooldown exceeding 100°F (approximately 415 psig).

TASK NUMBER: H-OPRO017.002

OBJECTIVE NUMBER: H-OP017.002.D

PLANT HATCH JTA IMPORTANCE RATING:

NPO 2.6

SRO N/A

K/A CATALOG NUMBER: 245000A4.07

K/A CATALOG JTA IMPORTANCE RATING:

Error! Reference source not found.

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
	NA	34AB-C71-001-2, Ver. 14.4

REQUIRED MATERIALS:	Unit 1	Unit 2
	NA	34AB-C71-001-2, Ver. 14.4

APPROXIMATE COMPLETION TIME: 10.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR A SETUP

1. **Simulator Initial Conditions:**
2. **RESET** the Simulator to **100% RTP** or **SNAP 614** and leave in **FREEZE**.
3. **ACTIVATE** the following **EVENT TRIGGER**:

Trigger #	Description	Conditions	Expert Command
EGN32-8	When Turbine Trip P.B. is depressed, inserts svoN37227 (#3 Bypass Valve fails full open	diN32-P101S28.aivToPanel=1	svoN37227 f:1 r:10 d:0

4. **INSERT THE** following **MALFUNCTIONS/OVERRIDES**:

MALF #	TITLE	FINAL VALUE	RAMP RATE	DELAY
	NONE			

5. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO)**:

Activator	SVO #	DESCRIPTION	FINAL VALUE	RAMP RATE	DELAY
EGN37-8	svoN37227	Turbine Bypass Valve Position	1 (OPEN)	10	0000

6. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:
 - A. **INSERT** a Reactor Scram and **PLACE** the Reactor Mode Switch to SHUTDOWN
 - B. **PERFORM** RC-2 actions and stabilize RWL
 - C. **WAIT** until Main Generator output is below 80 MWe
 - D. **ACKNOWLEDGE and RESET** alarms
7. **RUN** **SCENARIO FILE** and **EVENT TRIGGER** (current rev) **(2023-CR-SIM 4)**
8. **PLACE** the Simulator in **FREEZE** until the **INITIATING CUE** is given.

ESTIMATED Simulator SETUP TIME: 10 minutes

SIMULATOR B SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to one of the following:
 - **100% RTP**, and then go to step 2
 - **SNAP (311)** and then go to step 7 and leave in **FREEZE**.
2. **ACTIVATE** the following **EVENT TRIGGER**:

Trigger #	Description	Conditions	Expert Command
EGN37-2	Turbine Trip Push button depressed	gfxdin32_p101s01NE1	svoN37227 f:1 r:10 d:0

3. **INSERT THE** following **MALFUNCTIONS/OVERRIDES**:

MALF #	TITLE	FINAL VALUE	H/M/S
	NONE		

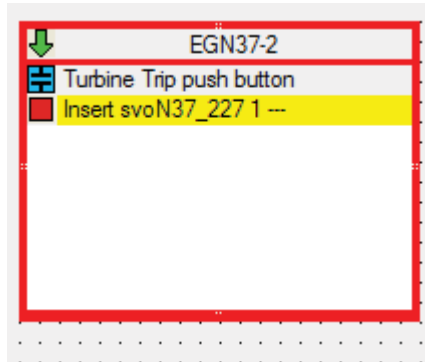
4. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO)**:

Activator	SVO #	DESCRIPTION	FINAL VALUE	H/M/S
EGN37-2	svoN37227	Turbine Bypass Valve Position	1 (OPEN)	0/0/10

5. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:
 - A. **INSERT** a Reactor Scram and **PLACE** the Reactor Mode Switch to SHUTDOWN
 - B. **PERFORM** RC-2 actions and stabilize RWL
 - C. **WAIT** until Main Generator output is below 80 MWe
 - D. **ACKNOWLEDGE and RESET** alarms
6. **RUN** **SCENARIO FILE** and **EVENT TRIGGER** (current rev) (**CR_SIM 4 TTPB**)
7. **PLACE** the Simulator in **FREEZE** until the **INITIATING CUE** is given.

ESTIMATED Simulator SETUP TIME: 10 minutes

Simulator B Scenario File:



EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. An automatic scram has occurred.
2. You are performing 34AB-C71-001-2, Scram Procedure.
3. You are responsible for RC-3 with an RPV pressure band of 800 psig to 900 psig.
4. No fire alarms exist.

INITIATING CUES:

IAW 34AB-C71-001-2, Scram Procedure, perform TC-1.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

1.	Operator has DETERMINED the correct procedure to use.	The operator DETERMINES the correct procedure is the TC-1 placard posted at panel 2H11-P650.	
2.	Manually trip the turbine. (Step 1 of the TC-1 placard)	At panel 2H11-P650, the operator DEPRESSES both Master Trip pushbuttons.	

ALTERNATE PATH STARTS HERE

NOTE **SIMULATOR OPERATOR**, ENSURE Event Trigger (Sim A - **EGN37-8**) (Sim B - **EGN37-2**) is activated when JPM step 2 is performed and INSERTS Bypass #3 Valve malfunction (svoN37227 f:1 d:0).

PROMPT: **IF** the operator informs SS that TC-1 is complete **PRIOR** to recognizing BPV#3 is open, **INFORM** the operator to continue performing 34AB-C71-001-2 and maintain RPV pressure between 800 psig to 900 psig.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	Diagnoses RPV pressure lowering OR Bypass Valve #3 full OPEN.	The operator determines RPV pressure is lowering using multiple RPV pressure indicators OR determines Bypass Valve #3 is full OPEN at HMI Screen.	

NOTE: After both EHC pumps are tripped, Bypass Valve #3 will remain full OPEN.

NOTE: Detailed TC-1 actions start at step 9.

4.	Enters 34AB-C71-001-2 and performs step 5.17 IF any Main Turbine Control, Bypass OR Stop Valve fails open AND an uncontrolled pressure reduction is occurring, with Shift Supervisor direction, perform either or both of the following actions: Trip BOTH EHC Pumps AND/OR ***** (Step 5.17 of 34AB-C71-001-2)	At panel 2H11-P650, the operator TRIPS both EHC pumps by momentarily placing the running 2N32-C001A/B EHC pump to TRIP then NORM and placing the Standby EHC pump to NORM position. 2N32-C001A TRIP/NORM green & red lights EXTINGUISHED 2N32-C001B NORM green & red lights EXTINGUISHED	
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NOTE: The **CRITICAL STEPS** will be met by completing JPM steps 5, 6, 7 & 8 prior to RPV pressure LOWERING BELOW 415 psig.

RPV pressure prior to scram – 1045 psig (Sat temp 551.7°F) minus 100°F = 451.7°F. 451.7°F (Sat pressure 415 psig).

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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NOTE: At a MINIMUM, one valve in each MSL (Inboard AND/OR Outboard) is required to be isolated to stop the uncontrolled cooldown prior to the RPV cooldown exceeding 100°F (approximately 415 psig).

<p>**5.</p>	<p>Enters 34AB-C71-001-2 and performs step 5.17 ***** ***** AND/OR Close the MSIVs. (Step 5.17 of 34AB-C71-001-2)</p>	<p>At panel 2H11-P601/P602, the Operator places the switches to CLOSE for the following Inboard AND/OR Outboard MSIVs, green lights ILLUMINATED, red lights EXTINGUISHED: 2B21-F022A AND/OR 2B21-F028A</p>	
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<p>**6.</p>	<p>Enters 34AB-C71-001-2 and performs step 5.17 ***** ***** AND/OR Close the MSIVs. (Step 5.17 of 34AB-C71-001-2)</p>	<p>At panel 2H11-P601/P602, the Operator places the switches to CLOSE for the following Inboard AND/OR Outboard MSIVs, green lights ILLUMINATED, red lights EXTINGUISHED: 2B21-F022B AND/OR 2B21-F028B</p>	
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(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
7.	<p>Enters 34AB-C71-001-2 and performs step 5.17 *** *****</p> <p>AND/OR</p> <p>Close the MSIVs.</p> <p>(Step 5.17 of 34AB-C71-001-2)</p>	<p>At panel 2H11-P601/P602, the Operator places the switches to CLOSE for the following Inboard AND/OR Outboard MSIVs, green lights ILLUMINATED, red lights EXTINGUISHED:</p> <p>2B21-F022C</p> <p>AND/OR</p> <p>2B21-F028C</p>	
8.	<p>Enters 34AB-C71-001-2 and performs step 5.17 *** *****</p> <p>AND/OR</p> <p>Close the MSIVs.</p> <p>(Step 5.17 of 34AB-C71-001-2)</p>	<p>At panel 2H11-P601/P602, the Operator places the switches to CLOSE for the following Inboard AND/OR Outboard MSIVs, green lights ILLUMINATED, red lights EXTINGUISHED:</p> <p>2B21-F022D</p> <p>AND/OR</p> <p>2B21-F028D</p>	
9.	<p>Ensure that the TSV's, TCV's, and CIV's closed.</p> <p>(Step 2 of the TC-1 placard)</p>	<p>At panel 2H11-P650, on the Main Turbine HMI screen the operator DETERMINES the following valves are CLOSED:</p> <ul style="list-style-type: none"> • MSVs • CVs • ISVs • IVs 	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
10.	Ensure Generator PCBs are tripped AND, *****. (Step 3 of the TC-1 placard)	The operator DETERMINES Main Generator megawatts have decreased to ZERO on the Main Turbine HMI screen (2H11-P650) or Plasma Displays (2H11-P603).	
11.	Ensure *****, EX2100 Control Stopped. (Step 3 of the TC-1 placard)	At panel 2H11-P651, the operator DETERMINES PCBs 179740 & 179750 are OPEN, green lights ILLUMINATED, red lights EXTINGUISHED.	
12.	Check House loads swap to the SUTs. (Step 4 of the TC-1 placard)	At panel 2H11-P651, the operator DETERMINES 4160 VAC buses 2A, 2B, 2C, & 2D are energized from the SUTs, white POT lights ILLUMINATED.	
13.	Ensure Turning Gear Motor in auto. (Step 5 of the TC-1 placard)	At panel 2H11-P650, the operator ensures the TGM is in AUTO.	
<p>PROMPT: IF asked by the NPO about Fire alarms, INFORM the operator that NO fire alarms exist.</p>			
**14.	Start the Turning Gear Oil pump. (Step 6 of the TC-1 placard)	At panel 2H11-P650, the operator starts the TGOP by placing the control switch in RUN, red light ILLUMINATED, green light EXTINGUISHED.	
**15.	Start the Motor Suction pump. (Step 6 of the TC-1 placard)	At panel 2H11-P650, the operator starts the Motor Suction Pump by placing the control switch in RUN, red light ILLUMINATED, green light EXTINGUISHED.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
16.	Start the Lift Pumps. (Step 6 of the TC-1 placard)	At panel 2H11-P650, the operator ensures the Lift Pumps have automatically started, red light ILLUMINATED, green light EXTINGUISHED.	
17.	Check Steam Seal AND Condenser Vacuum systems are operating properly. (Step 7 of the TC-1 placard)	The operator determines Steam Seal AND Condenser Vacuum systems are operating properly due to Steam Seal Pressure ~ 3.5 psig on 2N33-R601A, Steam Seal Hdr Pressure Indicator.	
18.	Close the RSSV's, 2N11-F004A and F004B. (Step 8 of the TC-1 placard)	At 2H11-P650, the operator places the switch for 2N11-F004A & F004B to CLOSE, green lights ILLUMINATED, red lights EXTINGUISHED.	
19.	Notify the SS that these actions are complete. (Step 9 of the TC-1 placard)	The operator reports to the SS that TC-1 is COMPLETE.	

PROMPT: **IF** the operator informs SS that TC-1 is complete **PRIOR** to recognizing BPV#3 is open, **INFORM** operator to continue to perform 34AB-C71-001-2 and maintain RPV pressure between 800 psig to 900 psig.

PROMPT: **IF** the Operator asks the Shift Supervisor about RPV pressure control, **INFORM** the operator that another Operator will address RPV pressure control.

END TIME: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 19.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023 CR-SIM 4:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	6
Step 5 Close 2B21-F022A &/Or F028A	Isolates MSL A to mitigate uncontrolled RPV cool-down rate.	
Step 6 Close 2B21-F022B &/Or F028B	Isolates MSL B to mitigate uncontrolled RPV cool-down rate.	
Step 7 Close 2B21-F022C &/Or F028C	Isolates MSL C to mitigate uncontrolled RPV cool-down rate.	
Step 8 Close 2B21-F022D &/Or F028D	Isolates MSL D to mitigate uncontrolled RPV cool-down rate.	
Step 9 Start TGOP	Supplies oil to Turbine bearings to prevent damage.	
Step 10 Start MSP	Supplies oil to Turbine bearings to prevent damage.	
<u>Number of JPM Steps</u>	<30	19
<u>Time to Perform JPM</u>	<45 min	10 min.
<u>Normal / Faulted / Alternate Path</u>		
Alternate Path	While the operator is performing TC-1, Main Turbine Bypass valve #3 will fail open resulting in an uncontrolled RPV cooldown. Unless manual actions are taken to isolate the MSLs, Tech Specs RPV cooldown will be exceeded.	
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD "1" or "5"</u>	NO	NO

(** Indicates critical step)

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. An automatic scram has occurred.
2. You are performing 34AB-C71-001-2, Scram Procedure.
3. You are responsible for RC-3 with an RPV pressure band of 800 psig to 900 psig.
4. No fire alarms exist.

INITIATING CUES:

IAW 34AB-C71-001-2, Scram Procedure, perform TC-1.

Southern Nuclear Company
Operations Training
Job Performance Measure (JPM)

FINAL
CR/SIM 5 (RO & SRO-I)

Title: INITIATE EMERGENCY DRYWELL VENTING USING THE CAD VALVES (ALTERNATE PATH)		Version: 0.1
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 5	Time 12.0 Minutes
Line Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: INITIATE EMERGENCY DRYWELL VENTING
USING THE CAD VALVES (ALTERNATE PATH)

JPM NUMBER: 2023-301 CR-SIM 5

TASK STANDARD: This task shall be successfully completed when the following actions are taken IAW 31EO-EOP-101-2, Emergency Containment Venting, Section 4.3, Drywell Venting, and 2B SBTG FAN LOW ARP 654-031:

- o Defeat hi DW pressure, low RWL, & Rx/RF isolation signals
- o Open both Drywell 2” vent valves
- o Start and align 2A SGT to the reactor building
- o Operate the Drywell Vent Controller to lower Drywell pressure

TASK NUMBER: 013.053

OBJECTIVE NUMBER: 013.053.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.14

SRO 4.50

K/A CATALOG NUMBER: 223001A2.07

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.4

SRO 4.3

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
	NA	34SO-T46-001-2 Ver 15.3 31EO-EOP-012-2 Ver 8.0 31EO-EOP-101-2 Ver 5.2

REQUIRED MATERIALS:	Unit 1	Unit 2
	NA	31EO-EOP-101-2 Ver 5.2 Designated EOP jumpers(2) Screwdriver or nutdriver

APPROXIMATE COMPLETION TIME: 12.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR A SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **100% RTP** or **SNAP 615** and leave in **FREEZE**.
2. **ACTIVATE** the following **Event Triggers**:

ET #	Description
EGT46-31	B SBTG green OFF light illuminated deletes B SBTG low flow & dP (DO NOT LOAD IN SCENARIO FILE)
EGT48-29	Inserts SBTG 2B low flow & dP overrides when F336B is >47% opened; Inserts EGT46-31
EGT48-30	Modifies & decreases Containment pressures when F336B is opened (>47% open) with SBTG 2A in service. Inserts EGT48-35
EGT48-34	Modifies Containment pressure rate when F336B is <50% open & inserts EGT48-35 (DO NOT LOAD IN SCENARIO FILE)
EGT48-35	Modifies & decreases Containment pressures when F336B is >50% open; Inserts EGT46-34 (DO NOT LOAD IN SCENARIO FILE)

3. **INSERT** the following **OVERRIDES**:

Activator	TAG #	S/M/L	DESCRIPTION	Final Value	Ramp Rate	Delay
ST-0	aoB21-R623AP2	M	Post-Accident Mon Sys A – Rx Press	1.5	100	0000
ST-0	aoB21-R623BP2	M	Post-Accident Mon Sys B – Rx Press	1.5	100	0000
ST-0	aoT48-R601AP1	M	DW Press (Wide Range)	41	100	0000
ST-0	aoT48-R601BP1	M	DW Press (Wide Range)	41	100	0000
ST-0	aoT48-R607AP2	M	DW Press (Normal)	5	100	0000
ST-0	aoT48-R607BP2	M	DW Press (Normal)	5	100	0000
ST-0	aoT48-R608P1	M	DW Press Abnormal	48	100	0000
ST-0	aoT48-R608P2	M	Torus Press Abnormal	46	100	0000
ST-0	aoT48-R609P1	M	DW Press Abnormal	41	100	0000
ST-0	aoT48-R609P2	M	Torus Press Abnormal	39	100	0000
ST-0	aoT48-R631A	M	DW Press	41	100	0000
ST-0	aoT48-R631B	M	DW Press	41	100	0000
ST-0	aoT48-R632A	M	Torus Press	39	100	0000
ST-0	aoT48-R632B	M	Torus Press	39	100	0000

ST-0	aoT48-R635	M	Drywell To Torus Differential Press	2.5	100	0000
ST-0	aoT48-R635_1	M	Drywell To Torus Differential Press	2.5	100	0000
ST-0	loT46-F003BG1	L	Filter Inlet from RF to SBGT green light	1		0000
ST-0	loT46-F003BR2	L	Filter Inlet from RF to SBGT red light	0		0000
ST-0	diT48-F332A	S	Torus Vent Isol Vlv, 2T48-F332A	0		0000
ST-0	diT48-F332B	S	Torus Vent Isol Vlv, 2T48-F332B	0		0000

4. **INSERT** the following **REMOTE FUNCTIONS**:

REM #	DESCRIPTION	STATUS
rfT48_278	T48- F307, F308, F309, F324, F318, F319, F320, & F326	ORIDE

5. **INSERT** the following **SIMULATOR VALUE OVERRIDES (SVO)**:

Activator	SVO #	DESCRIPTION	FINAL VALUE	RAMP RATE	DELAY
EGT48-29	svoT46107	SBGT Filter B Diff Pressure	12.5	1000	0000
ST-0	svoT48140	SP Level Water Level In Torus	168	1000	0000

6. **INSERT** the following **Malfunctions**:

Activator	MALF #	TITLE	FINAL VALUE	RAMP RATE	DELAY
ST-0	mfB21_123A	MSL A Break (before restrictor)	0.15	1000	0000
ST-0	mfT46_254A	SBGT fan T46-C001A fails to Auto Start	1		0000
ST-0	mfT46_254B	SBGT fan T46-C001B fails to Auto Start	1		0000

7. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:

- A. Perform RC-1, 2, & 3
- B. Start SBGT System “2B” with suction from the Reactor Building.
- C. Allow the Simulator to run until the plant is in the UNSAFE Region of the DSIL Curve.
- D. When in the UNSAFE Region of the DSIL Curve, close the MSIVs and open the ADS valves.
- E. Maintain RWL around “0” inches with Condensate.
- F. Turn SPDS Screens OFF
- G. Acknowledge/Reset annunciators.

6. **RUN** SCENARIO FILE and **EVENT TRIGGER** (current rev) **2023-CR-SIM 5**

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 Torus pressure is above the Pressure Suppression Pressure.
2. 31EO-EOP-012-2 (PC) is in progress.
3. Standby Gas Treatment 2B is in operation, taking suction from the Reactor Building.
4. Normal AC Power has just been restored.
5. Torus Venting with CAD A or B is NOT possible and Torus pressure is 40 psig and rising slowly.
6. CAD Loop A is unavailable and can NOT be used.

INITIATING CUES:

Reduce Primary Containment pressure below 35 psig by performing Drywell venting with CAD Loop B using 31EO-EOP-101-2, Emergency Containment Venting, Section 4.3.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:

For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.

For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

NOTE: Provide the operator with 31EO-EOP-101-2, Section 4.3.

1.	Operator identifies the materials that are required.	Operator identifies the required materials and where to obtain them.	
**2.	Defeat the High Drywell Pressure Isolation signal. (step 4.3.3.a)	At panel 2H11-P654, the operator PLACES the keylock PCIS Override Switches to OVERRIDE for: High Drywell Press, 2T48-F334B High Drywell Press, 2T48-F335B	
**3.	Defeat the Low RPV Level Isolation signal. (step 4.3.3.a)	At panel 2H11-P654, the operator PLACES the keylock PCIS Override Switches to OVERRIDE for: Low RPV Level, 2T48- F334B Low RPV Level, 2T48- F335B	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**4.	Defeat the Reactor Building High Radiation Isolation signal. (step 4.3.3.a)	At panel 2H11-P654, the operator PLACES the keylock PCIS Override Switches to OVERRIDE for: Rx Bldg High Radn, 2T48-F334B Rx Bldg High Radn, 2T48-F335B	
**5.	Defeat the Refuel Floor High Radiation Isolation signal. (step 4.3.3.a)	At panel 2H11-P654, the operator PLACES the keylock PCIS Override Switches to OVERRIDE for: Refuel Flr High Radn, 2T48-F334B Refuel Flr High Radn, 2T48-F335B	
**6.	Open Drywell 2" Vent valve, 2T48-F334B. (step 4.3.3.b)	At panel 2H11-P654: DRYWELL VENT ISOL VLV, 2T48-F334B is OPEN, red light ILLUMINATED, green light EXTINGUISHED.	
**7.	Open Drywell 2" Vent valve, 2T48-F335B. (step 4.3.3.b)	At panel 2H11-P654: DRYWELL VENT ISOL VLV, 2T48-F335B is OPEN, red light ILLUMINATED, green light EXTINGUISHED.	
**8.	Using Drywell Flow Controller, 2T48-R615B, Open Drywell Vent Flow Control Valve, 2T48-F336B. (step 4.3.3.c)	At panel 2H11-P654, the operator Operates 2T48-R615B, Drywell Vent Flow Cntl Vlv, to OPEN 2T48-F336B.	

ALTERNATE PATH STARTS HERE

9.	The Operator recognizes and acknowledges the SGBT annunciator	Operator IDENTIFIES 2B SGBT FAN FLOW LOW (654-031) is alarming and transitions to ARP.	
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(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
10.	Check low flow condition on 2U41-R600, SBTG B Flow to Main Stack. (ARP step 5.1)	At panel 2H11-P654, the operator checks flow indication on 2U41-R600, SBTG B Flow to Main Stack and determines flow is approximately 1000 scfm.	
11.	IF SBTG System is required by plant conditions, START 2T46-D001A, SBTG A Fan/Filter. (ARP step 5.2)	At panel 2H11-P657, the operator determines SBTG A is NOT running and is required to be in service.	
12.	Open 2T46-F003A AND/OR 2T46-F001A. 34SO-T46-001-2, Placard (step 1.0)	At panel 2H11-P657: SBTG A Filter Inlet From Refuel Flr 2T46-F003A is OPEN, red light ILLUMINATED, green light EXTINGUISHED AND/OR SBTG A Filter Inlet From Rx Bldg., 2T46-F001A is OPEN, red light ILLUMINATED, green light EXTINGUISHED.	
**13.	Place SBTG A in RUN position. 34SO-T46-001-2, Placard (step 2.0) OR 2B SBTG FAN FLOW LOW (654-031)	At panel 2H11-P657, the operator PLACES 2T46-D001A, SBTG A FAN/FILTER to ON, red light ILLUMINATED, green light EXTINGUISHED.	
14.	Confirm 2T46-F002A OPENS. 34SO-T46-001-2, Placard (step 3.0)	At panel 2H11-P657, the operator CONFIRMS that 2T46-F002A, FLTR DISCH OPENS, red light ILLUMINATED, green light EXTINGUISHED.	
15.	Confirm SBTG A HTR Red Light ILLUMINATES. 34SO-T46-001-2, Placard (step 4.0)	At panel 2H11-P657, the operator CONFIRMS that SBTG A HTR ON, red light ILLUMINATED, green light EXTINGUISHED.	
16.	Confirm SBTG A Flow increases to 1500-4000 SCFM. 34SO-T46-001-2, Placard (step 5.0)	At panel 2H11-P657, the operator CONFIRMS 2T41-R618, SBTG A Flow To Main Stack, rises to 1500-4000 SCFM.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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NOTE: 2T48-R615B, Drywell Vent Flow Cntl Vlv 2T48-F336B, must be open >50% open for Drywell pressure to lower.

17.	Using Drywell Flow Controller, 2T48-R615B, Operate Drywell Vent Flow Control Valve, 2T48-F336B. (step 4.3.3.c)	At panel 2H11-P654, the operator ADJUSTS 2T48-R615B, Drywell Vent Flow Cntl Vlv 2T48-F336B, as required to establish a lowering Drywell pressure.	
18.	Confirm OPEN OR OPEN the following dampers as required by plant conditions: 2T46-F001B, SBGT B Fltr Inlet From Rx Bldg 2T46-F002B, SBGT B Fltr Disch 2T46-F003B, SBGT B Fltr Inlet From Refuel Flr (ARP step 5.4)	At panel 2H11-P654, the operator CONFIRMS the following dampers OPEN, red lights ILLUMINATED, green lights EXTINGUISHED: 2T46-F001B 2T46-F002B 2T46-F003B	
19.	If 2T46-D001B, SBGT Filter, damper lineup cannot be corrected, SHUTDOWN 2T46-D001B, SBGT B Fan/Filter. (ARP step 5.6)	At panel 2H11-P654, the operator PLACES 2T46-D001B, SBGT B FAN/FILTER to OFF, green light ILLUMINATED red light EXTINGUISHED.	
20.	Monitor Drywell Pressure indication	At panel 2H11-P657 (P654), Drywell pressure is being monitored by the operator and determines Torus pressure is lowering.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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PROMPT: **IF** the operator addresses System Restoration, as the Shift Supervisor,
INFORM the operator that it is NOT desired at this time.

**END
TIME:** _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 20.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023 CR-SIM 5:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	8
Step 2 Defeat DW press		Removes signal to allow F334 & F335B to be open.
Step 3 Defeat RWL low		Removes signal to allow F334 & F335B to be open.
Step 4 Defeat RB Rad high		Removes signal to allow F334 & F335B to be open.
Step 5 Defeat RF Rad high		Removes signal to allow F334 & F335B to be open.
Step 6 Open 2T48-F334B		Aligns Drywell vent flow path.
Step 7 Open 2T48-F335B		Aligns Drywell vent flow path.
Step 8 Open 2T48-F336B		Establishes Drywell vent flow.
Step 13 SBGT 2A in RUN		Re-establishes SBGT flow.
<u>Number of JPM Steps</u>	<30	20
<u>Time to Perform JPM</u>	<45 min	12 min.
<u>Normal / Faulted / Alternate Path</u>		
Alternate Path		31EO-EOP-101-2, Sections 4.1 have been correctly performed to Emergency Vent the Drywell with SBGT 2A now in operation.
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD "1" or "5"</u>	NO	NO

(** Indicates critical step)

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 Torus pressure is above the Pressure Suppression Pressure.
2. 31EO-EOP-012-2 (PC) is in progress.
3. Standby Gas Treatment 2B is in operation, taking suction from the Reactor Building.
4. Normal AC Power has just been restored.
5. Torus Venting with CAD A or B is NOT possible and Torus pressure is 40 psig and rising slowly.
6. CAD Loop A is unavailable and can NOT be used.

INITIATING CUES:

Reduce Primary Containment pressure below 35 psig by performing Drywell venting with CAD Loop B using 31EO-EOP-101-2, Emergency Containment Venting, Section 4.3.

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

FINAL
CR/SIM 6 (RO & SRO-I)

Title: ENERGIZING 230KV BUS NO.1, SAT 1C, 2C, 1E & 1D		Version: 1.1
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 6	Time: 15.0 Minutes
Line Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: ENERGI ZING 230KV BUS NO.1, SAT 1C, 2C, 1E & 1D

JPM NUMBER: 2023-301 CR-SIM 6

TASK STANDARD: This task shall be successfully completed when the applicant has energized SAT 1C, 2C, 1E and 1D via 230KV Bus 1 from the Vidalia line.

TASK NUMBER: 027.048

OBJECTIVE NUMBER: 027.048.A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 262001A4.01

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.7

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
	NA	34SO-S22-001-1, Ver. 11.3

REQUIRED MATERIALS:	Unit 1	Unit 2
	NA	34SO-R23-001-2, Ver. 11.3

APPROXIMATE COMPLETION TIME: 15.0 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR A SETUP

1. **Simulator Initial Conditions:**
2. **RESET** the Simulator to **100% RTP** or **SNAP 616** and leave in **FREEZE**.
3. **INSERT** the following **MALFUNCTIONS**:

Key #	MALF #	TITLE	FINAL VALUE	RAMP RATE	DELAY
ST-0	mfS11_161	Loss of Off Site Power (Black Out)			

4. **ACTIVATE** the following **EVENT TRIGGERS**:

Trigger #	DESCRIPTION	CONDITIONS	Expert Command
	NONE		

5. **INSERT** the following **ORS OVERRIDES**:

Activator	TAG #	S/M/L	DESCRIPTION	Final Value	Ramp Rate	Delay
	NONE					

6. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:
 - A. **START** RCIC
 - B. **PLACE** HPCI in PTL
 - C. **DELETE** mfS11_161.
 - D. **OPEN** 4160 VAC Buses 2A thru 2D **NORMAL** & **ALTERNATE** Supply Breakers.
7. **RUN** **SCENARIO FILE** and **EVENT TRIGGER** (current rev) **2023-CR-SIM 6**
8. **PLACE** the Simulator in **FREEZE** until the **INITIATING CUE** is given.
9. **ESTIMATED** Simulator **SETUP TIME**: **10 Minutes**

SIMULATOR B SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to one of the following:
 - **100% RTP**, and then go to step 2
 - or **SNAP (312)** and then go to step 7 and leave in **FREEZE**.
2. **INSERT** the following **MALFUNCTIONS**:

Key #	MALF #	TITLE	FINAL VALUE	RAMP RATE	DELAY
ST-0	mfS11_161	Loss of Off Site Power (Black Out)			

3. **ACTIVATE** the following **EVENT TRIGGERS**:

Trigger #	DESCRIPTION	CONDITIONS	Expert Command
	NONE		

4. **INSERT** the following **ORS OVERRIDES**:

Activator	TAG #	S/M/L	DESCRIPTION	Final Value	Ramp Rate	Delay
	NONE					

5. **TAKE** the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS**:

- A. **START** RCIC
- B. **PLACE** HPCI in PTL
- C. **DELETE** mfS11_161.
- D. **OPEN** 4160 VAC Buses 2A thru 2D **NORMAL** & **ALTERNATE** Supply Breakers.

6. **RUN** SCENARIO FILE and **EVENT TRIGGER** (current rev) **(NA)**

7. **PLACE** the Simulator in **FREEZE** until the **INITIATING CUE** is given.

8. **ESTIMATED Simulator SETUP TIME: 10 Minutes**

Simulator B Scenario File:

NO SIM B PICTURES

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The plant has experienced a LOSP.
2. The plant is stabilized, and other operators are responding to the plant.
3. The Power Control Center has reported that investigation has been completed, and Off Site Power is available and can be restored from the Vidalia line.
4. All PCBs in the 230KV switchyard are OPEN.
5. The Open Phase Protection System Panels for SATs 1C, 1D & 1E have been shutdown.
6. The Open Phase Protection System Panels for SATs 2C, 2D & 2E have been shutdown.
7. The Normal and Alternate supply breakers for 4160VAC 1A, 1B, 1C & 1D are open.
8. Pre-Job Brief is NOT required.

INITIATING CUES:

Re-energize 230KV Bus 1, SATs 1C, 2C, 1E and 1D from the Vidalia line per 34SO-S22-001-1 starting at step 4.3.2.8.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

NOTE: Provide the operator with a copy of 34SO-S22-001-1.

**1.	On panel 1H11-P653, PLACE the Sync Switches in the positions indicated in Table 1 for PCB 179410. Step 4.3.2.8	At panel 1H11-P653, the Operator PLACES Bus 1 Sync Switch to R and Vidalia Sync Switch to I for PCB 179410.	
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NOTE: The operator must place the PCB control switch to the TRIP position to reset the associated amber light PRIOR to closing the PCB.

**2.	CLOSE PCB 179410. Step 4.3.2.9	At panel 1H11-P653, the Operator takes switch for PCB 179410 to close and observes red light ILLUMINATED and green light EXTINGUISHED.	
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PROMPT **IF** the operator addresses checking lockouts for energizing Startup Auxiliary Transformers 1D, 1C, 1E and 2C, **INFORM** operator that associated relays are RESET. (Step 4.3.2.10.a – d)

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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PROMPT: **IF** the operator addresses Substation Maintenance ensuring closed Line disconnects 179477, 179487, 179479, 179449 and 179369, **INFORM** operator that they are closed. (Step 4.3.2.11)

PROMPT: **IF** the operator addresses checking lockout relays and relay targets for PCB 179450 are reset, **INFORM** the operator that the relays and targets are reset. (Step 4.3.2.12)

PROMPT: **IF** the operator addresses Substation Maintenance ensuring closed motor operated disconnects 179451 and 179453, **INFORM** operator that they are closed. They can be observed on the 1H11-P653 panel. (Step 4.3.2.13)

**3.	On panel 1H11-P653, PLACE the Sync Switches in the positions indicated in Table 1 for PCB 179450. (Step 4.3.2.14)	At panel 1H11-P653, the Operator PLACES Bus 1 Sync Switch to R and Eastman Sync Switch to I for PCB 179450.	
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**4.	CLOSE PCB 179450. (Step 4.3.2.15)	At panel 1H11-P653, the Operator takes switch for PCB 179450 to close and observes red light ILLUMINATED and green light EXTINGUISHED.	
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PROMPT: **IF** the operator addresses Substation Maintenance ensuring closed motor operated disconnects, **INFORM** operator that they are closed. They can be observed on the 1H11-P653 panel. (Step 4.3.2.16)

**5.	On panel 1H11-P653, PLACE the Sync Switches in the positions indicated in Table 1 for PCB 179480. (Step 4.3.2.17)	At panel 1H11-P653, the Operator PLACES Bus 1 Sync Switch to R and Bus 2 Sync Switch to I for PCB 179480.	
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(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**6.	CLOSE PCB 179480. (Step 4.3.2.18)	At panel 1H11-P653, the Operator takes switch for PCB 179480 to close and observes red light ILLUMINATED and green light EXTINGUISHED.	

PROMPT: **IF** the operator addresses Substation Maintenance ensuring closed motor operated disconnects 179371 and 179373, **INFORM** operator that they are closed. They can be observed on the 1H11-P653 panel. (Step 4.3.2.19)

**7.	On panel 1H11-P653, PLACE the Sync Switches in the positions indicated in Table 1 for PCB 179370. (Step 4.3.2.20)	At panel 1H11-P653, the Operator PLACES Bus 1 Sync Switch to R and Bus 2 Sync Switch to I for PCB 179370.	
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**8.	CLOSE PCB 179370. (Step 4.3.2.21)	At panel 1H11-P653, the Operator takes switch for PCB 179370 to close and observes red light ILLUMINATED and green light EXTINGUISHED.	
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PROMPT: **IF** the operator addresses re-energizing 230KV Bus 2, **INFORM** the operator that it is NOT desired to complete those actions at this time.

END TIME: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 8.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023 CR-SIM 6:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	8
Step 1 PCB 179410 Sync Switches	Sync Switches must be aligned to allow PCB to close.	
Step 2 Close PCB 179410	PCB must be closed to provide path for energizing SAT.	
Step 3 PCB 179450 Sync Switches	Sync Switches must be aligned to allow PCB to close.	
Step 4 Close PCB 179450	PCB must be closed to provide path for energizing SAT.	
Step 5 PCB 179480 Sync Switches	Sync Switches must be aligned to allow PCB to close.	
Step 6 Close PCB 179480	PCB must be closed to provide path for energizing SAT.	
Step 7 PCB 179370 Sync Switches	Sync Switches must be aligned to allow PCB to close.	
Step 8 Close PCB 179370	PCB must be closed to provide path for energizing SAT.	
<u>Number of JPM Steps</u>	<30	8
<u>Time to Perform JPM</u>	<45 min	10 min.
<u>Normal / Faulted / Alternate Path</u>		
Normal Path		
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD “1” or “5”</u>	NO	NO

(** Indicates critical step)

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The plant has experienced a LOSP.
2. The plant is stabilized, and other operators are responding to the plant.
3. The Power Control Center has reported that investigation has been completed, and Off Site Power is available and can be restored from the Vidalia line.
4. All PCBs in the 230KV switchyard are OPEN.
5. The Open Phase Protection System Panels for SATs 1C, 1D & 1E have been shutdown.
6. The Open Phase Protection System Panels for SATs 2C, 2D & 2E have been shutdown.
7. The Normal and Alternate supply breakers for 4160VAC 1A, 1B, 1C & 1D are open.
8. Pre-Job Brief is NOT required.

INITIATING CUES:

Re-energize 230KV Bus 1, SATs 1C, 2C, 1E and 1D from the Vidalia line per 34SO-S22-001-1 starting at step 4.3.2.8.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL CR/SIM 7 (RO & SRO-I)

Title: RESPOND TO THE TRIP OF A REACTOR RECIRC PUMP WHILE THE RECIRC PUMPS ARE RUNNING AT LESS THAN 35% SPEED, AND PLOT PLANT OPERATION ON THE POWER/FLOW MAP. (ALT PATH)		Version: 0.2
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 7	Time: 15.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: RESPOND TO THE TRIP OF A REACTOR RECIRC PUMP WHILE THE RECIRC PUMPS ARE RUNNING AT LESS THAN 35% SPEED, AND PLOT PLANT OPERATION ON THE POWER/FLOW MAP. (ALT PATH)

JPM NUMBER: 2023-301 CR-SIM 7

TASK STANDARD: The task shall be completed when the the operator plots where the plant is operating on the Power/Flow map, the tripped Recirc Pump Discharge valve has been closed and then re-opened, AND then performs the Immediate Operator Actions of 34AB-B31-001-2.

TASK NUMBER: 200.037

OBJECTIVE NUMBER: 200.037.A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 216000A2.14

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.6

SRO 3.3

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 2
	34AB-B31-001-2 (Ver 12.0) 34GO-OPS-005-2 (Ver 31.9) 34SO-B31-001-2 (Ver 48.5)

REQUIRED MATERIALS:	Unit 2
	34AB-B31-001-2 (Ver 12.0) 34GO-OPS-005-2 (Ver 31.9) 34SO-B31-001-2 (Ver 48.5)

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR A SETUP

Simulator Initial Conditions:

1. **RESET** the Simulator to **IC #110** or **SNAP 617** and leave in **FREEZE**.
2. **INSERT** the following **MALFUNCTIONS**:

RB#	MALF #	TITLE	FINAL VALUE	RAMP RATE	ACT. TIME
RB-1	mfB31_38B	Recirc Pump B Motor Protection Trip	N/A	N/A	9999

3. **INSERT** the following **EVENT TRIGGER**

ET #	Description
EGB31-5	Inserts EGB31-6 when 2B31-F031B is full closed, red light out.
EGB31-6	Inserts mfB31_37A when 2B31-F031B is throttled open, red light on. (DO NOT LOAD IN SCENARIO FILE)

4. Take the Simulator **OUT OF FREEZE** and **PERFORM** the following **MANIPULATIONS OR RUN SCENARIO FILE** and **EVENT TRIGGER** (current rev) **2023-CR-SIM 7**:
 - A. **REDUCE** Reactor Recirc Pumps to **MINIMUM** speed.
 - B. **INSERT** control rods to reduce power to **approx. 33%**, with the goal of remaining below the 78% load line.
 - C. **PRESS RB-1** to activate Recirc Pump B Motor Protection Trip.
 - D. Allow plant conditions to **STABILIZE**.
 - E. Acknowledge/reset alarms.
 - F. **TURN OFF** the Process Computer monitor.
5. **PLACE** the Simulator in **FREEZE** until the **INITIATING CUE** is given.
6. **ESTIMATED Simulator SETUP TIME:** **25 Minutes**

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 was operating approximately 33% power.
2. Both Reactor Recirc Pumps were running at minimum speed.
3. All OPRMs are operable.
4. The Process Computer monitor is NOT functional.
5. The “2B” Reactor Recirc pump has just tripped.
6. Personnel have been directed to investigate the cause of the pump trip.

INITIATING CUES:

1. RESPOND to the trip of the 2B Reactor Recirc Pump IAW 34AB-B31-001-2.

AND

2. PLOT the plant operating point on the Unit 2 Power/Flow map.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME: _____

NOTE: Provide the operator with a copy of 34AB-B31-001-2.

1.	The operator identifies correct procedure SECTION to use.	The operator has IDENTIFIED the correct section: Section 1 Loss Of A Single Reactor Recirculation Pump A or B.	
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NOTE: The operator may choose to plot position on the Power/Flow map at this time. These steps are NOT required to be done in order.

NOTE: It is expected that the operator will read the NOTE, located just after step 4.4. The NOTE describes how to determine core flow with one Recirc Pump out of service when the Running pump is operating below 35% pump speed.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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NOTE: The operator will calculate actual core flow as follows:

- 1st step:** ADD Jet Pump Total Flow indications (2B21-R611A/R611B (P602)).
The values total approx 24 MLB/hr for these plant conditions.
- 2nd step:** This number is divided by 77 MLB/hr (rated core flow).
The result is ACTUAL CORE FLOW, approx. 31% then,
- 3rd step:** The operator uses 2C51-K620A&B, “APRM Display” (P603) to determine that Rx power is approx. 33%.

**2.	<p>Verify whether or not the plant is operating inside the Immediate Exit Region of the Power/Flow Map.</p> <p style="text-align: right;">(Step 4.1 & 4.2)</p>	<p>The operator has PLOTTED the operating point on the Power/Flow map (P603) and has DETERMINED the plant is operating in the ACCEPTABLE region with the following values:</p> <p><u>ACTUAL CORE FLOW, approx. 31%</u> (Accept 28.0% - 34.0%)</p> <p><u>Rx power is approx. 33%</u> (Accept ± 3%);</p>	
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NOTE: If the operator uses the 2B31-R613, “Core Plate dp/Rx Core Flow” recorder (P603), the plotted point will erroneously indicate the plant is operating in the Safety Limit Region of the Power/Flow map, approx. 7% core flow with 33% power.
See attached **EVALUATOR ANSWER KEY**.

PROMPT: **IF** the operator reports that the plant is in the Safety Limit area of the Power/Flow Map, **DIRECT** the operator to continue responding to the tripped Recirc Pump (unless all required actions have previously been taken).

3.	<p>Verify whether the OPRM System is INOPERABLE.</p> <p style="text-align: right;">(Step 4.1 & 4.2)</p>	<p>The operator has DETERMINED the OPRMs are OPERABLE, (information provided in JPM Initial Conditions) and that it is NOT necessary to enter 34AB-C51-001-2.</p>	
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(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
4.	Verify the Running Recirc. Pump is operating below rated flow for one pump. (Step 4.6)	The operator has VERIFIED that the "2A" Recirc pump is operating below rated flow using 2B31-R617, "Drive Flow" indicator (P602).	

**5.	Close Reactor Recirc Pump Discharge Valve, 2B31-F031B and record the time. (Step 4.7)	At Panel 2H11-P602, the operator has PLACED the PUMP DISCH VLV, 2B31-F031B into the close position, green light ILLUMINATED, red light EXTINGUISHED, and the operator has RECORDED the time the valve is fully CLOSED. (NOT critical to record time)	
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PROMPT: **IF** addressed, **INFORM** the Operator it is desired to maintain Recirc loop temperature.

PROMPT: **AFTER** the Operator has fully closed 2B31-F031B, **INFORM** the Operator, using Time Compression, four (4) minutes has elapsed.

**6.	After 4 - 5 minutes, throttle open Reactor Recirc Pump Discharge Valve, 2B31-F031B to maintain less than 50°F suction temperature differential between the loops, as indicated on 2B31-R650, Recirc Pump Suction Temperature, panel 2H11-P602. (Step 4.8)	The operator has THROTTLED PUMP DISCH VLV, 2B31-F031B OPEN (P602) within 4 - 5 minutes of the time recorded in JPM step 6, red and green lights ILLUMINATED.	
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(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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ALTERNATE PATH STARTS HERE (Step 7)

(Event Trigger EGB31-6 TRIPS ASD 2A after 2B31-F031B is THROTTLED OPEN).

NOTE: INSERTING A MANUAL SCRAM IS AN IMMEDIATE OPERATOR ACTION IF BOTH RECIRC PUMPS ARE TRIPPED.

**7.	Enter 34AB-C71-001-2, Scram Procedure, AND SCRAM the reactor (Section II, Step 3.1)	On 2H11-P603, the Operator INSERTS a MANUAL SCRAM (depresses at least one scram pushbutton in RPS channels A and B).	
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PROMPT: **WHEN** the operator addresses subsequent steps in the procedure as the Shift Supervisor, **INFORM** the operator that another operator will complete the rest of the procedure steps.

END TIME: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 7.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

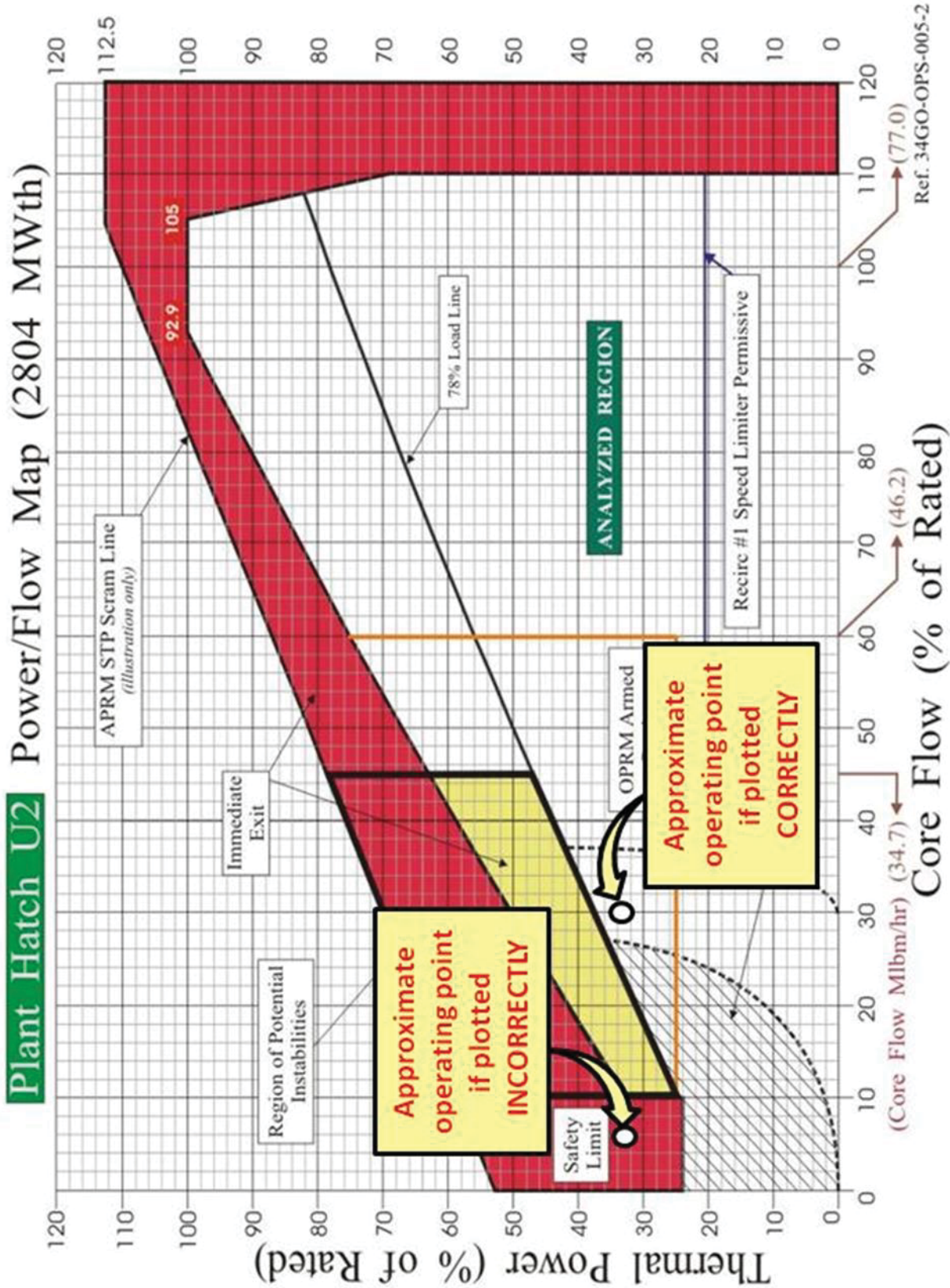
Summary of JPM Attributes

JPM 2023-301 CR-SIM 7:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	4
Step 2 Power-To-Flow Map point		Region of Potential Instabilities determination.
Step 5 Close 2B31-F031B		Allows pump to stop rotating.
Step 6 Open 2B31-F031B		Allows natural circulation to flow through recirc loop.
Step 7 Performs Manual Scram		Immediate Operator Action without forced circulation.
<u>Number of JPM Steps</u>	<30	7
<u>Time to Perform JPM</u>	<45 min	15 min
<u>Normal / Faulted / Alternate Path</u>		
Alternate Path		When 2B31-F031B is throttled open ASD 2A will trip resulting in loss of forced Recirc circulation requiring a manual scram to be inserted.
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD “1” or “5”</u>	NO	NO

Evaluator Answer Key



UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 was operating approximately 33% power.
2. Both Reactor Recirc Pumps were running at minimum speed.
3. All OPRMs are operable.
4. The Process Computer monitor is NOT functional.
5. The “2B” Reactor Recirc pump has just tripped.
6. Personnel have been directed to investigate the cause of the pump trip.

INITIATING CUES:

1. RESPOND to the trip of the 2B Reactor Recirc Pump
IAW 34AB-B31-001-2.

AND

2. PLOT the plant operating point on the Unit 2 Power/Flow map.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL CR/SIM 8 (RO ONLY)

Title ALIGN INSTRUMENT AIR TO DRYWELL PNEUMATIC SYSTEM		Version: 1.1
Author: Anthony Ball	Media Number: 2023-301 CR-SIM 8	Time: 10.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: ALIGN INSTRUMENT AIR TO DRYWELL PNEUMATIC SYSTEM

JPM NUMBER: 2023-301 CR-SIM 8

TASK STANDARD: The task shall be successfully completed IAW 34SO-P70-001-2, DRYWELL PNEUMATIC SYSTEM, when the applicant has:

- o Closed 2P70-F001A and 2P70-F001B, Drywell Pneumatic System Drywell Atmosphere N2 Makeup Isolation Valves
- o Opened 2P70-F004, Drwl Pneu Inbd Inlet Isol valve
- o Opened 2P70-F066, Drwl Pneu Inbd Inlet Isol valve
- o Opened 2P70-F005, Drwl Pneu Outbd Inlet Isol valve
- o Opened 2P70-F067, Drwl Pneu Outbd Inlet Isol valve

TASK NUMBER: N/A

OBJECTIVE NUMBER: N/A

PLANT HATCH JTA IMPORTANCE RATING:

RO

SRO

K/A CATALOG NUMBER: 300000A2.03

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.9

SRO 3.8

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
	N/A	34SO-P70-001-2, Ver. 11.1

REQUIRED MATERIALS:	Unit 1	Unit 2
	N/A	34SO-P70-001-2, Ver. 11.1

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: REFER TO SIMULATOR SETUP SHEET ON THE FOLLOWING PAGE

SIMULATOR A SETUP

Simulator Initial Conditions:

1. **RESET** Simulator to **IC# 102** (All rods in) or **SNAP 618** and leave in **FREEZE**.
2. **INSERT** the following **MALFUNCTIONS**:

Key #	MALF #	TITLE	FINAL VALUE	RAMP RATE	DELAY
NONE					

3. **ACTIVATE** the following **EVENT TRIGGERS**:

Trigger #	DESCRIPTION	CONDITIONS	Expert Command
NONE			

4. **INSERT** the following **REMOTE FUNCTIONS**:

Activator	TAG #	DESCRIPTION	Final Value	Ramp Rate	Delay
ST-0	rfP52_149	Instrument Air Manual Connection			9999

5. **RUN** **SCENARIO FILE** and **EVENT TRIGGER** (current rev) **2023-CR-SIM 8**
6. **PLACE** the following valves in the close position on panel 2H11-P700:
 - a. 2P70-F004, Drwl Pneu Inbd Inlet Isol
 - b. 2P70-F066, Drwl Pneu Inbd Inlet Isol
 - c. 2P70-F005, Drwl Pneu Outbd Inlet Isol
 - d. 2P70-F067, Drwl Pneu Outbd Inlet Isol
7. **PLACE** the Simulator in **FREEZE** until the crew assumes the shift.
8. **ESTIMATED Simulator A SETUP TIME: 10 Minutes**

SIMULATOR B SETUP

Simulator Initial Conditions:

1. **RESET** Simulator to **IC# 102** (All rods in) or **SNAP 313** and leave in **FREEZE**.
2. **INSERT** the following **MALFUNCTIONS**:

Key #	MALF #	TITLE	FINAL VALUE	RAMP RATE	DELAY
NONE					

3. **ACTIVATE** the following **EVENT TRIGGERS**:

Trigger #	DESCRIPTION	CONDITIONS	Expert Command
NONE			

4. **INSERT** the following **REMOTE FUNCTIONS**:

Activator	TAG #	DESCRIPTION	Final Value	Ramp Rate	Delay
ST-0	rfP52_149	Instrument Air Manual Connection			9999

5. **RUN** **SCENARIO FILE** and **EVENT TRIGGER** (current rev) **2023-CR-SIM 8**
6. **PLACE** the following valves in the close position on panel 2H11-P700:
 - a. 2P70-F004, Drwl Pneu Inbd Inlet Isol
 - b. 2P70-F066, Drwl Pneu Inbd Inlet Isol
 - c. 2P70-F005, Drwl Pneu Outbd Inlet Isol
 - d. 2P70-F067, Drwl Pneu Outbd Inlet Isol
7. **PLACE** the Simulator in **FREEZE** until the crew assumes the shift.
8. **ESTIMATED Simulator B SETUP TIME: 10 Minutes**

Simulator B Scenario File:

NO SIM B PICTURES

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is shut down in Mode 4.
2. Recirc pumps are in service.
3. CRD in service.
4. RWCU out of service.
5. Nitrogen Backup is supplying the Drywell Pneumatic System.
6. 34SO-P70-001-2, Drywell Pneumatic System, Section 4.1.2, Instrument Air System Supply to Drywell Pneumatic System, is in progress and has been completed through step 4.1.2.1.e.

INITIATING CUES:

IAW 34SO-P70-001-2, Drywell Pneumatic System, Section 4.1.2, Instrument Air System Supply to Drywell Pneumatic System, Align Instrument Air to supply the Drywell Pneumatic system.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME: _____

NOTE: Provide the operator with a copy of 34SO-P70-001-2.

NOTE: Unless otherwise noted, all the following actions will be performed at panel 2H11-P700.

**1.	Close 2P70 F001A, Drywell Pneumatic System Drywell Atmosphere N ₂ Makeup Isolation Valve (step 4.1.2.2)	At 2H11-P700 the operator places the control switch for 2P70-F001A in the CLOSE positioned. green light ILLUMINATED; red light EXTINGUISHED.	
**2.	Close 2P70 F001B, Drywell Pneumatic System Drywell Atmosphere N ₂ Makeup Isolation Valve (step 4.1.2.2)	At 2H11-P700 the operator places the control switch for 2P70-F001B in the CLOSE positioned. green light ILLUMINATED; red light EXTINGUISHED.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	Ensure open the following valves, 2H11 P700: 2P70 F004, Drwl Pneu Inbd Inlet Isol *** ***** ***** (step 4.1.2.3)	At 2H11-P700 the operator momentarily places the control switch to Reset and observes the red light ILLUMINATED; green light EXTINGUISHED.	
4.	Ensure open the following valves, 2H11 P700: *** 2P70 F066, Drwl Pneu Inbd Inlet Isol ***** ***** (step 4.1.2.3)	At 2H11-P700 the operator momentarily places the control switch to Reset and observes the red light ILLUMINATED; green light EXTINGUISHED.	
5.	Ensure open the following valves, 2H11 P700: *** ***** 2P70 F005, Drwl Pneu Outbd Inlet Isol ***** (step 4.1.2.3)	At 2H11-P700 the operator momentarily places the control switch to Reset and observes the red light ILLUMINATED; green light EXTINGUISHED.	
6.	Ensure open the following valves, 2H11 P700: *** ***** ***** 2P70 F067, Drwl Pneu Outbd Inlet Isol (step 4.1.2.3)	At 2H11-P700 the operator momentarily places the control switch to Reset and observes the red light ILLUMINATED; green light EXTINGUISHED.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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PROMPT: **WHEN** the operator addresses Drywell Pneumatic System pressure at 158RBR16, **INFORM** the operator that another operator has confirmed Drywell Pneumatic system pressure is 105 psig. (Step 4.1.2.4.a)

PROMPT: **AFTER** the operator addresses Step 4.1.2.4.b, if the applicant has completed the task correctly, **INFORM** the operator that another operator will complete the procedure.

**END
TIME:** _____

NOTE: The terminating cue shall be given to the operator when any of the following conditions are met:

- Operator completes step 6 of this JPM.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023-301 CR-SIM 8:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	6
Step 1 Place 2P70-F001A to CLOSE	Isolates Nitrogen from the Instrument Air system.	
Step 2 Place 2P70-F001B to CLOSE	Isolates Nitrogen from the Instrument Air system.	
Step 3 Place 2P70-F004 to RESET	Aligns Instrument Air to one of the Drywell Pneumatic headers.	
Step 4 Place 2P70-F066 to RESET	Aligns Instrument Air to one of the Drywell Pneumatic headers.	
Step 5 Place 2P70-F005 to RESET	Aligns Instrument Air to one of the Drywell Pneumatic headers.	
Step 6 Place 2P70-F067 to RESET	Aligns Instrument Air to one of the Drywell Pneumatic headers.	
<u>Number of JPM Steps</u>	<30	6
<u>Time to Perform JPM</u>	<45 min	10 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD “1” or “5”</u>	NO	NO

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is shut down in Mode 4.
2. Recirc pumps are in service.
3. CRD in service.
4. RWCU out of service.
5. Nitrogen Backup is supplying the Drywell Pneumatic System.
6. 34SO-P70-001-2, Drywell Pneumatic System, Section 4.1.2, Instrument Air System Supply to Drywell Pneumatic System, is in progress and has been completed through step 4.1.2.1.e.

INITIATING CUES:

IAW 34SO-P70-001-2, Drywell Pneumatic System, Section 4.1.2, Instrument Air System Supply to Drywell Pneumatic System, Align Instrument Air to supply the Drywell Pneumatic system.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL PLANT 1 (ALL)

Title VENT THE SCRAM AIR HEADER - UNIT 1		Version: 1.2
Author: Anthony Ball	Media Number: 2023-301 PLANT 1	Time: 15.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



<u>Course Number</u>	<u>Program Name</u> OPERATIONS TRAINING	<u>Media Number</u> 2023-301 PLANT 1
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Ver. No.	Date	Reason for Revision	Author Print Initials/Name	Peer Review Print Initials/Name
1.0	5/15/2019	Developed for ILT-12 NRC Exam 2019-301	ABG	ARB
1.1	10/01/21	Updated for ILT-14 Audit Exam.	ARB	JDW
1.2	10/30/23	Updated to current procedure for use on ILT-15 NRC Exam as PLANT 1.	ARB Anthony Ball	JDW Derek Williams

UNIT 1 () UNIT 2 (X)

TASK TITLE: VENT THE SCRAM AIR HEADER - UNIT 1

JPM NUMBER: 2023-301 PLANT 1

TASK STANDARD: The task shall be successfully completed per 31EO-EOP-103 when the operator has:

- o Closed the Scram Air Header Isolation Valve
- o Removed the pipe cap downstream of the pressure instrument
- o Opened the pressure instrument vent valve.

TASK NUMBER: 010.015

OBJECTIVE NUMBER: 010.015.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 4.50

SRO 3.65

K/A CATALOG NUMBER: 295037EA1.05

K/A CATALOG JTA IMPORTANCE RATING:

3.9

OPERATOR APPLICABILITY: Systems Operator (SO)

GENERAL REFERENCES:	Unit 1	Unit 2
	31EO-EOP-103-1, Ver. 7.2	N/A

REQUIRED MATERIALS:	Unit 1	Unit 2
	31EO-EOP-103-1, Ver. 7.2 Adjustable Wrench	N/A

APPROXIMATE COMPLETION TIME: 15 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Reactor scram signal has been received and all the control rods did NOT insert to Position 02 and Reactor power is greater than 10%.
2. The blue scram inlet and outlet valve lights are extinguished.
3. 31EO-EOP-017-1, CP-3 ATWS RPV CONTROL, is in progress.

INITIATING CUES:

Vent the scram air header per 31EO-EOP-103-1, Control Rod Insertion Methods, Section 4.6, VENTING SCRAM AIR HEADER.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME: _____

NOTE: Provide the operator with a copy of 31EO-EOP-103-1, Section 4.6.

1.	Operator identifies the materials that are required. (pliers)	Operator identifies the required materials and where to obtain.	
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NOTE: WHEN the Operator closes 1C11-F095 valve, the handwheel will be turned in the clockwise direction until it will NOT turn any farther.

**2.	CLOSE 1C11-F095 (31EO-EOP-103-1 step 4.6.1).	At location 130RAR03, 1C11-F095, SCRAM AIR HEADER ISOLATION VALVE is CLOSED.	
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**3.	REMOVE cap if installed from end of piping downstream of 1C11-R013-TV1 (31EO-EOP-103-1 step 4.6.2).	At location 130RAR03, cap is REMOVED from end of piping downstream of 1C11-R013-TV1.	
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(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
4.	Ensure OPEN 1C11-R013-IV1 (31EO-EOP-103-1 step 4.6.3).	At location 130RAR03, 1C11-R013-IV1, PRESSURE INSTRUMENTATION ISOLATION VALVE is OPEN.	
**5.	OPEN 1C11-R013-TV1 (31EO-EOP-103-1 step 4.6.4).	At location 130RAR03, 1C11-R013-TV1, PRESSURE INSTRUMENTATION VENT VALVE, is OPEN, Scram Air Header pressure lowering on 1C11-PI-R013.	

PROMPT: **IF** the operator addresses Scram Air Header Pressure, **INDICATE** that the Scram Air Header Pressure is lowering and that you can hear the air escaping.

END TIME: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 5.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(Indicates critical step)**

Summary of JPM Attributes

JPM 2023-301 Plant 1:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	3
Step 2 Close 1C11-F095		Isolates air to the Scram Air Header
Step 3 Remove cap		Aligns Scram Air Header Vent Path.
Step 5 Open 1C11-R013-TV1		Vents Scram Air Header.
 <u>Number of JPM Steps</u>		
	<30	5
 <u>Time to Perform JPM</u>		
	<45 min	15 min
 <u>Normal / Faulted / Alternate Path</u>		
Normal Path		
 <u>Setting (administered)</u>		
Simulator		
 <u>Is LOD “1” or “5”</u>		
	NO	NO

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Reactor scram signal has been received and all the control rods did NOT insert to Position 02 and Reactor power is greater than 10%.
2. The blue scram inlet and outlet valve lights are extinguished.
3. 31EO-EOP-017-1, ATWS RPV CONTROL, (CP-3) is in progress.

INITIATING CUES:

Vent the scram air header per 31EO-EOP-103-1, Control Rod Insertion Methods, Section 4.6, VENTING SCRAM AIR HEADER.

Southern Nuclear Company
Operations Training
Job Performance Measure (JPM)

FINAL
PLANT 2 (RO & SRO-I)

Title: SWAPPING TURBINE BUILDING EXHAUST FAN POWER SUPPLY TO ALTERNATE POWER		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 PLANT 2	Time: 10.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **SWAPPING TURBINE BUILDING EXHAUST FAN
POWER SUPPLY TO ALTERNATE POWER**

JPM NUMBER: **2023-301 PLANT 2**

TASK STANDARD: The task shall be completed when 1U41-C002A, Turbine Building Exhaust Fan, is aligned to the Alternate Power Supply IAW 34SO-U41-001-1/2, Section 4.3.5.

TASK NUMBER: 010.001

OBJECTIVE NUMBER: 010.001.B

K/A CATALOG NUMBER: 288000A2.07

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.1

SRO 3.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
	34SO-U41-001-1, Ver. 10.6	34SO-U41-001-2, Ver. 9.1

REQUIRED MATERIALS:	Unit 1	Unit 2
	34SO-U41-001-1, Ver. 10.6	34SO-U41-001-2, Ver. 9.1

APPROXIMATE COMPLETION TIME: 10.0 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Loss of Offsite Power has occurred on BOTH Units.
2. A Turbine Building Exhaust Fan is required to be placed in service on Unit 1.
3. All Emergency Buses are energized by their associated Emergency Diesel Generator.
4. Pre-Job Brief is NOT required.

INITIATING CUES:

Swap 1U41-C002A, Turbine Building Exhaust Fan, power supply to Alternate Power IAW 34SO-U41-001-1, Turbine Building Ventilation System, Section 4.3.5.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME: _____

NOTE: Provide the operator with a copy of 34SO-U41-001-1, P/Ls & Section 4.3.5.

1.	Operator has DETERMINED the correct procedure section to use.	Operator has DETERMINED the correct procedure section to use is starting at section 4.3.5 of 34SO-U41-001-1 and where to obtain the procedure.	
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PROMPT: **WHEN** the applicant addresses 1U41-C002A & 1U41-C002B, Turbine Building Exhaust Fans, as an Operator in the Main Control Room **INFORM** the applicant that the control switch for each fan is in the OFF position.

**2.	Ensure 1U41-C002A Turbine Building Exhaust Fan, Control Switch, in "OFF", on 1H11-P654. (Step 4.3.5.1)	Operator CONTACTS the Main Control Room to Ensure 1U41-C002A Turbine Building Exhaust Fan, Control Switch, is in "OFF", on 1H11-P654.	
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(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**3.	Ensure 1U41-C002B Turbine Building Exhaust Fan, Control Switch, in “OFF”, on 1H11-P654. (Step 4.3.5.2)	Operator CONTACTS the Main Control Room to Ensure 1U41-C002B Turbine Building Exhaust Fan, Control Switch, is in “OFF”, on 1H11-P654.	

NOTE: The Manual Transfer Switches are normally locked in position.

4.	Unlock 1R26-M124, Manual Transfer Switch For U1 Turb Bldg HVAC Exhaust Fan 1U41-C002A, at 164’ Reactor Building. (Step 4.3.5.3.a)	At 164’ Reactor Building, the operator UNLOCKS 1R26-M124, Manual Transfer Switch For U1 Turb Bldg HVAC Exhaust Fan 1U41-C002A.	
**5.	Place 1R26-M124, Manual Transfer Switch, in the UP position. (1R24-S011 Alternate Power). (Step 4.3.5.3.b)	The operator places 1R26-M125, Manual Transfer Switch, in the UP position. (1R24-S011 Alternate Power).	
6.	Lock 1R26-M124, Manual Transfer Switch, in the UP (1R24-S011 Alternate Power) position. (Step 4.3.5.3.c)	The operator LOCKS 1R26-M124, Manual Transfer Switch, in the UP (1R24-S011 Alternate Power) position.	

PROMPT: **IF** the Operator addresses running 1U41-C002A fan, as the Shift Supervisor, **INFORM** the operator that another operator will run 1U41-C002A fan.

END TIME: _____

NOTE: The terminating cue shall be given to the Operator when:

- Operator completes step 6 of this JPM.
- With NO reasonable progress, the Operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Loss of Offsite Power has occurred on BOTH Units.
2. A Turbine Building Exhaust Fan is required to be placed in service on Unit 1.
3. All Emergency Buses are energized by their associated Emergency Diesel Generator.
4. Pre-Job Brief is NOT required.

INITIATING CUES:

Swap 1U41-C002A, Turbine Building Exhaust Fan, power supply to Alternate Power IAW 34SO-U41-001-1, Turbine Building Ventilation System, Section 4.3.5.

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Loss of Offsite Power has occurred on BOTH Units.
2. A Turbine Building Exhaust Fan is required to be placed in service on Unit 2.
3. All Emergency Buses are energized by their associated Emergency Diesel Generator.
4. Pre-Job Brief is NOT required.

INITIATING CUES:

Swap 2U41-C002A, Turbine Building Exhaust Fan, power supply to Alternate Power IAW 34SO-U41-001-2, Turbine Building Ventilation System, Section 4.3.5.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME: _____

NOTE: Provide the operator with a copy of 34SO-U41-001-2, P/Ls & Section 4.3.5.

1.	Operator has DETERMINED the correct procedure section to use.	Operator has DETERMINED the correct procedure section to use is starting at section 4.3.5 of 34SO-U41-001-2 and where to obtain the procedure.	
**2.	Ensure 2U41-C002A Turbine Building Exhaust Fan, Control Switch, in “OFF”, on 2H11-P654. (Step 4.3.5.2)	Operator CONTACTS the Main Control Room to Ensure that 2U41-C002A Turbine Building Exhaust Fan, Control Switch, is in “OFF”, on 2H11-P654.	

PROMPT: **WHEN** the applicant addresses if a Turbine Building Exhaust Fan is operating, as an Operator in the Main Control Room **INFORM** the applicant that the control switch for the exhaust fan is in the OFF position.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
3.	Unlock 2R26-M122, Manual Transfer Switch for U2 Turb Bldg HVAC Exhaust Fan 2U41-C002A, at 164' Reactor Building. (Step 4.3.5.2.b)	At 164' Reactor Building, the operator UNLOCKS 2R26-M122, Manual Transfer Switch For U2 Turb Bldg HVAC Exhaust Fan 2U41-C002A.	
**5.	Place 2R26-M122, Manual Transfer Switch, in the UP position. (2R24-S011 Alternate Power). (Step 4.3.5.2.c)	The operator places 2R26-M122, Manual Transfer Switch, in the UP position. (2R24-S011 Alternate Power).	
6.	Lock 2R26-M122, Manual Transfer Switch, in the UP (2R24-S011 Alternate Power) position. (Step 4.3.5.2.d)	The operator LOCKS 2R26-M122, Manual Transfer Switch, in the UP (2R24-S011 Alternate Power) position.	

PROMPT: **IF** the Operator addresses running 2U41-C002A fan, as the Shift Supervisor, **INFORM** the operator that another operator will run 2U41-C002A fan.

END TIME: _____

NOTE: The terminating cue shall be given to the operator when any of the following conditions are met:

- Operator completes step 6 of this JPM.
- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(Indicates critical step)**

Summary of JPM Attributes

JPM: 2023-301 PLANT 2

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	2 (3 Unit 1)
Step 2 Ensure Exhaust Fans are OFF		Operator must ensure that Exhaust Fans are OFF.
Step 3 Ensure Exhaust Fans are OFF		Operator must ensure that Exhaust Fans are OFF. (Unit 1 only)
Step 5 Position Man Transfer Switch		Operator must align Man Transfer Switch to Alternate supply.
<u>Number of JPM Steps</u>	<30	6
<u>Time to Perform JPM</u>	<45 min	10.0 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		Align alternate power supply to Turbine Building Exhaust fan.
<u>Setting (administered)</u>		
Plant		
<u>Is LOD "1" or "5"</u>	NO	NO

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A Loss of Offsite Power has occurred on BOTH Units.
2. A Turbine Building Exhaust Fan is required to be placed in service on Unit 2.
3. All Emergency Buses are energized by their associated Emergency Diesel Generator.
4. Pre-Job Brief is NOT required.

INITIATING CUES:

Swap 2U41-C002A, Turbine Building Exhaust Fan, power supply to Alternate Power IAW 34SO-U41-001-2, Turbine Building Ventilation System, Section 4.3.5.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL PLANT 3 (ALL)

Title: ISOLATE THE FIRE PROTECTION SPRINKLERS		Version: 10.2
Author: Anthony Ball	Media Number: 2023-301 PLANT 3	Time: 13.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 () UNIT 2 (X)

TASK TITLE: ISOLATE THE FIRE PROTECTION SPRINKLERS

JPM NUMBER: 2023-301 PLANT 3

TASK STANDARD: The task shall be completed when the Fire Protection Sprinklers listed in Attachment 1 of 34AB-P51-001-2 have been isolated during a loss of air.

TASK NUMBER: 036.013

OBJECTIVE NUMBER: 036.013.O

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.57

SRO 3.70

K/A CATALOG NUMBER: 286000A2.07

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.2

SRO 2.9

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
		34AB-P51-001-2, Ver. 7.1

REQUIRED MATERIALS:	Unit 1	Unit 2
		34AB-P51-001-2, Ver. 7.1

APPROXIMATE COMPLETION TIME: 13.0 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A scram has occurred on Unit 2.
2. Unit 2 has had a loss of control air pressure and header pressure is below 45 psig and NOT increasing.
3. No fires exist in the plant.
4. Another operator is isolating Fire Protection Sprinklers to the Startup Transformers.
5. 34AB-P51-001-2, Loss of Instrument and Service Air System, is in progress.

INITIATING CUES:

Isolate the Fire Protection Sprinklers inside the Power Block IAW Attachment 1 of 34AB-P51-001-2.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences.

START TIME: _____

NOTE: Provide the applicant with a copy of Attachment 1 of 34AB-P51-001-2.

NOTE: The steps of this JPM may be performed in any order.

**1.	Close valve 2U43-F093.	At location 112TAT19, valve 2U43-F093 is CLOSED.	
-------------	------------------------	--------------------------------------------------	--

NOTE: This valve isolates the Reactor Feed Pump and Oil Conditioner area.

**2.	Close valve 2U43-F214.	At location 136THT20, valve 2U43-F214 is CLOSED.	
-------------	------------------------	--------------------------------------------------	--

NOTE: This valve isolates the Hydrogen Seal Oil System, W End Cond A & B (Below 130') and W End Cond A & B (Above 130') areas.

**3.	Close valve 2Z43-F101.	At location 112THT13, valve 2Z43-F101 is CLOSED.	
-------------	------------------------	--------------------------------------------------	--

NOTE: This valve isolates the Main Turbine Lube Oil Reservoir area.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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PROMPT: **IF** the operator addresses stationing a fire watch, as the Shift Supervisor, **INFORM** the operator that a fire watch is being posted with back-up suppression equipment.

**4.	Close valve 2U43-F090.	At location 130TAT19, valve 2U43-F090 is CLOSED.	
------	------------------------	--------------------------------------------------	--

NOTE: This valve isolates the RFP Oil Conditioner area.

**END
TIME:** _____

NOTE: The terminating cue shall be given to the operator when any one of the following is met:

- After JPM step #4 is complete.
- With no reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023-301 Plant 3:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	4
Step 1 Close valve 2U43-F093	Closing 2U43-F093 isolates the Reactor Feed Pump and Oil Conditioner area	
Step 2 Close valve 2U43-F214	Closing 2U43-F214 isolates the Hydrogen Seal Oil System, W End Cond A & B (Below 130') and W End Cond A & B (Above 130') areas	
Step 3 Close valve 2Z43-F101	Closing 2Z43-F101 isolates the Main Turbine Lube Oil Reservoir area	
Step 4 Close valve 2U43-F090	Closing 2U43-F090 isolates the RFP Oil Conditioner area	
<u>Number of JPM Steps</u>	<30	4
<u>Time to Perform JPM</u>	<45 min	13 min
<u>Normal / Faulted / Alternate Path</u>		
Normal Path		
<u>Setting (administered)</u>		
Simulator		
<u>Is LOD "1" or "5"</u>	NO	NO

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A scram has occurred on Unit 2.
2. Unit 2 has had a loss of control air pressure and header pressure is below 45 psig and NOT increasing.
3. No fires exist in the plant.
4. Another operator is isolating Fire Protection Sprinklers to the Startup Transformers.
5. 34AB-P51-001-2, Loss of Instrument and Service Air System, is in progress.

INITIATING CUES:

Isolate the Fire Protection Sprinklers inside the Power Block IAW Attachment 1 of 34AB-P51-001-2.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL RO ADMIN 1

Title: CORRECT RWL INDICATORS FOR HIGH DRYWELL TEMPERATURE		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 RO Admin 1	Time: 11.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **CORRECT RWL INDICATORS FOR HIGH DRYWELL TEMPERATURE**

JPM NUMBER: **2023-301 RO Admin 1**

TASK STANDARD: The task shall be completed when the operator has determined the corrected RWL is -137 inches as corrected for the valid instrumentation 1B21-R623A Fuel Zone & 1B21-R623B Fuel Zone per 34AB-B21-002-1.

TASK NUMBER:

OBJECTIVE NUMBER:

K/A CATALOG NUMBER: G2.1.25

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.9

SRO 4.2

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
	34AB-B21-002-1, Ver. 5.16	N/A

REQUIRED MATERIALS:	Unit 1	Unit 2
	34AB-B21-002-1, Ver. 5.16	N/A

VALIDATION TIME: 11.0 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. A reactor scram has occurred.
2. Plant conditions are indicated on Attachments 1 & 2.
3. An operator has reported the following RWLs:
 - Wide Range, 1B21-R604A & 1B21-R623A (UNCOMPENSATED) are -142 inches
 - Wide Range, 1B21-R604B & 1B21-R623B (UNCOMPENSATED) are -144 inches
 - Fuel Zone, 1B21-R623A & 1B21-R623B (UNCOMPENSATED) are -170 inches
4. NO erratic behavior for the specified instruments has been observed.

INITIATING CUES:

- 1) Determine which of these RWL indications are VALID;
AND
- 2) Report the corrected RWL for EACH valid RWL instrument.

RWL Instrument (UNCOMPENSATED)	Valid (Y/N)	Valid Instrument Corrected Level (inches)
1B21-R604A Wide Range		
1B21-R604B Wide Range		
1B21-R623A Wide Range		
1B21-R623B Wide Range		
1B21-R623A Fuel Zone		
1B21-R623B Fuel Zone		

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

NOTE: Provide the operator with Attachments 1 & 2.

1.	Determine highest temperature for RTD Group 1 and 2 (Maximum Run Temperature).	At SPDS panel, the operator has DETERMINED the following Maximum Run Temperatures: RTD Group 1 - 297°F RTD Group 2 - 294°F	
**2.	Determine if the RWL instrument may be used by comparing the Minimum Indicated Level for the associated Maximum Run Temperature.	The operator has DETERMINED the following RWL instruments are VALID : 1B21-R623A & 1B21-R623B (Fuel Zone)	
3.	Determine if the RWL instrument may be used by comparing the Minimum Indicated Level for the associated Maximum Run Temperature.	The operator has DETERMINED the following RWL instruments are INVALID : 1B21-R604A 1B21-R604B 1B21-R623A (Wide Range) 1B21-R623B (Wide Range)	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**4.	Determine corrected Fuel Zone Level (1B21-R623A & R623B).	Using Attachment 3 of 34AB-B21-002-1, the operator has DETERMINED Corrected Level for 1B21-R623A & 1B21-R623B (Fuel Zone) is -137 inches (accept ±1 inch).	

END
TIME: _____

NOTE: The terminating cue shall be given to the Operator when:

- After JPM step #4 is complete.
- With NO reasonable progress, the Operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023-301 RO Admin 1:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	2
Step 2 Determine if the RWL instrument may be used		Comparing the Minimum Indicated Level for the associated Maximum Run Temperature.
Step 4 Determine corrected Fuel Zone Level		Using Attachment 3 of 34AB-B21-002-1, the operator has DETERMINED corrected RWL.
<u>Number of JPM Steps</u>	<30	4
<u>Time to Perform JPM</u>	<45 min	11 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD "1" or "5"</u>	NO	NO

(** Indicates critical step)

Evaluator Answer Key

RWL Instrument (UNCOMPENSATED)	Valid (Y/N)	Valid Instrument Corrected Level (inches)
1B21-R604A Wide Range	N	
1B21-R604B Wide Range	N	
1B21-R623A Wide Range	N	
1B21-R623B Wide Range	N	
1B21-R623A Fuel Zone	Y	-137 inches
1B21-R623B Fuel Zone	Y	-137 inches

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

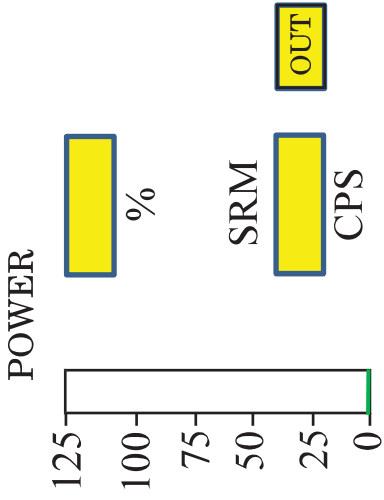
1. A reactor scram has occurred.
2. Plant conditions are indicated on Attachments 1 & 2.
3. An operator has reported the following RWLs:
 - Wide Range, 1B21-R604A & 1B21-R623A (UNCOMPENSATED) are -142 inches
 - Wide Range, 1B21-R604B & 1B21-R623B (UNCOMPENSATED) are -144 inches
 - Fuel Zone, 1B21-R623A & 1B21-R623B (UNCOMPENSATED) are -170 inches
4. NO erratic behavior for the specified instruments has been observed.

INITIATING CUES:

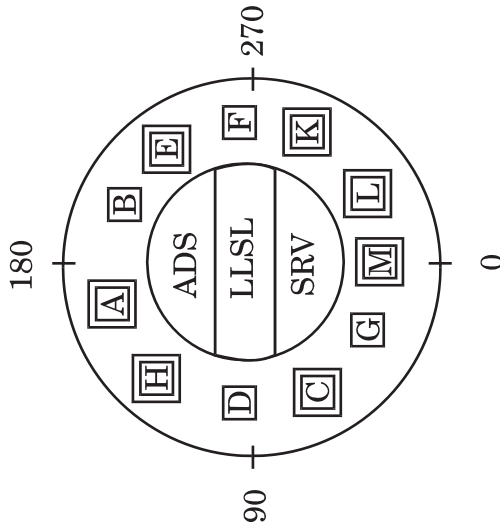
- 1) Determine which of these RWL indications are VALID;
AND
- 2) Report the corrected RWL for EACH valid RWL instrument.

RWL Instrument (UNCOMPENSATED)	Valid (Y/N)	Valid Instrument Corrected Level (inches)
1B21-R604A Wide Range		
1B21-R604B Wide Range		
1B21-R623A Wide Range		
1B21-R623B Wide Range		
1B21-R623A Fuel Zone		
1B21-R623B Fuel Zone		

MODE: RUN



N



VENT		
HNP 1	6.4E-007	μCi/cc
HNP 2	6.5E-007	μCi/cc
STACK	2.0E-005	μCi/cc

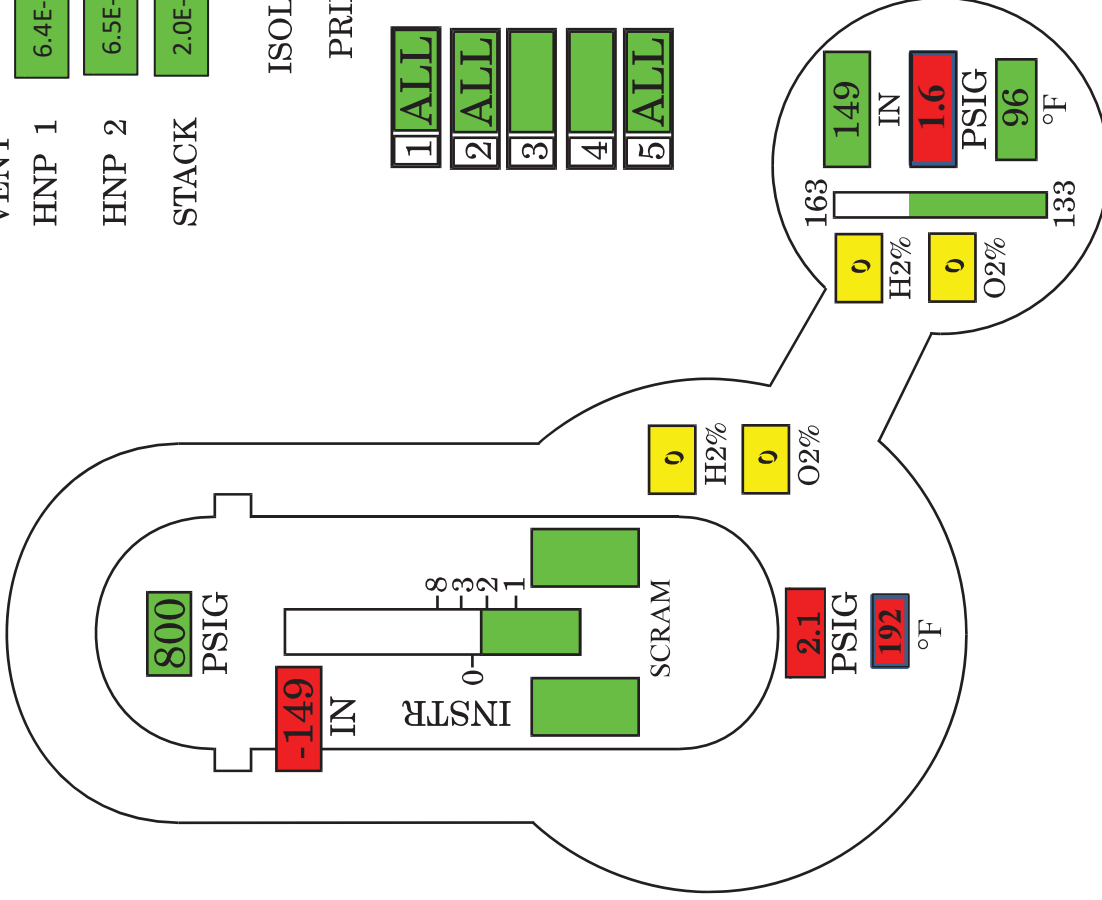
ISOLATION

PRIMARY

1	ALL	1	3	2A	2B
2	ALL	4	5	2D	2E
3		2C			
4					
5	ALL	SEC			

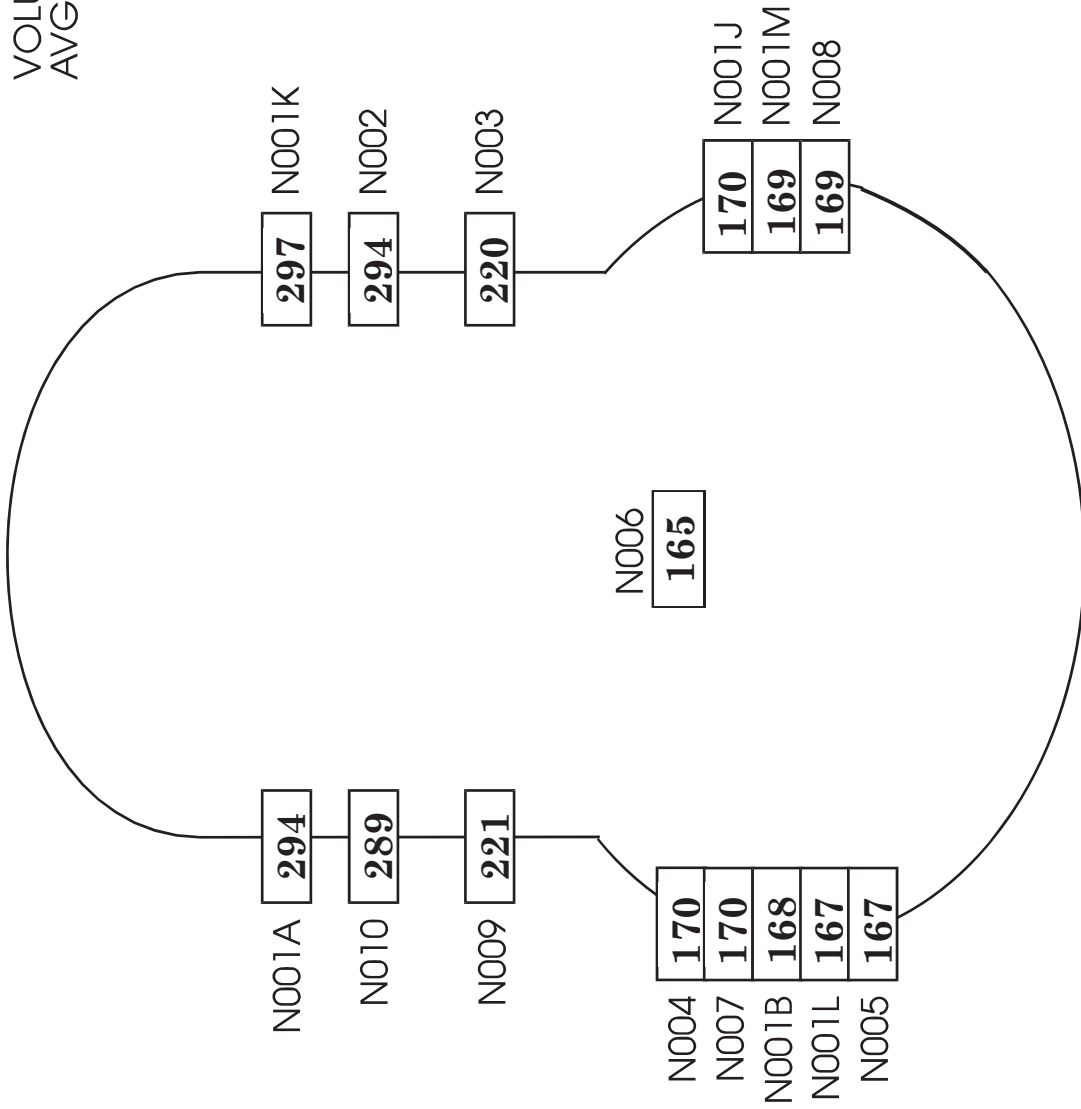
SECONDARY

HNP 1	
HNP 2	



DRYWELL TEMPERATURE DIAGNOSTIC

VOLUMETRIC
AVG. TEMP **192** DEG. F



Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

FINAL
RO ADMIN 2

Title: DETERMINE MINIMUM CREW STAFFING		Version: 1.0
Author: Anthony Ball	Media Number 2023-301 RO Admin 2	Time: 15.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: DETERMINE MINIMUM CREW STAFFING

JPM NUMBER: 2023-301 RO Admin 2

TASK STANDARD: The task shall be satisfactorily completed when the operator IAW NMP-OS-007-013 has determined:

- The required shift manning for Safe Shutdown positions are MET since the number of Licensed Nuclear Plant Operators equals the required MINIMUM of four (4) and the required MINIMUM of three (3) Systems Operators.
- The required MINIMUM of four (4) Fire Brigade positions are NOT MET.

TASK NUMBER: H-OPRO300.001

OBJECTIVE NUMBER: H-OP300.001. A.01

PLANT HATCH JTA IMPORTANCE RATING:

RO N/A

SRO 3.03

K/A CATALOG NUMBER: G2.1.5

K/A CATALOG JTA IMPORTANCE RATING:

RO 2.9

SRO 3.9

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1 & 2
	NMP-ES-035-010, Ver. 7.0 NMP-OS-007-013, Ver. 3.0

REQUIRED MATERIALS:	Unit 1 & 2
	NMP-OS-007-013, Ver. 3.0

VALIDATION TIME: 15.0 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Both Units are operating at 100% RTP.
2. The table below represents the Operations personnel who have arrived to receive turnover and their qualification status.
3. All personnel have ALL their current qualifications listed and have held these qualifications for a minimum of 3 years.
4. All SROs have already performed turnover and all required SROs are present.

Operations Personnel	License Status / Qualifications
Bob	RO, OATC, UO, ENN Communicator, ENS Communicator
Jarred	RO, OATC, UO, ENN Communicator, ENS Communicator
Ben	RO, OATC, UO, ENN Communicator, ENS Communicator
Mark	RO, OATC, UO, ENN Communicator, ENS Communicator
Wayne	SO, Fire Brigade
James	SO, Fire Brigade
Josh	SO, Fire Brigade
Dustin	SO, NOT Fire Brigade
Maurice	SO, NOT Fire Brigade
Greg	SO, NOT Fire Brigade
John	SO, NOT Fire Brigade

EVALUATOR COPY

INITIATING CUES:

Using the operations crew shown in the table provided, give a written response to the following question:

1. Does the crew shown in the table provided satisfy the Plant Hatch administrative procedural Minimum Shift Staffing requirements for Safe Shutdown and Fire Brigade?

(NOTE: Only consider the operations crew members and not the RP or Chemistry Technicians.). Annotate any exceptions.

ANSWER SHEET	
Safe Shutdown Designated Personnel Met	YES / NO
Fire Brigade Members Met	YES / NO

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

NOTE: If referenced, staffing is NOT met IAW NMP-OS-007-013, Shift Manning Requirements, Data Sheet 2.

**1.	NMP-OS-007-013, Step 4.1.10 Is Safe Shutdown staffing requirement met?	The candidate determines that the Safe Shutdown requirement IAW NMP-OS-007-013, Data Sheet 2 IS MET.	
-------------	---------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------	--

**2.	NMP-OS-007-013, Data Sheet 2 Is Fire Brigade staffing requirement met?	The candidate determines that the Fire Brigade requirement IAW NMP-OS-007-013, Data Sheet 2 IS NOT MET.	
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(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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**END
TIME:** _____

NOTE: The terminating cue shall be given to the Operator when:

- After JPM step #2 is complete.
- With NO reasonable progress, the Operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

***** EVALUATOR ANSWER KEY *****

ANSWER SHEET	
Safe Shutdown Designated Personnel Met	YES / NO
Fire Brigade Members Met	YES / NO

(** Indicates critical step)

EVALUATOR COPY

NOTE: Names in attachment may be placed in alternate positions based on qualifications.

ATTACHMENT 1
Page 1 of 1

MINIMUM SHIFT CREW COMPOSITION

Minimum requirements per shift for On Site Staffing per 10 CFR 50.54(m)(2)(i).
Additionally Included is staffing for non licensed operators (TS 5.2.2.a) and STA (TS 5.2.2.g) positions.

Number of nuclear power units operating	Position	Minimum number required
None	Senior Reactor Operator	1
	Nuclear Plant Operator	2
	System Operator	3
	Shift Technical Advisor	0
One or Two	Senior Reactor Operator	2
	Nuclear Plant Operator	3
	System Operator	3
	Shift Technical Advisor	1

(** Indicates critical step)

EVALUATOR COPY

DATA SHEET 2
Page 1 of 2

MINIMUM EMERGENCY PREPAREDNESS SHIFT STAFFING REQUIREMENTS

MINIMUM EMERGENCY PREPAREDNESS SHIFT STAFFING REQUIREMENTS Based on the Emergency Plan Table 2.2.A			
Position		Person Filling Position	
Operations			
Safe Shutdown Designated personnel • Nuclear Plant Operator (4 minimum) • System Operator (cover remaining open positions)	7	NPO #1	_____ Bob _____
		NPO #2	_____ Jarred _____
		NPO #3	_____ Ben _____
		NPO #4	_____ Mark _____
		NPO/SO #4	_____ Dustin _____
		NPO/SO #5	_____ Maurice _____
		NPO/SO #6	_____ Greg _____
Fire Brigade Members	4	SO #1	_____ Wayne _____
		SO #2	_____ James _____
		SO #3	_____ Josh _____
		SO #4	_____ NOT FILLED _____

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023-301 RO Admin 2:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	2
Step 1 Determine Safe Shutdown Requirements		Applicant determines the Safe Shutdown requirements are MET .
Step 2 Determine Fire Brigade Requirements		Applicant determines the Fire Brigade requirements are NOT MET .
<u>Number of JPM Steps</u>	<30	2
<u>Time to Perform JPM</u>	<45 min	15 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD "1" or "5"</u>	NO	NO

(** Indicates critical step)

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Both Units are operating at 100% RTP.
2. The table below represents the Operations personnel who have arrived to receive turnover and their qualification status.
3. All personnel have ALL their current qualifications listed and have held these qualifications for a minimum of 3 years.
4. All SROs have already performed turnover and all required SROs are present.

Operations Personnel	License Status / Qualifications
Bob	RO, OATC, UO, ENN Communicator, ENS Communicator
Jarred	RO, OATC, UO, ENN Communicator, ENS Communicator
Ben	RO, OATC, UO, ENN Communicator, ENS Communicator
Mark	RO, OATC, UO, ENN Communicator, ENS Communicator
Wayne	SO, Fire Brigade
James	SO, Fire Brigade
Josh	SO, Fire Brigade
Dustin	SO, NOT Fire Brigade
Maurice	SO, NOT Fire Brigade
Greg	SO, NOT Fire Brigade
John	SO, NOT Fire Brigade

INITIATING CUES:

Using the operations crew shown in the table provided, give a written response to the following question:

1. Does the crew shown in the table provided satisfy the Plant Hatch administrative procedural Minimum Shift Staffing requirements for Safe Shutdown and Fire Brigade?

(NOTE: Only consider the operations crew members and not the RP or Chemistry Technicians.). Annotate any exceptions.

ANSWER SHEET

Safe Shutdown Designated Personnel Met

YES / NO

Fire Brigade Members Met

YES / NO

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL RO ADMIN 3

Title: DETERMINE THE DRYWELL FLOOR DRAIN LEAKAGE RATE		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 RO Admin 3	Time: 25.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **DETERMINE THE DRYWELL FLOOR DRAIN
LEAKAGE RATE**

JPM NUMBER: **2023-301 RO Admin 3**

TASK STANDARD: The task will be complete when the Drywell Leakage Rates have been determined, any procedural limit violations and required actions reported to the Shift Supervisor, and 24hr identified and unidentified leakage designated.

TASK NUMBER:

OBJECTIVE NUMBER:

K/A CATALOG NUMBER: G2.2.12

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.7

SRO 4.1

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1	Unit 2
	34SV-SUV-019-1, Ver. 37.49	N/A

REQUIRED MATERIALS:	Unit 1	Unit 2
	34SV-SUV-019-1, Ver. 37.49	N/A

VALIDATION TIME: 25.0 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 is operating at 100% power.
2. The time is 0800.
3. The Drywell Floor Drain (DWFD) sumps have just been “pumped down.”
4. 34SV-SUV-019-1, Surveillance Checks, is in progress.
5. Drywell Equipment Drain 24 Hour Leakage has been calculated to be 1.21 gpm.
6. Drywell Temperature 124°F.

INITIATING CUES:

- 1) Complete Drywell Floor Drain Leakage, section 4.25.5 of 34SV-SUV-019-1, Surveillance Checks
- 2) Report the Identified & Unidentified 24-hour Leakage rates
- 3) Evaluate the results AND identify all applicable 34SV-SUV-019-1, NOTES to the Shift Supervisor (SS)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

PROMPT: **PROVIDE** the operator with 34SV-SUV-019-1 and Attachments 1 & 2.

PROMPT: **IF** addressed by the operator, as the SS, **INFORM** the operator that another operator has already performed the DWED Leakage Rate check.

NOTE: The initial conditions stated the sumps had just been pumped down.

**1.	Select the correct integrator.	Operator has selected DWFD leakage integrator 1G11-K601.	
**2.	Operator reads the integrator.	Operator has obtained DWFD reading of 4017.0 (allowable band 4016.9 – 4017.1).	
3.	Operator completes Attachment 1.	Operator has completed Attachment 1 with the same results as Evaluators Copy.	

PROMPT: **IF** the Operator addresses verification of calculations, **INFORM** the operator that will be done after they have completed their analysis.

**4.	Operator determines DWFD 8-hour leakage.	Operator records step 22 at 5.50 gpm.	
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(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Operator determines Differential Floor Drain Leakage	Operator records step 25 at 5.34 gpm.	
**6.	Operator notifies SS of DWFD leakage limits exceeded.	Operator has notified the SS that: <ul style="list-style-type: none"> • DWFD leakage rate exceeds 5 OR provides the calculated numbers. • Differential DWFD leakage rate exceeds 2 gpm limits OR provides the calculated numbers. 	
**7.	Operator reports the Identified & Unidentified 24-hour Leakage rates.	Operator reports the Identified 24 Leakage rate is 1.21 gpm & the Unidentified 24-hour Leakage rate is 1.97 gpm (allowable band 1.96 – 1.98).	
**8.	Operator notifies SS of DWFD applicable note.	Operator notifies SS that note FF is applicable.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
--------	------------------	----------	----------------------

NOTE: The ff, f.2 and f.3 notes require the following:

- f. Concerning Drywell Floor Drains and Drywell Equipment Drains:
- (1) Enter “N/A” if the integrator is or was inoperable due to drifting OR is not or was not required to be operable. For actual time and present reading, enter data when integrator is restored to service or required to be operable.
 - (2) Use 34SO-G11-013-1 to calculate leakage if integrator drifting. Circle the results in red or, if using HHC, add note stating integrator drifting.
 - (3) If an abnormal rise in Drywell Floor Drain leakage has been noted AND Drywell average temperature is < 100°F, request Engineering to evaluate the need to secure some drywell cooling fans. This is due to the possibility of excessive moisture condensation at the low drywell temperature.
- ff. For DWFD leakage:
- (1) If DWFD leakage is >0.5 GPM, perform the following:
 - Notify Management (Operations Duty Management and Plant Hatch Duty Manager) and include DWFD leakage on the Morning Report under Major Equipment Impacting Operational Focus.
 - Each Operating crew will review 34AB-T23-002-1 at the beginning of shift and log the DWFD leakage rate each shift.
 - Initiate a Condition Report and make a Control Room Log entry.
 - Engineering Support will include a graph of U-1 DWFD leakage in the Daily Status Report each Friday.
 - (2) If DWFD leakage is >1.5 GPM, perform the following:
 - Notify Management to schedule a Unit 1 shutdown based on DWFD leakage trend.
 - Initiate a Condition Report and make a Control Room Log entry.
 - Every 2 hours, calculate DWFD leakage and make a Control Room Log entry of the leakage rate.
 - (3) IF DWFD leakage is >2.5 GPM, perform the following:
 - Perform a controlled shutdown of Unit 1 to repair the leakage.
 - Initiate a Condition Report and make a Control Room Log entry.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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PROMPT: **IF** addressed by the Operator, as the Shift Supervisor, **INFORM** the Operator that a second Drywell Floor Drain leakage rate check is not desired at this time.

**END
TIME:** _____

NOTE: The terminating cue shall be given to the Operator when:

- After JPM step #8 is complete.
- With no reasonable progress, the Operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023-301 RO Admin 3:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	7
Step 1 Select correct integrator		Selects 1G11-K601
Step 2 Read the integrator		Reads 4017.0
Step 4 Determine DWFD 8 hr leakage		Calculates 5.5 gpm
Step 5 Determine differential DWFD leakage		Calculates 5.34 gpm
Step 6 Operator Notifies SS		Notifies SS that DWFD leakage exceeds 5 gpm and differential DWFD leakage exceeds 2 gpm.
Step 7 Notifies SS of identified/unidentified leakage		Identified leakage 1.21 gpm and Unidentified leakage of 1.97 gpm
Step 8 Notifies SS of applicable notes		Note ff is applicable
<u>Number of JPM Steps</u>	<30	8
<u>Time to Perform JPM</u>	<45 min	25 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD "1" or "5"</u>	NO	NO

Evaluator Use Only (not a handout)

4.25	PANEL - INSTRUMENT / TECH SPEC.	NOTE	OPER COND	T/S OR OPER LIMIT	0000	0800	1600
4.25.1	If possible, pump sump down prior to obtaining reading.	b	1,2,3		√	√	
4.25.2	1H11-P613: - 1G11-K603, Equipment Drain Leakage	f.1	1,2,3				
	Actual Time (1)				0000	0800	
	Present Reading (2)				####	####	
	Yesterday's Reading Time (3)				####	####	
	Yesterday's Reading (4)				####	####	
	Difference (2) - (4) (5)				####	####	
	Difference Conversion (5) x 10 (6)				###	###	
	24 hour elapsed minutes (7)				####	####	
	24 hour leakage (6)/(7) (8)	ll, f.2			1.19	1.21	
4.25.3	Check pump shuts off automatically on decreasing level of sump.	b	1,2,3		√	√	
Initials					CME	DRK	
Time					0003	0800	

Calculations Verified

ARB / DRK /

0000

0800

1600

DATE

Evaluator Use Only (not a handout)

4.25 Cont.	PANEL-INSTRUMENT/TECH SPEC	NOTE	OPER COND	T/S OR OPER LIM	0000	0800	1600	
4.25.4	If possible, pump sump down prior to obtaining reading.	b	1,2,3		√	√		
4.25.5	1H11-P613 - 1G11-K601, Floor Drain Leakage	f.1	1,2,3					
	Actual Time (9)				0000	0800		
	Present Reading (10)				3752.9	4017.0 Allowable Band 4016.9-4017.1		
	Yesterday's Reading Time (11)				0000	0800	1600	
	Yesterday's Reading (12)				3723.9	3732.9	3744.1	
	Difference (10) - (12) (13)				29.0	284.1 Allowable Band 284.0-284.2		
	Difference Conversion (13) x 10 (14)				290	2841 Allowable Band 2840-2842		
	24 hour elapsed minutes (15)				1440	1440		
	24 hour leakage (14) / (15) (16)	ff, f.2, f.3			≤ 5 gpm	.20	1.97	
	Previous 8 hour reading (17)	f.1				3744.1	3752.9	
	Previous 8 hour reading time (18)					1600	0000	
	8 Hour difference (10) - (17) (19)					8.8	264.1 Allowable Band 264.0-264.2	
	Difference conversion (19) x 10 (20)					88	2641 Allowable Band 2640-2642	
	8 hour elapsed minutes (21)					480	480	
	8 hour leakage (20) / (21) (22)	ff,f.2, f.3				≤ 5 gpm	.18	5.50
	8 hour leakage from previous 24 hours (23)					.16	.16	.18
	Total Leakage (8) + (16) (24)					≤ 30 gpm	1.55	3.18
	Differential Floor Drain Leakage (22) - (23) (SR 3.4.4.1) (25)	ff				≤ 2 gpm in Mode 1	.02	5.34

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 is operating at 100% power.
2. The time is 0800.
3. The Drywell Floor Drain (DWFD) sumps have just been “pumped down.”
4. 34SV-SUV-019-1, Surveillance Checks, is in progress.
5. Drywell Equipment Drain 24 Hour Leakage has been calculated to be 1.21 gpm.
6. Drywell Temperature 124°F.

INITIATING CUES:

- 1) Complete Drywell Floor Drain Leakage, section 4.25.5 of 34SV-SUV-019-1, Surveillance Checks
- 2) Report the Identified & Unidentified 24-hour Leakage rates
- 3) Evaluate the results AND identify all applicable 34SV-SUV-019-1, NOTES to the Shift Supervisor (SS)

ATTACHMENT 1 (U1)
(Excerpt from 34SV-SUV-019-1)

4.25	PANEL - INSTRUMENT / TECH SPEC.	NOTE	OPER COND	T/S OR OPER LIMIT	0000	0800	1600	
4.25.1	If possible, pump sump down prior to obtaining reading.	b	1,2,3		√	√		
4.25.2	1H11-P613: - 1G11-K603, Equipment Drain Leakage	f.1	1,2,3					
	Actual Time (1)				0000	0800		
	Present Reading (2)				####	####		
	Yesterday's Reading Time (3)				####	####		
	Yesterday's Reading (4)				####	####		
	Difference (2) - (4) (5)				###	###		
	Difference Conversion (5) x 10 (6)				####	####		
	24 hour elapsed minutes (7)	####	####					
	24 hour leakage (6)/(7) (8)	ll f.2			1.19	1.21		
4.25.3	Check pump shuts off automatically on decreasing level of sump.	b	1,2,3		√	√		
					Initials	CME	DRK	
					Time	0003	0800	

Calculations Verified

ARB / DRK /

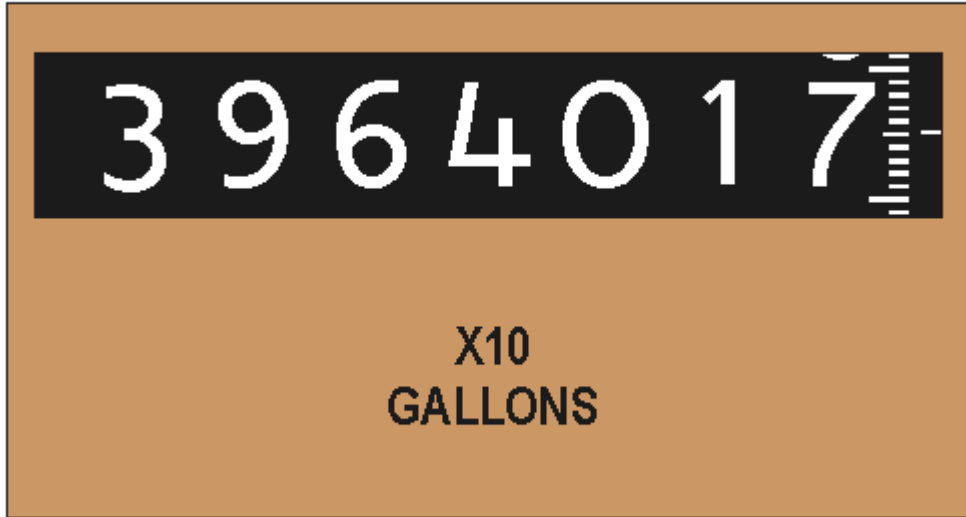
0000 0800 1600

DATE _____

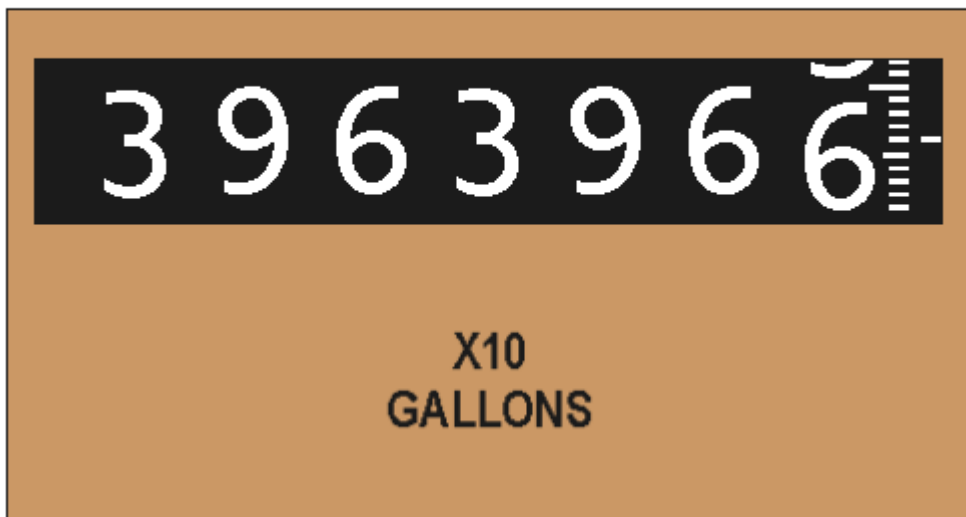
ATTACHMENT 1 (U1)
(Excerpt from 34SV-SUV-019-1)

4.25 Cont.	PANEL-INSTRUMENT/TECH SPEC	NOTE	OPER COND	T/S OR OPER LIM	0000	0800	1600
4.25.4	If possible, pump sump down prior to obtaining reading.	b	1,2,3		√	√	
4.25.5	1H11-P613 - 1G11-K601, Floor Drain Leakage	f.1	1,2,3				
	Actual Time (9)			0000			
	Present Reading (10)			3752.9			
	Yesterday's Reading Time (11)			0000	0800	1600	
	Yesterday's Reading (12)			3723.9	3732.9	3744.1	
	Difference (10) - (12) (13)			29.0			
	Difference Conversion (13) x 10 (14)			290			
	24 hour elapsed minutes (15)			1440			
	24 hour leakage (14) / (15) (16)	ff, f.2, f3		≤ 5 gpm	.20		
	Previous 8 hour reading (17)	f.1			3744.1	3752.9	
	Previous 8 hour reading time (18)				1600	0000	
	8 Hour difference (10) - (17) (19)				8.8		
	Difference conversion (19) x 10 (20)				88		
	8 hour elapsed minutes (21)				480		
	8 hour leakage (20) / (21) (22)	ff,f.2, f3		≤ 5 gpm	.18		
	8 hour leakage from previous 24 hours (23)				.16	.16	.18
	Total Leakage (8) + (16) (24)			≤ 30 gpm	1.55		
	Differential Floor Drain Leakage (22) - (23) (SR 3.4.4.1) (25)	ff		≤ 2 gpm in Mode 1	.02		

1G11-K601, Floor Drain Leakage



1G11-K603, Equipment Drain Leakage



Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL RO ADMIN 4

Title: DETERMINE EVACUATION ROUTE		Version: 1.1
Author: Anthony Ball	Media Number: 2023-301 RO Admin 4	Time: 10.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: DETERMINE EVACUATION ROUTE

JPM NUMBER: 2023-301 RO Admin 4

TASK STANDARD: The task shall be completed when the wind direction has been checked and an exit point, site exit route & evacuation route has been determined and provided to the ED per NMP-EP-144.

TASK NUMBER: 300.046

OBJECTIVE NUMBER: 300.046.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.86

SRO 3.96

K/A CATALOG NUMBER: G2.4.39

K/A CATALOG JTA IMPORTANCE RATING:

RO 3.9

SRO N/A

OPERATOR APPLICABILITY: Nuclear Plant Operator (NPO)

GENERAL REFERENCES:	Unit 1 & 2
	NMP-EP-142-F10, Ver. 3.0 NMP-EP-144, Ver. 10.0

REQUIRED MATERIALS:	Unit 1 & 2
	NMP-EP-142-F10, Ver. 3.0 NMP-EP-144, Ver. 10.0

VALIDATION TIME: 10.0 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Emergency Director (ED) has declared a Site Area Emergency.
2. The Emergency Director (ED) has ordered evacuation with radiation monitoring.
3. The Prompt Off-Site Dose Assessment indicated an offsite release is in progress.
4. Plant conditions have resulted in an Elevated Radioactive release.
5. The ED has directed YOU to prepare for the PA announcement using NMP-EP-142- F10, SAE Public Announcement Script.
6. SPDS MIDAS & Meteorological Data are provided as Attachments.

INITIATING CUES:

In preparation of making a page announcement for the above emergency condition, **DETERMINE** the applicable:

**Exit Point,
Site Exit Route,
Evacuation Route &
INFORM the ED of the results.**

CIRCLE your answer below.

Exit Point	Gate 17	PESB
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Site Exit Route	Main Access Road	Road behind LLRWB
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Evacuation Route	U.S. Hwy. 1 - North	U.S. Hwy. 1 - South	EITHER direction on U.S. Hwy. 1
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NOTE: Another Operator will make the actual page announcement.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

NOTE: Provide the operator with Attachments 1 & 2.

NOTE: The Operator may review NMP-EP-142-F10, Site Area Emergency Public Address Announcement Script.

1.	Select correct section of NMP-EP-144.	The Operator uses NMP-EP-144 Table of Contents and determines that Instruction 4.1.6 – Site Evacuation With Radiological Monitoring, is the required section.	
2.	Operator must determine which attachment is required to be performed to correctly identify the evacuation routes. (Step 4.1.6.1.a)	Operator determines that NMP-EP-144 Attachment 12, Hatch Site Evacuation Routes, is required to be performed.	
**3.	Is a radiological release in progress? (Attachment 12, step 1)	Operator reviews Initial Conditions and determines “YES” and goes to Attachment 12 step 1. b.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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NOTE: If the operator marks “NO”, the wrong Evacuation Route and State Reception Center (s) will be determined.

NOTE: Attachment 12 NOTE after Step 1.b informs the operator to use the 15-minute average wind direction information using the meteorological instrumentation that corresponds to the primary release point:
 The 100M instrument must be used for Main Stack (elevated) release.
 The 10M instrument must be used for RB Vent (ground) release.

NOTE: The Operator will determine the 100M wind direction is required to be used (Main Stack) due to the MIDAS handout indicating the Unit 1 and Unit 2 Reactor Building stacks Normal range rad monitors being in service and the Main Stack Accident Range Monitor (KAMAN system 2D11-R631) being in service with the Normal Range out of service. This indicates a release out of the Main Stack which is considered an Elevated release.

**4.	The operator must determine if the 10M or 100M meteorological instruments will be used to determine meteorological conditions. (Attachment 12. step 1.b)	From the SPDS MIDAS screen, the Operator determines that the 100M instruments will be used.	
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5.	IF a radiological release is in progress, THEN, based on <u>wind direction</u> , determine *** (Attachment 12 step 1.b Table)	At a SPDS terminal, determines 100M wind direction is 65 degrees using either: SPDS MIDAS screen OR SPDS MET Data screen	
------	---------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------	--

6.	*** the Exit point, ***** (Attachment 12 step 1.b Table)	Determines the Exit Point is the Plant Entry Security Building (PESB)	
------	---------------------------------------------------------------------	-----------------------------------------------------------------------	--

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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NOTE: If the operator uses the 10 Meter wind direction, the Exit Point will **(INCORRECTLY)** be Gate 17.

7.	<p>***</p> <p>site exit route,</p> <p>*****</p> <p>(Attachment 12 step 1.b Table)</p>	<p>Determines the Site Exit Route is the Road behind Low Level Radwaste Building.</p>	
------	-----------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------	--

NOTE: If the operator uses the 10 Meter wind direction, the Site Exit Route will **(INCORRECTLY)** be the Main Access Road.

8.	<p>***</p> <p>Evacuation route/State Reception Center</p> <p>(Attachment 12 step 1.b Table)</p>	<p>Determines the Evacuation Route is U.S. Hwy 1 – South to Appling Co. High School / Baxley.</p>	
------	---------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------	--

NOTE: If the operator uses the 10 Meter wind direction, the evacuation route will **(INCORRECTLY)** state “U.S. Hwy. 1 – North to Toombs Co. Middle School / Lyons“.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
9.	The Operator informs the ED of the applicable Exit point, exit route, and evacuation route	The Operator informs the ED of the following: Exit Point: <u>Plant Entry Security Building (PESB)</u> Exit Route: <u>Road behind Low Level Radwaste Building</u> Evacuation Route/Reception Center: <u>U.S. Hwy 1 – South to Appling Co. High School / Baxley</u>	

PROMPT: **IF** the operator addresses Page Announcements, as the Shift Supervisor, **INFORM** the operator that will be performed by another Operator.

END TIME: _____

- NOTE:** The terminating cue shall be given to the Operator when:
- After JPM step #9 is complete.
 - With NO reasonable progress, the Operator exceeds double the allotted time.
 - Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023-301 RO Admin 4:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	6
Step 3 Determine Release Y/N		Operator determines “YES” for a release is in progress
Step 4 Determines Release Level		Determines a elevated release and that the 100M instruments will be used or the wrong Evacuation Route and State Reception Centers will be determined causing undue exposure to evacuees.
Step 5 Wind Direction		Improper wind direction of 55 degrees using the 10 Meter <u>vice</u> the 100 Meter reading of 65 degrees (correct wind direction) will cause the wrong Evacuation Route and State Reception Centers to be determined causing undue exposure to evacuees.
Step 6 Exit Point		Using the Table and selecting the correct Exit Point will prevent undue exposure to evacuees.
Step 7 Site Exit Route		Using the Table and selecting the correct Site Exit Route will prevent undue exposure to evacuees.
Step 8 Evacuation Route		Using the Table and selecting the correct Evacuation Route will prevent undue exposure to evacuees.
<u>Number of JPM Steps</u>	<30	9
<u>Time to Perform JPM</u>	<45 min	10 min
<u>Normal / Faulted / Alternate Path</u>		
Admin (Normal)		Determine Exit Point, Site Exit Route and Evacuation Route during an Emergency with a Release.
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD “1” or “5”</u>	NO	NO

(** Indicates critical step)

EVALUATOR USE ONLY (NOT A HANDOUT)

HATCH SITE EVACUATION ROUTES

1. Is a radiological release in progress? Yes No
 - a. IF a radiological release is NOT in progress, **use** the following exit point, site exit route, and evacuation route.
 - Exit Point - Plant Entry & Security Building (PESB)
 - Site Exit Route - Main Access Road
 - Evacuation Route - Either direction on U.S. Hwy. 1
 - b. IF a radiological release is in progress, THEN, based on wind direction, **determine** the exit point, site exit route, evacuation route, and State Reception Center with the chart below.

NOTE

- Security should be consulted to determine alternative(s) IF designated exit point and/or site exit route cannot be used. Using an alternate exit point requires discussion with Security and RP.
- The 15 minute average wind direction information MUST be read using the meteorological instrumentation that corresponds to the primary release point:
 - The 100M instrument MUST be used for Main Stack (elevated) release.
 - The 10M instrument MUST be used for RB Vent (ground) release.
 - **Consult** the On-Shift Dose Analyst or the EOF Dose Assessment Staff for alternate locations IF either of these instruments is INOPERABLE.

Wind Direction From	Exit Point	Site Exit Route	Evacuation Route/ State Reception Center
340° - 60°	Gate 17	Main Access Road	U.S. Hwy. 1 - North to Toombs Co. Middle School/ Lyons
61° - 110° (65°)	PESB	Road behind LLRWB	U.S. Hwy. 1 - South to Appling Co. High School/ Baxley
111° - 225°	PESB	Main Access Road	U.S. Hwy. 1 - South to Appling Co. High School/ Baxley
226° - 339°	PESB	Main Access Road	EITHER direction on U.S. Hwy. 1 to Toombs Co. Middle School/ Lyons OR Appling Co. High School/ Baxley

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. The Emergency Director (ED) has declared a Site Area Emergency.
2. The Emergency Director (ED) has ordered evacuation with radiation monitoring.
3. The Prompt Off-Site Dose Assessment indicated an offsite release is in progress.
4. Plant conditions have resulted in an Elevated Radioactive release.
5. The ED has directed YOU to prepare for the PA announcement using NMP-EP-142- F10, SAE Public Announcement Script.
6. SPDS MIDAS & Meteorological Data are provided as Attachments.

INITIATING CUES:

In preparation of making a page announcement for the above emergency condition, **DETERMINE** the applicable:

**Exit Point,
Site Exit Route,
Evacuation Route &
INFORM the ED of the results.**

CIRCLE your answer below.

Exit Point	Gate 17	PESB
-------------------	---------	------

Site Exit Route	Main Access Road	Road behind LLRWB
------------------------	------------------	-------------------

Evacuation Route	U.S. Hwy. 1 - North	U.S. Hwy. 1 - South	EITHER direction on U.S. Hwy. 1
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NOTE: Another Operator will make the actual page announcement.

MIDAS INFORMATION

METEOROLOGICAL

10M WIND SPD 133-R601 0.0	100M WIND SPD 1Y33-R603 4.0	10M WIND DIR 1Y33-R601 55	100M WIND DIR 1Y33-R603 65
AMBIENT TMP (F) 10M 55	DELTA T 60-10 -0.5	DELTA T 100-10 -1.0	RAINFALL 15 MIN AVG .000

RADIOLOGICAL

MAIN STACK	U1 RX BLDG VENT	U2 RX BLDG VENT
NORMAL RANGE 1D11-K600A	KAMAN 1D11-R631 8.65E+02	NORMAL RANGE 2D11-K636A 5.60E+01
1D11-K600B	KAMAN 1D11-R631 6.70E+01	KAMAN 2D11-R631 5.56E+01

STABILITY
CLASS
D

METEOROLOGICAL DATA

Wind	(DIRECTION FROM)	15 MIN AVERAGE	STD-DEV	SPEED	15 MIN AVERAGE
10M ELEVATION	55 DEG	55 DEG	12	1 MPH	0 MPH
60M ELEVATION	63 DEG	65 DEG	6	2 MPH	2 MPH
100M ELEVATION	65 DEG	65 DEG	4	4 MPH	4 MPH
45M ELEVATION-BACKUP	50 DEG	50 DEG	4	2 MPH	2 MPH
TEMPERATURE					
10M ELEVATION AMBIENT	55 DEG F	55 DEG F		FLOW*	
10M ELEVATION AMBIENT-BACKUP	55 DEG F	55 DEG F		FLOW	
10M DEWPOINT	73 DEG F				
60M - 10M DELTA TEMP.	-0.5 DEG F			FLOW	-4.1 DEG F
100M - 10M DELTA TEMP.	-1.0 DEG F			FLOW	-2.4 DEG F
45M - 10M DELTA TEMP.-Backup	-1.0 DEG F			FLOW	-2.4 DEG F
Precipitation					.00 INCHES SINCE MIDNIGHT

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

FINAL
SRO ADMIN 1

Title: DETERMINE WORK HOURS		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 SRO Admin 1	Time: 30.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: DETERMINE WORK HOURS**JPM NUMBER:** 2023-301 SRO Admin 1

TASK STANDARD: The task shall be satisfactorily completed when the operator, IAW NMP-AD-016-003, has determined that Operators 1, 2, 4 would require a waiver to work the additional 3 hours. Operator 3 can work the additional 3 hours without requiring a waiver. Identifies that Operators 1 and 4 would exceed the 7-day work hour limit. Operator 2 would exceed the 24-hour work hour limit and Operator 4 would exceed the 48-hour work hour limit. The operator must also identify the lowest level of management (Operations Shift Manager) to authorize the waiver.

TASK NUMBER: H-OPRO300.001**OBJECTIVE NUMBER:** H-OP300.001.A.01**PLANT HATCH JTA IMPORTANCE RATING:**

SRO 3.03

K/A CATALOG NUMBER: G2.1.5**K/A CATALOG JTA IMPORTANCE RATING:**

RO 2.9

SRO 3.9

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	Unit 1 & 2
	NMP-AD-016, Ver. 11.1 NMP-AD-016-001 Ver. 8.1 NMP-AD-016-001-F02 Ver. 2.1 NMP-AD-016-003, Ver 9.1
REQUIRED MATERIALS:	Unit 1 & 2
	NMP-AD-016, Ver. 11.1 NMP-AD-016-001 Ver. 8.1 NMP-AD-016-003, Ver. 9.1 Calculator

VALIDATION TIME: 30 Minutes**SIMULATOR SETUP:** N/A

EVALUATOR COPY

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 is operating at 100% RTP. One Reactor Operator must be held over three hours to meet Tech Spec minimum staffing.
2. The table below represents the work history (excluding shift turnover time) of the available Reactor Operators on shift (hours reflected those worked PRIOR to the 3 hour holdover). All operators began their shift schedule at the same time each day. All work hours on Day 3 were spent in LOCT training.
3. All the shifts are Day Shift.

Day	1 Sun	2 Mon On-Shift	3 Tue TRAINING	4 Wed On-Shift	5 Thu On-Shift	6 Fri On-Shift	7 Sat On-Shift	8 Sun On-Shift
Operator #1	0	4	12	10	10	14	10	11
Operator #2	0	0	12	12	12	8	8	14
Operator #3	0	8	12	10	10	8	10	11
Operator #4	0	0	12	12	10	10	14	10

Note: A break of at least 10 hours has occurred between all work periods

INITIATING CUES:

Evaluate the work history for all 4 operators.

1. If an additional 3 hours is worked determine if a waiver would be required for each operator.
2. Identify the fatigue rule(s) that would be exceeded for any required waivers.
3. Identify the lowest level of management that can determine if a waiver is necessary to mitigate or prevent a condition adverse to operations safety.
4. DO NOT consider the 54 hour Maximum Average Work Hours (MAWH) rule in your evaluation of work history.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

**1.	NMP-AD-016-003, Step 4.1.2. Evaluate Operator #1.	The operator determines that the operator will not exceed 16 in 24 hours or 26 in 48 hours but would require a waiver to exceed 72 hours in a 7 day period.	
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**2.	NMP-AD-016-003, Step 4.1.2. Evaluate Operator #2.	The operator determines that the operator will not exceed 26 in 48 hours or 72 hours in a 7 period but would require a waiver to exceed 16 in 24 hours on day 8.	
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**3.	NMP-AD-016-003, Step 4.1.2. Evaluate Operator #3.	The operator determines that the operator will not exceed any fatigue rule limits and NO waiver would be required.	
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(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**4.	NMP-AD-016-003, Step 4.1.2. Evaluate Operator #4.	The operator determines that the operator will not exceed 16 in 24 hours or 72 hours in a 7 day period but would require a waiver to exceed 26 in 48 hours (days 7 & 8).	
**5.	NMP-AD-016-003, Step 3.4.a NMP-AD-016-001, Step 4.3.2 Determines waivers.	The operator identifies the Operations Shift Manager as the lowest level to determine if waivers must be granted.	

**END
TIME:** _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 5.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023-301 SRO Admin 1:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	5
Step 1 Evaluate Operator #1		The operator determines a waiver is required
Step 2 Evaluate Operator #2		The operator determines a waiver is required
Step 3 Evaluate Operator #3		The operator determines a waiver is NOT required
Step 4 Evaluate Operator #4		The operator determines a waiver is required.
Step 5 Identifies/Determines waiver		The operator identifies the OSM.
<u>Number of JPM Steps</u>	<30	5
<u>Time to Perform JPM</u>	<45 min	30.0 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD “1” or “5”</u>	NO	NO

(** Indicates critical step)

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 1 is operating at 100% RTP. One Reactor Operator must be held over three hours to meet Tech Spec minimum staffing.
2. The table below represents the work history (excluding shift turnover time) of the available Reactor Operators on shift (hours reflected those worked PRIOR to the 3 hour holdover). All operators began their shift schedule at the same time each day. All work hours on Day 3 were spent in LOCT training.
3. All the shifts are Day Shift.

Day	1 <u>Sun</u>	2 <u>Mon</u> On-Shift	3 <u>Tue</u> TRAINING	4 <u>Wed</u> On-Shift	5 <u>Thu</u> On-Shift	6 <u>Fri</u> On-Shift	7 <u>Sat</u> On-Shift	8 <u>Sun</u> On-Shift
Operator #1	0	4	12	10	10	14	10	11
Operator #2	0	0	12	12	12	8	8	14
Operator #3	0	8	12	10	10	8	10	11
Operator #4	0	0	12	12	10	10	14	10

Note: A break of at least 10 hours has occurred between all work periods

INITIATING CUES:

Evaluate the work history for all 4 operators.

1. If an additional 3 hours is worked determine if a waiver would be required for each operator.
2. Identify the fatigue rule(s) that would be exceeded for any required waivers.
3. Identify the lowest level of management that can determine if a waiver is necessary to mitigate or prevent a condition adverse to operations safety.
4. DO NOT consider the 54 hour Maximum Average Work Hours (MAWH) rule in your evaluation of work history.

Southern Nuclear Company

Operations Training Job Performance Measure (JPM)

FINAL SRO ADMIN 2

Title: CONDUCT OF OPERATIONS, 34SV-SUV-019-2 SURVEILLANCE & TECH SPEC REQUIRED ACTIONS		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 SRO Admin 2	Time: 30.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **CONDUCT OF OPERATIONS, 34SV-SUV-019-2
SURVEILLANCE & TECH SPEC REQUIRED ACTIONS**

JPM NUMBER: **2023-301 SRO Admin 2**

TASK STANDARD: This task will be satisfactorily met when the student has correctly documented all the Tech Spec required CHANNEL CHECKS in section 4.4 of 34SV-SUV-019-2, SURVEILLANCE CHECKS, and then evaluate that LCO 3.6.2.1, Suppression Pool Average Temperature, is not met requiring Require Action A.1 & A.2 to be performed.

TASK NUMBER: H-OPRO300.001

OBJECTIVE NUMBER: H-OP300.001.A.01

PLANT HATCH JTA IMPORTANCE RATING:

K/A CATALOG NUMBER: G2.1.7

K/A CATALOG JTA IMPORTANCE RATING:

RO 4.4

SRO 4.7

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	Unit 1 & 2
	34SV-SUV-019-2, Ver. 41.40

REQUIRED MATERIALS:	Unit 1 & 2
	34SV-SUV-019-2, Ver. 41.40 Calculators

VALIDATION TIME: 30 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is operating at 100 % RTP.
2. 2T48- N308A, Torus Temperature, is out of service and inoperable.
3. 2T48-N304B, Torus Temperature, is out of service and inoperable.
4. 2T48-R647, Torus Bulk Average Temperature, on 2H11-P689 panel is indicating 95.0°F.
5. The Shift Supervisor has directed this surveillance to be completed as a paper version.
6. Attachment 1, Unit 2 SPDS Torus Water Temperature Diagnostic
7. Attachment 2, 2T47-R626 and 2T47-R627 Temperature Recorders

INITIATING CUES:

Complete section 4.4 of 34SV-SUV-019-2, SURVEILLANCE CHECKS, which evaluates Torus temperatures,

AND

Determine & Inform the evaluator of Bulk Average Torus Temperature

AND

Evaluate any Technical Specification implications associated with the section 4.4 surveillance results.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

PROMPT: **GIVE** the operator a copy of 34SV-SUV-019-2, Surveillance Checks, AND Attachments 1, 2 & 3 of this JPM.

START TIME: _____

1.	Performs step 4.4.1 of 34SV-SUV-019-2.	From the R626/R627 recorder provided, the operator lists the temperature readings on the surveillance sheet with NO errors for: 2T47-R626, Pt 1, 2T48-N009A 102.5°F Pt 2, 2T48-N009C 102.5°F 2T47-R627, Pt 1, 2T48-N009B 104°F Pt 2, 2T48-N009D 103°F	
**2.	Performs step 4.4.2 of 34SV-SUV-019-2.	The operator evaluates the temperatures from step 4.4.1 and determines the temperature difference to be <3°F AND enters a ✓ OR a 'SAT' per NOTE 'B'.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)																						
**3.	Performs step 4.4.3 of 34SV-SUV-019-2.	The operator calculates the readings in step 4.4.1 and determines the N009A-D average temperature is 103.0°F.																							
4.	Performs step 4.4.4 of 34SV-SUV-019-2.	From the SPDS screen provided, the operator records N009 Average temperature reading of 103.0°F.																							
5.	Performs step 4.4.5 of 34SV-SUV-019-2.	The operator compares the average temperature reading in step 4.4.3 to the 4.4.4 SPDS N009 reading and concludes the temperatures do NOT differ by more than 2°F AND enters a ✓ OR a 'SAT' per NOTE 'B'.																							
6.	Performs step 4.4.6 of 34SV-SUV-019-2.	<p>From the SPDS screen provided, the operator lists the temperature readings on the surveillance sheet with NO errors for;</p> <table border="0"> <tr><td>2T48-N301A</td><td>98°F</td></tr> <tr><td>2T48-N302A</td><td>98°F</td></tr> <tr><td>2T48-N303A</td><td>100°F</td></tr> <tr><td>2T48-N304B</td><td>INOP</td></tr> <tr><td>2T48-N305A</td><td>98°F</td></tr> <tr><td>2T48-N306A</td><td>100°F</td></tr> <tr><td>2T48-N307A</td><td>98°F</td></tr> <tr><td>2T48-N308A</td><td>INOP</td></tr> <tr><td>2T48-N309A</td><td>101°F</td></tr> <tr><td>2T48-N310A</td><td>98°F</td></tr> <tr><td>2T48-N311A</td><td>101°F</td></tr> </table>	2T48-N301A	98°F	2T48-N302A	98°F	2T48-N303A	100°F	2T48-N304B	INOP	2T48-N305A	98°F	2T48-N306A	100°F	2T48-N307A	98°F	2T48-N308A	INOP	2T48-N309A	101°F	2T48-N310A	98°F	2T48-N311A	101°F	
2T48-N301A	98°F																								
2T48-N302A	98°F																								
2T48-N303A	100°F																								
2T48-N304B	INOP																								
2T48-N305A	98°F																								
2T48-N306A	100°F																								
2T48-N307A	98°F																								
2T48-N308A	INOP																								
2T48-N309A	101°F																								
2T48-N310A	98°F																								
2T48-N311A	101°F																								

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**7.	Performs step 4.4.7 of 34SV-SUV-019-2.	The operator evaluates the operable temperatures from step 4.4.6 are within 10°F of the temperature from step 4.4.3 (103°F) and enters an 'SAT' per NOTE 'B'.	
**8.	Performs step 4.4.8 of 34SV-SUV-019-2.	The operator calculates the readings in step 4.4.6 and determines the N301-N311 average is 99.1°F ($\pm 1^\circ\text{F}$ for rounding).	
**9.	Performs step 4.4.9 of 34SV-SUV-019-2.	Enters an 'UNSAT' or "INOP" per attachment 2 NOTES, due to all the items in step 4.4.6 are not operable.	

NOTE: From the 2T48-R647 recorder provided, the operator may list the 2T48-R647 Torus water temperature reading of 95°F.
This listing is not Critical.

10.	Performs step 4.4.10 of 34SV-SUV-019-2.	From the SPDS screen provided, the operator records SPDS Average Torus water temperature reading of 98°F.	
**11.	Performs step 4.4.11 of 34SV-SUV-019-2.	The operator evaluates the temperatures from step 4.4.8 & step 4.4.9 and determines the temperature difference to be $>2^\circ\text{F}$ AND enters an 'UNSAT' per NOTE 'B'.	
**12.	Performs step 4.4.12 of 34SV-SUV-019-2.	The operator calculates the Bulk Average Torus temperature using the bottom formula (since 2T48-R647 is inop) to be 101.06°F. (Accept $\pm 1^\circ\text{F}$ due to rounding errors)	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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NOTE: If the operator uses the top formula (R647 operable) then Torus Bulk Average temperature will be calculated (INCORRECTLY) to be 97.06°F.

13.	Performs step 4.4.13 of 34SV-SUV-019-2.	The operator evaluates the temperature difference from steps 4.4.10 & 4.4.12 and determines it to be >2°F AND enters an “UNSAT” per NOTE ‘B’.	
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NOTE: Applicant may identify tracking RAS for PAM instrumentation.

**14.	Determine & Inform the evaluator whether LCO 3.6.2.1, Suppression Pool Average Temperature, is / is NOT met.	The operator determines that LCO 3.6.2.1, Suppression Pool Average Temperature, is NOT met.	
**15.	Determines Technical Specification Required Actions	SRO enters TS 3.6.2.1.A and performs Required Action A.1 by verifying Suppression Pool average temp \leq 110°F, once per hour.	
**16.	Determines Technical Specification Required Actions	SRO enters TS 3.6.2.1.A and performs Required Action A.2 by restoring Suppression Pool average temp \leq 100°F, within 24 hours.	

**END
TIME:** _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 16.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023-301 SRO Admin 2:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>Total Critical Steps</u>	At least 2	10
Step 2 Perform step 4.4.2		Operator determines SR 3.3.3.1.1 met.
Step 3 Perform step 4.4.3		Operator determines the average temperature for instruments N009A-D.
Step 7 Perform step 4.4.7		Operator determines SR 3.3.3.1.1 met.
Step 8 Perform step 4.4.8		Operator determines the average temperature for instruments N301-N311
Step 9 Perform step 4.4.9		Operator determines SR 3.6.2.1.1 NOT met.
Step 11 Perform step 4.4.11		Operator determines SR 3.3.3.1.1 NOT met.
Step 12 Perform step 4.4.12		Operator determines Bulk Average Torus temperature.
Step 14 Evaluate LCO 3.6.2.1		Determines that LCO 3.6.2.1, Suppression Pool Average Temperature, is NOT met.
Step 15 Determines Tech Spec Required Actions		Performs required action A1.
Step 16 Determines Tech Spec Required Actions		Performs required action A2.
 <u>Number of JPM Steps</u>	 <30	 16
 <u>Time to Perform JPM</u>	 <45 min	 30 min
 <u>Normal / Faulted / Alternate Path</u>		
Normal		
 <u>Setting (administered)</u>		
Classroom		
 <u>Is LOD "1" or "5"</u>	 NO	 NO

(** Indicates critical step)

EVALUATOR ANSWER KEY

EXCERPT FROM 34SV-SUV-019-2

NOTE

If any of the step 4.4 instruments are inoperable, refer to Attachment 2, Torus Temperature Monitoring.

4.4	PANEL - INSTRUMENT / TECH SPEC.	NOTE	OPER COND	FREQ	T/S OR OPER LIM	NIGHT	DAY
4.4.1	2H11-P657 - 2T47-R626, Pt 1, Torus Water Temp 2T48-N009A	m u v	1,2,3	C	≤ 95°F (T.S. ≤ 100°F)		102.5
	- 2T47-R626, Pt 2, Torus Water Temp 2T48-N009C					102.5	
	-P650 - 2T47-R627, Pt 1, Torus Water Temp 2T48-N009B					104.0	
	- 2T47-R627, Pt 2, Torus Water Temp 2T48-N009D (SR 3.6.2.1.1)					103.0	
4.4.2	Confirm temperatures in 4.4.1 within 3°F (SR 3.3.3.1.1 for 3.3.3.1-1(9.))	b m	1,2,3	C			SAT or ✓
4.4.3	Calculate the average of operable points in 4.4.1.	m	1,2,3	C			103
4.4.4	2T48-N009 Average from SPDS	m	1,2,3	C			103
4.4.5	Confirm temperature in 4.4.3 within 2°F of 4.4.4.	b,m	1,2,3	C			SAT or ✓
4.4.6	SPDS Torus Temperature Diagnostic	m v	1,2,3	C			98
	2T48-N301A					98	
	2T48-N302A					100	
	2T48-N303A					Inop	
	2T48-N304B					98	
	2T48-N305A					100	
	2T48-N306A					98	
	2T48-N307A					Inop	
	2T48-N308A					101	
	2T48-N310A					98	
2T48-N311A	101						
4.4.7	Confirm temperatures in 4.4.6 within 10°F. (SR 3.3.3.1.1 for 3.3.3.1-1(9.))	b, m	1,2,3	C			SAT
4.4.8	Calculate the average of operable points in 4.4.6.	m	1,2,3	C			99.1
4.4.9	2H11-P689 - 2T48-R647, Torus Avg Bulk Temp (SR 3.6.2.1.1)	m u	1,2,3	C	All items in 4.4.6 must be operable		95.0 or UNSAT
4.4.10	SPDS Average Torus Water Temperature	m	1,2,3	C	At least nine of 4.4.6 must be operable		98.0
4.4.11	Confirm temperature in 4.4.8 within 2°F of 4.4.9 (SR 3.3.3.1.1 for 3.3.3.1-1(9.))	b,m	1,2,3	C	2T48-R647 must be within 2°F to be operable		UNSAT
4.4.12	Calculate the Torus bulk average temperature $\frac{4.4.3 \text{ \& } 4.4.9}{2}$	m	1,2,3	C	≤ 95°F (T.S. ≤ 100°F)		101.06
	OR 4.4.3 & 4.4.8 if 2T48-R647 is inoperable $\frac{\quad}{2}$ (SR 3.6.2.1.1)						
4.4.13	Confirm temperature in 4.4.12 within 2°F of 4.4.10.	b,m	1,2,3	C			UNSAT ARB

Calculations verified ____ / ____

Date _____

Initials

Time

ARB

1215

Night / Day

(Indicates critical step)**

UNIT 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. Unit 2 is operating at 100 % RTP.
2. 2T48- N308A, Torus Temperature, is out of service and inoperable.
3. 2T48-N304B, Torus Temperature, is out of service and inoperable.
4. 2T48-R647, Torus Bulk Average Temperature, on 2H11-P689 panel is indicating 95.0°F.
5. The Shift Supervisor has directed this surveillance to be completed as a paper version.
6. Attachment 1, Unit 2 SPDS Torus Water Temperature Diagnostic
7. Attachment 2, 2T47-R626 and 2T47-R627 Temperature Recorders

INITIATING CUES:

Complete section 4.4 of 34SV-SUV-019-2, SURVEILLANCE CHECKS, which evaluates Torus temperatures,

AND

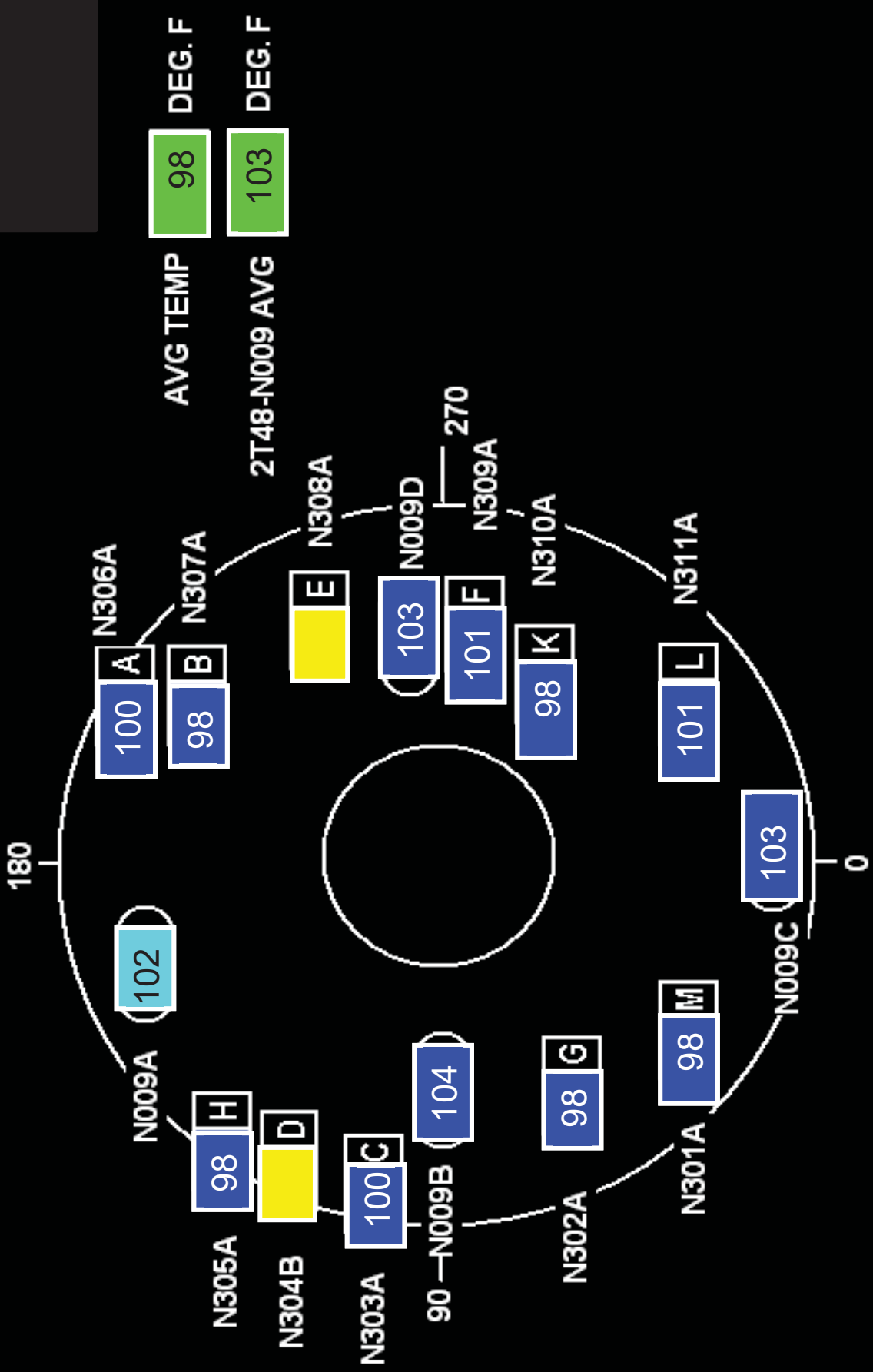
Determine & Inform the evaluator of Bulk Average Torus Temperature

AND

Evaluate any Technical Specification implications associated with the section 4.4 surveillance results.

Attachment 1
Unit 2 SPDS

TORUS WATER TEMPERATURE DIAGNOSTIC



Attachment 2
2T47-R626

PUMP RM COOLERS		DISP		12day 16/16		+			
Nov. 27. 2016 14:15:44		1. TORUS WTR TEMP		2. TORUS WTR TEMP		3. RHR HX OUTLET		4. TORUS AIR TEMP	
102.5		102.5		71.8		93.2		93.2	
5. TORUS AIR TEMP		6. SPARE		7. SUCT OF DW CLG FAN C001A		8. SUCT OF DW CLG FAN B008AB			
93.2		86.2		182.6		111.1			
9. AMB DW CLG FANS B001AB		10. AMB VESSEL CVTY AT 90°		11. AMB RECIRC PMP MTR A		12. AMB CRD CAVITY			
111.1		182.6		110.0		135.0			
13. AMB RECIRC PMP MTR B		14. AMBIENT DW SHIELD CAVITY							
112.6		165.0							

Attachment 2 (Cont.)
2T47-R627

PUMP RM COOLERS		DISP		12day 16/16	
Apr. 27. 2016 14:15:44		1. TORUS WTR TEMP		2. TORUS WTR TEMP	
104.0	103.0	78.1	93.2	4. TORUS AIR TEMP	
5. TORUS AIR TEMP	6. SPARE	7. SUCT OF DW CLG FAN C001A	8. SUCT OF DW CLG FAN B008AB		
93.3	0.0	183.2	112.1		
9. AMB DW CLG FANS B001AB	10. AMB VESSEL CVTY AT 90°	11. AMB RECIRC PMP MTR A	12. AMB CRD CAVITY		
112.2	183.1	110.2	134.9		
13. AMB RECIRC PMP MTR B	14. AMBIENT DW SHIELD CAVITY				
112.5	164.9				

Attachment 3

EXCERPT FROM 34SV-SUV-019-2

NOTE

If any of the step 4.4 instruments are inoperable, refer to Attachment 2, Torus Temperature Monitoring.

4.4	PANEL - INSTRUMENT / TECH SPEC.	NOTE	OPER COND	FREQ	T/S OR OPER LIM	NIGHT	DAY
4.4.1	2H11-P657 - 2T47-R626, Pt 1, Torus Water Temp 2T48-N009A - 2T47-R626, Pt 2, Torus Water Temp 2T48-N009C -P650 - 2T47-R627, Pt 1, Torus Water Temp 2T48-N009B - 2T47-R627, Pt 2, Torus Water Temp 2T48-N009D (SR 3.6.2.1.1)	m u v	1,2,3	C	≤ 95°F (T.S. ≤ 100°F)		
4.4.2	Confirm temperatures in 4.4.1 within 3°F (SR 3.3.3.1.1 for 3.3.3.1-1(9.))	b m	1,2,3	C			
4.4.3	Calculate the average of operable points in 4.4.1.	m	1,2,3	C			
4.4.4	2T48-N009 Average from SPDS	m	1,2,3	C			
4.4.5	Confirm temperature in 4.4.3 within 2°F of 4.4.4.	b,m	1,2,3	C			
4.4.6	SPDS Torus Temperature Diagnostic 2T48-N301A 2T48-N302A 2T48-N303A 2T48-N304B 2T48-N305A 2T48-N306A 2T48-N307A 2T48-N308A 2T48-N309A 2T48-N310A 2T48-N311A	m v	1,2,3	C			
4.4.7	Confirm temperatures in 4.4.6 within 10°F. (SR 3.3.3.1.1 for 3.3.3.1-1(9.))	b, m	1,2,3	C			
4.4.8	Calculate the average of operable points in 4.4.6.	m	1,2,3	C			
4.4.9	2H11-P689 - 2T48-R647, Torus Avg Bulk Temp (SR 3.6.2.1.1)	m u	1,2,3	C	All items in 4.4.6 must be operable		
4.4.10	SPDS Average Torus Water Temperature	m	1,2,3	C	At least nine of 4.4.6 must be operable		
4.4.11	Confirm temperature in 4.4.8 within 2°F of 4.4.9 (SR 3.3.3.1.1 for 3.3.3.1-1(9.))	b,m	1,2,3	C	2T48-R647 must be within 2°F to be operable		
4.4.12	Calculate the Torus bulk average temperature $\frac{4.4.3 + 4.4.9}{2}$ OR $\frac{4.4.3 + 4.4.8}{2}$ if 2T48-R647 is inoperable (SR 3.6.2.1.1)	m	1,2,3	C	≤ 95°F (T.S. ≤ 100°F)		
4.4.13	Confirm temperature in 4.4.12 within 2°F of 4.4.10.	b,m	1,2,3	C			
Calculations verified _____ / _____ Date _____						Initials	
Night / Day						Time	

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

FINAL
SRO ADMIN 3

Title: Maintenance Activities Effects on the Status of LCOs		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 SRO Admin 3	Time: 30.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: Maintenance Activities Effects on the Status of LCOs**JPM NUMBER:** 2023-301 SRO Admin 3

TASK STANDARD: For an SRO to successfully complete this task, the SRO has determined using the TRM & Tech Specs that Required Action 3.3.5.1.C.1 is required to be performed within 1 hour by declaring Core Spray inoperable due to loss of function and restoring channel within 24 hours. After 1 hour, Required Action 3.5.1.I.1 will be required to be performed immediately to enter LCO 3.0.3 which requires within 1 hour to initiate action to place the unit in MODE 2 within 10 hours, MODE 3 within 13 hours and MODE 4 within 37 hours.

TASK NUMBER: H- OPSR300.027**OBJECTIVE NUMBER:** H- OPSR300.027.A**PLANT HATCH JTA IMPORTANCE RATING:**

RO N/A

SRO N/A

K/A CATALOG NUMBER: G2.2.36**K/A CATALOG JTA IMPORTANCE RATING:**

RO 3.1

SRO 4.2

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	Unit 1 & 2
	UNIT 1 TECH SPECS UNIT 1 TRM
REQUIRED MATERIALS:	Unit 1 & 2
	UNIT 1 TECH SPECS UNIT 1 TRM

VALIDATION TIME: 30.0 Minutes**SIMULATOR SETUP:** N/A

EVALUATOR COPY

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. After performing surveillances, Maintenance reports the following to the Unit 1 Shift Supervisor:
 - 1B21-N090A instrument detector has failed causing 1B21-N690A, Low Press Vessel Instrument, Master Trip Unit (**MTU**), to indicate High Upscale. • 1B21-N690B, Slave Trip Unit (**STU**), has failed and will NOT provide a trip signal.
2. These (2) two instrument failures cannot be repaired until (2) two hours from now.
3. Unit 1 is in Mode 1.

INITIATING CUES:

Determine Technical Specification required actions with regards
FOR CORE SPRAY ONLY.

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

START TIME: _____

1.	Operator identifies the procedure needed to perform the task.	Operator has identified the correct procedure as Unit 1 TRM/TS.	
2.	Determines the correct LFD by using section Table T10.1-1 Master Equipment Cross Reference-Sorted by MPL of the TRM.	Determines the correct LFD to be LFD-1-ECCS-03 by referencing 1B21-N690 A, B, C, D. (1B21-N090A and 1B21-N690B both reference LFD-1-ECCS-03).	
3.	Determines correct Technical Specifications section to be entered by using section Table T10.1-1 Master Equipment Cross Reference-Sorted by MPL of the TRM.	Determines Technical Specification section to be referenced by TRM section Table T10.1-1 Master Equipment Cross Reference is TS 3.3.5.1-1(1c.)	
**4.	Determines if Core Spray Initiation is being maintained by using LFD.	Determines that 1E21-K9A contact (Channel A1) will NOT close since the instrument has failed high as given in the Initiating Cue.	

NOTE: Contact 1E21-K9A will only close on Reactor Steam Dome Pressure Low.

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**5.	Determines if Core Spray Initiation is being maintained by using LFD.	Determines that 1E21-K9B contact (Channel B1) will NOT close since the MTU will NOT trip as given in the Initiating Cue.	

NOTE: Contact 1E21-K9B will only close on Reactor Steam Dome Pressure Low.

**6.	Determines if Core Spray Initiation is being maintained by using LFD.	Determines that Core Spray Initiation is NOT being maintained since relay E21-K9A, & K9B can NOT be energized by using drawing for the TRIP Logic or by using the Minimum Channel Requirements for System Initiation Capability at bottom of LFD.	
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NOTE: Minimum Channel Requirements for System Initiation Capability:

A1 & A2

A1 & B2

B1 & A2

B1 & B2

7.	Determines Technical Specification Required Actions	SRO determines that TS Table 3.3.5.1-1(1c.) requires 4 channels to be operable AND SRO determines 2 of the 4 required Channels (A1 and B1) are INOP.	
**8.	Determines Technical Specification Required Actions	SRO enters TS 3.3.5.1.A and performs Required Action A.1 Immediately by Entering Condition referenced in Table 3.3.5.1-1 for the channel. The SRO immediately enters Condition 3.3.5.1.C	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**9.	Determines Technical Specification Required Actions	SRO determines Required Action C.1 is required to be performed since Core Spray Initiation Capability is NOT maintained and will declare Core Spray inoperable within one hour.	
**10.	Determines Technical Specification Required Actions	SRO determines Required Action C.2 is required to be performed. Restore Channel to OPERABLE status within 24 hours OR IAW the Risk Informed Completion Time Program (<i>evaluation process of the Risk Informed Completion Time Program will NOT be evaluated</i>).	

NOTE: Applicant may report that LPCI is not operable. Not required since initiating cue directions were for actions with regards for Core Spray only.

**11.	Determines Technical Specification Required Actions	SRO determines Required Action H.1 is required to be performed. Declare associated supported feature(s) inoperable immediately.	
**12.	Determines Technical Specification Required Actions	SRO enters TS 3.5.1.I and determines Required Action I.1 is required to be performed. Enter LCO 3.0.3 immediately.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**13.	Determines Technical Specification Required Actions	SRO determines Required Action LCO 3.0.3 is required to be performed. Action initiated within 1 hour to place unit in: MODE 2 within 10 hours, MODE 3 within 13 hours, MODE 4 within 37 hours.	

END TIME: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 13.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023-301 SRO Admin 3:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	9
Step 4 Determines Ch A1 will not trip		Loss of one of four required channels
Step 5 Determines Ch B1 will not trip		Loss of second of four required channels.
Step 6 Initiation not maintained		Loss of function.
Step 8 Enters TS 3.3.5.1.A		Action required for loss of one or more channel
Step 9 Determine action C1 required		Declares Core Spray Inoperable within one hour
Step 10 Determine action C2 required		Restore Channel within 24 hours.
Step 11 Enters TS 3.3.5.1.H		Required action to declare associated features inoperable immediately.
Step 12 Enters TS 3.5.1.I		Required action to enter LCO 3.0.3 immediately.
Step 13 Determine LCO 3.0.3 actions		Action initiated within 1 hour to place unit in: MODE 2 within 10 hours, MODE 3 within 13 hours, MODE 4 within 37 hours.
<u>Number of JPM Steps</u>	<30	13
<u>Time to Perform JPM</u>	<45 min	15 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD “1” or “5”</u>	NO	NO

UNIT 1

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. After performing surveillances, Maintenance reports the following to the Unit 1 Shift Supervisor:
 - 1B21-N090A instrument detector has failed causing 1B21-N690A, Low Press Vessel Instrument, Master Trip Unit (**MTU**), to indicate High Upscale. • 1B21-N690B, Slave Trip Unit (**STU**), has failed and will NOT provide a trip signal.
2. These (2) two instrument failures cannot be repaired until (2) two hours from now.
3. Unit 1 is in Mode 1.

INITIATING CUES:

Determine Technical Specification required actions with regards
FOR CORE SPRAY ONLY.

Southern Nuclear Company
Operations Training
Job Performance Measure (JPM)

FINAL
SRO ADMIN 4

Title: Evaluate an Inoperable ODCM Radiation Detector		Version: 1.0
Author: Anthony Ball	Media Number: 2023-301 SRO Admin 4	Time: 20.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: Evaluate an Inoperable ODCM Radiation Detector**JPM NUMBER:** 2023-301 SRO Admin 4

TASK STANDARD: The task shall be completed when the operator has determined non-functional instrument, 1D11-K605, Service Water Liquid Effluent, is required per the ODCM and any applicable initial (Grab samples are to be collected once per shift and analyzed for gross radioactivity) and follow up actions (if instrument is inoperable for over 30 days an explanation of the circumstances must be included in the next Radioactive Effluent Release Report).

TASK NUMBER: H-OPSR300.006**OBJECTIVE NUMBER:** H-OP300.006A**PLANT HATCH JTA IMPORTANCE RATING:**

RO N/A

SRO 3.00

K/A CATALOG NUMBER: G2.3.11**K/A CATALOG JTA IMPORTANCE RATING:**

RO 3.8

SRO 4.3

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	Unit 1 & 2
	Unit 1 Tech Specs Unit 1 TRM Unit 1 ODCM, 2.1, Ver. 27.0 34AR-650-350-1, Ver. 3.0
REQUIRED MATERIALS:	Unit 1 & 2
	Unit 1 TRM Unit 1 ODCM, 2.1, Ver. 27.0 34AR-650-350-1, Ver. 3.0

VALIDATION TIME: 20 Minutes**SIMULATOR SETUP:** N/A

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

PROMPT: **GIVE** the operator a copy of 34AR-650-350-1.

START TIME: _____

1.	Operator obtains the procedure needed references	Operator has obtained the Unit 1 ODCM and other controlled documents.	
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NOTE: The operator has several means to find the specification for this radiation detector. One is to use the Master Equipment Cross Reference in the Unit 1 TRM, another is the Tech Spec/TRM/ODCM reference section of the ARP.

**2.	Determine if 1D11-K605 is an ODCM radiation detector.	Operator determines the instrument is a required ODCM detector.	
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3.	Locate the administrative requirements associated with this radiation detector.	The operator identifies that ODCM section 2.1 contains the requirements for this radiation detector being inoperable.	
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(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
4.	Selects the applicable instrument on Table 2-1 of the Unit 1 ODCM.	On Table 2-1 determines the inoperative detector is addressed in Section 2 of the table, as this instrument does not provide any automatic isolation.	
5.	Evaluates whether the minimum number of channels OPERABLE is met from Table 2.	Recognizes the minimum number of channels is NOT met.	
6.	Evaluates the applicability of the specification, whether the instrument is required to be OPERABLE, under the current plant conditions.	Determines note (2) applies: <ul style="list-style-type: none"> “Whenever the Service Water System pressure is below the Closed Cooling Water System pressure, or Δp indication is not available.” 	
**7.	Evaluates the system pressure between PSW and RBCCW.	Determines that PSW pressure of 89 psig is lower than RBCCW pressure of 92 psig and dP must be re-established.	

PROMPT: **IF** the Operator indicates pressure needs to be adjusted per the ODCM or ARP, **THEN** inform the Operator that the cause of the low pressure is being investigated.

**8.	Identifies the actions required by Action 101.	Determines that once per shift grab samples are collected and analyzed for a gross radioactivity.	
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(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**9.	Identifies how long the instrument may remain inoperable before “additional” actions are required.	Identifies that if the instrument is inoperative for over 30 days: <ul style="list-style-type: none"> • “An explanation of the circumstances must be included in the next Radioactive Effluent Release Report.” 	

**END
TIME:** _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 9.
- With NO reasonable progress, the operator exceeds double the allotted time.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

Summary of JPM Attributes

JPM 2023-301 SRO Admin 4:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>Total Critical Steps</u>	At least 2	4
Step 2 Determine if 1D11K605 is in ODCM		Operator determines the instrument is a required ODCM detector.
Step 7 Determine PSW/RBCCW dP not met		Insufficient dP meets the entrance criteria for this spec.
Step 8 Determine actions required per 101		Determines that once per shift grab samples are collected and analyzed for a gross radioactivity.
Step 9 Identifies time limit for additional actions		Identifies that if the instrument is inoperative for over 30 days: “An explanation of the circumstances must be included in the next Radioactive Effluent Release Report.”
<u>Number of JPM Steps</u>	<30	9
<u>Time to Perform JPM</u>	<45 min	20 min
<u>Normal / Faulted / Alternate Path</u>		
Normal		
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD “1” or “5”</u>	NO	NO

(** Indicates critical step)

EVALUATOR COPY

ANSWER SHEET	
Is 1D11-K605, Service Water Liquid Effluent, required to be operable for the current conditions?	YES / NO
If 1D11-K605, Service Water Liquid Effluent, is required to be operable, list all actions (initial and follow up) that may be required.	<p>Grab samples are to be collected once per shift and analyzed for gross radioactivity.</p> <p>If the instrument is inoperable for over 30 days an explanation of the circumstances must be included in the next Radioactive Effluent Release Report.</p>

ANSWER SHEET

Is 1D11-K605, Service Water Liquid Effluent, required to be operable for the current conditions?

YES / NO

If 1D11-K605, Service Water Liquid Effluent, is required to be operable, list all actions (initial and follow up) that may be required.

Southern Nuclear Company

Operations Training
Job Performance Measure (JPM)

FINAL
SRO ADMIN 5

Title: DETERMINE EAL CLASSIFICATION - COMPLETE NMP-EP-142 FORM 1		Version: 1.0
Author Anthony Ball	Media Number 2023-301 SRO Admin 5	Time Critical 15.0 Minutes
Line Technical Review By (N/A for minor revisions) N/A		Date: N/A
Reviewed by Instructional Technologist or designee (N/A for minor revisions) N/A		Date: N/A
Approved By (Training Program Manager or Lead Instructor) Charlie Edmund		Date: 10/30/2023



UNIT 1 (X) UNIT 2 (X)

TASK TITLE: **DETERMINE EAL CLASSIFICATION - COMPLETE NMP-EP-142 FORM 1**

JPM NUMBER: **2023-301 SRO Admin 5**

TASK STANDARD: This task shall be satisfactorily completed when the student has correctly: identified the emergency declaration identifier and the basis for the classification within 15 minutes; completes NMP-EP-142-F01 lines 2 through 6 AND line 13, except unaffected unit status, within an additional 15 minutes.

TASK NUMBER: 200.052

OBJECTIVE NUMBER: 200.052.A

PLANT HATCH JTA IMPORTANCE RATING:

RO 3.2

SRO 4.4

K/A CATALOG NUMBER: 2.4.41

K/A CATALOG JTA IMPORTANCE RATING:

SRO 4.6

OPERATOR APPLICABILITY: Senior Reactor Operator (SRO)

GENERAL REFERENCES:	Unit 1 & 2
	NMP-EP-141-002, Hatch Emergency Action Levels and Bases, Ver. 5.0 NMP-EP-141-002-F01, EAL Hot Classification Matrix, Ver 4.0 NMP-EP-141-002-F02, EAL Cold Classification Matrix, Ver 4.0 NMP-EP-142-F01, Emergency Notification Form (ENF), Ver. 2.4
REQUIRED MATERIALS:	Unit 1 & 2
	NMP-EP-141-002, Hatch Emergency Action Levels and Bases, Ver. 5.0 NMP-EP-141-002-F01, EAL Hot Classification Matrix, Ver 4.0 NMP-EP-141-002-F02, EAL Cold Classification Matrix, Ver 4.0 NMP-EP-142-F01, Emergency Notification Form (ENF), Ver. 2.4

VALIDATION TIME: 15.0 Minutes

SIMULATOR SETUP: N/A

EVALUATOR COPY

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. You are the On Shift Manager.
2. Units 1 and 2 are operating at 100% power. The FAA Atlanta calls Plant Hatch control room on the telephone. A NPO answers the phone. The following information is rapidly confirmed with the NRC Operations Center using the Emergency Notification System (ENS) phone.
3. The NRC Operations Center confirms:
 - One (1) hour ago, a DC 10, Delta Flight D-1492, took off from Atlanta, headed for Houston Texas.
 - The plane has inexplicably changed course, is now headed east, and is 20 miles west of Macon, Georgia.
 - Atlanta Flight Control has tried all available methods to communicate with the flights' crew but has been unsuccessful.
 - Based on the plane's flight path and rate of descent, it appears that Plant Hatch is in the flight path of a Track of Interest (TOI).
The flight will reach Plant Hatch, by best estimate, in 29 minutes.
4. The Control Room has contacted the NRC and NRC has confirmed the information.
5. NO Peer Check is available.

INITIATING CUES:

EXAM SECURITY CAUTION:

Do Not Make Any Verbal Crew Announcements During This JPM

1. Evaluate the current conditions and determine the EAL identifier. IMMEDIATELY raise your hand so the evaluator/proctor can log your determination and time of determination.
(TIME CRITICAL)
2. AFTER the evaluator/proctor has logged your determination, complete the appropriate lines in NMP-EP-142-F01, Emergency Notification Form.
(TIME CRITICAL)

Current time is: _____ .

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
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For **INITIAL** Operator Programs:
For OJT/OJE; ALL PROCEDURE STEPS must be completed for Satisfactory Performance.
For License Examinations; ALL CRITICAL STEPS must be completed for Satisfactory Performance.

	IF	THEN
PASS	<input type="checkbox"/> Human performance tools, safety, PPE met (1), AND <input type="checkbox"/> For initial trg all steps completed correctly OR <input type="checkbox"/> For continuing trg, critical steps (if used) completed correctly	<input type="checkbox"/> Mark the JPM as a PASS
FAIL	<input type="checkbox"/> Above standards not met	<input type="checkbox"/> Mark the JPM as a FAIL

(1) The standard for human performance tools, safety, PPE, and other pertinent expectations is considered met provided any deviations are minor and have little or no actual or potential consequence. Errors may be self-corrected provided the action would not have resulted in significant actual or potential consequences. (AG-TRN-01-0685 Section 6.5.3 provides examples)

PROMPT: **GIVE** the operator a blank copy of NMP-EP-142-F01, Emergency Notification Form (ENF).

NOTE: The **CLASSIFICATION** must be made within 15 minutes of the initial prompt and the operator states they understand the initial conditions.

START TIME: _____

1.	Refer to the site specific IC/EAL Matrix Evaluation Charts, NMP-EP-141-002-F01 & F02.	The operator has OBTAINED NMP-EP-142-F01 and NMP-EP-141-002-F01, IC/EAL Matrix Evaluation Charts.	
2.	Determine the appropriate IC/EAL Matrix Evaluation Chart for classification of the event based on the current operating mode: HOT IC/EAL Matrix Eval Chart COLD IC/EAL Matrix Eval Chart	The operator has selected HOT IC/EAL Matrix Evaluation Chart, NMP-EP-141-002-F01.	

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
**3.	NMP-EP-141-002-F01, Determine the highest applicable IC/EAL.	NMP-EP-141-002-F01. The operator has determined HA1 - A validated notification from NRC of an airliner attack threat less than 30 minutes away. (or similar wording). 1st Time Critical Stop Time: _____ . NOTE: For this step to be completed considered SAT, the time entered must be within 15 minutes of the time of the Emergency Declaration. Refer to JPM Initiating Cues step 1 listed time.	

PROMPT: Operator raises hand to stop 1st Time Critical Clock.
Evaluator logs completion time and IC #. START New Critical Time after Evaluator has recorded time and logged results from above.

NOTE: If follow-up questioning reveals that a classification was declared and based on another IC #, the classification should be evaluated for validity.

2nd Time Critical Start Time: _____

4.	Select Initial or Follow-up. ***** ENF Form, Above Line 1	Initial event box is marked.	
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PROMPT: **WHEN** the operator enquires about the next number in the Message Book, **INFORM** the operator the number will be obtained later.

5.	***** Record Message Number. ENF Form, Above Line 1	This would be entered later and is not part of this JPM.	
6.	Select appropriate block for Drill, Actual Declaration, or Termination. ENF Form, Line 1	DRILL box is marked.	
**7.	Select correct site. ENF Form, Line 2	HATCH box is marked.	

(Indicates critical step)**

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
8.	Select correct classification. ENF Form, Line 3	ALERT box is marked.	
9.	Record correct: Emergency Action Level (EAL) #, ***, *****, *****. ENF Form, Line 4	HA1 is recorded in the space provided.	
10.	Record correct: ***, Declaration Date, *****, *****. ENF Form, Line 4	Current date is recorded to the right of Declaration Date in the space provided.	
11.	Record correct: ***, *****, Declaration Time, *****, ENF Form, Line 4	Current time is recorded to the right of Declaration Time, in the space provided in the space provided.	
12.	Record correct: ***, *****, *****, corresponding EAL Description. ENF Form, Line 4	A validated notification from NRC of an airliner attack threat within 30 minutes of the site in the space provided.	

NOTE: The operator can reference NMP-EP-142, Attachment 5, Hatch Specific Charts, to determine if a Radiological Release is or has occurred.

(** Indicates critical step)

STEP #	PERFORMANCE STEP	STANDARD	SAT/UNSAT (COMMENTS)
13.	Select appropriate Release to the Environment block: None; Is Occurring; or Has Occurred. ENF Form, Line 5	None box is marked.	
14.	Select any PARs. If Evaluation, Shelter or Other is chosen, enter needed descriptions. ENF Form, Line 6	NONE box is marked.	
**15.	Approve the emergency classification. ENF Form, Line 13	The Operator (ED) has signed their name as the Emergency Director, entered the current Date , and entered the current Time in the spaces provided. 2nd Time Critical Stop Time: _____ NOTE: For this step to be completed considered SAT, the time entered must be within 15 minutes of the time of the Emergency Declaration. Refer to JPM step 3 listed time.	

PROMPT: Operator raises hand to stop 2nd Time Critical Clock.

2nd Time Critical Stop Time: _____

NOTE: The terminating cue shall be given to the operator when:

- When the operator completes step 15.
- The operator exceeds the allotted time of 15 minutes.
- Operator states the task is complete.

TERMINATING CUE: We will stop here.

EVALUATOR – **PICK UP** the Initiating Cue sheet.

(** Indicates critical step)

Summary of JPM Attributes

JPM 2023-301 SRO Admin 5:

SUMMARY OF JPM QUANTITATIVE ATTRIBUTES

<u>CATEGORY</u>	<u>Minimum NRC Attributes</u>	<u>JPM CONTENT</u>
<u>Total Critical Steps</u>	At least 2	6
Step 3/9 Annotate Emerg Classification		Proper Event Classification from Hot / Cold / Fission Product Barrier Charts to be provided to the State and local authorities.
Step 7 Affected Site documented		Accurate plant site is required to ensure the State knows how and where to respond.
Step 10 Declaration Date documented		Proper date to be provided to the State and local authorities
Step 11 Declaration Time documented		Proper time to be provided to the State and local authorities
Step 12 Event Description		Proper EAL Description from Hot / Cold / Fission Product Barrier Charts to be provided to the State and local authorities
Step 15 NMP-EP-142-F01 approved (signed)		SRO approves Emergency Notification to State & Local.
<u>Number of JPM Steps</u>	<30	15
<u>Time to Perform JPM</u>	<30 min	15 min / 15 min (Time Critical)
<u>Normal / Faulted / Alternate Path</u>		
Admin (Normal)		Normal Emergency Classification/Notification of an event.
<u>Setting (administered)</u>		
Classroom		
<u>Is LOD "1" or "5"</u>	NO	NO

(** Indicates critical step)

EVALUATOR KEY

INITIAL FOLLOW-UP

MESSAGE # _____ Confirmation Phone # _____ AUTHENTICATION CODE # _____

Lines 1-6 are required for INITIAL Notifications

1. EVENT: DRILL ACTUAL DECLARATION TERMINATION (ONLY Lines 1, 2, 4, 12, & 13 required)

2. AFFECTED SITE: FARLEY HATCH VOGTLE 1&2 VOGTLE 3&4

3. EMERGENCY CLASSIFICATION:

UE ALERT SITE AREA EMERGENCY GENERAL EMERGENCY

4. EAL# HAI Declaration Date _____ Time _____
Termination Date _____ Time _____ (mark "N/A" for EAL# & Description)

EAL DESCRIPTION: **A validated notification from NRC of an airliner attack threat within 30 minutes of the site.**

5. RELEASE TO THE ENVIRONMENT (caused by the emergency) None Is Occurring Has Occurred

6. PROTECTIVE ACTION RECOMMENDATIONS

NONE

EVACUATE: _____

SHELTER: _____

Advise Remainder of EPZ to monitor Local Radio/TV Stations/Tone Alert Radios for Additional Information and Consider the use of KI (potassium iodide) in accordance with State plans and policy.

OTHER: _____

Lines 7-11 are NOT required for INITIAL notification.

7. PROGNOSIS: Upgrade in classification or PAR change is likely before the next follow-up notification Yes No

8. SITE UNIT(S) STATUS:

AFFECTED UNIT

YES Unit 1- _____ % Power Shutdown: Date _____ Time _____

YES Unit 2- _____ % Power Shutdown: Date _____ Time _____

YES Unit 3- _____ % Power Shutdown: Date _____ Time _____

YES Unit 4- _____ % Power Shutdown: Date _____ Time _____

9. METEOROLOGICAL DATA:

Wind Direction from _____ degrees Wind Speed _____ mph Precipitation _____

Stability Class A B C D E F G

Lines 10-11 Completed for follow-up notifications, IF Line 5 IS OCCURRING or HAS OCCURRED is selected

10. AIRBORNE RELEASE CHARACTERIZATION: Mixed Ground Elevated

MAGNITUDE UNITS: Ci Ci/sec uCi/sec

Mix ID: _____ Noble Gases: _____ Iodine: _____ Particulates: _____

11. DOSE PROJECTION: Projection Period _____ Hours Estimated Release Duration: _____ Hours

	DISTANCE	TEDE (Rem)	THYROID CDE (Rem)
Performed:	Site boundary		
	2 Miles		
Date: _____	5 Miles		
Time _____	10 Miles		

12. REMARKS (As Applicable) _____

13. APPROVED BY: _____ Title: _____ Date: _____ Time: _____

14. NOTIFIED BY: _____ Date: _____ Time: _____

15. RECEIVED BY (ORO use only): _____ Date: _____ Time: _____

UNIT 1 & 2

READ TO THE OPERATOR

INITIAL CONDITIONS:

1. You are the On Shift Manager.
2. Units 1 and 2 are operating at 100% power. The FAA Atlanta calls Plant Hatch control room on the telephone. A NPO answers the phone. The following information is rapidly confirmed with the NRC Operations Center using the Emergency Notification System (ENS) phone.
3. The NRC Operations Center confirms:
 - One (1) hour ago, a DC 10, Delta Flight D-1492, took off from Atlanta, headed for Houston Texas.
 - The plane has inexplicably changed course, is now headed east, and is 20 miles west of Macon, Georgia.
 - Atlanta Flight Control has tried all available methods to communicate with the flights' crew but has been unsuccessful.
 - Based on the plane's flight path and rate of descent, it appears that Plant Hatch is in the flight path of a Track of Interest (TOI).

The flight will reach Plant Hatch, by best estimate, in 29 minutes.
4. The Control Room has contacted the NRC and NRC has confirmed the information.
5. NO Peer Check is available.

INITIATING CUES:

EXAM SECURITY CAUTION:

Do Not Make Any Verbal Crew Announcements During This JPM

1. Evaluate the current conditions and determine the EAL identifier. IMMEDIATELY raise your hand so the evaluator/proctor can log your determination and time of determination.
(TIME CRITICAL)
2. AFTER the evaluator/proctor has logged your determination, complete the appropriate lines in NMP-EP-142-F01, Emergency Notification Form.
(TIME CRITICAL)

Current time is: _____ .

Emergency Notification Form (ENF)

NMP-EP-142-F01

SNC

Version 2.4

Unit S Category 1

Page 1 of 1

INITIAL FOLLOW-UP

MESSAGE # _____ Confirmation Phone # _____ AUTHENTICATION CODE # _____

Lines 1-6 are required for INITIAL Notifications

1. EVENT: DRILL ACTUAL DECLARATION TERMINATION (ONLY Lines 1, 2, 4, 12, & 13 required)

2. AFFECTED SITE: FARLEY HATCH VOGTLE 1&2 VOGTLE 3&4

3. EMERGENCY CLASSIFICATION:
 UE ALERT SITE AREA EMERGENCY GENERAL EMERGENCY

4. EAL# _____ Declaration Date _____ Time _____
Termination Date _____ Time _____ (mark "N/A" for EAL# & Description)

EAL DESCRIPTION:

5. RELEASE TO THE ENVIRONMENT (caused by the emergency) None Is Occurring Has Occurred

6. PROTECTIVE ACTION RECOMMENDATIONS
 NONE
 EVACUATE: _____
 SHELTER: _____
 Advise Remainder of EPZ to monitor Local Radio/TV Stations/Tone Alert Radios for Additional Information and Consider the use of KI (potassium iodide) in accordance with State plans and policy.
 OTHER: _____

Lines 7-11 are NOT required for INITIAL notification.

7. PROGNOSIS: Upgrade in classification or PAR change is likely before the next follow-up notification Yes No

8. SITE UNIT(S) STATUS:

AFFECTED UNIT

- YES Unit 1- _____ % Power Shutdown: Date _____ Time _____
- YES Unit 2- _____ % Power Shutdown: Date _____ Time _____
- YES Unit 3- _____ % Power Shutdown: Date _____ Time _____
- YES Unit 4- _____ % Power Shutdown: Date _____ Time _____

9. METEOROLOGICAL DATA:

Wind Direction from _____ degrees Wind Speed _____ mph Precipitation _____
Stability Class A B C D E F G

Lines 10-11 Completed for follow-up notifications, IF Line 5 IS OCCURRING or HAS OCCURRED is selected

10. AIRBORNE RELEASE CHARACTERIZATION: Mixed Ground Elevated

MAGNITUDE UNITS: Ci Ci/sec uCi/sec

Mix ID: _____ Noble Gases: _____ Iodine: _____ Particulates: _____

11. DOSE PROJECTION: Projection Period _____ Hours Estimated Release Duration: _____ Hours

	DISTANCE	TEDE (mRem)	THYROID CDE (Rem)
Performed:	Site boundary		
	2 Miles		
Date: _____	5 Miles		
Time _____	10 Miles		

12. REMARKS (As Applicable) _____

13. APPROVED BY: _____ Title: _____ Date: _____ Time: _____

14. NOTIFIED BY: _____ Date: _____ Time: _____

15. RECEIVED BY (ORO use only): _____ Date: _____ Time: _____