

SIMULATOR
EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC SCENARIO 1
SCENARIO NUMBER: ESG-NRC-S1
EFFECTIVE DATE: Effective when approved.
EXPECTED DURATION: 80 minutes
REVISION NUMBER: 02
PROGRAM: L.O. REQUAL
 INITIAL LICENSE
 OTHER

REVISION SUMMARY:

1. Added MSL RMS Channel A failure for CRS TS entry.
2. Added MALF AN-D3E3 CRYWOLF ANN D3E3 120VAC UPS TROUBLE from validation comments
3. Modified PC06 to ramp leak from 10 to 50% over 8 minutes from validation comments. This is consistent with ESG-005 rates.
4. Validation time 80 minutes.

PREPARED BY: Archie E. Faulkner
Instructor

12/5/2008
DATE

APPROVED BY: *Muh W. Parrish*
Operations Training Manager or Designee

12/11/08
DATE

APPROVED BY: *[Signature]*
Operations Director or Designee

12/11/8
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I. OBJECTIVE(S):

Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Critical tasks within this examination scenario guide are identified with an “*.”)

II. MAJOR EVENTS:

- A. Raise Reactor Power with Control Rods
- B. Inerting the Containment
- C. Stuck Control Rod
- D. Main Steam Line RMS failure
- E. Loss of 1AD482 inverter
- F. Steam leak in the steam tunnel
- G. Small break LOCA/
- H. RHR pump room flooding/ (Failure to isolate)
- I. Emergency Depressurization/ SRV Failure to open

III. SCENARIO SUMMARY:

The scenario starts with the plant at approximately 4% power at rated pressure. The crew will withdraw Control Rods to 8% power in preparation to place the reactor Mode Switch to Run. The crew will commence inerting the drywell. During the rod withdrawal, a rod will stick. The crew's efforts to unstick the rod will be successful. After the reactivity manipulation and containment inerting are complete, "A" Main Steam Line Rad Monitor will fail upscale resulting in a Tech Spec entry. The 1A-D-482 inverter will develop a fault resulting in TACS isolation requiring restoration, and loss of various indications. Once TACS has been restored, the plant will develop a steam leak in the steam tunnel requiring the unit to be shutdown and the crew to close the Main Steam Isolation Valves.

A LOCA will develop after closing the MSIVs. When RHR Pump D is started, a Suppression Pool leak develops on the suction piping to the pump. Attempts to isolate the leak and to makeup will be unsuccessful, requiring an Emergency Depressurization of the RPV (**Critical Task**). An SRV will fail to open when required and the crew will be required to open an additional SRV (**Critical Task**). The scenario will be terminated when the reactor is depressurized and level is above – 185 inches.

IV. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to IC-94; 4% power, MOC. Pull step 259
	INSERT control rods through step 234.
	DEINERT containment to >4% O2. Secure lineup, but leave H2O2 analyzers in service.
	ENSURE lineup to inert containment is up to 5.1.8 of HC.OP-SO.GS-0001.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	INITIAL IO.ZZ-0003 Section 5.3 up to and including step 5.3.39.
	INITIAL SO.GS-0001 Section 5.1 up to and including step 5.1.8.
	MARKUP OP-HC-103-105 Forms 1 and 2 to support inerting containment.
	ENSURE Data Collection is trending the following parameters:
	<ul style="list-style-type: none"> • Reactor power
	<ul style="list-style-type: none"> • W/R Reactor Water Level
	<ul style="list-style-type: none"> • W/R Reactor Pressure
	<ul style="list-style-type: none"> • Fuel Zone RPV Level
	COMPLETE the Simulator Ready for Training/Examination Checklist.
	PRE-BRIEF the crew for the power change and Containment Inerting

EVENT TRIGGERS:

Initial	ET #	Description
	1	EVENT ACTION: LCPNEP01 >= 300 COMMAND: DMF CD033843 PURPOSE: Deletes malfunction when drive pressure is 300 psig
	5	EVENT ACTION: ZLMS20A COMMAND: PURPOSE: CLOSED light for A MSIV
	6	EVENT ACTION: ZLRHPMR(4) COMMAND: IMF RH07D PURPOSE: Inserts flooding malfunction when RHR D pump is running
	7	EVENT ACTION: ZDRHF0C(20) COMMAND: PURPOSE: HV-F004D Switch to CLOSE
	9	EVENT ACTION: ZDCWZPDM >= 1.0 COMMAND: PURPOSE: D SACS Pump MAN PB
	10	EVENT ACTION: ZDCWZPDA >= 1.0 COMMAND: DMF CW15D PURPOSE: D SACS Pump AUTO PB
	11	EVENT ACTION: ZDCWZPDS >= 1.0 COMMAND: PURPOSE: D SACS Pump START PB
		EVENT ACTION: COMMAND: PURPOSE:

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CD033843 Control Rod 38-43 stuck	---	---	None	---	---
	AD02EC ADS/Relief valve F013E sticks closed	---	---	None	---	---
	RM9509 Main Steam Line Channel A Radiation Monitor fails upscale	---	---	ET-2	---	9980000
	ED09A2 Loss of 120VAC Class 1E Instr bus 1AD482	1	---	ET-3	---	---
	AN-D3E3 CRYWOLF ANN D3E3 120VAC UPS TROUBLE	1	---	ET-3	---	---
	CW15D D SACS Pump Process Auto Start Fail	---	---	ET-3	---	---
	MS04A Steam line A leak in tunnel	---	600	ET-4	---	100
	RR31A2 Recirc Loop A large break	300	300	ET-5	---	3
	RR31B2 Recirc loop B large break	300	300	ET-5	---	3
	RH07D RHR leak via pump D suction	---	---	ET-6	---	---
	PC06 Suppression Pool Break	---	8:00	ET-6	10%	50%

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RH21D HV-F004 RHR pump D suction valve	---	---	ET-7	---	TAGGED

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	5A31 C OVLO DP210 MAN-LOOP B Pumps-Pump	---	---	ET-9	OFF	ON
	5A31 D OVLO DP210 AUTO-LOOP B PUMPS-Pump	---	---	ET-9	OFF	OFF

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Raise Reactor Power with Control Rods: After the Crew assumes the watch.</p>	<ul style="list-style-type: none"> • CRS directs the RO to raise Reactor power with Control Rods in accordance with RE guidance. • RO withdraws Control Rods in accordance with HC.OP-SO.SF-0001 and CRS directions. <ul style="list-style-type: none"> ⇒ Selected rod PB comes ON (bright white). ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod position (10C650C). ⇒ The associated Full Core Display (white) numbered rod identification light comes ON (10C650C). • At the ROD SELECT MODULE, simultaneously press and hold both the WITHDRAW PB <u>AND</u> the CONTINUOUS WITHDRAW PB and observe the following: <ul style="list-style-type: none"> ⇒ The INSERT (white) light comes ON momentarily. ⇒ The WITHDRAW (white) light comes ON and the CONTINUOUS WITHDRAW (white) light comes ON. ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates control rod movement. • Prior to reaching the desired control rod position, simultaneously release both the WITHDRAW PB and the CONTINUOUS WITHDRAW PB and OBSERVE the following: <ul style="list-style-type: none"> ⇒ The WITHDRAW (white) light goes OUT. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>
<p>NOTE: LPRM downscale alarms can be expected. As RE, inform crew alarms are expected for this rod pattern.</p>		
<p>NOTE: Operator may single notch withdraw the rods, as necessary, in which case the CONTINUOUS WITHDRAW PB is NOT used.</p>		

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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- ⇒ The SETTLE (white) light comes ON for ≈ 6 seconds, then goes out.
- ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod has settled to the desired position.
- ⇒ At position 48 the applicable Full Core Display FULL OUT (red) light comes on.
- Perform a control rod coupling integrity check IAW HC.OP-ST.BF-0001.
- Perform the following while giving the selected Control Rod a continuous withdraw signal:
 - ⇒ Observe the following as indication of the Control Rod being coupled:
 1. ROD OVERTRAVEL alarm does NOT annunciate.
 2. Red Full Out light illuminates on the Full Core Display.
 3. RPIS indicates the Control Rod is full out (48).
 4. Proper response of the Nuclear Instrumentation while withdrawing the Control Rod.
- Indicates the completion of the movement on the Pull Listing.
- RO determines that Control Rod 38-43 is stuck by observing no change in Rod motion on the 4 Rod Display or the RWM and informs the CRS.
- CRS directs actions in accordance with HC.OP-AB.IC-0001:
 - ⇒ Condition I.

HPI USED:
 STAR
 PEER CHECK
 OP BARRIERS

Stuck Control Rod 38-43:
 Preinserted.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>NOTE: Crew may request RE guidance. Respond that a withdraw signal then an insert signal may be attempted.</p> <p>ENSURE ET-1 triggers when drive water pressure dp >300 psid. This deletes stuck rod malfunction.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>Inerting the Containment:</u> After the Crew assumes the watch.</p> </div>	<ul style="list-style-type: none"> • RO performs actions in accordance with CRS directions: <ul style="list-style-type: none"> ⇒ Verifies no Rod Blocks are present. ⇒ Attempts to operate the drive in both directions to determine the exact condition of the Control Rod. ⇒ Verifies drive water flow fluctuates normally. ⇒ Verifies proper operation of the <u>SETTLE, INSERT, AND WITHDRAW</u> lights. • Performs the following: <ul style="list-style-type: none"> ⇒ Raises the drive water pressure in approximately 50 psid increments, not to exceed 500 psid. ⇒ Attempts to notch in <u>OR</u> notch out the Control Rod at the new pressure increment. • RO observes Rod Movement as indicated on the 4 Rod Display or RWM, and notifies the CRS. • RO returns the drive water pressure to the normal operating range (260-270 psid on A3015). • CRS directs the PO to inert the containment in accordance with HC.OP-SO.GS-0001 starting at 5.1.8. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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- PO commences inerting the containment in accordance with CRS directions by:
- Opening the following valves:
 - ⇒ HV-4978
 - ⇒ HV-5035
 - ⇒ P-KH-V9973, Liquid N2 To Vaporizer (local)
 - ⇒ GU-HD-9372A
 - ⇒ HV-4958
 - ⇒ HV-4952
 - ⇒ HV-4950
 - ⇒ Establishes communications between the Main Control Room AND an operator stationed at TI-3955.
 - ⇒ Log start time on Gaseous Effluent Release Permit
 - ⇒ Presses the FV-4971 ON push-button.
 - ⇒ Presses the FIC-4971, N2 FLOW, AUTO push-button.
- Intermittently presses FIC-4971 N₂ RAISE SETPOINT PB to attain the desired nitrogen flow rate as indicated on FR-4971-1, N₂ FLOW (up to 150,000 scfh).
- Intermittently OPEN one of the PSV-4946A (B,C,D,E,F,G,H), Torus to Drywell Vacuum Breakers, using the TEST OPEN push-button approximately every 15 minutes.
- Crew recognizes MSL RMS Channel failure by:
 - ⇒ OHA C6-A3 "MN STM LINE RADIATION HI"
 - ⇒ RM11 9RX511 High alarm
 - ⇒ Other channels reading normally.
- CRIDS Page 37 MSL Radiation readings.

HPI USED:
 STAR
 PEER CHECK
 FLAGGING
 OP BARRIERS

**Main Steam Line RMS "A"
 Fails Upscale:**

TRIGGER ET-2 when Control Rods have been withdrawn, containment inerting is in progress, or at the Lead Examiner's discretion.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Loss of 1AD482 Inverter: TRIGGER ET-3 when Control Rods have been withdrawn, containment inerting is in progress, or at the Lead Examiner's discretion.</p>	<ul style="list-style-type: none"> • CRS reviews AB.RPV-0008: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B ⇒ Condition C and finds them not applicable. • CRS recognize Tech Specs action <ul style="list-style-type: none"> ⇒ 3.3.2 action b.1) c) applies. • CRS contacts Maintenance to troubleshoot and repair the MSL RMS channel. • Crew identifies and communicates the loss of TACS to the CRS. • RO/PO informs CRS that RPV power, level and pressure are stable. 	
<p>NOTE: HC.OP-AB.ZZ-0001 may be referenced also for the transfer of TACS.</p>	<ul style="list-style-type: none"> • CRS orders TACS placed on the B SACS loop IAW HC.OP-AB.COOL-0002: <ul style="list-style-type: none"> ⇒ Condition B. • PO performs HC.OP-AB-COOL-0002 as directed by the CRS 	
<p>WHEN operator starts D SACS Pump, THEN DELETE Overrides 5A31C and 5A31 D.</p>	<ul style="list-style-type: none"> • PO ensures the standby SACS pump starts. • Ensures BOTH pairs of TACS supply and return valves on the Standby loop open to supply TACS. (HV-2522/2496) • Ensures <u>ALL</u> TACS supply <u>AND</u> return valves on the loop that <u>WAS</u> supplying TACS are <u>CLOSED</u>. (HV-2522/2496) 	<p>HPI USED: STAR <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>WHEN dispatched to the 1A-D-482 as an operator, THEN REPORT the inverter output breaker CB10 is open, the AC Reg Output breaker CB302 is open and the Static Switch cabinet is de-energized.</p>	<ul style="list-style-type: none"> • Determines that the HV-2522E and HV-2522F are closed <u>THEN</u> re-opens them as follows: <ul style="list-style-type: none"> ⇒ Verifies no large break has occurred in TACS by observing SACS expansion tank levels. ⇒ Determines that no large break in TACS has occurred, then <i>simultaneously</i> presses and holds the HV-2522E and/or HV-2522F OPEN PB's until the valves indicate open. • Crew identifies the loss of the 1AD482 inverter <ul style="list-style-type: none"> ⇒ OHA D3-E3 120VAC UPS TROUBLE ⇒ CRIDS 	
<p>WHEN dispatched to the 1A-D-482 as maintenance, THEN REPORT there appears to be a fault in the Static Switch cabinet and you will need the inverter tagged.</p>	<ul style="list-style-type: none"> • CRS implements HC.OP-AB.ZZ-0136, Attachment 5. 	
<p>NOTE: If dispatched to investigate H2 Seal Oil System, respond that alarm was due to low pressure. Using Remote Function acknowledge alarm.</p>	<ul style="list-style-type: none"> • Crew recognizes loss of RWCU via OHA and trip of both RWCU pumps due to a loss of HV-F001 indication. 	
<p>NOTE: If dispatched to the Isophase System, alarm was due to high temperature. Using Remote Function acknowledge alarm.</p>	<ul style="list-style-type: none"> • RO/PO refers CRS to HC.OP-AB.RPV-0007 in accordance with HC.OP-AR.ZZ-0008. 	
	<ul style="list-style-type: none"> • CRS directs actions to be taken in accordance with HC.OP-AB.RPV-0007, Condition B. [DIRECT Chemistry to sample and analyze reactor coolant.] 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>WHEN dispatched to SACS or SSW, THEN REPORT the equipment is ready for starting or post start checks are SAT.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Steam leak in the steam tunnel:</p> <p>TRIGGER ET-4 (Steam leak in the Steam Tunnel) when the crew completes actions for the loss of 1AD482, or at the Lead Examiner's discretion.</p> </div>	<ul style="list-style-type: none"> • CRS may direct Containment Inerting lineup to be secured. • CRS recognize Tech Specs action <ul style="list-style-type: none"> ⇒ 3.8.3.1.a.1.e and action A applies. (8 hr Action time) • Crew recognizes Steam Tunnel temp rising: <ul style="list-style-type: none"> ⇒ A2541 Stm Tunnel Clr Inlet temp in alarm. 	
	<ul style="list-style-type: none"> • CRS directs PO to implement HC.OP-AB.BOP-0005, Condition A: • PO implements HC.OP-AB.BOP-0005, Condition A: <ul style="list-style-type: none"> ⇒ Isolate the source of the leak if known. ⇒ Monitor the following to determine the source of leak: <ul style="list-style-type: none"> • Main Steam Flow indication • Feedwater Flow indication • RWCU System ⇒ Ensures TB Chilled Water Supply Temp is <55F. ⇒ HV-9532-1 and HV-9532-2 are open. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>WHEN dispatched to perform BOP-0005 actions, REPORT:</p> <p>Action A.3: Steam Tunnel supply and return back draft dampers – both sets are open.</p> <p>Action A.5: Place Both Steam Tunnel cooling fans in service by placing REMOTE FUNCTION HV11 and HV12 in RUN.</p> <p>Action A.6: GU-HD9395A and 9395B are closed.</p>	<ul style="list-style-type: none"> ⇒ Ensure proper positioning of Steam Tunnel Supply <u>AND</u> Return Backdraft dampers ⇒ Ensure both Steam Tunnel cooling Fans in-service at panel 1EC281. ⇒ Ensure GU-HD9395A AND GU-HD9395B are closed. 	
<p>WHEN dispatched to perform BOP-0005 actions, REPORT:</p> <p>Action A.3: Steam Tunnel supply and return back draft dampers – both sets are open.</p>	<ul style="list-style-type: none"> • CRS assigns a crewmember to monitor Steam Tunnel temperature. • CRS implements HC.OP-AB.CONT-0004, Condition A. <ul style="list-style-type: none"> ⇒ Direct Radiation Protection to enter RP-AR.SP-0001 ⇒ Monitor for indications of fuel damage ⇒ Monitor activity at the exhaust ducts to localize the source of the activity ⇒ Determine the Total Release Rates • CRS implements HC.OP-AB.CONT-0004, Condition C. <ul style="list-style-type: none"> ⇒ Monitor for indications of a steam leak 	
<p>NOTE:</p> <p>This alarm may not be received.</p> <p>High alarm is 2.5 mR/hr.</p>	<ul style="list-style-type: none"> • Crew responds to RM-11 “High Alarm” for 9RX620 for the Tech Support Center ARM. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>The CRS may take conservative action and scram before 145 degrees.</p>	<ul style="list-style-type: none"> • CRS briefs the crew on plant conditions and contingencies for a rising Main Steam Tunnel temperature. • Crew monitors HC.OP-AB.BOP-0005 Retainment Override. • CRS directs a manual Scram when Steam Tunnel temperature ≥ 145 degrees IAW the Retainment Override. • RO takes actions to manually scram the reactor IAW HC.OP-AB.ZZ-0001. • PO takes action to control, restore and maintain RPV level with Feedwater. • CRS implements HC.OP-EO.ZZ-0101 based on entry condition of ≤ 12.5" RPV Level and directs actions to stabilize the plant. \Rightarrow RO performs scram actions IAW HC.OP-AB.ZZ-0001 • CRS may transfer level and pressure control to RCIC and SRVs in anticipation of MSIV closure. • RO/PO coordinate transfer of Reactor Pressure and RPV level control. • Crew places 'B' RHR in Suppression Pool cooling to support RCIC/SRV operation IAW HC.OP-AB.ZZ-0001 Attachment 3 • CRS directs closing MSIVs and drains to isolate steam leak. 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARDCARD <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARDCARD <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARDCARD <input type="checkbox"/></p>
<p>NOTE: The MSIVs may automatically close on an isolation signal.</p>		

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>LOCA: VERIFY ET-5 triggers a LOCA (w/ 5 minute ramp) 5 minutes after MSIV closure, or at the discretion of the Lead Examiner.</p> </div>	<ul style="list-style-type: none"> • RO closes the MSIVs and drains. 	<p>HPI USED: STAR <input type="checkbox"/></p>
	<ul style="list-style-type: none"> • The CRS directs the PO to restore and maintain RPV level / pressure with HPCI and/or RCIC and SRVs. 	<p>HPI USED: STAR <input type="checkbox"/></p>
	<ul style="list-style-type: none"> • CRS implements HC.OP-AB.BOP-0002, Condition A: <ul style="list-style-type: none"> ⇒ Verify the Main Turbine valves are CLOSED ⇒ Ensure the Motor Suction Pump and Turning Gear Oil Pump are running ⇒ When Main Turbine Speed <900 rpm, ensure all Main Turbine Lift Pumps running. 	
	<ul style="list-style-type: none"> • Crew recognizes LOCA condition: <ul style="list-style-type: none"> ⇒ RM-11 DLD monitors. ⇒ Rising Drywell Pressure. ⇒ OHA A4-F5, A7-E4, C6-C2. 	
	<ul style="list-style-type: none"> • CRS directs actions for the high Drywell pressure IAW HC.OP-AB.CONT-0001. <ul style="list-style-type: none"> ⇒ Maximize Drywell Cooling by ensuring: <ul style="list-style-type: none"> • All Drywell Fan Cooling Coils are Open • All Drywell Fans are running in Fast Speed • Turbine Bldg. Chill Water system is operating properly ⇒ Perform the following: <ul style="list-style-type: none"> • Check Reactor Recirc. Pump Seals • Check SRV Tailpipe Temperatures • PO maximizes Drywell cooling and checks proper operation of TB Chillers. 	<p>HPI USED: STAR <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>RHR Room Flood (Failure to isolate): VERIFY ET-6 active when RHR Pump D starts.</p> <p>NOTE: At the discretion of the Lead Examiner, raise the severity of PC06.</p> <p>As RBEO, two minutes after being dispatched, REPORT a large leak at D pump suction with approximately two inches of water on floor. You have exited the room and closed the watertight door.</p> <p>WHEN operator places F004D keyswitch in CLOSE, THEN ENSURE ET-7 Triggers.</p>	<ul style="list-style-type: none"> • Crew recognizes HI-HI Drywell pressure of 1.68 psig • CRS reenters HC.OP-EO.ZZ-0101, enters HC.OP-EO.ZZ-0102, and directs actions to mitigate the leak. • CRS determines that drywell sprays are required based upon DRWL temperatures / pressure. • CREW may recognize Suppression Pool leak via decreasing Suppression Pool level indications on SPDS and annunciator A6-A5 and informs the CRS. • CREW determines leak to be in RHR pump D room via SPDS and/or CRIDS alarms D2971 and D2939. • RO/PO notifies RBEO to investigate cause of RHR pump room flooded alarm. • CRS enters and directs actions of HC.OP-EO.ZZ-0103/4, Reactor Building and Rad Release to isolate the leak. • CRS directs actions to isolate RHR Pump D suction by closing HV-F004D. • PO attempts to close HV-F004D, observes that the OVLDPWR FAIL illuminates, and informs the CRS. 	<p>HPI USED: STAR <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>NOTE: Role-play as the building EO to support implementation of EOP 300 level procedures.</p> <p>Do NOT implement EO-315, use Remote Functions CS02 or CS04. Although, REPORT completion of lineup to the MCR.</p>	<ul style="list-style-type: none"> When Suppression Pool Level drops below 74.5 inches, CRS reenters HC.OP-EO.ZZ-0102, Primary Containment Control, and directs actions to restore suppression pool level using RCIC, Core Spray, or Service Water. 	
<p>NOTE: Once Crew determines a major failure of the Torus has occurred and level cannot be maintained, they may stop makeup efforts.</p>	<ul style="list-style-type: none"> CREW closely monitors Torus level decrease and determines that a major failure of the Torus has occurred. <i>* Crew determines that Suppression Pool water level cannot be maintained above 38.5" and opens five SRVs before Suppression Pool level reaches 30".</i> CRS implements HC.OP-EO.ZZ-0202, Emergency RPV Depressurization, when torus level cannot be maintained above 38.5". PO opens 5 ADS valves IAW CRS direction. 	<p>HPI USED: STAR <input type="checkbox"/> HARDCARD <input type="checkbox"/></p>
<p>SRV Failure: SRV E Failure to Open is Pre-inserted</p>	<ul style="list-style-type: none"> PO recognizes failure of SRV F013E to open via closed indication on 10C650C and informs CRS. CRS directs PO to open other SRV(s) until 5 SRVs are open. PO opens additional SRV per CRS instructions 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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NOTE: This task is completed satisfactorily if Emergency Depressurization occurs before 38.5" of SPL is reached.

- * ***Crew recognizes via acoustic and temperature indications that F013E, ADS SRV, has failed to open and opens an additional SRV***
 - PO maintains/restores RPV level >-185 inches in accordance with CRS instructions.
 - PO initiates Suppression Pool cooling IAW CRS direction.

HPI USED:
STAR

Termination Requirements

The Scenario may be terminated when RPV level is under control, the RPV is depressurized, or at the discretion of the Lead Examiner.

VI. SCENARIO REFERENCES:

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. Emergency Plan (ECG)
- G. Alarm Response Procedures (Various)
- H. HU-AA-101 Performance Tools and Verification Practices
- I. HU-AA-104-101 Procedure Use and Adherence
- J. OP-AA-101-111-1003 Use of Procedures
- K. HU-AA-1081 Fundamentals Toolkit
- L. HU-AA-1211 Briefing
- M. OP-AA-101-111-1004 Operations Standards
- N. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- O. OP-AA-106-101-1001 Event Response Guidelines
- P. OP-AA-108-114 Post Transient Review
- Q. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- R. OP-HC-108-106-1001 Equipment Operational Control
- S. OP-AA-101-112-1002 On-Line Risk Assessment
- T. HC.OP-AB.BOP-0002 Main Turbine
- U. HC.OP-AB.BOP-0005 Main Steam Tunnel Temperature
- V. HC.OP-AB.CONT-0001 Drywell Pressure
- W. HC.OP-AB.CONT-0004 Radioactive Gaseous Release
- X. HC.OP-AB.COOL-0002 Safety Auxiliaries Cooling System
- Y. HC.OP-AB.IC-0001 Control Rod
- Z. HC.OP-AB.RPV-0007 Reactor Coolant Conductivity
- AA. HC.OP-AB.RPV-0008 Reactor Coolant Activity
- BB. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- CC. HC.OP-AB.ZZ-0136 Loss of 120 VAC Inverter
- DD. HC.OP-EO.ZZ-0101 RPV Control
- EE. HC.OP-EO.ZZ-0102 Primary Containment Control
- FF. HC.OP-EO.ZZ-0103/4 Reactor Building and Rad Release
- GG. HC.OP-EO.ZZ-0202 Emergency RPV Depressurization
- HH. HC.OP-IO.ZZ-0003 Startup From Cold Shutdown to Rated Power
- II. HC.OP-SO.AE-0001 Feedwater System Operation
- JJ. HC.OP-SO.SF-0001 Reactor Manual Control
- KK. HC.OP-ST.BF-0001 Control Rod Drive Exercise - Weekly

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S1 / 02

1.

- * ***Crew determines that Suppression Pool water level cannot be maintained above 38.5" and opens five SRVs before Suppression Pool level reaches 30".***

K/A 295030 Low Suppression Pool Water Level

EA2 Ability to determine and/or interpret the following as they apply to LOW SUPPRESSION POOL WATER LEVEL

EA2.01 Suppression Pool level RO 4.1 SRO 4.2

K/A 218000 Automatic Depressurization System

A.4 Ability to manually operate and/or monitor in the control room:

A4.01 ADS Valves RO 4.4 SRO 4.4

If Suppression Pool Level drops below 38.5", the downcomer pipes are uncovered and the Pressure Suppression function of the Primary Containment is lost. EOPs direct Emergency Depressurizing if Suppression Pool level cannot be maintained above 38.5". Requiring the Emergency Depressurization to be initiated before Supp Pool Level reaches 30" allows the Crew three minutes to implement this action in this scenario.

2.

- * ***Crew recognizes via acoustic and temperature indications that F013E, ADS SRV, has failed to open and opens an additional SRV.***

(K/A 239002 Relief/Safety Valves

A4 Ability to manually operate and/or monitor in the control room:

A4.01 SRV's RO 4.4 SRO 4.4

The Minimum Number of SRVs required for Emergency Depressurization (MNSRED) is five. The MNSRED is utilized to assure the RPV will depressurize and remain depressurized when Emergency Depressurization is required. When the PSV-F013E fails to open, the Crew needs to open an additional SRV to achieve MNSRED. This is directed by both HC.OP-EO.ZZ-0202 and AB.ZZ-0001. SRV's are designed to open with a minimum differential pressure of 50 psid between the reactor vessel and the suppression chamber. Below this d/p, they may not open. If the Crew does not attempt to open the fifth SRV before this minimum d/p is lost, they cannot validate it's operation. This would prevent them from detecting the failure and pursuing the use of the Alternate Depressurization Systems in HC.OP-EO.ZZ-0202.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

<u>Y/N</u>	<u>EVENT</u>	<u>Y/N</u>	<u>EVENT</u>
_____	Loss Of Offsite Power/SBO	_____	Internal Flooding
_____	LOCA		
	<u>TRANSIENTS:</u>		<u>LOSS OF SUPPORT SYSTEMS:</u>
_____	Turbine Trip	_____	Loss of SSW
_____	Loss of Condenser Vacuum	_____	Loss of SACS
_____	Loss of Feedwater	_____	Loss of Instrument Air
_____	Inadvertent MSIV Closure		
_____	Inadvertent SRV Opening		
_____	Manual Scram		

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

<u>Y/N</u>	<u>KEY EQUIPMENT</u>	<u>Y/N</u>	<u>KEY EQUIPMENT</u>
_____	Hard Torus Vent	_____	SLC
_____	HPCI	_____	CRD
_____	1E 4.16KV Bus	_____	1E 125VDC
_____	SACS Hx/Pump		
_____	EDG		<u>KEY SYSTEMS</u>
_____	120VAC 481/482 Inverter	_____	500KV AC Power
_____	A/B RHR	_____	SRVs
_____	RCIC	_____	Condensate/Feedwater
_____	SSW Pump	_____	PCIG

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

<u>Y/N</u>	<u>OPERATOR ACTION</u>
_____	Aligning RHR for Suppression Pool Cooling
_____	Emergency Venting of Primary Containment
_____	Emergency Depressurize RPV W/O High Pressure Injection
_____	Initiating LP ECCS with No High Pressure Injection Available
_____	Restoration of AC Power after a LOP (EDG / Offsite)
_____	Monitoring and Control of SACS heat loads
_____	Preventing LVL 8 trip of Feedwater during a transient
_____	Align Core Spray Suction to CST when at NPSH limits
_____	Cross-Tie De-Energized B/D 125VDC Battery Charger to Energized Bus
_____	Inhibit ADS during ATWS

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: 4%
MWe (May vary slightly): 0
Work Week: B

Activities Completed Last Shift:

- Reactor Startup in progress to step 5.3.40 of IO-3
- Containment inerting lineup in progress through step 5.1.8 of SO-GS-0001.

Major Activities Next 12 Hours:

- Continue with Startup by withdrawing Control Rods @ <15%/hour.
- Commence inerting the containment IAW HC.OP-SO.GS-0001 step 5.1.9.

Protected Equipment:

None

Heightened Awareness:

None

Tagged Equipment:

None

Reactivity:

- Rod pull step 234.
- Continuous rod withdraw is allowed.
- RE-Some LPRM downscale and SRM Short Period alarms may occur during withdraw of rods. Contact RE for guidance.

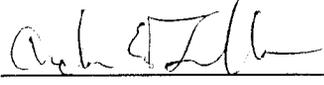
IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

Note: This form is used as guidance for an examination team to conduct a review for the proposed exam scenario(s). Attach a separate copy of this form to each scenario reviewed.

SELF-CHECK

ESG- NRC-S1

REVIEWER: 

- Q57 1. The scenario has clearly stated objectives in the scenario.
- Q57 2. The initial conditions are realistic, equipment and/or Instrumentation may be out of service, but it does not cue crew into expected events.
- Q57 3. Each event description consists of:
 - The point in the scenario when it is to be initiated
 - The malfunction(s) that are entered to initiate the event
 - The symptoms/cues that will be visible to the crew
 - The expected operator actions (by shift position)
 - The event termination point
- Q57 4. The use of non-mechanistic failures (e.g. pipe break) should be limited to one or a credible preceding event has occurred.
- Q57 5. The events are valid with regard to physics and thermodynamics.
- Q57 6. Sequencing/timing of events is reasonable (e.g. the crew has time to respond to the malfunctions in an appropriate time frame and implements procedures and/or corrective actions).
- Q57 7. Sequencing/timing of events is reasonable, and allows for the examination team to obtain complete evaluation results commensurate with the scenario objectives.
- Q57 8. If time compression techniques are used, scenario summary clearly so indicates.
- Q57 9. The simulator modeling is not altered.
- Q57 10. All crew competencies can be evaluated.
- Q57 11. Appropriate reference materials are available (SOERs, LERs, etc.)
- Q57 12. Proper critical task methodology used IAW NRC procedures.

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Note: The following criteria list scenario traits that are numerical in nature. A second set of numbers indicates a range to be met for a set of two scenarios. Therefore, to complete this part of the review, the set of scenarios must be available. The section below should be completed once per scenario set.

ESG: NRC-S1

SELF-CHECK

- Q47 1. Total malfunctions inserted: 5-8
- Q47 2. Malfunctions that occur after EOP entry: 1-2
- Q47 3. Abnormal Events: 2-4
- Q47 4. Major Transients: 1-2
- Q47 5. EOPs entered requiring substantive actions: 1-2
- Q47 6. EOP Contingency Procedures requiring substantive actions: 0-2
- Q47 7. Approximate scenario run time: 60-90 minutes
- Q47 8. Critical Tasks: 2-3
- Q47 9. Technical Specifications are exercised during the test: ≥ 2

Comments:

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Crew Validation **Rev:** 01 **Date Validated:** 11/20/2008

Validation Comments

Disposition

Need Containment purge Permit updated.
Short Period alarm occurred but not mentioned in turnover sheet.
Stuck rod trigger malfunctioned. Need to resnap. Validation stopped.

Provided updated purge permit from OP-HC-103-105
Updated TO sheet to reflect Short Period alarms may occur.
Resnapped ESG. Need to re-validate ESG.

Crew Validation **Rev:** 02 **Date Validated:** 12/5/2006

Validation Comments

Disposition

Validated by 3 operator crew from C Shift. Need to add 120V UPS
Trouble alarm when 1AD482 inverter fails.
Suppression Pool Leak too slow. Plant depressurizing faster than
approaching ED on SPL.
Validation time 80 minutes.

Added MALF AN-D3E3 CRYWOLF ANN D3E3 120VAC UPS
TROUBLE on ET-3
Modified PC06 to ramp leak from 25 to 50% over 6 minutes. This is
consistent with ESG-005 rates.
Revised cover sheet.

TRAINING USE ONLY

ONLINE RISK: GREEN

WORK WEEK CHANNEL: B

Reactor Power: 4%

MWe (May vary slightly): 0

Activities Completed Last Shift:

- Reactor Startup in progress to step 5.3.40 of IO-3
- Containment inerting lineup in progress through step 5.1.8 of SO-GS-0001.

Major Activities Next 12 Hours:

- Continue with Startup by withdrawing Control Rods @ <15%/hour.
- Commence inerting the containment IAW HC.OP-SO.GS-0001 step 5.1.9.

Heightened Awareness:

None

Protected Equipment:

None

Tagged Equipment:

None

Reactivity:

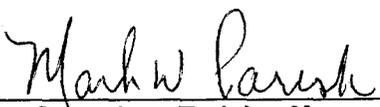
- Reactor Startup in progress. Continue Startup at <15% power / hr
- Rod Pull Sheet Step 234
- Continuous rod withdraw is allowed
- Per R.E. Some LPRM Downscale and SRM Short Period alarms may occur during withdraw of rods.

SIMULATOR
EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: Loss of RBVS, Loss of EHC, ATWS
SCENARIO NUMBER: ESG-NRC-S2
EFFECTIVE DATE: Effective when signed.
EXPECTED DURATION: 82 minutes
REVISION NUMBER: 01
PROGRAM: L.O. REQUAL
 INITIAL LICENSE
 OTHER

REVISION SUMMARY:

1. Added IO-0006 step to turnover sheet based on validation comments.
2. Changed accumulator pressures to clear alarms earlier based on validation comments.
3. Added validation time to cover sheet.

PREPARED BY:	_____ Archie E. Faulkner Instructor	_____ 12/2/2008 DATE
APPROVED BY:	_____  Operations Training Manager or Designee	_____ 12/11/08 DATE
APPROVED BY:	_____  Operations Director or Designee	_____ 12/11/08 DATE

I. OBJECTIVE(S):

Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Critical tasks within this examination scenario guide are identified with an "*".)

II. MAJOR EVENTS:

- A. Place 'D' Circ Water Pump in service
- B. Power Ascension
- C. 'A' CRD Pump trips
- D. Loss of RBVS
- E. Trip of EHC Pump
- F. Loss of EHC
- G. ATWS w/Trip of 'B' SLC Pump

III. SCENARIO SUMMARY:

The scenario begins with the plant at ~51% power, 547 MWe, with 'D' Circ Water Pump out of service. Following turnover, the crew starts 'D' Circ Water Pump and raises reactor power with control rods. 'A' CRD Pump will trip requiring 'B' CRD Pump to be placed in-service to restore charging flow within 20 minute Tech Spec LCO time. The RBVS Return Damper 9414B fails closed, requiring manual placement of FRVS in service. The 'A' EHC pump will trip. When the 'B' EHC pump starts, foreign material in the sump near the 'B' EHC pump suction will cause the 'B' EHC pump discharge filter to clog. EHC pressure will drop until the turbine trips. When the plant is scrammed, a half core ATWS will occur. Post scram power level is about 20%. Initially, bypass valves will control pressure. ADS is inhibited to prevent actuation during ATWS (**Critical Task**). Ultimately, the 'B' EHC pump will trip and bypass valves will be lost, requiring SRVs for pressure control. Torus temperature will approach 110 degF. The 'B' SLC pump will trip and cannot be recovered. The 'A' SLC pump will not auto-start, but can be started by the Crew (**Critical Task**). Crew intentionally lowers RPV water level to reduce reactor power (**Critical Task**). If the Crew efficiently manages the power control leg of EOP-101A and takes advantage of available steam line drains and RFPTs to reject heat to the condenser, intentional lowering of RPV water level to -129" can be avoided. Crew inserts all control rods via CRD or EOP-320 (**Critical Task**). The scenario is terminated when level is being maintained above -185 inches and all control rods have been inserted.

IV. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to 97% power.
	REDUCE reactor power to 73% using reactor Recirc.
	INSERT control rods in sequence to 51% power.
	REMOVE Crossflow from service.
	REMOVE 'C' RFPT from feeding and place on recirc IAW SO.AE-0001 section 5.10.
	REMOVE 'D' Circulating Water pump from service IAW SO.DA-0001 section 5.2.2.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
	INITIAL IO.ZZ-0006 Section 5.1 up to and including step 5.1.5.B.
	INITIAL SO.AE-0001 Section 5.10 up to and including step 5.10.6.A.
	INITIAL SO.DA-0001 Section 5.2.2 up to and including step 5.2.2.H.
	ENSURE Data Collection is trending the following parameters: <ul style="list-style-type: none">• Reactor power• W/R Reactor Water Level• W/R Reactor Pressure• Fuel Zone RPV Level
	COMPLETE the Simulator Ready for Training/Examination Checklist.
	PRE-BRIEF the crew for the power change and Circ Water Pump start (optional)

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	5	EVENT ACTION: et_array(5) COMMAND: imf tc16 100 PURPOSE: Swaps 'B' EHC filter and inserts filter plugging at 100%
	11	EVENT ACTION: crqnm1 <= 40 // Reactor Power <40% COMMAND: imf tc16 100 PURPOSE: Ensures Turbine Bypass valves fail shut.
	12	EVENT ACTION: slnmpmb >= 0.50 // SLC Pump 'B' Start COMMAND: PURPOSE: Triggers Failure of BP208 SLC pump
	13	EVENT ACTION: lc:pbrun // 'B' CRD pump in service. COMMAND: dmf cd051855 PURPOSE: Deletes accumulator trouble alarm malfunction.
	14	EVENT ACTION: lc:pbrun // 'B' CRD pump in service. COMMAND: dmf cd054223 PURPOSE: Deletes accumulator trouble alarm malfunction.
	15	EVENT ACTION: lcpdb >= 900 // 'B' CRD pump discharge pressure COMMAND: set lcpaccx(171) = 950 PURPOSE: Restores HCU accumulator pressure on rod 18-55.
	16	EVENT ACTION: lcpdb >= 900 // 'B' CRD pump discharge pressure COMMAND: set lcpaccx(66) = 950 PURPOSE: Restores HCU accumulator pressure on rod 42-23.
		EVENT ACTION: COMMAND: PURPOSE:

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RP07 Half Core ATWS Right Side	---	---	NONE	---	---
	SL04A AP208 SLC Pump Failure to Auto Start	---	---	NONE	---	---
	CD10A 'A' CRD Pump Trips	---	---	ET-1	---	---
	CD051855 Accumulator Trouble HCU 18-55	2:45	---	ET-1	---	---
	CD054223 Accumulator Trouble HCU 42-23	3:10	---	ET-1	---	---
	TC07A Trip of AP116 EHC Pump	---	---	ET-4	---	---
	TC16 EHC Discharge Filter Plugging	1:00	---	ET-4	---	75%
	TC07B Trip of BP116 EHC pump	4:00	---	ET-11	---	---
	TC01-10 Turbine Bypass Valves Fail Shut	5:30	---	ET-11	---	---
	SL01B BP208 SLC Pump Failure	00:30	---	ET-12	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	HV06 CVH300 RBVS Fan	---	---	ET-3	---	STOP
	HV05 BVH300 RBVS Fan	---	---	ET-3	---	STOP
	HV04 AVH300 RBVS Fan	---	---	ET-3	---	STOP
	HV03 CV301 RBVE Fan	---	---	ET-3	---	STOP
	HV02 BV301 RBVE Fan	---	---	ET-3	---	STOP
	HV01 AV301 RBVE Fan	---	---	ET-3	---	STOP
	AN24 10C382 Acknowledge	00:05		ET-3	---	NORM
	TC06 'B' EHC Pump Filter Replacement	---	---	ET-5	---	REPLACE
	EP01 EOP-301 MSIV LVL 1 Isolation	6:00	---	ET-6	---	BYPASS
	EP02 EOP-311 Restoring PCIG to MSIVs	8:00	---	ET-7	---	BYPASS
	EP38 EOP-319 Restoring Inst Air	3:00	---	ET-8	---	EMERG
	EP09 EOP 320 ARI Fuses	4:00	---	ET-9	---	REMOVE
	EP10 EOP 320 ARI Fuses	4:00	---	ET-9	---	REMOVE
	EP11 EOP 320 RPS Div 1	6:00	---	ET-9	---	INSTALL
	EP13 EOP 320 RPS Div 3	6:00	---	ET-9	---	INSTALL
	EP12 EOP 320 RPS Div 2	8:00	---	ET-9	---	INSTALL
	EP14 EOP 320 RPS Div 4	8:00	---	ET-9	---	INSTALL
	EP35 EOP-322 HPCI Core Spray Valve	3:00	---	ET-10	---	FAIL CLOSE

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	1A175 E LO HD-9414B OPEN light	---	---	ET-2	---	ON
	1A175 E DI HD-9414B OPEN PB	---	---	ET-2	---	OFF
	1A175 F DI HD-9414B CLOSE PB	---	---	ET-2	---	ON

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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Start 'D' Circ Water Pump:

Crew starts 'D' Circ water Pump and opens all circ water discharge valves full after assuming the watch.

IF dispatched to respond to CW Panel 10C502 panel alarm, **THEN REPORT** the alarm was caused by momentary high discharge pressure on D pump and the alarm has cleared. **TOGGLE** Remote Function **AN06** to **NORM**.

- CRS directs 'D' Circ Water Pump to be placed in service.
- PO starts D Circ Water Pump as follows:
- OBSERVE CIRCULATING WATER PUMP DP501 STR ENBL is illuminated.
- PRESS PUMP DP501 START push-button.
- OBSERVE AI-6325D CIRC WTR PUMP MOT AMP indicates 500 - 610 amps (running).
- OBSERVE DISCH VALVE HV-2152D OPEN/CLOSE MID illuminates.
- OBSERVE CIRCULATING WATER PUMP DP501 START is illuminated.
- PRESS DISCH VALVE HV-2152D OPEN FULL push-button.
- OBSERVE HV-2152D OPEN FULL illuminates.
- PO opens remaining CW Pump discharge valves OPEN FULL as follows:
- PRESS DISCH VALVE HV-2152A(B,C) OPEN FULL push-button.

HPI USED:
 STAR
 PEER CHECK
 OP BARRIERS

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Power Ascension: Crew commences reactor power ascension after assuming the watch.</p>	<ul style="list-style-type: none"> • OBSERVE HV-2152A(B,C) OPEN FULL illuminates. • CRS directs raising power to 80% using RE guidance. 	
<p>As RE PROVIDE the following guidance:</p> <ul style="list-style-type: none"> • SPRI and Enhanced Stability Guidance are valid for the remainder of the maneuver. • Power has been steady for the last hour. • Raise power to 60% with control rods using 9E rods to position 48. 	<ul style="list-style-type: none"> • RO raises power with control rods using provided Move Sheets as follows: 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>
<p>Select a control rod</p>	<ul style="list-style-type: none"> • RO selects the desired Control Rod Select PB on the ROD SELECT MODULE. • RO observes the following: <ul style="list-style-type: none"> ⇒ Selected rod PB comes ON (bright white). ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod position (10C650C). ⇒ The associated Full Core Display (white) numbered rod identification light comes ON (10C650C). ⇒ Approximately 6 gpm total flow through both the Insert AND Withdraw Stabilizing valves is indicated on CRIDs point B2117. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Continuous Withdraw</p>	<ul style="list-style-type: none"> • Simultaneously PRESS AND HOLD both the WITHDRAW PB AND the CONTINUOUS WITHDRAW PB while observing the following: <ul style="list-style-type: none"> ⇒ INSERT (white) light comes ON momentarily. ⇒ The WITHDRAW (white) light comes ON and the CONTINUOUS WITHDRAW (white) light comes ON ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates control rod movement. ⇒ Full Core Display FULL IN (green) light goes OUT, as applicable. • Prior to reaching the desired control rod position, simultaneously RELEASE both the WITHDRAW PB and the CONTINUOUS WITHDRAW PB and OBSERVE the following: <ul style="list-style-type: none"> ⇒ The WITHDRAW (white) light goes OUT. ⇒ The SETTLE (white) light comes ON for ≈ 6 seconds and THEN goes OUT. ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod has settled to the desired position. ⇒ For control rods withdrawn to position 48 (full out), the applicable Full Core Display FULL OUT (red) light comes ON. • After the continuous withdrawal cycle is completed, ENSURE that the rod position indicates that the rod is in the correct, even numbered position. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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Coupling check for rods at 48

- WHEN a control rod is withdrawn to position 48 (full out), THEN PERFORM a control rod coupling integrity check IAW HC.OP-ST.BF-0001(Q); Control Rod Drive Exercise as follows:
- WITHDRAW the control rod to position 48 AND PERFORM the following while giving the selected Control Rod a continuous withdraw signal:
- OBSERVE the following as indication of the Control Rod being coupled:
 - ⇒ ROD OVERTRAVEL alarm does NOT annunciate.
 - ⇒ Red Full Out light illuminates on the Full Core Display.
 - ⇒ RPIS indicates the Control Rod is full out (48).
 - ⇒ Proper response of the Nuclear Instrumentation while withdrawing the Control Rod.
- INDICATE on Pull Sheet the condition of Coupling Check.

ENTER time of CRD Pump trip for beginning of 20 minute LCO time:

Time: _____

Trip of 'A' CRD Pump:

After the Crew completes needed reactivity changes and placing D Circ Pump in service, at the discretion of the Lead Examiner,

TRIGGER ET-1 Trip of 'A' CRD Pump.

- RO recognizes trip of BP207 CRD pump by:
 - ⇒ OHA C6-F2 "CRD SYSTEM TROUBLE"
 - ⇒ CRIDS D2244 CRD WATER PUMP A MOTOR TRBL"
 - ⇒ OHA C1-F5 "COMPUTER PT IN ALARM"
 - ⇒ CRIDS D2926 "RECIRC PUMP A SEAL STAGE FLOW HILO"
 - ⇒ CRIDS D2927 "RECIRC PUMP B SEAL STAGE FLOW HILO"
 - ⇒ Flashing STOP light for AP207
 - ⇒ Flashing OVLD/PWR FAIL for AP207

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to AP207, THEN REPORT the pump inboard bearing oil bubbler is broken and the motor is hot to the touch.</p>	<ul style="list-style-type: none"> • RO dispatches NEO to inspect AP207 CRD pump. 	
<p><u>IF</u> dispatched to AP207 breaker, THEN REPORT the breaker tripped on overcurrent.</p>	<ul style="list-style-type: none"> • Crew dispatches NEO to inspect breaker for AP207 CRD pump. • Crew recognizes potentially inoperable accumulators on withdrawn control rods by: <ul style="list-style-type: none"> ⇒ OHA C6-D4 "CRD ACCUM TROUBLE" ⇒ CRIDS D5268 "CRD ACCUMULATOR TRBL" ⇒ Flashing amber ACCUM lights on Full Core Display for 18-55 and 42-23 	
<p><u>WHEN</u> dispatched to investigate HCU accumulator trouble alarms, THEN REPORT the following:</p> <ul style="list-style-type: none"> • <u>IF</u> the alarms are still in, pressures are 920 psig • <u>IF</u> the alarms are clear, pressures are 1040 psig 	<ul style="list-style-type: none"> • Crew dispatches NEO to check HCUs 18-55 and 42-23. 	
<p><u>IF</u> Crew does <u>NOT</u> recognize second accumulator trouble alarm <u>AND</u> alarm is still in, THEN when dispatched to first alarm, REPORT finding second HCU at 920 psig.</p>		
<p>CRDM temperatures can be checked with Monitor Item lctcrd.</p>	<ul style="list-style-type: none"> • CRS enters AB.IC-0001 ⇒ Condition A • CRS directs placing BP207 CRD pump in service IAW either: ⇒ AR.ZZ-0011 <u>OR</u> ⇒ SO.BF-0001 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>SUPPORT any directed manipulations of the BP207 discharge valve (v008) using Remote Function CD02.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Loss of RBVS: After the Crew assumes the watch and at the discretion of the Lead Examiner, TRIGGER ET-2 (RBVS Exhaust Damper HD-9414B Fails).</p> </div> <p><u>IF</u> dispatched to 10C382, <u>THEN REPORT</u> Low Flow Trip alarms on all Reactor Bldg Supply and exhaust fans.</p>	<ul style="list-style-type: none"> • RO place BP207 CRD pump in service as directed by CRS. • CRS recognize the following Tech Specs apply: <ul style="list-style-type: none"> ⇒ Control Rod Accumulators 3.1.3.5.a.2 • Crew recognizes Loss of RBVS by: <ul style="list-style-type: none"> ⇒ RB D/P indication on 10C650E ⇒ SPDS RB PARAMETERS D/P indication. ⇒ OHA E1-F5 "COMPUTER PT IN ALARM" ⇒ CRIDS B7164 "REACTOR BLDG DIFF PRESS" ⇒ OHA E6-C5 "RBVS & WING AREA HVAC PNL 10C382" ⇒ CRIDS D3960 "RBVS EXH RMT PNL C382 TRBL" ⇒ CRIDS D3961 "RBVS SUPPLY RMT PNL C382 TRBL" • CRS implements AB.CONT-003: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition D • Crew dispatches RBEO to 10C382 to investigate. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p> <p>Record Time B CRD Pump started</p> <p>TIME _____</p> <p>Restore charging water pressure within 20 minutes or place the mode switch in SHUTDOWN</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to secure RBVS, THEN TRIGGER ET-3.</p>	<ul style="list-style-type: none"> • RO/PO recognize HD-9414B failed in mid position by 10C651E indication and inform CRS. • RO/PO place FRVS in service IAW SO.GU-0001. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>
<p><u>IF</u> dispatched to HD-9414B, THEN REPORT there is no obvious reason for the failure. (GU-HD-9414B is located in Room 4624, on the Rx Bldg roof.)</p>	<ul style="list-style-type: none"> • Crew dispatches NEO and Maintenance to investigate closure of HD-9414B. 	
	<ul style="list-style-type: none"> • CRS recognize the following Tech Specs apply: <ul style="list-style-type: none"> ⇒ Secondary Containment Integrity 3.6.5.1 ⇒ Secondary Containment Automatic Isolation Dampers 3.6.5.2 action a or b or c 	<p>Restore Secondary Containment within 4 hours. 8 Hour LCO Action time for damper.</p>
<div style="border: 1px solid black; padding: 5px;"> <p>Trip of 'A' EHC Pump: After the Crew places FRVS in service and determines the required Tech Spec actions for the HD-9414B failure, <u>OR</u>, at the discretion of the Lead Examiner, TRIGGER ET-4 (Loss of EHC).</p> </div>	<ul style="list-style-type: none"> • Crew recognizes trip of AP116 EHC pump by: <ul style="list-style-type: none"> ⇒ OHA D3-F5 "TURB HYDR PUMP TROUBLE" ⇒ OHA D3-E5 "TURB HYDR RESERVOIR TROUBLE" ⇒ CRIDS D5542 "HYDRAULIC FLUID PUMP A TRBL" ⇒ CRIDS D5575 "TURBINE HYDRAULIC FLUID PRESS LO" ⇒ HYDR FLUID PUMP A flashing LOW DISCH PRESS light 	<p>If left in AUTO, the BP116 EHC pump will auto-start in about 10 seconds.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to AP116, <u>THEN REPORT</u> the pump outboard motor bearing is hot to the touch.</p> <p><u>IF</u> dispatched to AP116 breaker, <u>THEN REPORT</u> the breaker tripped on overcurrent.</p>	<ul style="list-style-type: none"> RO/PO ensures start of the BP116 EHC pump. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> Immediate Operator action IAW AB.BOP-0003.</p>
<p>Monitor Item:</p> <ul style="list-style-type: none"> EHC Header Pressure tupehchd EHC Pump Disch Pressure tupehc(2) – 15 EHC Pump Filter D/P tupehcdp(2) 	<ul style="list-style-type: none"> CRS implements AB.BOP-0003. 	<p>There are no subsequent actions in AB.BOP-0003 for a trip of a pump.</p>
<div style="border: 1px solid black; padding: 5px;"> <p>'B' EHC Pump Filter Clogging: The BP116 discharge filter will begin clogging one minute after the pump starts.</p> </div>	<ul style="list-style-type: none"> Crew recognizes BP116 discharge filter clogging by: <ul style="list-style-type: none"> ⇒ OHA D3-F5 "TURB HYDR PUMP TROUBLE" ⇒ CRIDS D3629 "MAIN TURB EHC PUMP B FILTER DP HI" ⇒ HYDR FLUID PUMP B flashing HI FILTER D/P light ⇒ Lowering EHC header pressure 	<p>With <u>NO</u> discharge filter swap, EHC pressure will reach 1100# in about 6 minutes after the pump trip.</p> <p><u>IF</u> the discharge filters are swapped, <u>THEN</u> EHC pressure will reach 1100# about 4 minutes after the swap.</p>
<p><u>IF</u> directed to swap BP116 discharge filters, REFER to SO.CH-0001 Section 5.20, THEN TRIGGER ET-5.</p>	<ul style="list-style-type: none"> CRS implements AB.BOP-0003: ⇒ Condition A Crew directs TBEO to swap BP116 pump discharge filters. 	<p>EHC header pressure will recover, then continue to decay.</p>
	<ul style="list-style-type: none"> <u>WHEN</u> EHC pressure lowers to 1200 psig, <u>THEN</u> CRS directs locking the Mode Switch in SHUTDOWN. 	<p>May direct earlier, based on rate of pressure drop and absence of any remaining compensatory actions.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>ATWS >4%: The half core ATWS is already inserted on the right side of the core.</p>	<ul style="list-style-type: none"> • RO locks the Mode switch in SHUTDOWN. • Crew recognizes Scram Condition and Reactor Power Above 4% EOP entry condition: <ul style="list-style-type: none"> ⇒ APRM indications ⇒ Absence of rod FULL IN lights on the right side of Full Core Display ⇒ Rod position indications • RO performs scram actions IAW AB.ZZ-0001 Attachment 1. • CRS implements EOP-101A. • PO stabilizes and maintains RPV level as directed by CRS. • CRS directs: <ul style="list-style-type: none"> ⇒ Initiating SLC ⇒ Verifying RWCU Isolates • RO initiate SLC and verify RWCU isolates. * Crew starts AP208 SLC pump before Suppression Pool temperature reaches 110 degrees. 	<p>HPI USED: HARD CARD <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/></p> <p>ENTER Supp Pool temp when AP208 SLC pump is started: Temp: _____</p>
<p>Trip of SLC Pump: The BP208 SLC pump will trip 30 seconds after starting.</p>	<ul style="list-style-type: none"> • Crew recognizes trip of BP208 SLC pump by: <ul style="list-style-type: none"> ⇒ OHA C1-B1 "SLC PUMP/VALVE O/PF" ⇒ OHA C1-F1 "SLC/RRCS INITIATION FAILURE" ⇒ CRIDS D3023 "SLC INJ PMP BP208 TROUBLE TRBL" ⇒ Flashing STOP light for BP208 	
<p><u>IF</u> dispatched to investigate trip of BP208, <u>HEN REPORT</u> the breaker is tripped and will not reset. (52-222101)</p>	<ul style="list-style-type: none"> • Crew dispatches NEO and Maintenance to investigate trip of BP208 SLC pump. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • CRS directs: <ul style="list-style-type: none"> ⇒ Verifying Recirc runback to minimum ⇒ Tripping reactor recirc pumps • RO: <ul style="list-style-type: none"> ⇒ Verify Recirc runback to minimum ⇒ Trip reactor recirc pumps • CRS directs inhibiting ADS. • RO/PO inhibit ADS IAW AB.ZZ-0001 Att. 13. 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>May already be tripped on EOC-RPT.</p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
<p>REFER to the appropriate EOP and SUPPORT Crew requests for EOPs IAW with the following. Validated execution time delays are built-in: EOP-301: ET-6 EOP-311: ET-7 EOP-319: ET-8 EOP-320: ET-9 EOP-322: ET-10</p>	<ul style="list-style-type: none"> * <i>Crew prevents an uncontrolled depressurization during ATWS conditions by preventing ADS ACTUATION.</i> • CRS directs performance of the following EOPs: <ul style="list-style-type: none"> ⇒ EO.ZZ-0320 "Defeating ARI and RPS Interlocks" ⇒ EO.ZZ-0301 "Bypassing MSIV Isolation Interlocks" ⇒ EO.ZZ-0311 "Bypassing Primary Containment Instrument Gas Isolation Interlocks" ⇒ EO.ZZ-0319 "Restoring Instrument Air in an Emergency" ⇒ EO.ZZ-0322 "Core Spray Injection Valve Override" • CRS directs terminating and preventing injection to the RPV with the exception of: <ul style="list-style-type: none"> ⇒ SLC ⇒ CRD ⇒ RCIC 	<p>This Critical Task is not applicable if RPV level never reaches -129". See justification for failure criteria.</p> <p>The timing, order, and priority of the EOP performance may vary.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • RO/PO terminate and prevent injection IAW AB.ZZ-0001: <ul style="list-style-type: none"> ⇒ Attachment 16 (10C651) ⇒ Attachment 17 (10C650) • CRS directs maintaining RPV water level between -50" and -185". • PO control level as directed by CRS with: <ul style="list-style-type: none"> ⇒ Feedwater IAW AB.ZZ-0001 Att. 14 ⇒ RCIC IAW AB.ZZ-0001 Att. 6 ⇒ HPCI IAW EOP-322 * <i>Crew lowers RPV level to -50", and ensures adequate core cooling by maintaining or restoring RPV level above -185" without Emergency Depressurizing.</i> • CRS directs bypassing the RWM and commencing manual rod insertion. • RO align CRD for ATWS operation IAW AB.ZZ-0001 Attachment 18. • RO bypass RWM and insert control rods IAW RE-AB.ZZ-0001 Attachment. 1. • Crew recognizes trip of the 'B' EHC pump by: <ul style="list-style-type: none"> ⇒ OHA D3-F5 "TURB HYDR PUMP TROUBLE" 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>Typically, the lower end of the level band is set above -129".</p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>If the turbine trips before the reactor is scrammed, an RRCS feedwater runback may occur.</p>
<p>Total Loss of EHC: The 'B' EHC pump will trip four minutes after the plant is scrammed. The bypass valves will fail shut about three minutes later.</p>		

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • Crew recognizes turbine bypass valves failing shut by: <ul style="list-style-type: none"> ⇒ OHA D3-D5 "EHC UNIT PANEL 10C363" ⇒ DEHC Bypass Valve Positioning Error alarms ⇒ Reactor pressure rising above Pressure Setpoint • CRS directs stabilizing pressure below 1037 psig with: <ul style="list-style-type: none"> ⇒ Main Steam Line Drains ⇒ SRVs • RO/PO control pressure as directed by CRS with: <ul style="list-style-type: none"> ⇒ Main Steam Line Drains IAW AB.ZZ-0001 Att. 15 ⇒ SRVs IAW AB.ZZ-0001 Att. 13 • Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH" ⇒ Flashing 95 degree status light on 10C650C ⇒ RM11 9AX833/834 alarm ⇒ Various Suppression Pool temperature indicators • CRS implements EOP-102. • CRS directs placing RHR in Suppression Pool Cooling. • RO/PO place RHR in Supp Pool Cooling IAW AB.ZZ-0001 Att. 3. 	<p>When pressure control swaps to SRVs, maintaining RPV water level between -50" and -129" will be very challenging due to shrink and swell and changing reactor pressure with the RFPTs in MAN.</p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> FLAGGING <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>WHEN</u> the Crew has reset RPS, <u>THEN</u> DELETE Malfunction RP07 to allow full rod insertion on the next scram.</p> <p>At the Lead Examiners discretion, MODIFY Monitor Item lcIsdv to accelerate draining of the SDV.</p>	<ul style="list-style-type: none"> • <u>IF</u> Suppression Pool temperature is >110 degrees, <u>AND</u> Reactor power is >4%, <u>AND</u> SRVs are open or cycling, <u>THEN</u> Crew terminates and prevents injection to the RPV with the exception of SLC, CRD, and RCIC, <u>UNTIL</u> Reactor power is <4%, <u>OR</u> RPV level reaches -129", <u>OR</u> SRVs remain closed. • <u>IF</u> RPV level reaches -129", <u>THEN</u> RO/PO terminates and prevents injection from Core Spray IAW AB.ZZ-0001 Attachment 16. • <u>WHEN</u> EOP-320 Section 5.1 and 5.2 are complete, <u>THEN</u> the Crew implements EOP-320 Section 5.3 and resets RPS. • <u>WHEN</u> OHA C6-E4 clears, <u>THEN</u> the Crew initiates a manual scram IAW EOP-320 Section 5.3. * <i>CREW fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320.</i> • Crew recognizes the reactor is shutdown by: <ul style="list-style-type: none"> ⇒ SPDS ALL RODS IN ⇒ RWM Confirm Shutdown ⇒ CRIDS Rod positions • CRS directs terminating SLC injection. • RO/PO terminate SLC injection. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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Termination Requirement:
The scenario may be terminated at the discretion of the Lead Examiner when:

- RPV Level is being maintained above -185"
AND
- All rods are fully inserted

- CRS exits EOP-101A, enters EOP-101.

VI. SCENARIO REFERENCES:

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. Emergency Plan (ECG)
- G. Alarm Response Procedures (Various)
- H. HU-AA-101 Performance Tools and Verification Practices
- I. HU-AA-104-101 Procedure Use and Adherence
- J. OP-AA-101-111-1003 Use of Procedures
- K. HU-AA-1081 Fundamentals Toolkit
- L. HU-AA-1211 Briefing
- M. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- N. OP-AA-106-101-1001 Event Response Guidelines
- O. OP-AA-108-114 Post Transient Review
- P. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- Q. OP-HC-108-106-1001 Equipment Operational Control
- R. OP-AA-101-112-1002 On-Line Risk Assessment
- S. HC.OP-IO.ZZ-0006 Power Changes During Operation
- T. HC.OP-SO.AE-0001 Feedwater System Operation
- U. HC.OP-SO.DA-0001 Circulating Water System Operation
- V. HC.OP-SO.SF-0001 Reactor Manual Control
- W. HC.OP-SO.SF-0003 Rod Worth Minimizer Operation
- X. HC.OP-AB.IC-0001 Control Rod
- Y. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- Z. HC.OP-AB.CONT-0004 Reactor Building
- AA. HC.OP-AB.BOP-0006 Turbine Hydraulic Pressure
- BB. HC.RE-AB.ZZ-0001 Insertion of Control Rods in Response to an ATWS
- CC. HC.OP-AB.ZZ-000 Reactor Scram
- DD. HC.OP-EO.ZZ-0101 RPV Control
- EE. HC.OP-EO.ZZ-0101A ATWS-RPV Control
- FF. HC.OP-EO.ZZ-0102 Primary Containment Control
- GG. HC.OP-EO.ZZ-0301 Bypassing MSIV Isolation Interlocks
- HH. HC.OP-EO.ZZ-0311 Bypassing Primary Containment Instrument Gas Isolation Interlocks
- II. HC.OP-EO.ZZ-0319 Restoring Instrument Air in an Emergency
- JJ. HC.OP-EO.ZZ-0320 Defeating ARI and RPS Interlocks
- KK. HC.OP-EO.ZZ-0322 Core Spray Injection Valve Override

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S2 / 01

1.

- * ***Crew starts AP208 SLC pump before Suppression Pool temperature reaches 110 degrees.***

K/A 295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown

EA1. Ability to operate and/or monitor the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA1.04 SBLC RO 4.5 SRO 4.5

EA2 Ability to determine and/or interpret the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA2.04 Suppression Pool Temperature RO 4.0 SRO 4.1

The Boron Initiation Injection Temperature above about 9% power is 110°F. The post scram power level in this scenario is greater than 9%. 110°F is also one of the conditions that may require intentional lowering of RPV water level to as low as -129" to control power. Lowering RPV water level to -129" jeopardizes main condenser and RFPT availability, which could significantly complicate mitigation of the ATWS. Initiating SLC before 110°F will help reduce power and may prevent the need to lower level to -129".

2.

- * ***Crew prevents an uncontrolled depressurization during ATWS conditions by preventing ADS ACTUATION.***

K/A 218000 Automatic Depressurization System

A4 Ability to manually operate and/or monitor in the control room:

A4.04 ADS inhibit RO 4.1 SRO 4.1

K/A 295031 Reactor Low Water Level

EA1. Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL:

EA.06 Automatic depressurization RO 4.4 SRO 4.4

Given the current ATWS conditions of this scenario, preventing ADS automatic operation and potential uncontrolled reactor level flood up prevents a significant transient and subsequent positive reactivity addition to the reactor. EOPs direct this action under the current conditions. This critical task is only applicable if RPV water level goes below -129". Failure to satisfactorily complete the task is demonstrated by an automatic ACTUATION of ADS such that the ADS SRVs open and reduce reactor pressure to less than 700 psig.

3.

- * ***Crew lowers RPV level to -50", and ensures adequate core cooling by maintaining or restoring RPV level above -185" without Emergency Depressurizing.***

K/A 295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown

EA2 Ability to determine and/or interpret the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA2.02 Reactor water level RO 4.1 SRO 4.2

Lowering level RPV level during an ATWS with reactor power >4% is a key strategy for controlling reactor power.

Maintaining adequate Core cooling under ATWS conditions is accomplished by maintaining/restoring level above -185". HPCI and RCIC are capable of maintaining level under the current conditions. An Emergency Depressurization is not warranted and would result in a large injection of cold water and the potential displacement of boron from the core.

4.

- * ***Crew fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320.***

K/A 295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown

EA1. Ability to operate and/or monitor the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA1.01 Reactor Protection System RO 4.6 SRO 4.6

EA1.07 RMCS RO 3.9 SRO 4.0

Manually inserting all control rods, OR, implementing HC.OP-EO.ZZ-0320, provides the only methods for control rod insertion and substantial negative reactivity addition. It is critical for the crew to implement one of these methods to insert control rods and shut the reactor down. Failure to initiate these actions may result in requiring RPV level to be lowered to or below TAF to reduce power to <4%. This represents a significant challenge to maintaining adequate core cooling.

VIII. TURNOVER SHEET:

Rx Power: ~51% returning from power reduction for condenser water box cleaning.

MWe (May vary slightly): 547

Work Week: C

Activities Completed Last Shift:

Completed all condenser waterbox work and returned to service.

Removed 'D' Circ Water Pump from service.

Completed OP-IO.ZZ-0006 up to step 5.1.5.B

Major Activities Next 12 Hours:

Place 'D' Circ Water Pump back in service.

Raise reactor power per RE guidance and IO-0006:

- Withdraw 9E Rods to position 48 IAW Move Sheets
- Continuous Rod Withdraw is permitted.
- Hold at 60% power for Thermal Limit check.

Protected Equipment:

None

Tagged Equipment:

None

IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

Note: This form is used as guidance for an examination team to conduct a review for the proposed exam scenario(s). Attach a separate copy of this form to each scenario reviewed.

SELF-CHECK

ESG- NRC-S2

REVIEWER: Arch E Z H

- 047 1. The scenario has clearly stated objectives in the scenario.
- 057 2. The initial conditions are realistic, equipment and/or Instrumentation may be out of service, but it does not cue crew into expected events.
- 057 3. Each event description consists of:
 - The point in the scenario when it is to be initiated
 - The malfunction(s) that are entered to initiate the event
 - The symptoms/cues that will be visible to the crew
 - The expected operator actions (by shift position)
 - The event termination point
- 057 4. The use of non-mechanistic failures (e.g. pipe break) should be limited to one or a credible preceding event has occurred.
- 057 5. The events are valid with regard to physics and thermodynamics.
- 057 6. Sequencing/timing of events is reasonable (e.g. the crew has time to respond to the malfunctions in an appropriate time frame and implements procedures and/or corrective actions).
- 057 7. Sequencing/timing of events is reasonable, and allows for the examination team to obtain complete evaluation results commensurate with the scenario objectives.
- 057 8. If time compression techniques are used, scenario summary clearly so indicates.
- 057 9. The simulator modeling is not altered.
- 057 10. All crew competencies can be evaluated.
- 057 11. Appropriate reference materials are available (SOERs, LERs, etc.)
- 057 12. Proper critical task methodology used IAW NRC procedures.

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Note: The following criteria list scenario traits that are numerical in nature

ESG: NRC-S2

SELF-CHECK

- 057 1. Total malfunctions inserted: 5-8
- 057 2. Malfunctions that occur after EOP entry: 1-2
- 057 3. Abnormal Events: 2-4
- 057 4. Major Transients: 1-2
- 057 5. EOPs entered requiring substantive actions: 1-2
- 057 6. EOP Contingency Procedures requiring substantive actions: 0-2
- 057 7. Approximate scenario run time: 60-90 minutes
- 057 8. Critical Tasks: 2-3
- 057 9. Technical Specifications are exercised during the test: ≥ 2

Comments:

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Crew Validation **Rev:** 00 **Date Validated:** 11/20/2008

Validation Comments

Disposition

Accumulator trouble alarms cleared late.
Add Yard operator report for CW panel alarm.
Simplify Turnover sheet.
Validation time 82 minutes. Add validation time to cover sheet.

Changed Event Triggers to set accumulator pressures to 950 vs 900 after pump start.
Added.
Minimized wording on TO sheet.
Added.

Crew Validation **Rev:** **Date Validated:**

Validation Comments

Disposition

Crew Validation **Rev:** **Date Validated:**

Validation Comments

Disposition

TRAINING USE ONLY

ONLINE RISK: GREEN

WORK WEEK CHANNEL: C

Reactor Power: ~51% Returning from power reduction for condenser water box cleaning.

MWe (May vary slightly): 547

Activities Completed Last Shift:

- Completed all condenser waterbox work and returned to service.
- Removed 'D' Circ Water Pump from service.
- Completed OP-IO.ZZ-0006 up to step 5.1.5.B

Major Activities Next 12 Hours:

- Place 'D' Circ Water Pump back in service.
- Raise reactor power per RE guidance and IO-0006

Heightened Awareness:

None

Protected Equipment:

None

Tagged Equipment:

None

Reactivity:

- Raise reactor power per RE guidance and IO-0006:
 - Withdraw 9E Rods to position 48 IAW Move Sheets
 - Continuous Rod Withdraw is permitted.
 - Hold at 60% power for Thermal Limit check.

SIMULATOR
EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: RRCS Inst Fails, RWCU Leak, High Rx Pressure, LOCA w/PSP

SCENARIO NUMBER: ESG-NRC-S3

EFFECTIVE DATE: Effective when approved

EXPECTED DURATION: 63 minutes

REVISION NUMBER: 01

PROGRAM: L.O. REQUAL
 INITIAL LICENSE
 OTHER

REVISION SUMMARY:

1. Changed ramp time from 10 minutes to 15 minutes based on validation comments. Overall time to respond is now about 2 minutes from 1st alarm until scram setpoint with no action taken.
2. Failed F001 to close manually and automatically based on validation comments.
3. Swapped to B TSC Chilled Water System in service for preps for TACS swap.

PREPARED BY:

Archie E. Faulkner

Instructor

12/5/08

DATE

APPROVED BY:

Mark W. Parrist

Operations Training Manager or Designee

12/11/08

DATE

APPROVED BY:

[Signature]

Operations Director or Designee

12/11/08

DATE

I. OBJECTIVE(S):

Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Critical tasks within this examination scenario guide are identified with an “*.”)

II. MAJOR EVENTS:

- A. Power reduction to 84.5%
- A. Swap TACS to B SACS Loop
- B. RRCS Pressure Transmitter Failure
- C. RWCU Leak w/Failure to Automatically Isolate
- D. High Reactor Pressure
- E. LOCA w/Downcomer Failure
- F. A/C DW Pressure Channel Initiation Failures

III. SCENARIO SUMMARY:

The scenario begins with the plant at 90% power. After turnover, the power reduction from 90 to 84.5% will be accomplished using control rods per RE instructions. TACS will be swapped to the 'B' SACS Loop for preplanned maintenance on A SACS Pump. The PT-N403A RRCS Pressure Transmitter will fail downscale. After Tech Specs for the failure are identified, RWCU will develop a leak that will require manual isolation of the system (**Critical Task**). The automatic isolation is failed. After RWCU is isolated, an EHC logic failure will cause reactor pressure to slowly rise. Bypass valves will not respond. Both the RPS and RRCS high pressure scrams will fail and a manual scram will be required to restore reactor pressure to within normal limits (**Critical Task**). The pressure transient will cause a LOCA and a downcomer will fail. This will require spraying the drywell to avoid exceeding PSP (**Critical Task**). The Mode switch will fail such that the Low Main Steam Line Pressure MSIV isolation will NOT be bypassed by taking the Mode Switch out of RUN. The PT-N094E/G will fail to respond to High Drywell Pressure due to inadvertently being left isolated following maintenance. This will result in the failure of A/C Core Spray and RHR logics to initiate, and the failure of HPCI to initiate. All logics can be manually initiated and all logics will respond to lowering RPV water level. The scenario ends when RPV level is being maintained and Drywell Sprays are in service.

IV. INITIAL CONDITIONS:

I.C.

Initial

INITIALIZE the simulator to 97% power, MOL.

REDUCE power to 90% using Reactor Recirc.

REMOVE Cross-flow from service and acknowledge annunciator.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial

Description

INITIAL SO.EG-0001 Section 5.7 up to and including stroke timing the valves (Step 5.7.4 of Rev 40).

ENSURE TACS is supplied by the 'A' SACS loop

ENSURE the 'B' SACS pump is in service and the 'D' SACS pump is in Standby.

ENSURE the 'B' TSC Chilled Water System is in service and the 'A' TSC Chilled Water Circ pump is in Standby in Auto.

ENSURE HC.OP-DL.ZZ-0026 log available.

ENSURE Remote Functions PC03ER and PC03GR are changed to RESET.

ENSURE Data Collection is trending the following parameters:

- Suppression Chamber Pressure
- W/R Reactor Water Level
- W/R Reactor Pressure
- TCV 1 Position
- TCV 2 Position
- TCV 3 Position
- TCV 4 Position

COMPLETE the Simulator Ready for Training/Examination Checklist.

PRE-BRIEF the crew for the power change and TACS swap

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	8	EVENT ACTION: cufdelta >= 60 // RWCU Diff Flow in gpm COMMAND: imf cu03 100 120 PURPOSE: Raises severity of RWCU leak after isolation setpoint is exceeded.
	9	EVENT ACTION: crqnmi <= 10 // Reactor power < 10% COMMAND: dmf tc01-10 PURPOSE: Deletes stuck closed bypass valves, fails Mode Switch and triggers LOCA.
	10	EVENT ACTION: mspeh <= 900 // Main Steam Line Header Pressure < 900 psig COMMAND: imf TC02-4 0 PURPOSE: Closes TCV#4 to prevent depressurization and MSIV isolation.
	11	EVENT ACTION: mspeh <= 890 // Main Steam Line Header Pressure < 890 psig COMMAND: imf TC02-3 0 PURPOSE: Closes TCV#3 to prevent depressurization and MSIV isolation.
	12	EVENT ACTION: mspeh <= 880 // Main Steam Line Header Pressure < 870 psig COMMAND: imf TC02-2 0 PURPOSE: Closes TCV#2 to prevent depressurization and MSIV isolation.
	13	EVENT ACTION: mspeh <= 870 // Main Steam Line Header Pressure < 860 psig COMMAND: imf TC02-1 0 PURPOSE: Closes TCV#1 to prevent depressurization and MSIV isolation.
	14	EVENT ACTION: pcpdw >= 16.4 // Drywell Pressure > 1.7 psig COMMAND: PURPOSE: Trips RFPTs to force use of HPCI.

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	AD06 Failure of Lo-Lo Set Valves to Arm	---	---	NONE	---	---
	CU11A RWCU HV-F001 Failure to Auto Isolate	---	---	NONE	---	---
	CU11B RWCU HV-F004 Failure to Auto Isolate	---	---	NONE	---	---
	RZ03A RRCS Logic A Channel A Auto Init Failure	---	---	NONE	---	---
	RZ03C RRCS Logic B Channel A Auto Init Failure	---	---	NONE	---	---
	TC01-10 Turbine Bypass Valves Fail to Open	---	---	NONE	---	---
	RZ02A RRCS Pressure Transmitter PT-N403A Fails	---	---	ET-4	---	0
	AN-D1E1 Cry Wolf OHA D1-D1 RRCS Trouble	---	---	ET-4	---	---
	CU03 RWCU System Leak	---	6:00	ET-5	10%	35%
	TC02-1 Turbine Control Valve #1 Failure	---	15:00	ET-7	44%	20%
	TC02-2 Turbine Control Valve #2 Failure	---	15:00	ET-7	47%	20%
	TC02-3 Turbine Control Valve #3 Failure	---	15:00	ET-7	44%	20%
	TC02-4 Turbine Control Valve #4 Failure	---	15:00	ET-7	0%	0%
	PC04 Downcomer Failure	7:00	---	ET-9	---	---
	RR31B1 'B' Recirc Loop small break	5:00	2:00	ET-9	0%	100%
	RR31B2 'B' Recirc Loop large break	7:00	20:00	ET-9	0%	6%
	PC03E Drywell Pressure PT-N094E Failure	60 sec.	---	ET-9	0.1%	0.1%
	PC03G Drywell Pressure PT-N094G Failure	60 sec.	---	ET-9	0.1%	0.1%
	FW26A Trip of the 'A' RFPT	---	---	ET-14	---	---
	FW26B Trip of the 'B' RFPT	---	---	ET-14	---	---
	FW26C Trip of the 'C' RFPT	---	---	ET-14	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	EP12 EOP-320 RPS B1 Jumper	---	---	NONE	---	INSTALL
	EP14 EOP-320 RPS B2 Jumper	---	---	NONE	---	INSTALL
	PC03ER Reset Gross Fail PC03E	---	---	NONE	RESET	RESET
	PC03GR Reset Gross Fail PC03G	---	---	NONE	RESET	RESET
	PP04 OD-3 Crossflow Applied	---	---	NONE	---	NOT APPLIED
	ET019 GROUP 7A HV-F001 RWCU Supply Isol	---	---	NONE	---	FAIL OPEN
	HV06 CVH300 RBVS Fan	---	---	ET-6	---	STOP
	HV05 BVH300 RBVS Fan	00:01	---	ET-6	---	STOP
	HV04 AVH300 RBVS Fan	00:01	---	ET-6	---	STOP
	HV03 CV301 RBVE Fan	00:02	---	ET-6	---	STOP
	HV02 BV301 RBVE Fan	00:03	---	ET-6	---	STOP
	HV01 AV301 RBVE Fan	00:03	---	ET-6	---	STOP

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	2A4 E LO RRCS Channel A Logic A Trouble	---	---	ET-4	---	ON
	3S22 A DI Mode Switch in SHUTDOWN	---	---	ET-9	---	OFF
	3S22 B DI Mode Switch in REFUEL	---	---	ET-9	---	OFF
	3S22 D DI Mode Switch in RUN	---	---	ET-9	---	ON
	3A33 C OVDI LV1785/1784 ON	---	---	ET-14	---	OFF
	3A33 D OVDI LV1785/1784 CLOSED	---	---	ET-14	---	ON

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Power Reduction: Crew continues reactor power reduction after assuming the watch.</p>	<ul style="list-style-type: none"> CRS directs continuing the power reduction to 84.5% using RE guidance. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>
<p>As RE PROVIDE the following guidance:</p> <ul style="list-style-type: none"> SPRI and Enhanced Stability Guidance are valid for the remainder of the maneuver Power has been steady for the last hour Lower power to 84.5% with control rods using 9D and 9E rods. 	<ul style="list-style-type: none"> RO reduces power with control rods using provided Move Sheets. 	
<p>Control rod selection</p>	<ul style="list-style-type: none"> RO selects the desired control rod, PRESS the desired Control Rod Select PB on the ROD SELECT MODULE AND OBSERVE the following: <ul style="list-style-type: none"> ⇒ Selected rod PB comes ON (bright white). ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod position (10C650C). ⇒ The associated Full Core Display (white) numbered rod identification light comes ON (10C650C). ⇒ Approximately 6 gpm total flow through both the Insert AND Withdraw Stabilizing valves is indicated on CRID's point B2117. 	
<p>Continuous rod insertion (Non-emergency)</p>	<ul style="list-style-type: none"> At the ROD SELECT MODULE, PRESS AND HOLD the INSERT PB AND OBSERVE the following: <ul style="list-style-type: none"> ⇒ The INSERT (white) light comes ON. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates control rod movement. ⇒ Full Core Display FULL OUT (red) light goes OUT, as applicable. • Prior to reaching the desired control rod position, RELEASE the INSERT PB AND OBSERVE the following: <ul style="list-style-type: none"> ⇒ The INSERT (white) light goes OUT. ⇒ The SETTLE (white) light comes ON for ≈ 6 seconds, THEN goes out. ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod has settled to the desired position. • After the continuous insertion is completed, ENSURE that the rod position indicates that the rod is in the correct position. • RO repeats steps as necessary to position rods IAW Move Sheets. • CRS direct PO to swap TACS to Loop B IAW OP-SO.EG-0001. • PO performs the following: <ul style="list-style-type: none"> ⇒ OBSERVE Loop B Pump D, REMOTE push-button is OFF. ⇒ PLACE Loop B Pump D in MAN control. 	

TACS SWAP TO B LOOP:
 PO swaps TACS after assuming the watch.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<p>⇒ PRESS the DP210 START pushbutton AND PERFORM the following:</p> <ul style="list-style-type: none"> ○ OBSERVE the LOOP B PUMP D, LOW DIFF PRESS light extinguishes. ○ THROTTLE OPEN EG-HV-2512B to ensure minimum flow requirements of ≈9000 gpm. <ul style="list-style-type: none"> • PO opens either B or D TACS isolation valves in the standby loop which required the most amount of time to stroke fully open. • PO opens TACS isolation valves in the standby loop NOT opened in previous step and OBSERVE positive indication that both valves are opening. • WHEN positive indication is noted that the remaining TACS Isolation Valves in the standby loop have started to open, THEN: CLOSE the following valves on the SACS Loop being removed from service: <ul style="list-style-type: none"> ⇒ HV-2522/2496A, TACS INBD SPLY/RTN VLVS • ADJUST OPEN HV-2512A, RHR HX OUTLET VALVE, to obtain ≈4500 gpm SACS flow through the 'A' RHR HX. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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- PRESS AND HOLD CLOSE PB until EG-HV-2512B, RHR HX OUTLET VALVE, indicates closed.
- CLOSE the following valves on the SACS Loop being removed from service:
 - ⇒ HV-2522/2496C, TACS OUTBD SPLY/RTN VLVS
- PERFORM the following to place the SACS Loop A in standby:
 - ⇒ PRESS the AP210 STOP pushbutton.
 - ⇒ PLACE SACS Loop A Pump A in AUTO.
 - ⇒ THROTTLE EG-HV-2512A to ensure minimum flow requirements of ≈4500 gpm.

RRCS Transmitter Failure:

After the 'B' RPS bus is transferred to Alternate, OR, at the discretion of the Lead Examiner, **TRIGGER ET-4.**

- Crew recognizes RRCS Failure by:
 - ⇒ OHA D1-E1 "RRCS TROUBLE"
 - ⇒ RRCS Channel A Logic A "RRCS LOGIC A TROUBLE" light
- Crew dispatches ABEO and/or Maintenance to RRCS cabinets 10C601/602.

PT-N403A output can be seen on the SPDS Reactor Pressure Point Status display.

IF dispatched to RRCS, **THEN REPORT** there is an "ATM CALI GROSS FAILURE" light lit on 10C601 and PT-N403A is reading 0 psig.

IF dispatched to RRCS to perform DL-26 Attach 1b Form 1, **THEN PROVIDE** DL-26 Attach 1b Form 1, filled out as provided on attached sheet.

IF dispatched to transmitter at instrument rack C004, **THEN REPORT** no visible problem at instrument rack.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>RWCU Leak: After Tech Spec actions for the PT-N403A have been identified, <u>OR</u>, at the discretion of the Lead Examiner, TRIGGER ET-5 (RWCU leak with Auto Isolation failure) <u>AND</u> two minutes after the RWCU leak has been input, VERIFY South Plant Vent Effluent monitor (9RX580) Rate of Rise is in alarm on RM11, <u>THEN CALL</u> as Rad Pro Tech and report the alarm.</p>	<ul style="list-style-type: none"> • CRS recognize the following Tech Spec action applies: ⇒ ATWS Recirculation Pump Trip System Instrumentation 3.3.4.1 action b • Crew recognizes rising offsite release rate by: ⇒ SPDS indication ⇒ RM11 SPV Effluent 9RX580 	<p>Place the inoperable channel in a tripped condition within one hour.</p> <p>9RX580 Rate of Rise will alarm 1-2 minutes after the leak starts.</p> <p>This alarm is <u>NOT</u> programmed to be audible in the Control Room</p>
<p>Monitor Items:</p> <ul style="list-style-type: none"> • RWCU Diff Flow cufdelta 	<ul style="list-style-type: none"> • CRS implements AB.CONT-004: ⇒ Condition C ⇒ Condition A • Crew recognizes leak from RWCU by: ⇒ Rising differential flows on NUMAC and CRIDS page 61 ⇒ OHA D3-B3 "RWCU STM LK ISLN TIMER INITIATED" ⇒ CRIDS D5871 "RWCU ISLN TIMER INITIATED CH D" ⇒ CRIDS D5873 "RWCU ISLN TIMER INITIATED CH A" 	<p>Room temperatures will not provide conclusive evidence of leak.</p> <p>RWCU differential flow will reach the alarm setpoint about 7.5 minutes after leak starts.</p> <p>If RWCU is isolated before differential flow setpoint is reached, alarms will not be received.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Monitor Items:</p> <ul style="list-style-type: none"> 'A' Channel Isolation cu:k6a09 'D' Channel Isolation cu:k6d11 	<ul style="list-style-type: none"> Crew recognizes failure of RWCU to isolate by: <ul style="list-style-type: none"> ⇒ OHA C1-A2 "RWCU DIFF FLOW HI" ⇒ CRIDS D5870 "RWCU DIFF FLOW CH D" ⇒ CRIDS D5872 "RWCU DIFF FLOW CH A" RO close RWCU HV-F001 and HV-F004. (May also close HV-F039) 	<p>If RWCU is isolated before differential flow setpoint is reached, isolation will not be received.</p> <p>Immediate Operator action IAW AB.CONT-0002.</p>
<p>Examiner Note: HV-F001 will not close manually or automatically.</p>	<ul style="list-style-type: none"> * <i>Crew initiates closure of RWCU HV-F004 within two minutes of receiving OHA C1-A2 "RWCU DIFF FLOW HI". (Closing HV-F004 prior to the isolation timer completion satisfies this requirement.)</i> 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>RECORD time between C1-A2 and initiating closure. TIME: _____</p> <p>Closing the RWCU HV-F004 prior to receiving OHA C1-A2 satisfies this Critical Task.</p>
<p>Monitor Items:</p> <ul style="list-style-type: none"> HV-F004 cuvf004 	<ul style="list-style-type: none"> RO reports the HV-F001 would not close manually or automatically. CRS implements AB.CONT-002: <ul style="list-style-type: none"> ⇒ Condition B ⇒ Condition A CRS directs placing FRVS in service. PO place FRVS in service IAW SO.GU-0001 Section 5.3. 	<p>If crew isolated RWCU prior to isolation signal, Condition A will not be performed.</p> <p>HPI USED: STAR <input type="checkbox"/></p>
<p><u>IF</u> directed to remove RBVS from service, <u>THEN REFER</u> to SO.GU-0001 <u>AND TRIGGER ET-6.</u></p>		

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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IF contacted as Shift Chem Tech,
 THEN **REPORT** RWR is the alternate monitoring point and **REQUEST** status of the RWR sample line.

- CRS recognizes the following Tech Spec action applies:
 - ⇒ Primary Containment Isolation Valves 3.6.3 action a
 - ⇒ Primary Containment Integrity 3.6.1.1

Need to restore valves to OPERABLE or deactivate the HV-F001 or HV-F004 in the next four hours.
 May also refer to T/S 3.3.2, although both trip systems would already be tripped, and the valves already shut.

MODIFY the initial severity of TCV Malfunctions to MATCH current TCV positions before proceeding.

Monitor Items:

- TCV1 Position: **tcvcv1**
- TCV2 Position: **tcvcv2**
- TCV3 Position: **tcvcv3**
- TCV4 Position: **tcvcv4**

Reactor High Pressure:

After RWCU has been isolated and FRVS is in service,
 OR,
 at the discretion of the Lead Examiner,
TRIGGER ET-7 (High Reactor Pressure with auto scram failure).

- Crew recognizes rising reactor pressure by:
 - ⇒ OHA D3-D5 "EHC UNIT PANEL 10C363"
 - ⇒ OHA B3-E5 "RPV PRESSURE HI"
 - ⇒ OHA C5-A5 "RPV PRESSURE HI"
 - ⇒ DEHC Bypass Valve Positioning Error alarms
 - ⇒ CRIDS D3372 MN TURB LOAD LIMIT LIMITING
 - ⇒ Various Reactor Pressure indicators

Some alarms may not be received if the pressure excursion is terminated before their setpoint.

- RO reduces reactor power to maintain the RPV PRESSURE HI overhead alarm clear.

Immediate Operator Action IAW AB.RPV-0005.

HPI USED:
 STAR

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>NOTE: If the crew is in the process of a manual scram when 1037 psig is reached, failure of RPS may not be recognized. However, if it is recognized that RPS did not automatically scram the reactor at 1037 psig, EOP-101A should be entered and exited.</p>	<ul style="list-style-type: none"> • CRS implements AB.RPV-0005: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition D • <u>WHEN</u> reactor pressure cannot be maintained <1030 psig, <u>THEN</u> Crew locks the Mode Switch in SHUTDOWN. * <i>Crew scrams the reactor within one minute of reactor pressure exceeding 1037 psig. (Scramming prior to reaching 1037 psig satisfies this requirement.)</i> • <u>IF</u> Reactor Pressure was above 1037 psig when the reactor was manually scrammed, <u>THEN</u> Crew recognizes Scram Condition and Reactor Power Above 4% or Undetermined EOP Entry Condition by: <ul style="list-style-type: none"> ⇒ OHA C5-A5 "RPV PRESSURE HI" ⇒ Various indications of reactor power • <u>IF</u> Reactor Pressure was above 1037 psig when the reactor was manually scrammed, <u>THEN</u> CRS implements EOP-101A until all rods are verified fully inserted, then exits EOP-101A and enters EOP-101. • RO performs scram actions IAW AB.ZZ-0001 Att. 1. • Crew recognizes RPV Level Below 12.5" EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA C5-A4 "RPV WATER LEVEL LO" ⇒ OHA A7-D5 "RPV LEVEL 3" ⇒ Various water level indicators • CRS implements EOP-101. 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>RECORD time when Reactor Pressure goes above 1037 psig. TIME: _____</p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>May also have High Reactor Pressure entry condition.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>LOCA w/Downcomer Break: The LOCA is automatically inserted five minutes after the reactor is scrammed.</p>	<ul style="list-style-type: none"> • PO maintains reactor water level as directed by CRS IAW AB.ZZ-0001 Att. 14. • Crew may recognize partial loss of Mode Switch functions by loss/absence of: <ul style="list-style-type: none"> ⇒ OHA C5-A3 "MANUAL SCRAM" ⇒ OHA C5-C1 "MODE SWITCH SHUTDOWN SCRAM BYP" ⇒ OHA C5-C3 "MSIV CLOSURE TRIP BYP" ⇒ Absence of SRM/IRM status lights and alarms 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> • Crew recognizes LOCA condition: <ul style="list-style-type: none"> ⇒ OHA C6-B1 "DLD SYSTEM ALARM/TRBL" ⇒ RM11 9AX314 DLD FLOOR DRN FLOW alarm ⇒ OHA D3-C3 "DRYWELL SUMP LEVEL HI/LO" ⇒ OHA A4-F5 "COMPUTER PT IN ALARM" ⇒ OHA A7-E4 "DRYWELL PRESSURE HI/LO" ⇒ Rising Drywell Pressure • CRS implements AB.CONT-001: <ul style="list-style-type: none"> ⇒ Condition A 	<p>HPI USED: STAR <input type="checkbox"/></p>
	<ul style="list-style-type: none"> • RO/PO ensures drywell cooling maximized. • Crew checks <ul style="list-style-type: none"> ⇒ Recirc pump seal parameters ⇒ SRV temperatures 	<p>HPI USED: STAR <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>A/C Logic Failures: The failure of Drywell Pressure transmitters N094E/G is already inserted.</p>	<ul style="list-style-type: none"> • Crew recognizes Drywell Pressure Above 1.68# EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA A7-D4 "DRYWELL PRESSURE HI/HI" ⇒ OHA C5-B5 "DRYWELL PRESSURE HI" ⇒ Various system initiations and isolations. • CRS enters EOP-102, re-enters EOP-101. • RO/PO verify automatic actions. 	<p>Core Spray <u>WILL</u> auto initiate if RPV water level reaches -129".</p>
	<ul style="list-style-type: none"> • Crew recognizes failure of the A/C Core Spray logics to initiate by: <ul style="list-style-type: none"> ⇒ A/C INIT AND SEALED IN lights extinguished ⇒ Pump STOPPED indication ⇒ A/C channel breaker status on 10C650E NON CLASS 1E LOAD ISLN CIRCUIT BREAKER STATUS AND CONTROL ⇒ A/C EDGs not running ⇒ Various valve failures to isolate 	<p>PCIS isolations will occur due to the availability of NSSSS and the PT-N094A/C. Only the Core Spray logic fanout (EDG, sequencer, etc) will be affected.</p> <p>Also, no drywell pressure indicators are affected by the failures.</p>
	<ul style="list-style-type: none"> • RO/PO initiate A/C Core Spray logic IAW AB.ZZ-0001 Att 5. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> • Crew recognizes failure of the A/C RHR logics to initiate by: <ul style="list-style-type: none"> ⇒ A/C INIT AND SEALED IN lights extinguished ⇒ Pump STOPPED indication 	<p>RHR <u>WILL</u> auto initiate if RPV water level reaches -129".</p>
	<ul style="list-style-type: none"> • RO/PO initiate A/C RHR logic IAW AB.ZZ-0001 Att 4. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • Crew recognizes failure of HPCI to initiate by: <ul style="list-style-type: none"> ⇒ HPCI INIT AND SEALED IN light extinguished ⇒ HV-F001 CLSD indication ⇒ FV-4880 CLOSED indication ⇒ FV-4879 CLOSED indication ⇒ SI-4919 Turbine Speed indicates zero rpm ⇒ FIC-R600 Pump Flow indicates zero gpm 	<p>HPCI <u>WILL</u> auto initiate if RPV water level reaches -38" and is capable of maintaining RPV water level by itself.</p>
	<ul style="list-style-type: none"> • RO/PO manually initiate HPCI IAW AB.ZZ-0001 Att. 6. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> • CRS directs maintaining RPV level 12.5" to 54" with any combination of: <ul style="list-style-type: none"> ⇒ HPCI ⇒ RCIC ⇒ Feedwater/Condensate 	<p>RFPTs will trip and SULCV will fail closed when drywell pressure reaches 1.7 psig and cannot be restored.</p>
	<ul style="list-style-type: none"> • RO/PO maintain RPV level as directed by CRS with: <ul style="list-style-type: none"> ⇒ HPCI IAW AB.ZZ-0001 Att. 6 ⇒ RCIC IAW AB.ZZ-0001 Att. 6 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> • CRS implements AB.COOL-003: <ul style="list-style-type: none"> ⇒ Condition B 	
	<ul style="list-style-type: none"> • RO/PO trips recirc pumps. 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>RRCS RPT trips are failed. Pumps must be tripped manually. May also be tripped IAW EOP-102 guidance for spraying the drywell.</p>
	<ul style="list-style-type: none"> • <u>WHEN</u> Suppression Chamber pressure exceeds 9.5 psig, <u>THEN</u> CRS directs initiating drywell spray. 	<p>Recirc pumps should be tripped prior to initiating drywell spray.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> RO/PO place one loop of RHR in drywell spray IAW AB.ZZ-0001 Att. 2. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>IF 'A' RHR logic was <u>NOT</u> manually initiated, <u>THEN</u> 'A' RHR cannot spray the drywell.</p>
	<ul style="list-style-type: none"> * <i>Crew maintains Suppression Chamber Pressure below the Action Required region of the PSP curve without Emergency Depressurizing.</i> 	<p>PSP will be reached approximately eleven minutes after the LOCA starts with no mitigating action.</p>
	<ul style="list-style-type: none"> CRS directs placing RHR pump in Suppression Pool Cooling and Suppression Chamber Spray. 	
	<ul style="list-style-type: none"> RO/PO place RHR pump in Suppression Pool Cooling and Suppression Chamber Spray IAW AB.ZZ-0001 Att. 3. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> CRS directs restoring PCIG to SRVs. 	
	<ul style="list-style-type: none"> RO/PO restore PCIG to SRVs IAW AB.ZZ-0001 Att. 9. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
<p>Termination Requirement: The scenario may be terminated at the discretion of the Lead Examiner when:</p> <ol style="list-style-type: none"> 1. RPV level is being maintained above -129" 2. Suppression Chamber pressure is being maintained below the Action Required region of the PSP curve. 	<ul style="list-style-type: none"> If necessary, Crew prevents injection from Low Pressure ECCS not required for adequate core cooling. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>

ATTACHMENT 1b
FORM 1

ATWS-RPT Channel Check (For Surveillance Log Item 6)

Operational Condition Date Today's Date

SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS			INSTRUMENT	DAY	EVE	MID
		MIN	NORM	MAX				
RPV LEVEL	1	-38	---	---	B21-LT-N402A			
		-38	---	---	B21-LT-N402B			
		-38	---	---	B21-LT-N402E			
		-38	---	---	B21-LT-N402F			
		---	NO	---	INST TRIPPED 10C601			
			NO		INST TRIPPED 10C602			
		---	---	10	INST DEVIATION			
RPV PRESSURE	1	---	---	1071	B21-PT-N403A	0		
		---	---	1071	B21-PT-N403B	1005		
		---	---	1071	B21-PT-N403E	1005		
		---	---	1071	B21-PT-N403F	1005		
		---	NO	---	INST TRIPPED 10C601	NO		
			NO		INST TRIPPED 10C602	NO		
		---	---	53	INST DEVIATION	1005		

COMMENTS:

VI. SCENARIO REFERENCES:

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. Alarm Response Procedures (Various)
- G. HU-AA-101 Performance Tools and Verification Practices
- H. HU-AA-104-101 Procedure Use and Adherence
- I. HU-AA-1081 Fundamentals Toolkit
- J. HU-AA-1211 Briefing
- K. OP-AA-101-111-1003 Use of Procedures
- L. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- M. OP-AA-101-111-1004 Operations Standards
- N. OP-AA-101-112-1002 On-Line Risk Assessment
- O. OP-AA-106-101-1001 Event Response Guidelines
- P. OP-HC-108-106-1001 Equipment Operational Control
- Q. OP-AA-108-114 Post Transient Review
- R. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- S. HC.OP-DL.ZZ-0026 Surveillance Log
- T. HC.OP-SO.BB-0002 Reactor Recirculation System Operation
- U. HC.OP-SO.BC-0001 Residual Heat Removal System Operation
- V. HC.OP-SO.BE-0001 Core Spray System Operation
- W. HC.OP-SO.GU-0001 Filtration, Recirculation, and Ventilation System Operation
- X. HC.OP-SO.SB-0001 Reactor Protection System Operation
- Y. HC.OP-SO.SF-0001 Reactor Manual Control System Operation
- Z. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- AA. HC.OP-AB.RPV-0005 Reactor Pressure
- BB. HC.OP-AB.CONT-0001 Drywell Pressure
- CC. HC.OP-AB.CONT-0002 Primary Containment
- DD. HC.OP-AB.CONT-0004 Radioactive Gaseous Release
- EE. HC.OP-AB.ZZ-000 Reactor Scram
- FF. HC.OP-EO.ZZ-0101 RPV Control
- GG. HC.OP-EO.ZZ-0102 Primary Containment Control
- HH. HC.CH-TI.ZZ-0012 Chemistry Sampling Frequencies, Specifications, and Surveillances
Industry Events
- II. LER 397-07001 RHR Pressure Switch Found Isolated (3/21/2007)
- JJ. LER 354-02001 RHR Min Flow Line Found Isolated (3/20/2002)
- KK. Event #249-000324-1 RHR Pressure Switch Found Isolated (6/13/2000)

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S3 / 01

1.

- * ***Crew initiates closure of RWCU HV-F004 within two minutes of receiving OHA C1-A2 "RWCU DIFF FLOW HI".***

K/A 223002 Primary Containment Isolation System / Nuclear Steam Supply Shut-Off

A4 Ability to operate and/or monitor in the Control Room

A4.01 Valve Closures RO 3.6 SRO 3.5

A4.06 Confirm initiation to completion RO 3.6 SRO 3.7

The RWCU System has failed to isolate automatically. HV-F001 fails to isolate manually. Failure of the Crew to manually isolate the system will result in a bypass of the Reactor Coolant and Primary Containment boundaries and release of radioactive materials to the Reactor Building. Two minutes is deemed adequate time to affect isolation from the time confirmation of failure of the automatic isolation function is received.

2.

- * ***Crew scrams the reactor within one minute of reactor pressure exceeding 1037 psig. (Scramming prior to reaching 1037 psig satisfies this requirement.)***

K/A 241000 Reactor/Turbine Pressure Regulating System

A2. Ability to (a) predict the impacts of the following on the REACTOR/TURBINE PRESSURE REGULATING SYSTEM; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations:

A2.04 Failed open/closed control/governor valves RO 3.7 SRO 3.8

A4 Ability to manually operate and/or monitor in the control room:

A4.02 Reactor Pressure RO 4.1 SRO 4.1

The Pressure Regulating System is failed and reactor pressure will continue to rise. Neither RPS nor RRCS will automatically scram the reactor. Lo-Lo set is also failed. Without operator action, reactor pressure will rise until the 1108 psig safety relief valve setpoint is reached. The only way to reduce pressure is to shutdown the reactor to lower steam generation. Manual operator action is required to accomplish this. Based on the worst case rate of pressure rise in this scenario (assuming the Immediate Operator Action to reduce power and maintain the RPV PRESSURE HI overhead alarm clear), it will take reactor pressure over a 1.5 minutes to reach the scram setpoint of 1037 psig. An additional minute past this point is adequate time to recognize both the rising reactor pressure and failure to scram and insert a manual scram.

3.

- * ***Crew maintains Suppression Chamber Pressure below the Action Required region of the PSP curve without Emergency Depressurizing.***

K/A 295024 High Drywell Pressure

EA1 Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE:

EA1.11 Drywell Spray RO 4.2 SRO 4.2

EA2 Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE:

EA2.04 Suppression chamber pressure RO 3.9 SRO 3.9

K/A 223001 Primary Containment Systems and Auxiliaries

A2. Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions of operations:

A2.02 Steam bypass of the suppressions pool RO 3.9 SRO 4.1

If suppression chamber pressure cannot be maintained below the pressure suppression pressure, EOPs direct actions to emergency depressurize the reactor. A LOCA condition while in the action required region of the Pressure Suppression Pressure curve, could cause design containment limits to be exceeded. Based upon the rate of pressure increase in this scenario, the Crew has over ten minutes to initiate Drywell Sprays and prevent entry into the Action Required region of the PSP curve. This will prevent an unnecessary Emergency Depressurization, which is a significant challenge to the Suppression Pool and would cause the Cooldown Limit for the Reactor Coolant system to be unnecessarily exceeded. Reducing reactor pressure within the cooldown limit may also delay/prevent entry into the action required region.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

<u>Y/N</u>	<u>EVENT</u>	<u>Y/N</u>	<u>EVENT</u>
<input type="checkbox"/>	Loss Of Offsite Power/SBO	<input type="checkbox"/>	Internal Flooding
<input checked="" type="checkbox"/>	LOCA		
	<u>TRANSIENTS:</u>		<u>LOSS OF SUPPORT SYSTEMS:</u>
<input type="checkbox"/>	Turbine Trip	<input type="checkbox"/>	Loss of SSW
<input type="checkbox"/>	Loss of Condenser Vacuum	<input type="checkbox"/>	Loss of SACS
<input type="checkbox"/>	Loss of Feedwater	<input type="checkbox"/>	Loss of Instrument Air
<input type="checkbox"/>	Inadvertent MSIV Closure		
<input type="checkbox"/>	Inadvertent SRV Opening		
<input checked="" type="checkbox"/>	Manual Scram		

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

<u>Y/N</u>	<u>KEY EQUIPMENT</u>	<u>Y/N</u>	<u>KEY EQUIPMENT</u>
<input type="checkbox"/>	Hard Torus Vent	<input type="checkbox"/>	SLC
<input type="checkbox"/>	HPCI	<input type="checkbox"/>	CRD
<input type="checkbox"/>	1E 4.16KV Bus	<input type="checkbox"/>	1E 125VDC
<input type="checkbox"/>	SACS Hx/Pump		
<input type="checkbox"/>	EDG		<u>KEY SYSTEMS</u>
<input type="checkbox"/>	120VAC 481/482 Inverter	<input type="checkbox"/>	500KV AC Power
<input type="checkbox"/>	A/B RHR	<input type="checkbox"/>	SRVs
<input type="checkbox"/>	RCIC	<input type="checkbox"/>	Condensate/Feedwater
<input type="checkbox"/>	SSW Pump	<input type="checkbox"/>	PCIG

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

<u>Y/N</u>	<u>OPERATOR ACTION</u>
<input checked="" type="checkbox"/>	Aligning RHR for Suppression Pool Cooling
<input type="checkbox"/>	Emergency Venting of Primary Containment
<input type="checkbox"/>	Emergency Depressurize RPV W/O High Pressure Injection
<input type="checkbox"/>	Initiating LP ECCS with No High Pressure Injection Available
<input type="checkbox"/>	Restoration of AC Power after a LOP (EDG / Offsite)
<input type="checkbox"/>	Monitoring and Control of SACS heat loads
<input type="checkbox"/>	Preventing LVL 8 trip of Feedwater during a transient
<input type="checkbox"/>	Align Core Spray Suction to CST when at NPSH limits
<input type="checkbox"/>	Cross-Tie De-Energized B/D 125VDC Battery Charger to Energized Bus
<input type="checkbox"/>	Inhibit ADS during ATWS

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: 90%
MWe (May vary slightly): 1100
Work Week: A
Risk Color: Green

Activities Completed Last Shift:

- Power reduction to 90% power.
- Making preparations to swap TACS to 'B' SACS Loop IAW HC.OP-SO.EG-0001 for work week planned maintenance on 'A' SACS Pump. The RB EO has been briefed and is standing by at the SACS pumps. SSW D Traveling screen has been run in preparation for the swap. The Yard EO has been briefed and is standing by at the SSW Intake Structure.

Major Activities Next 12 Hours:

- Continue power reduction to 84.5% for removal of A RFPT for maintenance troubleshooting.
 - RE Guidance: Insert rods to 84.5% power using 9D and 9E rods.

Swap TACS to 'B' SACS Loop IAW HC.OP-SO.EG-0001. The RB EO has been briefed and is standing by at the SACS pumps.

Protected Equipment:

None

Tagged Equipment:

None

IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

Note: This form is used as guidance for an examination team to conduct a review for the proposed exam scenario(s). Attach a separate copy of this form to each scenario reviewed.

SELF-CHECK

ESG- NRC-S3

REVIEWER: 

- 058 1. The scenario has clearly stated objectives in the scenario.
- 057 2. The initial conditions are realistic, equipment and/or instrumentation may be out of service, but it does not cue crew into expected events.
- 057 3. Each event description consists of:
 - The point in the scenario when it is to be initiated
 - The malfunction(s) that are entered to initiate the event
 - The symptoms/cues that will be visible to the crew
 - The expected operator actions (by shift position)
 - The event termination point
- 057 4. The use of non-mechanistic failures (e.g. pipe break) should be limited to one or a credible preceding event has occurred.
- 057 5. The events are valid with regard to physics and thermodynamics.
- 057 6. Sequencing/timing of events is reasonable (e.g. the crew has time to respond to the malfunctions in an appropriate time frame and implements procedures and/or corrective actions).
- 057 7. Sequencing/timing of events is reasonable, and allows for the examination team to obtain complete evaluation results commensurate with the scenario objectives.
- 057 8. If time compression techniques are used, scenario summary clearly so indicates.
- 057 9. The simulator modeling is not altered.
- 057 10. All crew competencies can be evaluated.
- 057 11. Appropriate reference materials are available (SOERs, LERs, etc.)
- 057 12. Proper critical task methodology used IAW NRC procedures.

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Note: The following criteria list scenario traits that are numerical in nature. The section below should be completed for each scenario.

ESG: NRC-S3

SELF-CHECK

- Q57 1. Total malfunctions inserted: 5-8
- Q57 2. Malfunctions that occur after EOP entry: 1-2
- Q57 3. Abnormal Events: 2-4
- Q57 4. Major Transients: 1-2
- Q57 5. EOPs entered requiring substantive actions: 1-2
- Q57 6. EOP Contingency Procedures requiring substantive actions: 0-2
- Q57 7. Approximate scenario run time: 60-90 minutes
- Q57 8. Critical Tasks: 2-3
- Q57 9. Technical Specifications are exercised during the test ≥ 2

Comments:

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

A Crew Validation Rev: 00 Date Validated: _____

Validation Comments	Disposition
This will be less time consuming than A.	
Need to add a failure to either F001 or F004 because if they close it early, then the CRS will not get TS call.	Failed F001 to close manually and automatically.
Slow down rate of rise of TCV failure. No real time to do anything about it.	Changed ramp time from 10 minutes to 15 minutes. Overall time to respond is now about 2 minutes from 1st alarm until scram setpoint with no action taken.

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Crew Validation Rev: _____ Date Validated: _____

Validation Comments	Disposition

TRAINING USE ONLY

ONLINE RISK: GREEN

WORK WEEK CHANNEL: A

Reactor Power: 90%

MWe (May vary slightly): 1100

Activities Completed Last Shift:

- Power reduction to 90% power.
- Making preparations to swap TACS to 'B' SACS Loop IAW HC.OP-SO.EG-0001 for work week planned maintenance on 'A' SACS Pump. SSW D Traveling screen has been run in preparation for the swap.

Major Activities Next 12 Hours:

- Continue power reduction to 84.5% for removal of A RFPT for maintenance troubleshooting.
- Swap TACS to 'B' SACS Loop IAW HC.OP-SO.EG-0001. The RB EO has been briefed and is standing by at the SACS pumps. The Yard EO has been briefed and is standing by at the SSW Intake Structure.

Heightened Awareness:

None

Protected Equipment:

None

Tagged Equipment:

None

Reactivity:

- Continue power reduction to 84.5% for removal of A RFPT for maintenance troubleshooting.
 - RE Guidance: Insert rods to 84.5% power using 9D and 9E rods.

SIMULATOR
EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC SCENARIO 4

SCENARIO NUMBER: ESG-NRC-S4

EFFECTIVE DATE: Effective when signed

EXPECTED DURATION: 66 minutes

REVISION NUMBER: 02

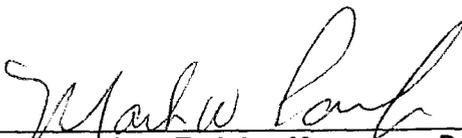
PROGRAM: L.O. REQUAL
 INITIAL LICENSE
 OTHER

REVISION SUMMARY:

1. Validated time 66 minutes.
2. Added to TO sheet, "Return 'B' RFPT to service IAW HC.OP-SO-AE-0001 Section 5.7".
3. Added driver guidance for I&C action for Flow Unit
4. Added that the light is extinguished for Seismic panel.

PREPARED BY: Archie E. Faulkner
Instructor

12/6/2008
DATE

APPROVED BY: 
Operations Training Manager or Designee

12/11/08
DATE

APPROVED BY: 
Operations Director or Designee

12/11/8
DATE

I. OBJECTIVE(S):

Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Critical tasks within this examination scenario guide are identified with an "*".)

II. MAJOR EVENTS:

- A. Place 'B' RFPT in service
- B. Power ascension
- C. SRV 'H' Tailpipe temp sensor fails upscale
- D. 'C' Recirc Flow Unit Summer fails downscale
- E. Seismic Event
- F. RCIC Steam Leak
- G. Trip of Service Air Compressor
- H. Air Leak w/Multiple Rod Drift
- I. LOP w/ EDG failures
- J. LOCA w/Steam Cooling

III. SCENARIO SUMMARY:

The scenario begins with the plant at ~84.5% power, 1000 MWe, with 'B' RPFT running at 1000 rpm. The PO will place 'B' RFPT in service. Power will be raised to 90% with Reactor Recirc flow. SRV 'H' Tailpipe Temperature fails upscale for SRO Tech Spec determination. 'C' Recirc Flow Unit Summer will fail downscale causing a half scram on the A1/A2 RPS channels. A seismic event greater than the SSE will occur. Following the seismic event, a steam leak will develop in the RCIC room. RCIC will fail to automatically isolate, but can be isolated from the Control Room (**Critical Task**). After the RCIC steam leak is isolated, the 10K107 Service Air Compressor will trip. When the 00K107 is placed in service, the pressure transient will cause an air leak to develop on the scram air header. The air leak will cause multiple control rods to drift in, requiring a manual reactor scram (**Critical Task**). After the scram, an aftershock will occur. The aftershock will cause a loss of offsite power and LOCA. Only the 'A' EDG will start. The HPCI F001 will fail to open, rendering HPCI inoperable. When the 'A' RHR pump starts, the 'A' EDG will trip. This will result in no available injection sources. When RPV water level reaches -200" the Crew must emergency depressurize (**Critical Task**). After the Crew opens five SRVs, the 'C' EDG will be restored to service. The 'C' RHR pump will fail to automatically start and inject, and must be started and aligned for injection by the Crew (**Critical Task**). After RPV water level is restored to above -185", the 'A' EDG will be restored to service. This will allow containment control to be exercised. The scenario is terminated when the RPV has been depressurized and RPV water level restored.

IV. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to full power, MOL.
	REDUCE power to 84.5% using recirc.
	ENSURE 10K107 Service Air Compressor is in service.
	REMOVE B RFPT from service as follows:
	1. PRESS RFPT A(B,C) SPEED CONTROLLER "INS" pushbutton to select "SPD DEMAND."
	2. PLACE the Reactor Feed Pump in manual by pressing the M pushbutton on RFPT SPEED CONTROLLER AND OBSERVE "M" (manual) illuminates.
	3. PRESS DECREASE ↓ pushbutton on RFPT A(B,C) SPEED CTRLR to reduce speed/flow of the Reactor Feed Pump to be removed from service AND ALLOW the other Reactor Feed Pumps to assume the flow of the Reactor Feed Pump being removed from service.
	4. WHEN the Reactor Feed Pump being removed reaches 0 gpm flow to RPV, PRESS DECREASE ↓ pushbutton on RFPT A(B,C) SPEED CTRLR UNTIL SPD is < 1000 RPM.
	5. CLOSE AE-HV-1769A(B,C), Reactor Feed Pump Discharge Stop Check Valve Motor Operator.
	INITIAL IO-0006 up to and including step 5.1.11 with the exception of step 5.1.9

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	PREPARE a Fire Alarm for FA016.
	COMPLETE the Simulator Ready for Training/Examination Checklist.
	ENSURE Data Collection is trending the following datapool variables:
	<ul style="list-style-type: none"> • RCIC Room Temp hvtr4110 • W/R Reactor Water Level: rrln091a or equivalent • Fuel Zone Reactor Water Level: rrlfzcha or equivalent • Instrument Air Header Pressure: iapiarca/iapiarcb or equivalent

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	6	EVENT ACTION: et_array(6) COMMAND: imf PC07B PURPOSE: Initiates aftershock with LOP/LOCA
	7	EVENT ACTION: COMMAND: PURPOSE:
	8	EVENT ACTION: et_array(8) COMMAND: dmf dg02a PURPOSE: Restores 'A' EDG to service.
	9	EVENT ACTION: ia:0prun >= 1.0 // 00K107 running COMMAND: PURPOSE: Inserts air leak when 00K107 is started.
	10	EVENT ACTION: iapiarca <= 75 // Instrument Air header pressure <= 75 psig COMMAND: imf cd011427 PURPOSE: Inserts drifting rods if pressure drops near 70 psig before delay times out.
	11	EVENT ACTION: iapiarca <= 75 // Instrument Air header pressure <= 75 psig COMMAND: imf cd011827 PURPOSE: Inserts drifting rods if pressure drops near 70 psig before delay times out.
	12	EVENT ACTION: iapiarca <= 75 // Instrument Air header pressure <= 75 psig COMMAND: imf cd012227 PURPOSE: Inserts drifting rods if pressure drops near 70 psig before delay times out.
	13	EVENT ACTION: iapiarca <= 75 // Instrument Air header pressure <= 75 psig COMMAND: imf cd062627 PURPOSE: Inserts drifting rods if pressure drops near 70 psig before delay times out.
	14	EVENT ACTION: rh:bkr(1) >= 1.0 // 'A' RHR pump running COMMAND: PURPOSE: Trips the 'A' EDG

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RC10 RCIC Steam Failure to Auto-Isolate	---	---	NONE	---	---
	HP04 HPCI system fails to start	---	---	NONE	---	---
	DG01C 'C' EDG Failure to Start (Auto or Man)	---	---	NONE	---	---
	DG02B Failure of 'B' EDG	---	---	NONE	---	---
	DG02D Failure of 'D' EDG	---	---	NONE	---	---
	RH08C 'C' RHR Failure to Auto-Start/Inject	---	---	NONE	---	---
	AD01 Failure of ADS to Actuate	---	---	NONE	---	---
	AD04H SRV H Tailpipe Temp fails upscale	---	---	ET-1	---	100%
	NM12C Recirc Flow Summer failure	---	---	ET-2	---	0%
	PC07B Seismic Event II	---	---	ET-3	---	---
	RC09 Steam Line Break in the RCIC Room	1:00	5:00	ET-3	25%	80%
	AN-A2A5 Cry Wolf Fire Protection Panel Alarm	3:00	---	ET-3	---	---
	IA01A Trip of 10K107 Service Air Compressor	---	---	ET-5	---	---
	IA02 Gradual Loss of Instrument Air	---	---	ET-9	---	60
	CD011427 Control Rod Drift In 14-27	2:00	---	ET-9	---	---
	CD011827 Control Rod Drift In 18-27	2:00	---	ET-9	---	---
	CD012227 Control Rod Drift In 22-27	2:00	---	ET-9	---	---
	CD062627 Control Rod Scram 26-27	2:00	---	ET-9	---	---
	EG12 Loss of Offsite Power	---	---	ET-6	---	---
	RR31A2 Large Break LOCA	3:00	5:00	ET-6	0%	3%
	DG02A Failure of 'A' EDG	00:03	---	ET-14	---	---

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	HV06 CVH300 RBVS Fan	---	---	ET-4	---	STOP
	HV05 BVH300 RBVS Fan	1 sec	---	ET-4	---	STOP
	HV04 AVH300 RBVS Fan	1 sec	---	ET-4	---	STOP
	HV03 CV301 RBVE Fan	2 sec	---	ET-4	---	STOP
	HV02 BV301 RBVE Fan	3 sec	---	ET-4	---	STOP
	HV01 AV301 RBVE Fan	3 sec	---	ET-4	---	STOP
	HP08 HPCI Aux Oil Pump Breaker	---	---	ET-7	---	TAGGED
	DG05 'A' EDG Shutdown Relay	00:05	---	ET-8	---	RESET
	DG01 'A' EDG Lockout Relay	00:20	---	ET-8	---	RESET

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final V	I

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
-----------------------------	---------------------------------	----------

Place 'B' RFPT in-service:

Crew places 'B' RFPT in service after assuming the watch.

- CRS directs PO to place 'B' RFPT in service IAW OP-SO.AE-0001.

- PO opens HV-1769B, REACTOR FEED PUMP B DISCH STOP CHK VLV MOT OPER.

HPI USED:
 STAR
 PEER CHECK
 OP BARRIERS

- PO presses the "INS" pushbutton as required to select "DEMAND" on the in-service RFPT(S), whose demand will be matched

- PO presses the "INS" pushbutton as necessary, for the RFPT to be placed in-service, to select RFPT B "SPEED CTRLR DEMAND".

- PO presses the INCREASE ↑ or DECREASE ↓ push button on the Pump being placed in-service as necessary, to equalize the "DEMAND" signals, WHILE MONITORING the following:
 - ⇒ RFPT Discharge Pressure
 - ⇒ RFPT "DEMAND"
 - ⇒ RFPT "FLOW"

HPI USED:
 STAR
 PEER CHECK
 OP BARRIERS

- When flow and speed are approximately equal, PO transfers RFPT B SPEED CTRLR to automatic by pressing the A pushbutton AND observing "A" illuminates.

HPI USED:
 STAR
 PEER CHECK
 OP BARRIERS

Power Ascension:

Crew commences reactor power ascension after assuming the watch.

- CRS directs raising power to 90% using RE guidance.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>As RE PROVIDE the following guidance:</p> <ul style="list-style-type: none"> • SPRI and Enhanced Stability Guidance are valid for the remainder of the maneuver • Power has been steady for the last hour. • Target rod line has been reached. • Raise power to 90% with reactor recirculation and hold for thermal limit checks. 	<ul style="list-style-type: none"> • RO monitors the following when changing Recirc Pump speed: <ul style="list-style-type: none"> ⇒ XR-R603A,B,C,D - C51 (NEUTRON MONITORING) APRM ⇒ B31-FR-R614 RECIRC LOOP A(B) FLOW ⇒ FR-R611A(B) RECIRC LOOP A(B) JET PUMP FLOW ⇒ PDR-R613/FR- FR-R613 CORE PLATE DIFF PRESS/JET PUMP FLOW 	
<p>SRV Tailpipe Temperature Fails High: After the Crew completes needed reactivity changes and placing B RFPT in service, at the discretion of the Lead Examiner, TRIGGER ET-1 (PSV-F013H Tailpipe Temperature Fails High)</p>	<ul style="list-style-type: none"> • RO raises Reactor Recirc Pump speed by intermittently pressing INCREASE pushbutton on SIC-R621A(B) PUMP A(B) SPD CONT. • Crew recognizes SRV F013H high tailpipe temp by: <ul style="list-style-type: none"> ⇒ OHA C1-A3 "ADS/SAFETY RELIEF VLV NOT CLOSED" ⇒ Flashing red alarm light on TRR-614 • Crew validates no SRV open by: <ul style="list-style-type: none"> ⇒ Absence of acoustic monitor indication ⇒ No change in Main Generator MWe ⇒ No steam flow feed flow mismatch • Crew recognizes probable SRV tailpipe temperature failure due to reading unrealistically high. • Crew contacts Maintenance. 	<p>HPI USED:</p> <ul style="list-style-type: none"> STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> OP BARRIERS <input type="checkbox"/>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>RECIRC LOOP FLOW SUMMER 'C' FAILURE: At the discretion of the lead Examiner, TRIGGER ET-2 (RECIRC LOOP FLOW SUMMER FAILURE to 0 percent).</p>	<ul style="list-style-type: none"> • CRS recognize the following Tech Spec action applies: <ul style="list-style-type: none"> ⇒ Accident Monitoring Instrumentation Table 3.3.7.5-1 Action 80a • Crew monitors Reactor power, pressure, and level and ensure plant conditions are stable. Ensures no scram setpoints have been exceeded. • Crew recognizes RPS ½ scram by: <ul style="list-style-type: none"> ⇒ OHA C3-A3 "REACTOR SCRAM TRIP LOGIC A2" ⇒ OHA C5-A1 "NEUTRON MONITORING SYSTEM" ⇒ RPS Trip Logic A2 NORMAL/RESET status lights extinguished ⇒ Pilot Scram Valve Solenoid LOGIC A NORMAL status lights for all four groups extinguished. ⇒ CRIDS D2127 "NEUTRON MONITORING SYSTEM SCRAM Y TRIP" ⇒ CRIDS D2132 "REACTOR SCRAM Y TRIP" 	<p>Must restore within 30 days or initiate actions IAW T/S 6.9.2</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>IF directed to place the Flow Unit C MODE Switch in the unlabeled position, THEN CHANGE Malfunction NM12C Final value to 100%.</p>	<ul style="list-style-type: none"> • Crew recognizes 'A', 'C', and 'E' APRMs Upscale by: <ul style="list-style-type: none"> ⇒ OHA C3-C4 "APRM SYS A UPSCALE TRIP/INOP" ⇒ C3-D4 "APRM UPSCALE" ⇒ APRMs A,C, and E "UPSC TR OR INOP" status lights ⇒ APRM A,C, and E "UPSC ALARM" status lights ⇒ CRIDS D2143 "APRM CHANNEL C UPSCALE TRIP YES" ⇒ CRIDS D4306 "APRM CH C UPSCALE THERMAL TRIP ALARM" • Crew recognizes 'C' RECIRC LOOP FLOW SUMMER FAILURE Downscale by: <ul style="list-style-type: none"> ⇒ FLOW UNIT C and A "COMPAR" status lights ⇒ APRM A, C, and E "UPSC ALARM" status lights • CRS implements AB.IC-0004: <ul style="list-style-type: none"> ⇒ Condition F • RO bypasses 'C' Flow Unit. • CRS refers to DD.ZZ-0020 for a failed PPC Sensor. • CRS directs Reactor Engineering to Evaluate the flow unit failure on the PPC. • RO directs I&C to place the MODE Switch, on the applicable flow unit, to the "UNLABELED" position between STANDBY and ZERO. • RO verifies RPS trip clear. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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- RO resets RPS trip as follows:
 - ⇒ TURN the affected RPS Trip Logic key to RESET, AND RETURN to the NORMAL position.
 - ⇒ VERIFY that RPS is reset.
- CRS determine no Tech Spec actions required. Enter Tracking Action statement for:
 - ⇒ Table 3.3.6-1 Function 6

Earthquake/Steam Leak:

At the discretion of the Lead Examiner:

- **PLAY** the Earthquake Sound Effect (if available) at medium volume for about 20 seconds
OR
- **ANNOUNCE** "You feel motion then it stops"
- **TRIGGER ET-3** (Seismic Event/Steam Leak in RCIC Room)

- Crew recognizes Seismic Event by:
 - ⇒ OHA C6-C4 "SEISMIC MON PNL C673"
 - ⇒ CRIDS D3977 "SEISMIC TROUBLE ALARM TRBL"
 - ⇒ Response Spectrum Analyzer indications on 10C650C
 - ⇒ Loud rumbling noise (if available)

- Crew monitors critical parameters to determine if plant is stable.

IF Crew calls National Earthquake Center, **THEN REPORT** a seismic event of 6.0 on Richter scale centered 12 miles east of Wilmington, DE.

IF Crew calls Security, **THEN REPORT** the Security system is intact.

- CRS implements AB.MISC-0001:
 - ⇒ Condition E
 - ⇒ Condition F

AB.MISC-0001 actions provided for reference only. Due to the pace of the scenario, it is unlikely they will be implemented.

- RO/PO implement AR.ZZ-0011 Attachment C4.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to 10C673, <u>THEN REPORT:</u></p> <ul style="list-style-type: none"> • The Event Indicator is WHITE • The tape machines have advanced but are not running • The Amber Alarm light on the Seismic Switch Power Supply drawer is lit. • The Amber SMA-3 Event Alarm Light is extinguished. 	<ul style="list-style-type: none"> • Crew dispatches ABEO to 10C673. • Crew recognizes a seismic event >0.1g has occurred 	
<p><u>IF</u> directed to reset 10C673, <u>THEN DELETE</u> Malfunction PC07B and re-insert Malf PC07B with trigger ET-6.</p>	<ul style="list-style-type: none"> • RO/PO direct ABEO to reset 10C673 IAW SO.SG-0001. • RO/PO record Seismic Response Spectrum Analyzer lights on AR.ZZ-0011 Att. C4-1. • RO/PO reset Seismic Response Spectrum Analyzer IAW SO.SG-0001. • Crew determines a shutdown IAW IO.ZZ-0004 is required. 	
<p>RCIC Steam Leak: The RCIC steam leak will be automatically inserted one minute after the seismic event. <u>WHEN</u> A2-A5 alarms, <u>THEN PROVIDE</u> Fire Computer indication of point FA016 (Fire Computer point may be provided by Examiner <u>or</u> by Fire Computer Simulation).</p>	<ul style="list-style-type: none"> • Crew recognizes a steam line break in the RCIC room by: <ul style="list-style-type: none"> ⇒ OHA B1-A2 "RCIC STEAM LINE DIFF PRESSURE HI" ⇒ OHA A2-A5 "FIRE PROT PANEL 10C671" ⇒ Fire Comp Pt FA016 "ROOM 4110 RCIC PUMP AND TURBINE ROOM" ⇒ RCIC room temperature trending up (Rm 4110) ⇒ Lowering Main Gen MWe ⇒ Offsite release rate trending up ⇒ RCIC Turbine Inlet Pressure on PI-R602 ⇒ ISLN INIT status lights 	<p>B1-A2 and ISLN INIT status lights will be received if the leak severity reaches 80% before being isolated. (about 5 minutes)</p> <p>A2-A5 Fire Alarm will be received two minutes after the leak starts.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to RCIC Room, THEN REPORT the room is filled with steam.</p>	<ul style="list-style-type: none"> • Crew announces steam leak in RCIC room on plant page. • Crew recognizes failure of RCIC to isolate by: <ul style="list-style-type: none"> ⇒ HV-F007 valve position ⇒ HV-F008 valve position ⇒ RCIC room temperature trending up (Rm 4110) • PO closes HV-F007 <u>AND</u> HV-F008 using Control Room keylock switches. * <i>Crew closes the RCIC HV-F007 OR HV-F008 before RCIC Room temperature reaches 250 degF.</i> • <u>IF</u> RCIC Room temperature reaches 115 degrees, <u>THEN</u> CRS implements EOP-103. • Crew recognizes abnormal gaseous radioactive release by: <ul style="list-style-type: none"> ⇒ OHA C6-C1 RADIATION MONITORING ALARM/TRBL" ⇒ RM11 9RX580 SPV Effluent alarm ⇒ SPDS indication • CRS implements AB.CONT-004: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition C 	<p>Only applicable if isolation signal received.</p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p> <p>Immediate Operator Action IAW AB.CONT-0002</p> <p>RECORD RCIC Room 4110 temperature when HV-F007 <u>OR</u> F008 are closed.</p> <p>Temperature: _____</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>IF dispatched to secure Rx Bldg Ventilation, THEN:</p> <ul style="list-style-type: none"> • REFER to SO.GU-0001 Section 5.3 • TRIGGER ET-4 to secure fans 	<ul style="list-style-type: none"> • PO places FRVS in service IAW SO.GU-0001 Section 5.3. • CRS recognize the following Tech Specs actions apply: <ul style="list-style-type: none"> ⇒ Reactor Core Isolation Clg 3.7.4 ⇒ Primary Containment Isolation Valves 3.6.3 (Only if failure to isolate is observed) 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p> <p>With RCIC inoperable operation may continue provided HPCI is operable. Must restore RCIC in 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor pressure to ≤ 150 psig in the following 24 hours.</p> <p>(Note that a shutdown is already required due to the seismic event)</p>
<div style="border: 1px solid black; padding: 5px;"> <p>Trip of 10K107: 10 minutes after the RCIC steam leak is isolated, OR, at the Lead Examiners discretion, TRIGGER ET-5 (Trip of 10K107, Air leak with multiple rod drifts).</p> </div>	<ul style="list-style-type: none"> • Crew recognizes loss of 10K107 by: <ul style="list-style-type: none"> ⇒ OHA A2-B2 "COMPRESSED AIR PANEL 00C188" ⇒ OHA A2-A1/A2 "INST AIR HEADER A/B PRESS LO" ⇒ CRIDS D4601 "INSTR AIR SPLY HDR A PRESS LO" ⇒ CRIDS D4602 "INSTR AIR SPLY HDR B PRESS" LO ⇒ OVLD/PWR FAIL light ⇒ Lowering Service and Instrument Air pressures • PO places 00K107 in service IAW AB.ZZ-0001 Attachment 7. • CRS implements AB.COMP-001: <ul style="list-style-type: none"> ⇒ Condition A 	<p>The primary purpose of the air malfunctions is to exercise the immediate operator actions for trip of the inservice service air compressor and multiple rods drifting in. The pace may not allow full implementation of the abnormal.</p> <p>Immediate Operator Action IAW AB.COMP-0001.</p> <p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>IF dispatched to check status of RACS demins, AND the EIAC is running, THEN REPORT the RACS demins are isolated.</p>	<ul style="list-style-type: none"> • IF Instrument Air Header Pressure reaches 85 psig, THEN CRS implements AB.COMP-0001: ⇒ Condition C 	
<p>IF dispatched to check status of HV-11416, AND Remote Function IA01 status is ONLINE, THEN REPORT the HV-11416 is open.</p>		
<p>IF dispatched to investigate the trip of 10K107, THEN REPORT VIBRATION ALARM and VIBRATION SHUTDOWN alarms were in.</p>	<ul style="list-style-type: none"> • Crew dispatches TBE0 and Maintenance to investigate trip of 10K107. 	
<div style="border: 1px solid black; padding: 5px;"> <p>Air Leak: The air leak is automatically inserted when the 00K107 is started. ENSURE ET-9 triggers when 00K107 is manually started.</p> </div>	<ul style="list-style-type: none"> • Crew recognizes air leak by: ⇒ OHA A2-A1/A2 "INST AIR HEADER A/B PRESS LO" ⇒ OHA A2-B2 "COMPRESSED AIR PANEL 00C188" ⇒ CRIDS D4601 "INSTR AIR SPLY HDR A PRESS LO" ⇒ CRIDS D4602 "INSTR AIR SPLY HDR B PRESS" LO ⇒ Lowering Service and Instrument Air pressures 	
<p>IF dispatched to check status of RACS demins, AND the EIAC is running, THEN REPORT the RACS demins are isolated.</p>	<ul style="list-style-type: none"> • CRS implements AB.COMP-001: ⇒ Condition A • IF Instrument Air Header Pressure reaches 85 psig, THEN CRS implements AB.COMP-0001: ⇒ Condition C 	
<p>IF dispatched to check status of HV-11416, AND Remote Function IA01 status is online, THEN REPORT the HV-11416 is open.</p>		

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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Multiple Rod Drifts:

The multiple rod drift is automatically inserted 2 minutes after the air leak starts, OR if instrument air pressure drops to 75 psig.

- Crew recognizes multiple rods drifting into the core by:
 - ⇒ OHA C6-E3 "ROD DRIFT"
 - ⇒ Multiple "DRIFT", lights on Full Core display
 - ⇒ RWM drifting rods indication
 - ⇒ CRIDS C078 "ROD DRIFT ALARM ALM"
 - ⇒ Lowering reactor power and Main Generator output

- RO locks the Mode Switch in SHUTDOWN.

- * ***Crew scrams the reactor within two minutes of rod drifts.***

RECORD the time between OHA C6-E3 and reactor scrambled.

TIME: _____

- RO performs scram actions IAW AB.ZZ-0001 Att 1.
- Crew recognizes RPV Level Below 12.5" EOP entry condition by:
 - ⇒ OHA C5-A4 "RPV WATER LEVEL LO"
 - ⇒ OHA A7-D5 "RPV LEVEL 3"
 - ⇒ Various water level indicators
- CRS implements EOP-101.
- PO controls RPV water level as directed by CRS IAW AB.ZZ-0001 Att 14.

HPI USED:
 STAR
 HARD CARD

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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Aftershock/LOP/LOCA:
 5 minutes after the scram,
OR,
 at the Lead Examiners discretion,
 • **PLAY** the Earthquake Sound Effect (if available) at medium volume for about 20 seconds
OR
ANNOUNCE "You feel motion then it stops"
 • **TRIGGER ET-6** (LOP/LOCA)

- Crew recognizes Loss of Offsite Power by:
 - ⇒ OHA "STA SERVICE TRANSFORMER TROUBLE" for all transformers
 - ⇒ TRIP indication for all 500 KV breakers
 - ⇒ Flashing TRIP lights for all previously closed bus infeeds.
 - ⇒ Numerous OVLD/PWR FAIL lights.

- Crew recognizes failure of the B/C/D EDGs to start and load by:
 - ⇒ Engine STOP lights
 - ⇒ Output breaker TRIP lights
 - ⇒ OVLD/PWR lights on associated Channel components
- RO/PO attempt to start the B/C/D EDGs.

Only 'A' EDG will start.
 'A' EDG will trip when the 'A' RHR pump is started.

HPI USED:
 STAR
 PEER CHECK

Immediate Operator
 Action IAW AB.ZZ-0135

- CRS implements AB.ZZ-0135.
- Crew dispatches NEO and/or Maintenance to investigate failure of B/D EDGs to start.

IF dispatched to investigate the failure of B/D EDGs to start, THEN REPORT both EDGs have Lube Oil Low Pressure Shutdown alarms. There is oil on EDG room floors.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to investigate the failure of the 'C' EDG to start, THEN REPORT there is a blown fuse on DC Circuit 3 on the CC421 panel.</p> <p><u>IF</u> directed to start the EDG using either local control switch, THEN REPORT it did not work. (AR.KJ-0005 Att. 37A)</p>	<ul style="list-style-type: none"> • Crew dispatches NEO and/or Maintenance to investigate failure of 'C' EDG to start. 	
<p><u>IF</u> dispatched to check 86, SFR, and SDR relays for 'C' EDG, THEN REPORT:</p> <ul style="list-style-type: none"> • 86 lockout relays are reset (CC422, elev 137') • Blue buttons on SFR and SDR are out (de-energized) (CC421 elev 102') 		
<p><u>IF</u> dispatched to determine status of HPCI, THEN REPORT</p> <ul style="list-style-type: none"> • HPCI is idle • HPCI Aux oil pump is running. • HV-F001 is closed 	<ul style="list-style-type: none"> • Crew recognizes HPCI oil problem by: <ul style="list-style-type: none"> ⇒ OHA B1-A4 "HPCI TURBINE TRIP" ⇒ OHA B1-E5 "HPCI PUMP DISCH FLOW LO" ⇒ HPCI Trip Throttle and Governor valves closed w/Aux Oil pump running and "TURB TRIP SOLENOID ENERGZ" light <u>not</u> lit ⇒ CRIDS D5435 "HPCI BRG OIL LO PR/HVF001 OPN" 	
<p><u>IF</u> directed to open the breaker for the HPCI Aux Oil pump, (72-251042) THEN TRIGGER ET-7.</p>		
<p><u>IF</u> directed to open HV-F001 by hand, REPORT HV-F001 will not move</p>		
	<ul style="list-style-type: none"> • CRS directs injecting with 'A' SLC pump. • RO/PO start the 'A' SLC pump. 	<p>Only available injection source.</p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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IF called as the ESOC, **THEN REPORT** both the Hope Creek AND Salem switchyards are de-energized. It will take a minimum of 6-10 hours to restore power once the transient has been investigated.

- Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by:
 - ⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH"
 - ⇒ Flashing 95 degree status light on 10C650C
 - ⇒ RM11 9AX833/834 alarm
 - ⇒ Various Suppression Pool temperature indicators

Given the lowering RPV water level, and 'A' RHR being the only available RHR pump, the Crew may not place 'A' RHR in Suppression Pool cooling at this time.

- Crew recognizes Supp Pool Level Above 78.5 In EOP entry condition by:
 - ⇒ OHA B1-C3 "SUPPRESSION POOL LEVEL HI/LO"
 - ⇒ Various Suppression Pool level indicators

Given the LOP and the unavailability of HPCI and RCIC, there is nothing the Crew can do to lower Suppression Pool water level at this time.

Steam Cooling:

The 'A' EDG will trip 3 seconds after the 'A' RHR pump starts. This will automatically occur at 1.68#, if the Crew doesn't start it sooner.

- Crew recognizes trip of the 'A' EDG by:
 - ⇒ Diesel engine STOP light
 - ⇒ Flashing generator breaker TRIP light
 - ⇒ OVLD/PWR FAIL lights on associated channel loads

IF dispatched to investigate the trip of the 'A' EDG, **THEN REPORT** you heard the EDG slow down, then speed up and trip. Alarm on local panel is ENGINE OVERSPEED.

- Crew dispatches NEO and/or Maintenance to investigate trips of the 'A' EDG.

- CRS recognize **no** pumps are lined up available for injection and Steam Cooling is required.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • <u>WHEN</u> RPV water level reaches -129", <u>THEN</u> CRS directs inhibiting ADS. • RO/PO inhibit ADS IAW AB.ZZ-0001 Att. 13. • <u>WHEN</u> RPV water level reaches -200", <u>THEN</u> CRS directs opening five ADS SRVs. • RO/PO open five ADS SRVs IAW AB.ZZ-0001 Att. 13. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>
<p><u>WHEN</u> at least five SRVs are open, <u>THEN DELETE</u> Malfunction DG01C to restore the 'C' EDG to service <u>AND REPORT</u> the 'C' EDG has been successfully started.</p>	<p>* <i>Crew opens at least five SRVs before reactor water level has been below -200" for two minutes.</i></p>	
<p>SUPPORT any requests to place ECCS pumps in PTL using Remote Functions:</p> <ul style="list-style-type: none"> • CS05C for 'C' Core Spray • RH23C for 'C' RHR 	<ul style="list-style-type: none"> • Crew recognizes start of the 'C' EDG by: <ul style="list-style-type: none"> ⇒ Diesel engine START light ⇒ Generator breaker CLOSE light ⇒ OVLD/PWR FAIL lights extinguished on associated channel loads • RO/PO starts the 'C' RHR pump, opens the HV-F017C, and restores RPV water level to above -185" IAW AB.ZZ-0001 Att. 4. 	<p>The auto-start of the 'C' RHR pump and auto-opening of the F017C are failed.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>AFTER the Crew restores RPV water level to above -185", THEN REPORT you are ready to restore the 'A' EDG to service. The governor oil level was low and has been restored to normal.</p>	<p>* <i>WHEN the 'C' EDG is restored, THEN the Crew injects with the 'C' RHR pump and restores and maintains RPV water level above -185".</i></p>	
<p>SUPPORT any requests to place ECCS pumps in PTL using Remote Functions:</p> <ul style="list-style-type: none"> • CS05A for 'A' Core Spray • RH23A for 'A' RHR 		
<p>IF directed to restore the 'A' EDG to service, AND after level has been restored with 'C' EDG, THEN TRIGGER ET-8 AND REPORT the 'A' EDG has been successfully restarted.</p>	<ul style="list-style-type: none"> • Crew recognizes start of the 'A' EDG by: <ul style="list-style-type: none"> ⇒ Diesel engine START light ⇒ Generator breaker CLOSE light ⇒ OVLD/PWR FAIL lights extinguished on associated channel loads • CRS directs restoring PCIG to the SRVs. • RO/PO restores PCIG to the SRVs IAW AB.ZZ-0001 Att. 9. • CRS directs placing the 'A' RHR pump in Drywell Spray. • RO/PO places 'A' RHR pump in Drywell Spray IAW AB.ZZ-0001 Att. 2. 	<p>The restoration of the 'A' EDG makes the 'A' Core Spray Loop available for RPV water level control.</p> <p>The AK202 PCIG compressor became available when the 'C' EDG was restored.</p> <p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p>
<p>Termination Requirement: The scenario should be terminated at the discretion of the Lead Examiner when:</p> <ul style="list-style-type: none"> • The reactor has been depressurized • RPV water level is being maintained above -129" 		

VI. SCENARIO REFERENCES:

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. Emergency Plan (ECG)
- G. Alarm Response Procedures (Various)
- H. HU-AA-101 Performance Tools and Verification Practices
- I. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- J. OP-AA-101-111-1004 Operations Standards
- K. OP-AA-101-112-1002 On-Line Risk Assessment
- L. OP-AA-106-101-1001 Event Response Guidelines
- M. OP-HC-108-106-1001 Equipment Operational Control
- N. OP-AA-108-114 Post Transient Review
- O. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- P. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- Q. HC.OP-AB.CONT-0002 Primary Containment
- R. HC.OP-AB.CONT-0004 Radioactive Gaseous Release
- S. HC.OP-AB.COMP-0001 Instrument and/or Service Air
- T. HC.OP-AB.MISC-0001 Acts of Nature
- U. HC.OP-AB.RPV-0006 Safety/Relief Valve
- V. HC.OP-AB.ZZ-0135 Station Blackout/Loss of Offsite Power/Diesel Generator Malfunction
- W. HC.OP-AB.ZZ-000 Reactor Scram
- X. HC.OP-EO.ZZ-0101 RPV Control
- Y. HC.OP-EO.ZZ-0102 Primary Containment Control
- Z. HC.OP-EO.ZZ-0103 Reactor Building Control
- AA. HC.OP-EO.ZZ-0202 Emergency RPV Depressurization
- BB. HC.OP-EO.ZZ-0206 RPV Flooding
- CC. HC.OP-SO.AE-0001 FEEDWATER SYSTEM OPERATION
- DD. HC.OP-SO.BB-0002 Recirculation System operation

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S4 / 02

1.

- * **Crew closes the RCIC HV-F007 OR HV-F008 before RCIC Room temperature reaches 250 degF.**

K/A 217000 Reactor Core Isolation Cooling System

A2 Ability to (a) predict the impacts of the following on the REACTOR CORE ISOLATION COOLING SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

A2.15 Steam Line Break RO 3.8 SRO 3.8

A3 Ability to monitor automatic operations of the REACTOR CORE ISOLATION COOLING SYSTEM including

A3.01 Valve Operation RO 3.5 SRO 3.5

A4 Ability to manually operate and/or monitor in the control room:

A4.03 System valves RO 3.4 SRO 3.3

RCIC has failed to automatically isolate and can only be isolated by the Crew. This represents a bypass of both the RCS and Containment barriers. With indications of high steam flow, high room temperature, rising offsite releases, and an isolation signal to RCIC, the Crew should perform their Immediate Operator Actions IAW AB.CONT-0002 for a failure of a containment isolation valve to close. 250°F is the Max Safe Op temperature for the RCIC Room (4110).

2.

- * **Crew scrams the reactor within two minutes of rod drifts.**

K/A 201003 Control Rod and Drive Mechanism

A2 Ability to (a) predict the impacts of the following on the CONTROL ROD AND DRIVE MECHANISM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

A2.03 Drifting rod RO: 3.4 SRO 3.7

Having multiple rods inserting into the core out of sequence places the core in an unanalyzed condition. Thermal Limits may be violated resulting in fuel damage and a potential for radiological release. The Neutron Monitoring System is not designed to protect the core under these conditions and operator action is required. Two minutes is adequate time to confirm the drifting of multiple rods and take the immediate operator action IAW AB.COMP-0001.

3.

- * **Crew opens at least five SRVs before reactor water level has been below -200" for two minutes.**

K/A 295031 Reactor Low Water Level

EA1. Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL:

EA.06 Automatic depressurization RO 4.4 SRO 4.4

When Reactor water level cannot be maintained above -200" without injection to the RPV, adequate core cooling cannot be assured (Minimum Zero Injection Reactor Water Level). EOPs direct action to initiate emergency depressurization when RPV water level reaches this value if there are no injection sources available. To restore adequate core cooling, the Crew must Emergency Depressurize and restore level with low pressure ECCS. The two minute time limit provides the Crew adequate time to implement EOP-202 IAW existing standards.

4.

- * ***WHEN the 'C' EDG is restored,
THEN the Crew injects with the 'C' RHR pump and restores and maintains RPV water level above -185".***

K/A 295031 Reactor Low Water Level

EA1. Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL:

EA1.01 Low pressure coolant injection (RHR) RO 4.4 SRO 4.4

The automatic start of the 'C' RHR pump and the automatic opening of the HV-F017C are failed. 'C' RHR is the only ECCS pump available for injection (although the 'C' Core Spray pump is running, there is no power to the injection valve due to the loss of the 'A' EDG). Operator action will be required to initiate injection and restore/maintain adequate core cooling. The absence of a time limit is due to the potential variance in reactor pressure when the 'C' RHR pump becomes available. The pump may become available before or after the permissible injection pressure for the RHR pump (IAW AB.ZZ-0001) is reached. This action must therefore be complete before the end of the scenario. Inherent to this critical task is the Crew dispatching personnel to investigate the failure of the 'C' EDG to start. If no one is sent to investigate, the EDG will NOT be restored to service.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

<u>Y/N</u>	<u>EVENT</u>	<u>Y/N</u>	<u>EVENT</u>
<u>X</u>	Loss Of Offsite Power/SBO	<u> </u>	Internal Flooding
<u>X</u>	LOCA		
	<u>TRANSIENTS:</u>		<u>LOSS OF SUPPORT SYSTEMS:</u>
<u> </u>	Turbine Trip	<u> </u>	Loss of SSW
<u> </u>	Loss of Condenser Vacuum	<u> </u>	Loss of SACS
<u> </u>	Loss of Feedwater	<u> </u>	Loss of Instrument Air
<u> </u>	Inadvertent MSIV Closure		
<u> </u>	Inadvertent SRV Opening		
<u>X</u>	Manual Scram		

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

<u>Y/N</u>	<u>KEY EQUIPMENT</u>	<u>Y/N</u>	<u>KEY EQUIPMENT</u>
<u> </u>	Hard Torus Vent	<u> </u>	SLC
<u>X</u>	HPCI	<u> </u>	CRD
<u>X</u>	1E 4.16KV Bus	<u> </u>	1E 125VDC
<u> </u>	SACS Hx/Pump		
<u>X</u>	EDG		<u>KEY SYSTEMS</u>
<u> </u>	120VAC 481/482 Inverter	<u>X</u>	500KV AC Power
<u> </u>	A/B RHR	<u> </u>	SRVs
<u>X</u>	RCIC	<u> </u>	Condensate/Feedwater
<u> </u>	SSW Pump	<u> </u>	PCIG

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

<u>Y/N</u>	<u>OPERATOR ACTION</u>
<u>X</u>	Aligning RHR for Suppression Pool Cooling
<u> </u>	Emergency Venting of Primary Containment
<u>X</u>	Emergency Depressurize RPV W/O High Pressure Injection
<u>X</u>	Initiating LP ECCS with No High Pressure Injection Available
<u>X</u>	Restoration of AC Power after a LOP (EDG / Offsite)
<u> </u>	Monitoring and Control of SACS heat loads
<u> </u>	Preventing LVL 8 trip of Feedwater during a transient
<u> </u>	Align Core Spray Suction to CST when at NPSH limits
<u> </u>	Cross-Tie De-Energized B/D 125VDC Battery Charger to Energized Bus
<u> </u>	Inhibit ADS during ATWS

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: ~84.5%

MWe (May vary slightly): 1000 MWe

Activities Completed Last Shift:

Completed troubleshooting activities on 'B' RFPT.

Major Activities Next 12 Hours:

Return 'B' RFPT to service IAW HC.OP-SO-AE-0001 Section 5.7.

Raise power to 90% IAW IO-0006.

Protected Equipment:

None

Tagged Equipment:

None

Reactivity:

Raise power to 90% using Reactor Recirc at $\leq 15\%$ /hr and hold for RE thermal limit checks.

IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

Note: This form is used as guidance for an examination team to conduct a review for the proposed exam scenario(s). Attach a separate copy of this form to each scenario reviewed.

- SELF-CHECK ESG- NRC-S4 REVIEWER: Archie E. J. [Signature]
- AEJ 1. The scenario has clearly stated objectives in the scenario.
- AEJ 2. The initial conditions are realistic, equipment and/or Instrumentation may be out of service, but it does not cue crew into expected events.
- AEJ 3. Each event description consists of:
- The point in the scenario when it is to be initiated
 - The malfunction(s) that are entered to initiate the event
 - The symptoms/cues that will be visible to the crew
 - The expected operator actions (by shift position)
 - The event termination point
- AEJ 4. The use of non-mechanistic failures (e.g. pipe break) should be limited to one or a credible preceding event has occurred.
- AEJ 5. The events are valid with regard to physics and thermodynamics.
- AEJ 6. Sequencing/timing of events is reasonable (e.g. the crew has time to respond to the malfunctions in an appropriate time frame and implements procedures and/or corrective actions).
- AEJ 7. Sequencing/timing of events is reasonable, and allows for the examination team to obtain complete evaluation results commensurate with the scenario objectives.
- AEJ 8. If time compression techniques are used, scenario summary clearly so indicates.
- AEJ 9. The simulator modeling is not altered.
- AEJ 10. All crew competencies can be evaluated.
- AEJ 11. Appropriate reference materials are available (SOERs, LERs, etc.)
- AEJ 12. Proper critical task methodology used IAW NRC procedures.

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Note: The following criteria list scenario traits that are numerical in nature.

ESG: NRC-S4

SELF-CHECK

- QET 1. Total malfunctions inserted: 5-8
- QET 2. Malfunctions that occur after EOP entry: 1-2
- QET 3. Abnormal Events: 2-4
- QET 4. Major Transients: 1-2
- QET 5. EOPs entered requiring substantive actions: 1-2
- QET 6. EOP Contingency Procedures requiring substantive actions: 0-2
- QET 7. Approximate scenario run time: 60-90 minutes
- QET 8. Critical Tasks: 2-3
- QET 9. Technical Specifications are exercised during the test ≥ 2

Comments:

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

Crew Validation **Rev:** 01 **Date Validated:** 11/21/2009

Validation Comments

Disposition

Need RFPT Startup step on Turnover Sheet.

Added to TO sheet. Return 'B' RFPT to service IAW HC.OP-SO-AE-0001 Section 5.7.

Add guidance for placing Flow unit Mode Switch in unlabeled position.

Added driver guidance for I&C action.

Add status of SMA-3 Event Alarm Light to ABEO report.

Added that the light is extinguished.

Crew Validation **Rev:** **Date Validated:**

Validation Comments

Disposition

TRAINING USE ONLY

ONLINE RISK: GREEN

WORK WEEK CHANNEL: B

Reactor Power: ~84.5%

MWe (May vary slightly): 1000

Activities Completed Last Shift:

- Completed troubleshooting activities on 'B' RFPT.

Major Activities Next 12 Hours:

- Return 'B' RFPT to service IAW HC.OP-SO-AE-0001 Section 5.7.
- Raise power to 90% IAW IO-0006.

Heightened Awareness:

None

Protected Equipment:

None

Tagged Equipment:

None

Reactivity:

- Raise power to 90% using Reactor Recirc at $\leq 15\%$ / hr and hold for RE thermal limit checks.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Control Area Ventilation System

TASK: Manually Isolate the Control Room Emergency Filter System

TASK NUMBER: 4880060101

JPM NUMBER: 305H-JPM.GK001

REV #: 05

SAP BET: NOH05JPGK01E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 8/26/08

REVIEWED BY: N/A
Operations Representative

DATE: N/A

APPROVED BY: 
Training Department

DATE: 9/23/08

STATION: Hope Creek
 JPM NUMBER: GK001
 SYSTEM: Control Area Ventilation System
 TASK NUMBER: 4880060101
 TASK: Manually Isolate the Control Room Emergency Filter System

ALTERNATE PATH: K/A NUMBER: 290003 A4.01
 IMPORTANCE FACTOR: 3.2 3.2
 APPLICABILITY: RO SRO
 EO RO STA SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.GK-0001 Rev 13
 HC.OP-AB.HVAC-0002 Rev 5

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 7 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____ GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ DATE: _____

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Manually Isolate the Control Room Emergency Filter System

TASK NUMBER: 4880060101

INITIAL CONDITIONS:

1. A severe Marsh fire had been observed near the site. Local fire departments responded to the fire.
2. Smoke was observed to be entering the Main Control Room from the Control Room Ventilation System.
3. 'A' CREF was placed in service in accordance with HC.OP-AB.HVAC-0002, Control Room Environment.
4. The fire is out, and the smoke has dissipated.

INITIATING CUE:

You are the Plant Operator.

Restore the Control Area Ventilation System to normal operation with one Control Area Exhaust Fan in service and one Control Area Exhaust Fan in AUTO.

GK001

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Control Area Ventilation System**TASK: **Manually Isolate the Control Room Emergency Filter System**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-SO.GK-0001.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.3.1 then 5.3.5. Examiner Note: The system was placed in Isolate Recirc Mode IAW HC.OP-AB.HVAC-0002. The SOP has not been marked up.			

GK001

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

T 100-0303

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Manually Isolate the Control Room Emergency Filter System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3	Manual Isolation	N/A			
NOTE	The system can be manually isolated 50 sec after a Process Inhibit Signal is generated by a LOP or LOCA. Isolation of Control Area Supply Unit should be for the running unit.	N/A			
5.3.1	ENSURE that all prerequisites have been satisfied IAW Section 2.3.	Operator reviews Prerequisites.			
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.	N/A			
5.3.5	IF Control Room Emergency Filter Unit operation is no longer required, RE-ESTABLISH normal Control Room Ventilation by performing the following steps: A. DISPATCH an operator to Local Panel 1EC485.	Examiner Note: Section 5.2.3 may be used in error. The Steps are identical to 5.3.5. Operator dispatches NEO to local panel 1EC485.			
CUE	Role-play as NEO sent to 1E-C485.	N/A			

GK001

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

T 106-0303

NAME: _____

DATE: _____

SYSTEM: **Control Area Ventilation System**

TASK: **Manually Isolate the Control Room Emergency Filter System**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	B. PRESS HD-9598A NORMAL AND HD-9598B NORMAL PB.	Operator presses CONTROL AREA SPLY/EXH HD9598A NORMAL pushbutton.	*		
		Operator presses CONTROL AREA SPLY/EXH HD9598B NORMAL pushbutton.			
	C. STOP A(B) Control Room Emergency Filter Unit A(B)V400 by pressing the STOP PB.	Operator presses the 'A' CREF Fan STOP pushbutton.	*		
		Operator observes the STOP light illuminates and the AV400 START light extinguishes.			

GK001

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

T -106-0302

NAME: _____
DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Manually Isolate the Control Room Emergency Filter System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	D. <u>IF</u> in RECIRC MODE, PLACE CONTROL ROOM EMER FILTER UNIT A <u>AND</u> B OP MODE Switch in OA MODE <u>AND INITIAL</u> Attachment 1.	Operator determines that the system is in RECIRC MODE.			
		Operator depresses the CONTROL ROOM EMER FILTER UNIT A OP MODE switch O.A. MODE push button. Examiner Note: Dampers will not reposition since the CREF fan is already out of service.	*		
		CONTROL ROOM EMER FILTER UNIT B OP MODE switch O.A. MODE push button and initials Attachment 1.			

GK001

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____
DATE: _____

SYSTEM: **Control Area Ventilation System**

TASK: **Manually Isolate the Control Room Emergency Filter System**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	E. INSTRUCT the operator to place HS-9599A <u>OR</u> HS-9599B for A(B)V402 Control Area Exhaust Fan to STOP <u>THEN</u> to the RUN position <u>AND INITIAL</u> Attachment 1. (1EC485)	Operator directs placing one CAE fan in RUN and initials Attachment 1.			
CUE	Role-play as NEO sent to 1E-C485, and support request for CAE fan manipulations using Remote Functions HV09 <u>AND</u> HV10.	N/A			
	F. INSTRUCT the operator to place the other A(B)V402 Control Area Exhaust Fan HS-9599A <u>OR</u> HS-9599B to STOP <u>THEN</u> to the AUTO position <u>AND INITIAL</u> Attachment 1. (1EC485)	Operator directs placing remaining CAE fan in AUTO and initials Attachment 1.			
CUE	Role-play as NEO sent to 1E-C485, and support request for CAE fan manipulations using Remote Functions HV09 <u>AND</u> HV10.	N/A			

GK001

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

T 106-9393

NAME: _____
DATE: _____

SYSTEM: **Control Area Ventilation System**

TASK: **Manually Isolate the Control Room Emergency Filter System**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	G. Following each run, INSPECT drain openings via port holes in doors. REPORT any water accumulation or signs of flow to SM/CRS. [CD-010E]	Operator directs inspecting drain openings via port holes in doors for signs of water accumulation or flow.			
CUE	Role-play as NEO sent to inspect drain openings via port holes in doors, and to report any water accumulation <u>OR</u> signs of flow to SM/CRS.	N/A			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: GK001

TASK: Manually Isolate the Control Room Emergency Filter System

TASK NUMBER: 4880060101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. A severe Marsh fire had been observed near the site. Local fire departments responded to the fire.
2. Smoke was observed to be entering the Main Control Room from the Control Room Ventilation System.
3. 'A' CREF was placed in service in accordance with HC.OP-AB.HVAC-0002, Control Room Environment.
4. The fire is out, and the smoke has dissipated.

INITIATING CUE:

You are the Plant Operator.

Restore the Control Area Ventilation System to normal operation with one Control Area Exhaust Fan in service and one Control Area Exhaust Fan in AUTO.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 100% power, MOL.
	ENSURE the 'A' Control Room Ventilation train is in service and the 'B' Train is in Stby..
	PRESS the HD-9598A ISOLATE pushbutton.
	PRESS the CONTROL RM EMER FILTER UNIT A RECIRC MODE pushbutton.
	ALLOW conditions to stabilize for 3 minutes (CAE fans trip)

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	ENSURE simulator is reset.

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
 SIMULATOR SETUP INSTRUCTIONS
 (OPTIONAL)

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	HV09 CAE Fan AV402					AS DIRECTED
	HV10 CAE Fan BV402					AS DIRECTED

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: GK001

Rev #	Date	Description	Validation Required?
04	8/15/07	<p>Revision 11 of HC.OP-SO.GK-0001 direction to initial Attachment 1 (IV of manipulations) in steps 5.3.5.D/E/F with NO change in action steps. JPM GK001 updated to reflect this. No change in actions, validation not required.</p> <p>Converted JPM GK001 to new JPM format. Since Critical JPM actions are now uniquely identified by the format, all statements identifying critical portion of action were redundant and deleted. This change is editorial, validation not required.</p> <p>Removed references to checking off/initialing steps in procedure. This is a generic work practice and adds unnecessary clutter to the Standard section. This change is editorial, validation not required.</p> <p>Added Caution text to Element section. This is for examiner reference only and has no associated student actions. This change is editorial, validation not required.</p> <p>Updated Estimated Completion Time based on actual performance data.</p>	N
05	8/26/08	Updated reference procedure revisions only. No changes to operator actions. No validation required.	N

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

TASK NUMBER: 2090030101

JPM NUMBER: 305H-JPM.BE005

REV #: 06

SAP BET: NOH05JPBE05E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner

DATE: 9/4/08

Instructor

REVIEWED BY: *Bill Fini*

DATE: 9-12-08

Operations Representative

APPROVED BY: *Pat Bal*

DATE: 9/16/08

Training Department

STATION: Hope Creek

JPM NUMBER: BE005

REV: 06

SYSTEM: Core Spray

TASK NUMBER: 2090030101

TASK: Manually Start the Core Spray System

ALTERNATE PATH:

K/A NUMBER: 209001 A4.01

IMPORTANCE FACTOR:	3.8	3.7
--------------------	-----	-----

APPLICABILITY:

EO RO STA SRO

RO	SRO
----	-----

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.ZZ-0001 Attachment 5 Rev. 16

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 13 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

TASK NUMBER: 2090030101

INITIAL CONDITIONS:

1. The plant has experienced a loss of all offsite power coincident with a small break LOCA.
2. A and C Emergency Diesel Generators have failed to start.
3. HPCI has just tripped
4. Reactor pressure is approximately 500 psig and lowering.
5. Reactor level is approximately -70 inches and lowering.

INITIATING CUE:

Restore reactor level to RPV Level 2 to Level 8 band with B Core Spray Loop. The simulator is in FREEZE until you are ready to begin.

JPM: BE005

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 06

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator obtains/locates procedure HC.OP-AB.ZZ-0001, Attachment 5.	Operator obtains the correct procedure.			
1.0	IF required, ARM THEN PRESS B MAN INIT PBs.	Operator determines that operation of the MAN INIT PBs is not necessary based on overhead annunciators B3-A1/A2/A3/A4, CORE SPRAY PUMP AUTO START are in alarm.			
2.0	ENSURE B Core Spray Pump is RUNNING.	Operator observes the B Core Spray Pump is not running.			
		Operator depresses the BP206 START push button.	*		
		Operator observes that B Core Spray Pump is running.			
3.0	IF Required, ARM THEN PRESS D MAN INIT PBs.	Operator determines that operation of the MAN INIT PBs is not necessary based on overhead annunciators B3-A1/A2/A3/A4, CORE SPRAY PUMP AUTO START are in alarm.			

JPM: BE005

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 06

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.0	ENSURE D Core Spray Pump is RUNNING.	Operator observes the D Core Spray Pump is not running.			
		Operator depresses the DP206 START push button.	*		
		Operator observes that D Core Spray Pump is running.			
5.0	ENSURE HV-F015B is CLOSED.	Operator observes that HV-F015B is CLOSED.			
6.0	<u>WHEN</u> REACTOR PRESSURE is < 461 psig, ENSURE HV-F005B is OPEN.	Operator observes Reactor Pressure.			
		Operator observes that HV-F005B did not open with Reactor pressure below 461 psig.			
		Operator depresses the HV-F005B OPEN pb.	*		
		Operator observes that HV-F005B opens.	#		
7.0	<u>WHEN</u> flow is > 775 gpm, ENSURE HV-F031B is CLOSED.	Operator observes Core Spray System B flow on FI-R601B to be >775 gpm.			
		Operator observes HV-F031B is closed.			

JPM: BE005

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 06

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p>WHEN operator informs you the task is complete, OR the JPM has been terminated for other reasons, THEN RECORD the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: BE005

TASK: Manually Start the Core Spray System

TASK NUMBER: 2090030101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant has experienced a loss of all offsite power coincident with a small break LOCA.
2. A and C Emergency Diesel Generators have failed to start.
3. HPCI has just tripped.
4. Reactor pressure is approximately 500 psig and lowering.
5. Reactor level is approximately -70 inches and lowering.

INITIATING CUE:

Restore reactor level to RPV Level 2 to Level 8 band with B Core Spray Loop. The simulator is in FREEZE until you are ready to begin.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	Insert below listed malfunctions.
	Take simulator out of freeze.
	Let vessel water level drop to approximately -70 inches.
	Reduce reactor pressure to approximately 500 psig.
	Freeze the simulator.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	COMPLETE Simulator Ready-for-Training/Examination Checklist.

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	EG12 Loss of all Offsite Power	---	---	None	---	---
	DG02A A Diesel Generator Failure To Start	---	---	None	---	---
	DG02C C Diesel Generator Failure To Start	---	---	None	---	---
	RR31A1 Recirc Loop small leak	---	---	None	---	10
	RR31A2 Recirc Loop large break	---	---	None	---	0
	MS01 Steam line break in the drywell	---	---	None	---	3
	CS03B Core Spray HV-F005B fails to auto open	---	---	None	---	---
	CS04B Core Spray pump fails to auto start	---	---	None	---	---
	CS04D Core Spray Pump Fails To Auto Start	---	---	None	---	---

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: BE005

Rev #	Date	Description	Validation Required?
06	9/4/2008	<p>This revision converts to HC LOR format, documents validation, and generates estimated completion time. Since Critical JPM actions are now uniquely identified by the format, all statements identifying critical portion of action were redundant and deleted.</p> <p>Revised Initiating Cue. Adds to cue "HPCI has just tripped".</p> <p>Adds HP03 malf to trip HPCI.</p> <p>Adds Malf RR31A2 Recirc Large break to assist setup.</p> <p>Adds Malf MS01 Steam line break in drywell to assist setup.</p>	Y

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Main Steam

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

TASK NUMBER: 2390020101

JPM NUMBER: 305H-JPM.AB006

REV #: 00

SAP BET: NOH05JPAB06E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner

DATE: 12/6/08

Instructor

REVIEWED BY:

DATE: 12/11/08

Operations Representative

APPROVED BY:

DATE: 12/11/08

Training Department

STATION: Hope Creek

JPM NUMBER: AB006

REV: 00

SYSTEM: Main Steam

TASK NUMBER: 2390020101

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

ALTERNATE PATH:

K/A NUMBER: 239001 A4.01

IMPORTANCE FACTOR: 4.2 4.0

APPLICABILITY:

RO

SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-EO.ZZ-0301, Rev. 6

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 18 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Main Steam**TASK:** Open The MSIVs With The Reactor Pressurized (>200 psig)**TASK NUMBER:** 2390020101**INITIAL CONDITIONS:**

1. The Reactor is at 5% power following a full core ATWS.
2. The Main Turbine is tripped.
3. The Main Condenser is available.
4. HC.OP-EO.ZZ-0101A, ATWS - RPV Control, is being executed.
5. HC.OP-EO.ZZ-0311, Bypassing Primary Containment Instrument Gas Interlocks, and HC.OP-EO.ZZ-0319, Restoring Instrument Air in an Emergency, have been completed.
6. There is no indication of fuel cladding failure or main steam line break.
7. HC.OP-EO.ZZ-0301 is being implemented.

INITIATING CUE:

Re-open the inboard MSIVs IAW HC.OP-EO.ZZ-0301, Bypassing MSIV Interlocks with MSIVs Closed. HC.OP-EO.ZZ-0301 has been completed up to and including step 5.1.9.D.

JPM: AB006

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Main Steam

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.				
	Operator determines beginning step of the procedure.	Operator determines the correct beginning step to be 5.1.10.			
5.1.10	ENSURE the following valves are CLOSED:				
5.1.10. A	HV-F021 STARTUP DRAIN VLV	Operator observes HV-F021 green close light illuminated and red open light extinguished.			
5.1.10. B	HV-F071 DRN HDR ISLN	Operator presses HV-F071 CLOSE PB.	*		

JPM: AB006

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Main Steam

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes HV-F071 green close light illuminates and red open light extinguishes.			
5.1.10. C	HV-F033 DRN HDR OPR DRN VLV	Operator presses HV-F033 CLOSE PB.	*		
		Operator observes HV-F033 green close light illuminates and red open light extinguishes.			
5.1.11.	RAISE the turbine pressure setpoint above reactor pressure as follows at MCP 10C651:				
5.1.11. A	SELECT Control , Pressure Control	Operator uses the DEHC HMI touchscreen display to select Control , then Pressure Control	*		
5.1.11. B	SELECT Throttle Pressure Set - Setpoint AND ENTER a pressure setpoint above reactor pressure.	Operator selects Throttle Pressure Set - Setpoint	*		
		Operator enters a value higher than current RPV pressure and presses OK. Examiner Note: Any value above the current RPV pressure is acceptable. The upper limit DEHC will accept is 1050 psig.	*		

JPM: AB006

Rev: 00

SYSTEM: Main Steam

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.12	OPEN HV-F019 //CNTMT INBD STM LINE DRAIN HDR ISLN OUTBOARD VALVE//.	Operator presses HV-F019 OPEN PB.	*		
		Operator observes HV-F019 red open light illuminates and green close light extinguishes.			
5.1.13	OPEN HV-F016 //CNTMT INBD STM LINE DRAIN HDR ISLN INBOARD VALVE//.	Operator presses HV-F016 OPEN PB.	*		
		Operator observes HV-F016 red open light illuminates and green close light extinguishes.			
5.1.14	THROTTLE OPEN HV-F020 MAIN STM LINE EQUALIZER HEADER DRAIN SHUTOFF to begin pressurizing the main steam piping downstream of the inboard MSIV's.	Operator presses HV-F020 UP ARROW PB.	*		
		Operator observes HV-F020 red open light illuminates and green close remains lit.			

JPM: AB006

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Main Steam

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.15.	WHEN WIDE RANGE PR-1002A (Panel 10C650C) MAIN STEAM PRESSURE, wide range, is within 200 psig of PI-R605 REACTOR PRESSURE, OPEN the following MSIV's by PLACING their respective control switches to OPEN:				
		Operator observes pressure on PR-1002A is within 200 psig of PI-R605.			
5.1.15. A	HV-F022A INBD MSIV A	Operator turns handswitch for HV-F022A INBD MSIV A to OPEN position.	*		
		Operator observes HV-F022A INBD MSIV A red open light illuminates and green closed light extinguishes.			
5.1.15. B	HV-F022B INBD MSIV B	Operator turns handswitch for HV-F022B INBD MSIV B to OPEN position.	*		
		Operator observes HV-F022B INBD MSIV B red open light illuminates and green closed light extinguishes.			
5.1.15. C	HV-F022C INBD MSIV C	Operator turns handswitch for HV-F022C INBD MSIV B to OPEN position.	*		
		Operator observes HV-F022C INBD MSIV C red open light illuminates and green closed light extinguishes.			

JPM: AB006

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Main Steam

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.15. D	HV-F022D INBD MSIV D	Operator turns handswitch for HV-F022D INBD MSIV D to OPEN position.	*		
CUE	WHEN F022D Handswitch is placed to open, THEN DELETE Overrides: 3S38 A 3DS31 B 3DS31 A				
		Operator observes HV-F022D INBD MSIV D red open light illuminates and green closed light extinguishes.			
5.1.16	WHEN the inboard MSIV's are OPEN, CLOSE the following valves:				
5.1.16. A	HV-F020 MAIN STM LINE EQUALIZER HEADER DRAIN SHUTOFF.	Operator presses HV-F020 CLOSE PB.			
		Operator observes HV-F020 green close light illuminates and red open light extinguishes.			
5.1.16. B	HV-F019 //CNTMT INBD STM LINE DRAIN HDR ISLN OUTBOARD VALVE//.	Operator presses HV-F019 CLOSE PB.			

JPM: AB006

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Main Steam

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes HV-F019 green close light illuminates and red open light extinguishes.			
5.1.16. C	HV-F016 //CNTMT INBD STM LINE DRAIN HDR ISLN INBOARD VALVE//.	Operator presses HV-F016 CLOSE PB.			
		Operator observes HV-F016 green close light illuminates and red open light extinguishes.			
5.1.17	CONTROL reactor pressure IAW HC.OP-EO.ZZ-0101A(Q).				
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: AB006

TASK: Open The MSIVs With The Reactor Pressurized (>200 psig)

TASK NUMBER: 2390020101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The Reactor is at 5% power following a full core ATWS.
2. The Main Turbine is tripped.
3. The Main Condenser is available.
4. HC.OP-EO.ZZ-0101A, ATWS - RPV Control, is being executed.
5. HC.OP-EO.ZZ-0311, Bypassing Primary Containment Instrument Gas Interlocks, and HC.OP-EO.ZZ-0319, Restoring Instrument Air in an Emergency, have been completed.
6. There is no indication of fuel cladding failure or main steam line break.
7. HC.OP-EO.ZZ-0301 is being implemented.

INITIATING CUE:

Re-open the inboard MSIVs IAW HC.OP-EO.ZZ-0301, Bypassing MSIV Interlocks with MSIVs Closed. HC.OP-EO.ZZ-0301 has been completed up to and including step 5.1.9.D.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 97 power, MOL.
	MS04 AB HV-F020 change status to UNTAGGED and remove bezel cover.
	MS05 AB HV-F021 change status to UNTAGGED and remove bezel cover.
	LOCK the reactor Mode Switch in Shutdown
	TAKE actions of HC.OP-AB.ZZ-0001 Attachment 1
	INITIATE SLC.
	TRIP the Main Turbine.
	CONTROL RPV level with HPCI and RCIC above -129 inches.
	INSERT MALF MS-15 SPURIOUS GROUP I ISOLATION (MSIV CLOSURE)
	DELETE MALF MS-15
	REMOVE bezel covers from AB-HV-F020 and F021.
	PERFORM HC.OP-EO.ZZ-0301 up to step 5.1.9.D.
	PLACE the simulator into Freeze.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	<i>Description</i>
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".
	ENSURE copies of HC.OP-EO.ZZ-0301 are available and marked up to and including step 5.1.9.D. for pre-briefing JPM.
	ENSURE an extra instructor is available to control RPV level using HPCI and acknowledge unrelated alarms. Approx 90 seconds after coming out of freeze, reduce HPCI AUTO flow setpoint to 1200 gpm.

JOB PERFORMANCE MEASURE
 SIMULATOR SETUP INSTRUCTIONS
 (OPTIONAL)

EVENT TRIGGERS:		
<i>Initial</i>	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RP06 Half Core ATWS – Left Side	1 sec.	---	None	---	---
	EG11 Main Generator Trip	---	---	ET-1	---	---
	TC01-10 All TBV failed closed.	---	---	None	---	---
	SL01A SBLC Injection pump AP208 failure	28 sec.	---	None	---	---
	SL01B SBLC Injection Pump BP208 failure	28 sec.	---	None	---	---
		---	---	---	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	EP02 EOP-311 Bypass PCIG (-129") isolation	---	---	None	---	BYPASS
	EP05 EOP-319 LOCA Level 2 interlock	---	---	None	---	EMERG
	EP35 EOP-322 HV-F006 HPCI to CS	---	---	None	---	FAIL CLOSE
	EP01 EOP-301 Bypass MSIV (-129") isolation	---	---	None	---	BYPASS
	MS04 AB HV-F020	---	---	None	---	UNTAGG ED
	MS05 AB HV-F021	---	---	None	---	UNTAGG ED

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	3S38 A HV-F022D CLOSE SWITCH	---	---	None	---	OFF
	3DS31 B HV-F022D CLOSED-INBD MSIV D	---	---	None	---	ON
	3DS31 A HV-F022D OPEN-INBD MSIV D	---	---	None	---	OFF

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: AB006

Rev #	Date	Description	Validation Required?
00	11/10/2008	New JPM.	Y
01	12/5/2008	Completed validation with C shift crew members. Validation average time 18 minutes. Added SBLC pump trips to stabilize RPV pressure for JPM per validation comments.	N

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Residual Heat Removal

TASK: Place B RHR Loop In Suppression Pool Cooling From
The Remote Shutdown Panel (RSP)

TASK NUMBER: 5000110501

JPM NUMBER: 305H-JPM.BC009

REV #: 09

SAP BET: NOH05JPBC09E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

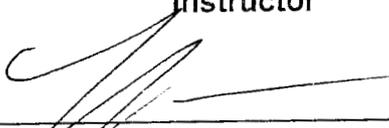
STA

SRO

DEVELOPED BY: Archie E. Faulkner

DATE: 8/25/08

Instructor

REVIEWED BY: 

DATE: 8-29-08

Operations Representative

APPROVED BY: 

DATE: 9/17/08

Training Department

STATION: Hope Creek

JPM NUMBER: BC009

REV: 09

SYSTEM: Residual Heat Removal

TASK NUMBER: 5000110501

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

ALTERNATE PATH:

K/A NUMBER: 295016 AA2.04

IMPORTANCE FACTOR: 3.9 4.1

APPLICABILITY:

RO SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.HVAC-0002 Rev 5
 HC.OP-IO.ZZ-0008 Rev 28

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 10 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

TASK NUMBER: 5000110501

INITIAL CONDITIONS:

1. The control room has been abandoned due to dense smoke.
2. HC.OP-AB.HVAC-0002, Control Room Environment, has been implemented.
3. The Reactor has been scrammed, all rods are full in.
4. The Turbine is tripped.
5. The MSIVs are closed.
6. Control of the plant has been established at the RSP IAW HC.OP-AB.HVAC-0002 AND Section 5.1 of HC.OP-IO.ZZ-0008, Shutdown from Outside Control room.
7. RCIC has been initiated IAW HC.OP-AB.HVAC-0002 AND Section 5.2 of HC.OP-IO.ZZ-0008.

INITIATING CUE:

You are an Extra NCO.

Place 'B' RHR in Suppression Pool Cooling from the RSP.

You are responsible ONLY for 'B' RHR.

JPM: BC009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 09

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-IO.ZZ-0008.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.8.1.			

JPM: BC009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 09

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	If at any time a situation develops whereby HV-F024A(B) an/or HV-F027A(B) are open and the associated RHR pump is not in operation, a potential system drain down will occur. A subsequent start of the RHR pump will cause water hammer. To preclude this occurrence, ensure both valves are closed and perform a system fill and vent prior to starting the RHR pump.	N/A			
5.8.1	<p>IF necessary, THEN PLACE the B RHR loop in the Suppression Pool Cooling mode as follows: [CD-987X, CD-370X]</p> <p>A. ENSURE EG-HV-2512B RHR HX SACS RTN ISLN MOV is OPEN. PB must be held depressed to open.</p>	Operator presses AND holds the HV2512B INCR OPEN pushbutton until the green CLOSE DECR light extinguishes.	*		
	B. ENSURE HV-F004B RHR PMP B SUPP POOL SUCT MOV is OPEN.	Operator observes the red HVF004B OPEN indicator is illuminated and green CLSD indicator is extinguished.			
	C. ENSURE HV-F007B RHR PMP B MIN FLOW MOV is OPEN.	Operator observes the red HVF007B OPEN indicator is illuminated and green CLSD indicator is extinguished.			

JPM: BC009

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

Rev: 09

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	D. START BP202 RHR PUMP.	Operator presses the BP202 START pushbutton.	* #		
		Operator observes the red RUNNING indicator illuminates and the green STOPPED indicator extinguishes.			
NOTE	The following two steps should be performed concurrently.	N/A			
	E. THROTTLE OPEN HV-F024B RHR LOOP B TEST RET MOV UNTIL FI-4435 RHR HEAT EXCHANGER FLOW indicates ≈ 10,000 gpm.	Operator presses HVF024B INCR pushbutton while observing FI-4435. When FI-4435 indicates ≈ 10,000 gpm, the operator releases the INCR Pb.	* #		
		Operator observes the red HVF024B OPEN indicator illuminates.			
	F. WHEN FI-4435 RHR HEAT EXCHANGER FLOW indicates > 1400 gpm, THEN CLOSE HV-F007B RHR PMP B MIN FLOW MOV.	When FI-4435 indicates > 1400 gpm, the Operator presses the HVF007B CLOSE pushbutton and observes the green CLSD indicator illuminates and the red OPEN indicator extinguishes.			

JPM: BC009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 09

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	G. ENSURE HV-F047B RHR HX INLET VALVE AND HV-F003B B RHR HX OUTLET MOV are OPEN AND CLOSE HV-F048B RHR HX B SHELL SIDE BYPASS VLV.	Operator observes the HVF047B and HVF003B red OPEN indicators are illuminated and green CLSD indicators are extinguished.			
		Operator presses and holds the HVF048B DECR Pb until the green CLSD indicator illuminates AND the red OPEN indicator extinguishes.	*		
	H. THROTTLE HV-F024B RHR LOOP B TEST RET MOV AS necessary to re-establish loop flow of approx. 10,000 gpm on FI-4435.	Operator presses HVF024B INCR and/or DECR pushbuttons as necessary until FI-4435 flow indicates 9,000 – 11,000 gpm.	*		
	I. OBSERVE TR-3647J(M)-SUPPRESSION CHAMBER WATER TEMP.	Operator observes Suppression Chamber Water Temperature on TR-3647J and/or M.			

JPM: BC009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 09

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: BC009

TASK: Place B RHR Loop In Suppression Pool Cooling From The Remote Shutdown Panel (RSP)

TASK NUMBER: 5000110501

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The control room has been abandoned due to dense smoke.
2. HC.OP-AB.HVAC-0002, Control Room Environment, has been implemented.
3. The Reactor has been scrammed, all rods are full in.
4. The Turbine is tripped.
5. The MSIVs are closed.
6. Control of the plant has been established at the RSP IAW HC.OP-AB.HVAC-0002 AND Section 5.1 of HC.OP-IO.ZZ-0008, Shutdown from Outside Control room.
7. RCIC has been initiated IAW HC.OP-AB.HVAC-0002 AND Section 5.2 of HC.OP-IO.ZZ-0008.

INITIATING CUE:

You are an Extra NCO.

Place 'B' RHR in Suppression Pool Cooling from the RSP.

You are responsible ONLY for 'B' RHR.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	Description
_____	INITIALIZE the simulator to 100% power, MOL.
_____	ENSURE the 'B' SSW pump is in service.
_____	ENSURE the 'B' SACS pump is in service.
_____	EVACUATE the Control Room IAW AB.HVAC-0002.
_____	ESTABLISH RPV level at between 0 and -20" inches.
_____	IMPLEMENT HC.OP-IO.ZZ-0008 up to the point of placing 'B' RHR in service.
_____	INSERT Malfunction HP01 to prevent HPCI from injecting.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
_____	ANNOTATE a copy of HC.OP-IO.ZZ-0008 up to the point of placing 'B' RHR in service.
_____	TOGGLE Control Room Horns to OFF .
_____	ENSURE RSP Chart Recorders are ON.
_____	ENSURE simulator reset.

EVENT TRIGGERS:

Initial	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
 SIMULATOR SETUP INSTRUCTIONS
 (OPTIONAL)

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	HP01 HPCI Auto Initiation Failure	---	---	NONE	---	--

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
				NONE		

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: BC009

Rev #	Date	Description	Validation Required?
08	7/23/07	DCP on EG-HV-2512 has valve no longer full open. Had to add an Operator action to fully open the valve in 5.8.1.A.	Y
09	8/25/08	Updated procedure revision numbers. Editorial changes only.	N

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

TASK NUMBER: 4000760401

JPM NUMBER: 305H-JPM.SM002

REV #: 00

SAP BET: NOH05JPSM02E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner

DATE: 12/5/08

Instructor

REVIEWED BY:

DATE: 12/11/08

Operations Representative

APPROVED BY:

DATE: 12/11/08

Training Department

STATION: Hope Creek

JPM NUMBER: SM002

REV: 00

SYSTEM: Primary Containment

TASK NUMBER: 4000760401

TASK: Respond To A Containment Isolation

ALTERNATE PATH:

K/A NUMBER: 223002A3.02

IMPORTANCE FACTOR: 3.5 3.5

APPLICABILITY:

RO SRO

EO RO STA SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB-CONT-0002 Rev. 7

HC.OP-SO.SM-0001 Rev. 17

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 9 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: _____ Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: _____ Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

TASK NUMBER: 4000760401

INITIAL CONDITIONS:

1. Hope Creek is recovering from a Scram due to loss of all RFP's at 97% power.
2. RPV level dropped to -90" before recovering with HPCI and RCIC.
3. EOP-101 and EOP-102 are being implemented.

INITIATING CUE:

Ensure all required NSSSS and PCIS isolations have occurred IAW HC.OP-AB.CONT-0002 Attachments 1 and 2.

JPM: SM002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator obtains procedure HC.OP-AB.CONT-0002 or Attachment 1 and 2 Hardcard.	Operator obtains the correct procedure.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be Attachment 1.			
	OBSERVE the Valves listed in Attachment 1 have closed under the -38" Automatic Isolation Signal.				
	<ul style="list-style-type: none"> PCIG MINOR KL-HV-5155, 5154, 5156A, 5156B, SE-HV-5161 	Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.			
	<ul style="list-style-type: none"> TIPS SE-SVJ004A1-5 	Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.			

JPM: SM002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<ul style="list-style-type: none"> • TWCU EE-HV-4652, 4679, 4680, 4681 	Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.			
	<ul style="list-style-type: none"> • DW SUMPS HB-HV-F019, F020, F003, F004 	Operator observes the HB-HV-F019 DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV has failed to isolate and informs the CRS.			
CUE	<p>IF the operator requests permission to close the valves, THEN re-read the initiating cue:</p> <p>Ensure all required NSSSS and PCIS isolations have occurred IAW HC.OP-AB.CONT-0002 Attachments 1 and 2.</p>				
	<p>Immediate Operator Action Primary Containment Isolation Valve FAILS to automatically ISOLATE. PERFORM EITHER of the following:</p> <ul style="list-style-type: none"> • CLOSE a redundant isolation valve • CLOSE the valve manually. 	Operator PRESSES CLOSE PB for HB-HV-F019 DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV.	*		

JPM: SM002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes the HB-HV-F019 DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV red OPEN light extinguishes and green CLSD light illuminates.			
	Immediate Operator Action Primary Containment Isolation Valve FAILS to automatically ISOLATE. PERFORM EITHER of the following: <ul style="list-style-type: none">● CLOSE a redundant isolation valve● CLOSE the valve manually.	Operator observes the HB-HV-F020 DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV has failed to isolate and informs the CRS.			
		Operator PRESSES CLOSE PB for HB-HV-F020 DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV.	*		
		Operator observes the HB-HV-F020 DRYWELL EQPT DRAIN SUMP AT267 ISLN VLV red OPEN light extinguishes and green CLSD light illuminates.			
	<ul style="list-style-type: none">● HB-HV-F003 DRYWELL FLOOR DRAIN SUMP BT267 ISLN VLV	Operator observes the HB-HV-F003 DRYWELL FLOOR DRAIN SUMP BT267 ISLN VLV has closed.			
	<ul style="list-style-type: none">● HB-HV-F004 DRYWELL FLOOR DRAIN SUMP BT267 ISLN VLV	Operator observes the HB-HV-F004 DRYWELL FLOOR DRAIN SUMP BT267 ISLN VLV has closed.			

JPM: SM002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<ul style="list-style-type: none"> • PRIMARY CONTAINMENT MIMIC GS-HV-4950, 4952, 4951, 4963, 4962, 4964, KL-HV-5172A, GS-HV-5057A, 5055A, 5052A, 5050A, 5053A, 5054A, 5022A GS-HV-4966A, 4965A, 4959A, 4983A, 4955A, 4984A, 5019A SK-HV-5018, 4953, 4957, 4981, GS-HV-4979, 4980, 4956, 4958, KL-HV-5172B GS-HV-4978, 5055B, 5057B, 5050B, 5052B, 5054B, 5053B GS-HV-5035, 4966B, 5022B, 4959B, 4965B, 4955B, 4983B GS-HV-5019B, 4984B, 4974 	<p>Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.</p>			

JPM: SM002

Rev: 00

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<ul style="list-style-type: none"> • RBVS SUPPLY/EXH GU-HD-9370A, 9370B GR-HD-9414A, 9414B 	Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.			
	<ul style="list-style-type: none"> • DW PURGE SUP/EXH GT-HD-9372A, 9372C 	Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.			
	<ul style="list-style-type: none"> • RECIRC SAMPLE BB-SV-4310, 4311 	Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.			
	<ul style="list-style-type: none"> • RWCU BG-HV-F001, F004 	Operator verifies that ALL of the listed valves/equipment in this group have responded correctly to the initiating event.			

JPM: SM002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Primary Containment

TASK: Respond To A Containment Isolation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: SM002

TASK: Respond To A Containment Isolation

TASK NUMBER: 4000760401

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. Hope Creek is recovering from a Scram due to loss of all RFP's at 97% power.
2. RPV level dropped to -90" before recovering with HPCI and RCIC.
3. EOP-101 and EOP-102 are being implemented.

INITIATING CUE:

Ensure all required NSSSS and PCIS isolations have occurred IAW HC.OP-AB.CONT-0002 Attachments 1 and 2.

JOB PERFORMANCE MEASURE
 SIMULATOR SETUP INSTRUCTIONS
 (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 97% power.
	TRIP all three RFPTs.
	CONTROL HPCI/RCIC such that RPV level recovers to the normal band.
	IMPLEMENT EOP-101/102 for the transient.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	CHECK light bulbs for -38" RPV level Isolation Valves INCLUDING all TIP drawers.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist"

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: et_array(1) COMMAND: irf et023 normal PURPOSE:
	2	EVENT ACTION: et_array(2) COMMAND: irf et024 normal PURPOSE:
		EVENT ACTION: COMMAND: PURPOSE:
		EVENT ACTION: COMMAND: PURPOSE:
		EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	FW26A Feedwater Pump Turbine AS105 Trip	---	---	None	---	---
	FW26B Feedwater Pump Turbine BS105 Trip	---	---	None	---	---
	FW26C Feedwater Pump Turbine CS105 Trip	---	---	None	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	ET023 GROUP 9B HV-F019 DW Eqp Sump Isol	---	---	None	---	FAIL AS IS
	ET024 GROUP 9B HV-F020 DW Eqp Sump Isol	---	---	None	---	FAIL AS IS

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: SM002

Rev #	Date	Description	Validation Required?
00	9/6/08	New JPM.	Y
00	12/5/08	Validated with 2 ROs from C Shift. Avg validation time 9 minutes added to page 2	N

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Emergency Diesel Generator

TASK: Perform Non-Emergency Operation of the Diesel Generators

TASK NUMBER: 2640030101

JPM NUMBER: 305H-JPM.KJ008

REV #: 01

SAP BET: NOH05JPKJ08E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

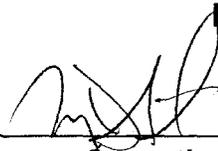
STA

SRO

DEVELOPED BY: Archie E. Faulkner

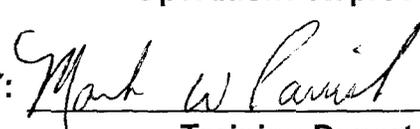
DATE: 12/7/08

Instructor

REVIEWED BY: 

DATE: 12/11/08

Operations Representative

APPROVED BY: 

DATE: 12/11/08

Training Department

STATION: Hope Creek

JPM NUMBER: KJ008

REV: 01

SYSTEM: Emergency Diesel Generator

TASK NUMBER: 2640030101

TASK: Perform Non-Emergency Operation of the Diesel Generators

ALTERNATE PATH:

K/A NUMBER: 264000A4.04

IMPORTANCE FACTOR: 3.7 3.7

APPLICABILITY:

RO

SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.KJ-0001 Rev 46; HC.OP-SO.PB-0001 Rev 24

TOOLS, EQUIPMENT AND PROCEDURES: HC.OP-SO.PB-0001 Rev 24

ESTIMATED COMPLETION TIME: 14 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Emergency Diesel Generator

TASK: Perform Non-Emergency Operation of the Diesel Generators

TASK NUMBER: 2640030101

INITIAL CONDITIONS:

1. 10A401 bus had been shifted to the Alternate breaker 40101 in preparation for work on the NORMAL breaker 40108.
2. The improper tagout of the 40108 breaker caused the AG400 EDG to start and load onto the 10A401 bus.
3. All components have been restored to their normal condition.
4. Station Service Transformers 1AX501 and 1BX501 are in service to supply power to class 1E 4.16Kv Busses.
5. Preparations are in progress to shutdown EDG A in accordance with HC.OP-SO.KJ-0001, Section 5.7.
6. HC.OP-SO.PB-0001 is complete through step 5.7.4.

INITIATING CUE:

Shift the breaker alignment on the 10A401 bus from the Diesel Generator Breaker to the ALTERNATE Supply Breaker (40101) in accordance with HC.OP-SO.PB-0001, Step 5.7.5.

JPM: KJ008

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Emergency Diesel Generator**

TASK: **Perform Non-Emergency Operation of the Diesel Generators**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator obtains/locates procedure HC.OP-SO.PB-0001.	Operator locates the proper procedure.			
	Operator reviews Precautions and Limitations.				
CUE	If excessive time is taken reviewing Precautions and Limitations, inform operator that all are satisfied.				
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.7.5, but may review 5.7.1-4.			
5.7.1	ENSURE that the prerequisites of Section 2.7 have been satisfied.	Operator reviews Prerequisites and initials each Prerequisite in the space provided in the procedure.			

JPM: KJ008

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Emergency Diesel Generator**

TASK: **Perform Non-Emergency Operation of the Diesel Generators**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE:	If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.	The operator then initials the appropriate procedure step.			
5.7.5	SHIFT breaker alignment on the desired Class 1E 4160V Busses (listed in Table PB-002, Section 5.4) from the Diesel Generator Breaker to the Normal (Alternate) FEED BRKR as follows:				
5.7.5. A	PRESS DIESEL ENG GOV INCR push-button AND INCREASE Generator frequency to 61 Hz.	Operator presses the DIESEL ENG GOV INCR push-button.	*		
		Operator observes engine frequency rise to 61 Hz on FI-6393A.			
5.7.5. B	PRESS DIESEL ENG GOV DROOP MODE push-button AND ENSURE that the DROOP MODE light for EDG, is illuminated.	Operator depresses the DIESEL ENG GOV DROOP MODE push-button.	*		
		Operator observes the DROOP MODE light is illuminated.			

JPM: KJ008

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Emergency Diesel Generator**

TASK: **Perform Non-Emergency Operation of the Diesel Generators**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.7.5. C	IF required, ADJUST EDG frequency to 60 Hz by pressing the DIESEL ENG GOV INCR OR DECR push-buttons as applicable.	Operator adjusts frequency to 60 Hz by pressing the DIESEL ENG GOV INCR OR DECR push-buttons			
		Operator observes frequency at approximately 60 Hz on FI-6393A.			
5.7.5. D	PLACE the Normal (Alternate) FEED BRKR-SYNC KEYLOCK Switch in the ON position.	Operator places the Alternate FEED (40101) BRKR-SYNC KEYLOCK Switch in the ON position.	*		
		Operator observes the Alternate FEED (40101) BRKR-SYNC KEYLOCK Switch in the ON position.			
		Operator observes the Sync Scope rotating.			
5.7.5. E	ENSURE the DROOP MODE light for the Diesel <u>AND</u> the SYNC indicator lights are ON.	Operator observes the DROOP MODE light for the Diesel is ON.			
		Operator observes the SYNC indicator lights are ON while the sync scope is off 12 O'clock position.			

JPM: KJ008

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Emergency Diesel Generator**

TASK: **Perform Non-Emergency Operation of the Diesel Generators**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.7.5. F	ENSURE that the Normal <u>AND</u> Alternate Feeder Breaker AUTO CLOSE BLOCK PB backlights are OFF.	Operator presses the Normal (40108) AUTO CLOSE BLOCK PB, and ensures that the Normal and Alternate Feeder Breaker AUTO CLOSE BLOCK PB backlights are OFF.	*		
		Operator observes that the Normal and Alternate Feeder Breaker AUTO CLOSE BLOCK PB backlights are OFF.			
5.7.5. G	PERFORM the following to synchronize across <u>AND CLOSE</u> the Normal (Alternate) FEED BRKR:				
5.7.5. G.1.	<u>IF</u> necessary, ADJUST the Running Voltage using the GEN VR RAISE <u>OR</u> LOWER PBs, to match Diesel Generator Running Voltage <u>WITH</u> Bus Incoming Voltage.	Operator ensures the Diesel Generator Running Voltage and Bus Incoming Voltage are matched on VI-6411A and VI-6412A. (Adjustment using the GEN VR RAISE <u>OR</u> LOWER PBs may be required. Should be within half an increment.)			

JPM: KJ008

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Emergency Diesel Generator**

TASK: **Perform Non-Emergency Operation of the Diesel Generators**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.7.5. G.2.	ADJUST DG Speed <u>UNTIL</u> the SYNCHROSCOPE pointer is moving slowly in the SLOW (counter clockwise) direction by pressing the DIESEL ENG INCR <u>OR</u> DECR PB.	Operator presses the DIESEL ENG INCR or DECR PB.			
		Operator observes the synchroscope pointer rotating in the SLOW direction.			
5.7.5. G.3.	<u>WHEN</u> synchroscope pointer is at 3 minutes past 12 O'clock (<u>before</u> pointer reaches 12 O'clock in its direction of travel), THEN CLOSE the Normal (Alternate) FEED BRKR.	When synchroscope pointer is approximately 3 minutes past 12 O'clock, the operator closes the Alternate FEED BRKR (40101) by pressing the 40101 CLOSE PB.	*		
		Operator observes the Alternate FEED BRKR (40101) CLOSE light illuminates and the green TRIP light extinguishes.			
5.7.5. H	PRESS the AUTO CLOSE BLOCK PB for the Normal(Alternate) Feed Breaker AND VERIFY that the AUTO CLOSE BLOCK PB is illuminated. [CD-056H]	Operator presses the AUTO CLOSE BLOCK PB for 40101.	*		
		Operator observes that the AUTO CLOSE BLOCK PB is illuminated.			

JPM: KJ008

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Emergency Diesel Generator

TASK: Perform Non-Emergency Operation of the Diesel Generators

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.7.5.I	PLACE the Normal (Alternate) FEED BRKR -SYNC KEYLOCK Switch in the OFF position.	Operator places the Alternate FEED BRKR-SYNC KEYLOCK Switch in the OFF position.	*		
		Operator observes that the synchroscope de-energizes.			
5.7.5.J	As directed by the CRS, UNLOAD AND STOP the Diesel Generator IAW HC.OP-SO.KJ-0001(Q).	Operator informs the CRS of the status of the EDG.			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: KJ008

TASK: Perform Non-Emergency Operation of the Diesel Generators

TASK NUMBER: 2640030101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. 10A401 bus had been shifted to the Alternate breaker 40101 in preparation for work on the NORMAL breaker 40108.
2. The improper tagout of the 40108 breaker caused the AG400 EDG to start and load onto the 10A401 bus.
3. All components have been restored to their normal condition.
4. Station Service Transformers 1AX501 and 1BX501 are in service to supply power to class 1E 4.16Kv Busses.
5. Preparations are in progress to shutdown EDG A in accordance with HC.OP-SO.KJ-0001, Section 5.7.
6. HC.OP-SO.PB-0001 is complete through step 5.7.4.

INITIATING CUE:

Shift the breaker alignment on the 10A401 bus from the Diesel Generator Breaker to the ALTERNATE Supply Breaker (40101) in accordance with HC.OP-SO.PB-0001, Step 5.7.5.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to rated power, MOL.
	TRANSFER 10A401 to the ALTERNATE FEED BRKR.
	START , parallel, and load EDG A.
	ENSURE Isochronous light is ON.
	OPEN breaker 40108.
	ACKNOWLEDGE overhead and local alarms.
	ADJUST generator voltage for bus voltage ~4300 volts.
	ADJUST bus frequency to 60 Hertz.
	SWAP busses 10A402, 403, and 404 to Alternate infeeds.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	MARKUP HC.OP-SO.PB-0001 through step 5.7.4. including Attachment 1.
	ENSURE copies are available for pre-brief if desired.

JOB PERFORMANCE MEASURE
 SIMULATOR SETUP INSTRUCTIONS
 (OPTIONAL)

EVENT TRIGGERS:		
<i>Initial</i>	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
 SIMULATOR SETUP INSTRUCTIONS
 (OPTIONAL)

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: KJ008

Rev #	Date	Description	Validation Required?
01	11/10/2008	This revision converts to HC LOR format, documents validation, and generates estimated completion time. Since Critical JPM actions are now uniquely identified by the format, all statements identifying critical portion of action were redundant and deleted. Updated Reference procedure revision numbers.	Y
01	12/11/2008	Validated with 2 ROs from B Shift. Average completion time is 14 minutes. Incorporated recommendation to swap other bus infeed breaker to alternate to prevent 3/1 lineup complications.	N

STATION: Hope Creek
 JPM NUMBER: ED002 REV: 01
 SYSTEM: Reactor Auxiliaries Cooling System
 TASK NUMBER: 4000230401
 TASK: Respond To A Reactor Auxiliary Cooling Malfunction

ALTERNATE PATH: K/A NUMBER: 295018 AA2.02
 IMPORTANCE FACTOR: 3.3 3.4
 APPLICABILITY: RO SRO
 EO RO STA SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.ED-0001 Rev 22
 HC.OP-AR.ZZ-0002 Rev 17
 HC.OP-AB.COOL-0003 Rev 3

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 13 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____ GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ DATE: _____

NAME: _____

DATE: _____

SYSTEM: Reactor Auxiliaries Cooling System

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

TASK NUMBER: 4000230401

INITIAL CONDITIONS:

1. The RACS System is in service with the AP209 and CP209 RACS pumps running.
2. AP209 RACS pump is scheduled for an oil change.
3. The Reactor Building EO has been briefed and is stationed at the BP209 RACS pump.
4. The BP209 has NOT been isolated since the last time it was in service and is ready for a start.

INITIATING CUE:

You are the Plant Operator.

Place the BP209 RACS pump in service and secure the AP209 RACS pump.

JPM: ED002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliaries Cooling System

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-SO.ED-0001.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.3.1.			
5.3.1	ENSURE all prerequisites have been satisfied IAW Section 2.3. Reactor Auxiliaries Cooling Water System is in service.	Operator ensures that all prerequisites have been satisfied. Operator then initials the appropriate procedure step.			
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.	N/A			

JPM: ED002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliaries Cooling System

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.2	ENSURE that one of the following valves are OPEN (10C651A): ED-HV-2537A(B) HX INLET VLVS.	On 10C651A operator observes the HX INLET VALVES: <ul style="list-style-type: none"> HX AE217 INLET red HV2537A OPEN light is illuminated and green CLOSE light is extinguished HX BE217 INLET red HV2537B OPEN light is illuminated and green CLOSE light is extinguished. 			
5.3.3	OBSERVE the following lights are off for the RACS Pumps going in service: <ul style="list-style-type: none"> OVLD/PWR FAIL INOP REMOTE 	Operator observes the REACTOR AUXILIARIES COOLING PUMPS PUMP B amber OVLD/PWR FAIL, INOP, and white REMOTE lights are extinguished.			
5.3.4	For the 1AP209 and/or 1BP209, as applicable, ENSURE RACS PMP 1AP209 BKR 52-41011, and/or 1BP209 BKR 52-42011 CLOSED is on. (10C650E)	On 10C650E operator observes the RACS PMP BP209 BRKR 52-42011 red CLOSED light is illuminated and green TRIPPED light is extinguished.			

JPM: ED002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Reactor Auxiliaries Cooling System**

TASK: **Respond To A Reactor Auxiliary Cooling Malfunction**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.5	<p>IF returning a pump to service that has been isolated and drained, PERFORM the following steps as necessary to correct/prevent air binding, otherwise, PROCEED to Step 0 for a normal start of a standby pump:</p>	<p>Operator determines to proceed to Step 5.3.6, since the Initiating Cue states that the pump was not isolated.</p>			
5.3.6	<p>PRESS REACTOR AUXILIARIES COOLING PUMP A(B)(C) START PB (10C651A). START comes on.</p> <p>OBSERVE AI-6460 (AI-6461) REACTOR AUXILIARIES COOLING PUMP A(B)(C) MOT AMPS settles at < 180 amps AND is approximately the same as the other I/S RACS pumps' motor amps.</p>	<p>Operator presses the REACTOR AUXILIARIES COOLING PUMPS PUMP B BP209 START pushbutton.</p> <p>Operator observes:</p> <ul style="list-style-type: none"> The red BP209 START light illuminates and the green STOP light extinguishes. AI-6461 is < 180 amps and settles at approximately the same value as the "A" and "C" RACS pumps' amps. 	* #		
5.3.7	<p>PRESS REACTOR AUXILIARIES COOLING PUMP B(A)(C) STOP PB. STOP comes on.</p>	<p>Operator presses the REACTOR AUXILIARIES COOLING PUMPS PUMP A STOP pushbutton.</p> <p>Operator observes the green STOP light illuminates and the red AP209 START light extinguishes.</p>	* #		

JPM: ED002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliaries Cooling System

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
N/A	Operations Fundamental: Control Board Awareness	5 seconds after the 'A' RACS pump has been secured, the Operator observes the following: <ul style="list-style-type: none"> • OHA A2-E2, "RACS TROUBLE" • CRIDS D5762 RACS PUMP BP209 TRBL • Amber OVLD/PWR FAIL is flashing • Red BP209 START light is extinguished. • Green STOP light is flashing. • AI-6461 reads 0 amps. 			
N/A	HC.OP-AR.ZZ-0002	N/A			
ATT E2	OPERATOR ACTION: 1. REFER to HC.OP-AB.COOL-0003(Q); Reactor Auxiliary Cooling System. 2. ENSURE compliance with Technical Specifications 3.6.3 – Containment Isolation Valves. 3. ENSURE compliance with Technical Specifications 3.6.5 – Secondary Containment Integrity.	Operator refers to HC.OP-AB.COOL-0003.			

JPM: ED002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliaries Cooling System

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	Direct the Operator to perform Condition 'A' of HC.OP-AB.COOL-0003 Reactor Auxiliary Cooling System.	N/A			
N/A	HC.OP-AB.COOL-0003	N/A			
COND A	Time	Operator enters the current Time in the space provided.			
A.1	PRESS the START P.B. for any available RACS pump in standby.	Operator presses the REACTOR AUXILIARIES COOLING PUMPS PUMP A AP209 START pushbutton. Operator observes: <ul style="list-style-type: none"> • The red AP209 START light remains extinguished and the green STOP light remains illuminated. • Motor amps continue to indicate 0. 			
CUE	Respond to any reports of the 'A' RACS pump failure to start by directing the operator to continue implementing Condition 'A' of HC.OP-AB.COOL-0003.	N/A			

JPM: ED002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliaries Cooling System

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
A.2	<p>IF a second RACS Pump <u>CANNOT</u> be placed in service, <u>THEN ISOLATE</u> RACS to the out of service Off-Gas Train as follows:</p> <ul style="list-style-type: none"> • IF the Common Off-Gas Train is in service, <u>THEN CLOSE</u> HV-2577. • IF Unit 1 Off-Gas Train is in service, <u>THEN CLOSE</u> HV-7712A1. 	<p>Operator observes the OFFGAS RECOMB TRAIN SELECT:</p> <ul style="list-style-type: none"> • COM TRAIN red OPEN light illuminated and green CLOSE light extinguished. • TRAIN 1 red OPEN light extinguished and green CLOSE light illuminated. 			
		<p>Operator presses the OFF GAS CLR CNDS COOLING 10E306 UNIT 1 green CLOSE pushbutton</p>	*		
		<p>Operator observes the green CLOSE light illuminates and red HV2577 OPEN light extinguishes.</p>			
CUE	<p>If the Operator Closes HV2577 the JPM may be terminated. If the operator closes the HV7712A1, allow 1 minute to recognize the mistake and then terminate the JPM.</p> <p>Leaving the HV7712A1 closed and/or causing an isolation of the Common Offgas Train is failure criteria.</p>	N/A			

JPM: ED002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliaries Cooling System

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ED002

TASK: Respond To A Reactor Auxiliary Cooling Malfunction

TASK NUMBER: 4000230401

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The RACS System is in service with the AP209 and CP209 RACS pumps running.
2. AP209 RACS pump is scheduled for an oil change.
3. The Reactor Building EO has been briefed and is stationed at the BP209 RACS pump.
4. The BP209 has NOT been isolated since the last time it was in service and is ready for a start.

INITIATING CUE:

You are the Plant Operator.
Place the BP209 RACS pump in service and secure the AP209 RACS pump.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to any IC with the Main Generator loaded.
	ENSURE the 'A' & 'C' RACS pumps are in service and the 'B' RACS pump is in STBY.
	ENSURE the Common Offgas Train is in service and HV-2577 is open.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	ENSURE simulator is reset.

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: cwnra209 <= 0.5 // AP209 RACS pump normalized pump speed COMMAND: PURPOSE: Trips BP209 RACS pump after the AP209 RACS pump is stopped
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CW08B Trip of BP209 RACS pump.	5 sec	---	ET-1	---	---

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	5A33 E DI AP209 RACS pump start pushbutton.	---	---	NONE	---	OFF

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: ED002

Rev #	Date	Description	Validation Required
01	7/23/07	Originally developed for ILOT NRC exam in 2005. This revision converts to HC LOR format, documents validation, and generates estimated completion time.	Y
02	8/26/08	Updated reference procedure revisions. Corrected previous typo error in procedure step A.2. No change in operator actions from previous revision. No validation required.	N

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-Up Operation

TASK NUMBER: 2020080401

JPM NUMBER: 305H-JPM.BB002

REV #: 16

SAP BET: NOH05JPBB02E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 9/4/08

REVIEWED BY: N/A
Operations Representative

DATE: N/A

APPROVED BY: 
Training Department

DATE: 9/17/08

STATION: Hope Creek

JPM NUMBER: BB002

REV: 16

SYSTEM: Reactor Recirculation

TASK NUMBER: 2020080401

TASK: Perform Scoop Tube Positioner Lock-Up Operation

ALTERNATE PATH:

K/A NUMBER: 202002 A2.05

IMPORTANCE FACTOR: 3.1 3.1

APPLICABILITY:

RO

SRO

EO RO STA SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.BB-0002 Rev 72

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 17 MinutesTIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Reactor Recirculation**TASK:** Perform Scoop Tube Positioner Lock-Up Operation**TASK NUMBER:** 2020080401**INITIAL CONDITIONS:**

1. The plant was at 80% Reactor Power with power ascension in progress.
2. The SPRI/ESG guidance is valid. Some rods may already be inserted.
3. A control signal failure caused the 'A' Reactor Recirc Pump Motor/Generator Scoop Tube to lock-up.
4. The 'A' Reactor Recirc pump was placed in Scoop Tube Positioner Lockup Operation IAW HC.OP-SO.BB-0002.
5. I&C has repaired the control signal failure.
6. An NCO is stationed at the 'A' Reactor Recirc Pump Motor/Generator Scoop Tube Positioner.
7. Manual adjustment of the 'A' Reactor Recirc Scoop Tube has been terminated.
8. The 'A' Reactor Recirc Scoop Tube Positioner Power Switch is ON.

INITIATING CUE:

You are the Reactor Operator
Reset the Scoop Tube lockup on the 'A' Reactor Recirc pump.

JPM: BB0u2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 16

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-Up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-SO.BB-0002.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	IF excessive time is taken reviewing precautions and limitations, THEN INFORM operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.9.1.			
CAUT	Improper reset of a Scoop Tube Positioner can result in a significant power transient, and possible Scram due to rapid changes in Recirculation Flow.	N/A			

JPM: BB002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 16

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-Up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.9.1	ENSURE all prerequisites have been satisfied IAW Section 2.9.	Operator ensures that all prerequisites have been satisfied.			
CUE	<u>IF</u> excessive time is taken reviewing prerequisites, THEN INFORM operator that all are satisfied.	N/A			
5.9.2	PRESS SIC-621A MAN <u>AND</u> SIC-621B MAN push buttons.	Operator observes SIC-R621A/B MAN are illuminated and AUTO is extinguished. Examiner Note: Operator may press buttons even with pumps already in MAN. If buttons are <u>NOT</u> pressed, "C/M" should be entered in place-keeping block.			Y N Flagging
5.9.3	PRESS SIC-620 OUTPUT A(B) SELECT push button, for the Pump that will be reset.	Operator observes OUTPUT A SELECT light is illuminated. Examiner Note: Operator may press button even with OUTPUT A already selected. If button is <u>NOT</u> pressed, "C/M" should be entered in place-keeping block.			Y N Flagging

JPM: BB002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 16

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-Up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	SIC-621A(B) SPEED DEMAND (demanded scoop tube position) may move while the scoop tube is locked due to a maintained deviation between actual and demanded speeds. Depending on the actual conditions, it may be either above or below the scoop tube position corresponding to the actual speed. This step determines the desired demanded scope tube position for the actual speed.	N/A			
5.9.4	Using Attachment 3, DETERMINE the desired SIC-621A(B) SPEED DEMAND for the actual SPEED indicated on SIC-621A(B).	Operator determines the desired SIC-R621A SPEED DEMAND to be 58-62% IAW Attachment 3. Examiner Note: The target SPEED DEMAND is 60%. Some leeway has been added for meter readability and the potential interpolation of Attachment 3 data.			

JPM: BB002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 16

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-Up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.9.5	<p>PRESS SIC-R621A(B) SPD CONT INCREASE OR DECREASE pushbutton as necessary to obtain the desired SIC-621A(B) SPEED DEMAND from Step 5.9.4.</p>	<p>Operator presses the SIC-R621A LOOP A SPD INCR and/or DECR pb until SIC-R621A SPEED DEMND matches the SPEED DEMAND from Step 5.9.4.</p> <p>Examiner Note: SPEED DEMAND is considered to be satisfactorily matched if reactor power does not change by more than 5% when scoop tube is reset.</p>	* #		<p>Y N Flagging Y N R.O.B</p>
NOTE	<p>With actual speed (SIC-R621A(B) SPEED) and demanded speed (SIC-620 A/B DEMND OUTPT) the same, the controller signal (SIC-R621A(B) SPEED DEMAND) should not move.</p> <p>Although a constant speed should be maintained when coming out of Lockup, a small speed change may be experienced.</p>	N/A			
CAUT	<p>When coming out of Scoop Tube Lockup, the potential exists for the Recirc Pump to "Run Away", and the operator should be prepared to take appropriate action.</p>	N/A			

JPM: BB002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 16

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-Up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.9.6	PRESS SCOOP TUBE TRIP RESET AND ENSURE SCOOP TUBE LOCK-UP light extinguishes	Operator presses the Pump A TRIPS RESET PB.	*		Y N Flagging Y N R.O.B
		Operator observes that the SCOOP TUBE LOCK-UP light is extinguished.	#		
5.9.7	<u>IF</u> Unable to reset the Lockup from the Control Room, <u>THEN PERFORM</u> the following to manually reduce the speed of the Reactor Recirc Pump A(B) from the Scoop Tube Positioner (Local):	Operator determines step 5.9.7 is not applicable.			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state " This JPM is complete ". STOP TIME:	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: BB002

TASK: Perform Scoop Tube Positioner Lock-Up Operation

TASK NUMBER: 2020080401

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 80% power, MOL as follows:
	<ul style="list-style-type: none"> • REDUCE Reactor Recirc pump speeds to 60% (It is critical that 'A' Recirc pump speed is 60%). • INSERT 10B rods to 06
	PRESS the REACTOR RECIRCULATION PUMP A TRIPS SCOOP TUBE TRIP pushbutton.
	ENSURE SIC-R621A AND SIC-R621B are in Manual.
	REDUCE SIC-R621A Demand Output by 4% AND allow SIC-R621A SPEED DEMAND to saturate low.
	ENSURE SIC-R620 MAST CONT OUTPUT A SELECT is selected.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	INITIAL a copy of HC.OP-SO.BB-0002 Section 5.5 for the 'A' Reactor Recirc Pump.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: BB002

Rev #	Date	Description	Validation Required?
15	11/28/07	<p>Updated reference procedure revision numbers. No change in actions, validation not required</p> <p>Converted to new JPM format. Since Critical JPM actions are now uniquely identified by the format, all statements identifying critical portion of action were redundant and deleted. This change is editorial, validation not required.</p> <p>Removed references to checking off/initialing steps in procedure. This is a generic work practice and adds unnecessary clutter to the Standard section. This change is editorial, validation not required.</p> <p>Added Note and Caution text to Element section. This is for examiner reference only and has no associated actions. This change is editorial, validation not required.</p> <p>Added Examiner Notes on use of "C/M" for steps that are already satisfied IAW HU-AA-104-101. This change is editorial, validation not required.</p> <p>Removed Critical Task identifier from step 5.9.4 (determining desired speed demand) since this is not an observable action. The result of this step is observed in step 5.9.5 (adjusting speed demand) and this step is critical. No change in actions. This change is editorial, validation not required.</p> <p>Raised initial recirc speed slightly from 55% to 60% to provide additional margin to 53% speed oscillations and to limit need for interpretation of speed. Speed at 55% fell between to marked divisions (54% and 56%) and speed may have been interpreted as 54, 55, or 56%. Speed is now on marked 60% division.</p>	N
16	9/4/2008	Updated Reference procedure revision numbers only. No changes to operator actions. No validation required.	N

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Control Rod Drive Hydraulics

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

TASK NUMBER: 2010200104

JPM NUMBER: 305H-JPM.BF013

REV #: 01

SAP BET: NOH05JPBF13E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner

DATE: 8/28/2008

Instructor

REVIEWED BY:

jm
Operations Representative

DATE:

9/18/08

APPROVED BY:

W. G. [Signature]
Training Department

DATE:

9/18/08

STATION: Hope Creek

JPM NUMBER: BF013

REV: 01

SYSTEM: Control Rod Drive Hydraulics

TASK NUMBER: 2010200104

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

ALTERNATE PATH:

K/A NUMBER: 295031EA 1.08

IMPORTANCE FACTOR: 3.8 3.9

APPLICABILITY:

RO SRO

EO RO STA SRO

EVALUATION SETTING/METHOD: Reactor Building/Simulate

REFERENCES: HC.OP-SO.BF-0001, Rev 28

TOOLS, EQUIPMENT AND PROCEDURES: Drain hose, Pipe wrench

ESTIMATED COMPLETION TIME: 26 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

TASK NUMBER: 2010200104

INITIAL CONDITIONS:

1. The plant was scrammed due to a loss of condensate and feedwater.
2. HPCI and RCIC are unavailable.
3. EOP-101, Reactor/Pressure Vessel (RPV) Control, is being implemented.
4. Emergency Makeup to the RPV with CRD is required.
5. The BP207 CRD pump, BF201 Pump Suction Filter, BF204 Drive Water Filter, and the 'B' FCV are currently in service.
6. The scram has not been reset.

INITIATING CUE:

You are the Reactor Building operator.

Perform steps 5.4.1 through 5.4.10 of HC.OP-SO.BF-0001 to lineup for two CRD pump injection. Another operator will be assigned to perform the remaining steps and control injection.

JPM: BF013

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator obtains procedure HC.OP-SO.BF-0001.	Operator obtains the correct procedure.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.				
4.0	EQUIPMENT REQUIRED <ul style="list-style-type: none"> • Wrench to remove cap from Stabilizing valve needle valve. • Small adjustable wrench to position Stabilizing valve needle valve stem AND locknut • Hoses (for filling & venting). 	Operator obtains hose and pipe wrench. Examiner Note: After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location. Based on initial conditions, Operator may NOT obtain hose to direct venting and may vent to the floor.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.4.1.			

JPM: BF013

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.1	ENSURE all prerequisites of Section 2.4 are satisfied.	Operator ensures that all prerequisites have been satisfied.			
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.				
5.4.2	PERFORM the following to place AF201(BF201), A(B) Pump Suction Filter, in-service: A. OPEN 1-BF-V078(1-BF-V029), CRD Suct Fltr AF201(BF201) Inlet Vlv.	Operator opens 1-BF-V078.	*		
CUE	The valve you indicated is open.		#		
	B. VENT filter using 1-BF-V081(1-BF-V036), CRD Suct Fltr AF201(BF201) Vent Vlv.	Operator uncaps 1-BF-V081.	*		
		Operator connects a hose between valve 1-BF-V081 and a drain hub.	#		
		Operator unlocks 1-BF-V081.			
		Operator throttles open 1-BF-V081.	*		
			#		
CUE	A steady stream of water flows from the vent line				

JPM: BF013

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator closes 1-BF-V081.	*		
			#		
CUE	The valve you indicated is closed.				
		Operator caps 1-BF-V081.			
	C. OPEN 1-BF-V079(1-BF-V030), CRD Suct Fltr AF201(BF201) Outlet Vlv.	Operator opens 1-BF-V079.	*		
			#		
CUE	The valve you indicated is open.				
5.4.3	VERIFY that the Main Control Room has NOT reset the SCRAM.	Operator contacts the Main Control Room to verify the scram is NOT reset.			
CUE	The scram is NOT reset.	Examiner Note: May not contact Control Room based on Initial Conditions provided.			
5.4.4	CLOSE 1-BF-V007(1-BF- V008), AP207(BP207) Discharge Vlv, for the idle CRD Pump.	Operator closes 1-BF-V007.	*		
			#		
CUE	The valve you indicated is closed.				
5.4.5	REQUEST the Main Control Room to START AP207(BP207), A(B) DRIVE WTR PUMP.	Operator requests the Main Control Room start the AP207 CRD pump.	*		
			#		
CUE	The AP207 CRD pump is running.				

JPM: BF013

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.6	OPEN 1-BF-V007(1-BF-V008), A(B) CRD Pump AP207(BP207) Dsch Vlv.	Operator opens the 1-BF-V007.	*		
CUE	You hear flow noise through the valve. The valve you indicated is open.		#		
5.4.7	PERFORM the following to place AF204(BF204), A(B) Drive Wtr Filter, in-service: A. OPEN 1-BF-V009(1-BF-V010), CRD Drive Wtr Fltr Inlet Vlv.	Operator opens 1-BF-V009.	*		
CUE	The valve you indicated is open.				
	B. OPEN 1-BF-V011(1-BF-V012), CRD Drive Wtr Fltr Outlet Vlv.	Operator opens 1-BF-V011.	*		
CUE	The valve you indicated is open.				
5.4.8	REQUEST the Main Control Room to open HV-F003, DRIVE WTR PC VLV.	Operator requests the Main Control Room open HV-F003.	*		
CUE	The HV-F003 is open.				
5.4.9	OPEN 1-BF-V062, DRIVE WTR PC VLV BYPASS.	Operator unlocks and opens the 1-BF-V062.	*		
CUE	The valve you indicated is open.				

JPM: BF013

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.10	VERIFY 1-BF-V045, CRD CHRG WTR HDR INLET ISLN VLV, OPEN.	Operator verifies the 1-BF-V045 is open by turning the handwheel in the closed direction, then back to full open.			
CUE	The valve you indicated is fully open.				
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: BF013

TASK: Conduct Emergency Makeup To The RPV Using Two CRD Pumps

TASK NUMBER: 2010200104

QUESTION: _____

RESPONSE: _____

RESULT: SAT UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: SAT UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant was scrammed due to a loss of condensate and feedwater.
2. HPCI and RCIC are unavailable.
3. EOP-101, Reactor/Pressure Vessel (RPV) Control, is being implemented.
4. Emergency Makeup to the RPV with CRD is required.
5. The BP207 CRD pump, BF201 Pump Suction Filter, BF204 Drive Water Filter, and the 'B' FCV are currently in service.
6. The scram has not been reset.

INITIATING CUE:

You are the Reactor Building operator.
Perform steps 5.4.1 through 5.4.10 of HC.OP-SO.BF-0001 to lineup for two CRD pump injection.
Another operator will be assigned to perform the remaining steps and control injection.

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: BF013

Rev #	Date	Description	Validation Required?
01	8/28/2008	Revised to new JPM format. Revalidated JPM time. Updated reference procedure revision number. Operator actions did not change.	Y

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

TASK NUMBER: 2000530504

JPM NUMBER: 305H-JPM. BE002

REV #: 08

SAP BET: NOH05JPBE02E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 9/3/08

REVIEWED BY: N/A
Operations Representative

DATE: N/A

APPROVED BY: W. Board
Training Department

DATE: 9/18/08

STATION: Hope Creek

JPM NUMBER: BE002

REV: 08

SYSTEM: Core Spray

TASK NUMBER: 2000530504

TASK: Perform Torus Makeup Via Core Spray System

ALTERNATE PATH:

K/A NUMBER: 295030 EA1.06

IMPORTANCE FACTOR: 3.4 3.4

APPLICABILITY:

RO

SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Reactor Building/Simulate

REFERENCES: HC.OP-EO.ZZ-0315 (Q) Rev. 4

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 14 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

TASK NUMBER: 2000530504

INITIAL CONDITIONS:

1. A leak on the 'D' RHR Pump suction line has lowered suppression pool level to 73 inches.
2. The leak has been isolated and suppression pool level is stable.

INITIATING CUE:

Make-up to the Suppression Chamber from Core Spray Loop B IAW HC.OP-EO.ZZ-0315

JPM: BE002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 08

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator obtains/locates procedure HC.OP-EO.ZZ-0315.	Operator obtains the correct procedure.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.				
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1.			

JPM: BE002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 08

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.0	<p><u>EQUIPMENT REQUIRED</u></p> <p>4.1 Key #9 for EOP Locker in OSC (obtain from OS office or break red key holder glass in OSC</p> <p style="text-align: center;">AND</p> <p>EOP-315 Implementation Kit (EOP Locker in OSC)</p> <p>Contents: 1 Wire Cutter</p>	<p>Operator obtains the following required equipment:</p> <ol style="list-style-type: none"> 1. Key #9 for EOP locker in OSC (obtain from OS office or break red key holder glass in OSC) 2. EOP-315 implementation kit from EOP locker in OSC <p>Examiner Note: After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location.</p>			
5.1.1	<p>ENSURE that all prerequisites have been satisfied IAW Section 2.1.</p>	<p>Operator ensures that all prerequisites have been satisfied.</p>			
CUE	<p>If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.</p>				
5.1.2	<p>UNLOCK AND OPEN 1-AP-V068 //Cond Stor & Xfr to Core Spray Pump B and D Suction Fill & Flush Isln Vlv//. (local, Room 4203 reactor building, elevation 77')</p>	<p>Operator UNLOCKS and OPENS 1-AP-V068, Cond Stor and Xfr to Core Spray Pump B & D Suction Fill & Flush Isln Valve located on the 77 ft. elevation of the reactor building.</p>	*		
CUE	<p>The valve you indicated is unlocked and open.</p>				

JPM: BE002

Rev: 08

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.3	<p>ENSURE the following (PANEL C650) are OPEN:</p> <p>A. HV-F001B CS Pmp B Suct Isln MOV</p> <p>B. HV-F001D CS Pmp D Suct Isln MOV</p>	<p>Operator contacts Control Room and directs Control Room Operator to verify OPEN HV-F001B and HV-F001D.</p> <p>Examiner Note: Operator may verify these valves OPEN before leaving the Control Room Area.</p>			
CUE	<p>Respond as the MCR, HV-F001B and HV-F001D are open.</p>				
5.1.4	<p>UNLOCK AND THROTTLE OPEN one OR both of the following valves to obtain the desired fill rate while monitoring CST and Torus levels (local, reactor building, elevation 54'):</p> <p>A. BE-V058 CS Pmps B & D Suct X-Tie Isln Vlv</p> <p>B. BE-V059 CS Pmps B & D Suct X-Tie Isln Vlv</p>	<p>Operator throttles open BE-V058 and/or BE-V059.</p>	*		
CUE	<p>(As appropriate) The valve you indicated is throttled open. Flow can be heard past the valve(s).</p>				
		<p>Operator informs Control Room that Suppression Chamber makeup is in progress.</p>			
CUE	<p>If operator informs Control Room, provide Terminating Cue.</p>				

JPM: BE002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 08

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____
DATE: _____

JPM Number: BE002

TASK: Perform Torus Makeup Via Core Spray System

TASK NUMBER: 2000530504

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. A leak on the 'D' RHR Pump suction line has lowered suppression pool level to 73 inches.
2. The leak has been isolated and suppression pool level is stable.

INITIATING CUE:

Make-up to the Suppression Chamber from Core Spray Loop B IAW HC.OP-EO.ZZ-0315

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: BE002

Rev #	Date	Description	Validation Required?
08	9/3/2008	Revised to new JPM format. Revalidated JPM time. Updated reference procedure revision number. Operator actions did not change. Added missing 5.1.4.B element for BE-V059.	Y

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To
RPS MG Set

TASK NUMBER: 2120050101

JPM NUMBER: 305H-JPM.SB015

REV #: 02

SAP BET: NOH05JPSB15E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 8/28/08

REVIEWED BY: JMA
Operations Representative

DATE: 9/18/08

APPROVED BY: [Signature]
Training Department

DATE: 9/18/08

STATION: Hope Creek

JPM NUMBER: SB015

REV: 02

SYSTEM: Reactor Protection System

TASK NUMBER: 2120050101

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

ALTERNATE PATH:

K/A NUMBER: 212000 A2.01

IMPORTANCE FACTOR: 3.7 3.9

APPLICABILITY:

RO SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Aux Building/Simulate

REFERENCES: HC.OP-SO.SB-0001 Rev 28

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 12 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

TASK NUMBER: 2120050101

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. RPS A is being powered from the ALTERNATE A FEED.
3. Maintenance has been completed on 1A-G-401, RPS MG set.
4. Once the MG Set is running, Maintenance needs to check/adjust MG Set output voltage in accordance with Step 5.5.2.D.

INITIATING CUE:

Start the 1A-G-401, RPS MG SET A, in preparation to transfer RPS Bus A power from RPS Alternate Transformer A to RPS MG SET A in accordance with Section 5.5 of HC.OP-SO.SB-0001.

Contact Maintenance when ready for MG set output voltage check/adjust.

JPM: SB015

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____
DATE: _____

Rev: 02

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator obtains procedure HC.OP-SO.SB-0001.	Operator obtains the correct procedure.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.				
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.5.1			
5.5.1	ENSURE all prerequisites of Section 2.5 are satisfied.	Operator ensures that all prerequisites have been satisfied.			
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.				

JPM: SBU15

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	IF asked about the current status/indications, state: The Red MOTOR ON lamp is extinguished, and the Green MOTOR OFF lamp is illuminated. The output breaker is open.				
5.5.2	IF start of 1A(B)G401, RPS MG Set, is necessary, THEN PERFORM the following (A[B] MG Set Local Panel): A. PRESS AND HOLD the MOTOR ON push-button (Red MOTOR ON lamp illuminates).	Operator presses and holds the AG401 MOTOR ON push-button. Examiner Note: Initialing the procedure steps is NOT critical.	# *		
		Operator observes the Red MOTOR ON lamp illuminates.			
CUE	The Red MOTOR ON lamp is illuminated, and the Green MOTOR OFF lamp is extinguished.				
		The operator then initials the appropriate procedure step.			

JPM: SB015

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	B. VERIFY A-C VOLTS Generator Output Voltage AND PERFORM the following: 1. IF voltage increases to 115 - 125 volts AND has been stabilized for approximately 5 seconds, THEN RELEASE the MOTOR ON push-button.	Operator observes A-C VOLTS Generator Output Voltage and <i>expects</i> a voltage increase to 115-125 volts which stabilizes for approximately 5 seconds.			
CUE	The meter identified rises and stabilizes at approximately 100 volts.				
		Operator determines need to proceed to Step 5.5.2.B.2.			
	2. IF voltage does NOT increase to 115 - 125 volts, THEN PERFORM the following: a. RELEASE the MOTOR ON push-button.	Operator releases the AG401 MOTOR ON push-button.	# *		
		The operator then initials the appropriate procedure step.			
	b. PRESS AND HOLD MOTOR OFF push-button.	Operator presses and holds the AG401 MOTOR OFF push-button.	# *		

JPM: SB015

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		The operator then initials the appropriate procedure step.			
	c. <u>WHEN</u> the MOTOR ON light extinguishes, <u>THEN</u> RELEASE the MOTOR OFF push-button.	When the AG401 MOTOR ON light extinguishes, the operator releases the AG401 MOTOR OFF push-button.	*		
CUE	The Red MOTOR ON lamp is extinguished, and the Green MOTOR OFF lamp is illuminated.				
		The operator then initials the appropriate procedure step.			
	d. REPEAT Step 5.5.2.A.	Operator returns to Step 5.5.2.A.			
CUE	If asked about restarting the MG Set, inform the operator that one restart attempt is allowed and restart can be attempted while the MG Set is spinning.				
		The operator then initials the appropriate procedure step.			

JPM: SB015

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.5.2	<p>IF start of 1A(B)G401, RPS MG Set, is necessary, THEN PERFORM the following (A[B] MG Set Local Panel):</p> <p>A. PRESS AND HOLD the MOTOR ON push-button (Red MOTOR ON lamp illuminates).</p>	Operator presses and holds the AG401 MOTOR ON push-button.	# *		
		Operator observes the Red MOTOR ON lamp illuminates.			
CUE	<p>The Red MOTOR ON lamp is illuminated, and the Green MOTOR OFF lamp is extinguished.</p>				
		The operator then initials the appropriate procedure step.			
	<p>B. VERIFY A-C VOLTS Generator Output Voltage AND PERFORM the following:</p> <ol style="list-style-type: none"> IF voltage increases to 115 - 125 volts AND has been stabilized for approximately 5 seconds, THEN RELEASE the MOTOR ON push-button. 	Operator observes A-C VOLTS Generator Output Voltage expecting an increase to 115-125 volts.			

JPM: SB015

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	The meter identified has risen from 0 volts, and has stabilized at approximately 120 volts for approximately 5 seconds.				
		Operator releases the AG401 MOTOR ON push-button.	# *		
		The operator then initials the appropriate procedure step.			
	2. IF voltage does NOT increase to 115 - 125 volts, THEN PERFORM the following:	Operator determines this step no longer applies.			
	C. <u>WHEN</u> 1 minute of MG Set operation has elapsed, <u>THEN PLACE</u> RPS MG Set 1A(B)G401 GENERATOR OUTPUT breaker to ON <u>AND INITIAL</u> Attachment 1.	Operator waits one minute.			
		Operator places the RPS MG Set AG401 GENERATOR OUTPUT breaker to ON.	# *		
CUE	The breaker identified is in the stated position.				
		Operator initials Attachment 1.			

JPM: SB015

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Protection System

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		The operator then initials the appropriate procedure step.			
	D. REQUEST Maintenance Department to CHECK AND ADJUST (as necessary), the RPS MG Set(s) output voltage at the input to Electrical Protection Assembly (EPA) Circuit Breaker 1AN410 (1AN411) (unloaded) IAW HC.MD-PM.SB-0001(Q), OTHERWISE, VERIFY A-C VOLTS at local panel meter is 115 to 125 volts.	Operator requests maintenance to check and adjust if necessary RPS MG Set A output voltage at the input to Electrical Protection Assembly (EPA) Circuit Breaker 1AN410 (unloaded) IAW HC.MD-PM.SB-0001(Q), otherwise, verify A-C VOLTS at local panel meter is 115 to 125 volts.			
CUE	Respond as necessary and provide Terminating Cue.				
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: SB015

TASK: Transfer RPS Bus A/B Power From Alternate Source To RPS MG Set

TASK NUMBER: 2120050101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. RPS A is being powered from the ALTERNATE A FEED.
3. Maintenance has been completed on 1A-G-401, RPS MG set.
4. Once the MG Set is running, Maintenance needs to check/adjust MG Set output voltage in accordance with Step 5.5.2.D.

INITIATING CUE:

- Start the 1A-G-401, RPS MG SET A, in preparation to transfer RPS Bus A power from RPS Alternate Transformer A to RPS MG SET A in accordance with Section 5.5 of HC.OP-SO.SB-0001.
Contact Maintenance when ready for MG set output voltage check/adjust.

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: SB015

Rev #	Date	Description	Validation Required?
02	8/28/08	Revised to new JPM format. Revalidated JPM time. Updated reference procedure revision number. Operator actions did not change.	Y

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Ensure the Operating Shift is Adequately Manned

TASK NUMBER: 2990750302

JPM NUMBER: 305H-JPM.ZZ009

REV #: 01

NRC ADMIN JPM SRO A1

SAP BET: NOH05JPZZ09E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

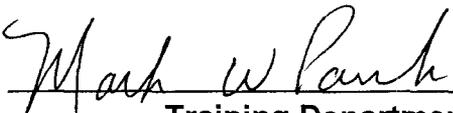
SRO

DEVELOPED BY: J. Berglund
Instructor

DATE: 11/9/08

REVIEWED BY: 
Operations Representative

DATE: 12/12/08

APPROVED BY: 
Training Department

DATE: 12/12/08

STATION: Hope Creek

JPM NUMBER: ZZ009

REV: 01

SYSTEM: Conduct of Operations

TASK NUMBER: 2990750302

TASK: Ensure the Operating Shift is Adequately Manned

ALTERNATE PATH:

K/A NUMBER: 2.15

IMPORTANCE FACTOR: 2.9 3.8

APPLICABILITY:

RO SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: LS-AA-119 Rev 5
Tech Spec 6.2.2

TOOLS, EQUIPMENT AND PROCEDURES:

Blank paper copy of LS-AA-119 Attachment 1 "Overtime Guideline Deviation Authorization."

ESTIMATED COMPLETION TIME: 10 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations**TASK:** Ensure the Operating Shift is Adequately Manned**TASK NUMBER:** 2990750302**INITIAL CONDITIONS:**

The following Hope Creek Generating Station working hour history is given for an Operations crew. The hours worked are in the Main Control Room during Operational Condition 1.

Date	CRS Jim Smith	RO John Jones	PO Bob Adams
1/28/09	12 hours-Days	12 hours-Days	12 hours-Days
1/29/09	12 hours-Days	OFF	OFF
1/30/09	12 hours-Days	OFF	OFF
1/31/09	OFF	12 hours-Days	OFF
2/1/09	12 hours-Days	12 hours-Days	OFF
2/2/09	12 hours-Days	12 hours-Days	12 hours-Days
2/3/09	12 hours-Days	12 hours-Days	12 hours-Days
2/4/09	12 hours-Days	12 hours-Days	12 hours-Days
2/5/09	12 hours-Days	12 hours-Days	12 hours-Days

Today is 2/5/09.

The crew is scheduled to work a 12 hour Dayshift from 0600-1800 tomorrow, 2/6, on watch in the Main Control Room.

INITIATING CUE:

EVALUATE the working hour history for the personnel above **AND TAKE ANY ACTIONS**, if required, to ensure the CRS, RO, and PO watchstations are staffed for the 12 hour 2/6 Dayshift watch tomorrow.

JPM: ZZ009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Ensure the Operating Shift is Adequately Manned

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue AND a paper copy of LS-AA-119.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
4.1.1	An individual should not be permitted to work more than 16 hours straight. 1. Activities listed in Step 1.4.4 may be excluded from time counted toward this time limitation.	Operator determines all work hours were applicable and no operator has or will exceed 16 hours straight.			
4.1.2	An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any seven-day (168 hr) period. 1. Activities listed in Step 1.4.4 may be excluded from time counted toward these time limitations.	Operator determines all work hours were applicable and the RO will exceed 72 hours in a seven-day period if 12 hour 2/6 Dayshift is worked.	*		

JPM: ZZ009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Ensure the Operating Shift is Adequately Manned**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	IF asked whether another RO is available, THEN INFORM the operator that due to a widespread illness, NO other RO's are available.	N/A			
4.1.3	A break of at least eight hours should be allowed between work periods. 1. An eight hour break between work periods only becomes applicable if one of the limitations in Steps 4.1.1 and 4.1.2 has been met or exceeded. 2. Shift turnover time and casual personal time noted in Step 1.4.4 may be included as part of the eight hour break between work periods.	Operator determines CRS will meet the limitations in step 4.1.2 and the RO has met and may exceed the limitations in step 4.1.2, but each operator has had a break of at least eight hours between work periods.			

JPM: ZZ009

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Ensure the Operating Shift is Adequately Manned**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.2	<p><u>Overtime Guideline Deviation</u> Recognizing that very unusual circumstances may arise (e.g., emergency situations to protect the public safety, critical emergent work requiring specialized skills, actions needed to avoid an unnecessary shutdown, or other urgent activities deemed necessary by station management) requiring deviation from the above guidelines, such deviation shall be considered on an individual basis and authorized by the Plant Manager or designated manager. Authorized deviations to the working hour guidelines shall be documented on Attachment 1 (i.e., each individual's name shall be listed).</p>	<p>Operator determines the RO watchstation is required to be staffed in OPCON 1. (Tech Spec 6.2.2)</p>			
CUE	<p><u>IF</u> asked whether another RO is available, THEN INFORM the operator that due to a widespread illness, NO other RO's are available.</p>	N/A			

JPM: ZZ009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Ensure the Operating Shift is Adequately Manned**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.2.1	Consistent with GL 82-12, the paramount consideration in such authorization shall be that significant reductions in the effectiveness of personnel would be highly unlikely. Authorized deviations to the working hour guidelines shall be documented on Attachment 1 (i.e., each individual's name shall be listed).	Operator determines Attachment 1 is required to document exceeding work hour guidelines.			
4.2.2	In an emergency situation, it is acceptable to obtain a verbal overtime guideline deviation authorization prior to an individual exceeding the above guidelines and subsequently complete Attachment 1 when time allows.	Operator determines there is sufficient time to complete an Attachment 1.			
4.2.3	Overtime hours worked for activities such as vacation coverage, normal shift coverage, do not constitute very unusual circumstances. Overtime worked for these types of activities should not exceed the GL 82-12 limitations.	Operator determines lack of operator availability due to widespread illness is unusual circumstance.			

JPM: ZZ009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Ensure the Operating Shift is Adequately Manned

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.2.4	<p>During activities noted in Step 4.2, overtime guideline deviations shall be considered and approved on an individual basis as noted above. The cognizant supervisor(s) will assess each individual for fatigue and mental alertness prior to an individual exceeding the GL 82-12 overtime guidelines and performing safety-related work. The cognizant supervisor(s) will assess each individual over the duration an individual is working in excess of the GL 82-12 guidelines. These assessments are not documented.</p> <p>1. If an individual is observed to be fatigued or exhibits unsatisfactory mental alertness, then the individual will be removed from performing safety-related work.</p>	Operator assesses workers for alertness and signs of fatigue.			
CUE	<p><u>IF</u> asked about the alertness of the operators, <u>THEN INFORM</u> the operator all three operators appear alert and show no signs of fatigue.</p>	N/A			

JPM: ZZ009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Ensure the Operating Shift is Adequately Manned**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.2.5	A single Overtime Guideline Deviation Authorization will be completed and remain active for the entire time period an individual exceeds a GL 82-12 overtime guideline.	Operator determines a single Attachment 1 is required to document exceeding work hour guidelines.			
CUE	<u>AFTER</u> the Operator demonstrates the ability to obtain an Attachment 1, THEN PROVIDE a blank copy of Attachment 1.	N/A			
4.3	When it has been determined that a deviation from the GL 82-12 overtime guidelines is necessary, then prior to an individual exceeding the GL 82-12 overtime guidelines and performing safety-related work, initiate Attachment 1, "Overtime Guideline Deviation Authorization." (<i>cognizant supervisor or designee</i>)	Operator obtains blank Attachment 1, "Overtime Guideline Deviation Authorization." Examiner Note: This is included in the provided copy of LS-AA-119.			

JPM: ZZ009

Rev: 01

SYSTEM: Conduct of Operations

TASK: Ensure the Operating Shift is Adequately Manned

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.3.1	<p>COMPLETE columns one through four of Attachment 1.</p> <p>1. If Attachment 1 is being completed for a large number of individuals, multiple forms will be required or a complete list of names may be attached to a single Attachment 1.</p> <p>2. The "Start Time/Date" in column 4 is the time at which an individual will exceed one of the overtime guidelines, not the start of the shift or work period.</p>	<p>Examiner Note: Refer to Exhibit 1 for example of completed form.</p> <p>Operator enters John Jones in Column 1.</p> <p>Operator enters Operations in Column 2.</p> <p>Operator enters D in Column 3. (Long descriptions are also acceptable, such as "72hrs in 7 days")</p> <p>Operator enters 0600 and 2/6/09 in Column 4.</p>	*		
4.3.2	<p>PROVIDE a description of the work to be performed verifying that the work is safety-related.</p>	<p>Operator enters description of work.</p>			
4.3.3	<p>PROVIDE a justification describing why the safety-related work needs to be performed on overtime.</p>	<p>Operator enters justification for needing overtime. Description may vary, but should convey "unusual circumstance" and not violate step 4.2.</p>	*		
4.3.4	<p>SIGN Attachment 1 as the cognizant supervisor of designee.</p>	<p>Operator signs and dates the attachment.</p>			
4.3.5	<p>FORWARD the form to the Plant Manager or designated manager for approval</p>	<p>Operator seeks Plant Manager or designee approval.</p>			

JPM: ZZ009

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Ensure the Operating Shift is Adequately Manned**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> the operator forwards the Attachment for approval, <u>THEN ROLE PLAY</u> as the Plant Manager and approve the Attachment.</p>	N/A			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ009

TASK: Ensure the Operating Shift is Adequately Manned

TASK NUMBER: 2990750302

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE
EXHIBIT 1

ATTACHMENT 1

Overtime Guideline Deviation Authorization

Page 1 of 1

The following individuals are needed to perform safety-related work and will exceed the overtime guidelines (as needed)

Examiner Copy

Name (Column 1)	Department (Column 2)	GL 82-12 Guideline Exceeded (Note 5) (Column 3)	Time Period Overtime Limit is Exceeded	
			Start Time/Date (Column 4)	End Time/Date (Column 5)
John Jones	Operations	D	0600 / 2-6-09	/
			/	/
			/	/
			/	/
			/	/
			/	/
			/	/

- Note 1: The cognizant supervisor will complete the information in columns 1 – 4 above. This form is then forwarded to the Plant Manager (or designated manager) for review.
- Note 2: The Plant Manager's (or designated manager's) approval shall be completed prior to an individual exceeding the overtime guidelines and performing safety related work. The Plant Manager's approval may be received verbally by telephone. This form is then forwarded back to the cognizant supervisor.
- Note 3: The cognizant supervisor will perform an assessment of each individual's fatigue and mental alertness prior to the start of performing safety-related work; and throughout the duration of the overtime deviation period. If the supervisor observes the individual to be fatigued or not mentally alert, that individual will not be assigned to perform safety-related work.
- Note 4: The cognizant supervisor will complete column 5 after the overtime deviation period is complete.
- Note 5: GL 82-12 Overtime Guideline to be exceeded:
 - A – more than 16 consecutive hours
 - B – more than 16 hours in a 24 hour period
 - C – more than 24 hours in a 48 hour period
 - D – more than 72 hours in a seven day (168 hr) period
 - E – less than an 8 hour break between work periods

Description of safety-related work to be accomplished: Stand Licensed Operator watch in the Main Control Room

Justification for needing overtime: To maintain minimum staffing IAW T/S 6.2.2. No other operators available due to widespread illness.

Submitted by: Operator NOW / TODAY
Cognizant Supervisor (or designee) Time Date

Approved by: _____ / _____
Plant Manager (or designated manager) Time Date

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

The following Hope Creek Generating Station working hour history is given for an Operations crew. The hours worked are in the Main Control Room during Operational Condition 1.

Date	CRS Jim Smith	RO John Jones	PO Bob Adams
1/28/09	12 hours-Days	12 hours-Days	12 hours-Days
1/29/09	12 hours-Days	OFF	OFF
1/30/09	12 hours-Days	OFF	OFF
1/31/09	OFF	12 hours-Days	OFF
2/1/09	12 hours-Days	12 hours-Days	OFF
2/2/09	12 hours-Days	12 hours-Days	12 hours-Days
2/3/09	12 hours-Days	12 hours-Days	12 hours-Days
2/4/09	12 hours-Days	12 hours-Days	12 hours-Days
2/5/09	12 hours-Days	12 hours-Days	12 hours-Days

Today is 2/5/09.

The crew is scheduled to work a 12 hour Dayshift from 0600-1800 tomorrow, 2/6, on watch in the Main Control Room.

INITIATING CUE:

EVALUATE the working hour history for the personnel above AND TAKE ANY ACTIONS, if required, to ensure the CRS, RO, and PO watchstations are staffed for the 12 hour 2/6 Dayshift watch tomorrow.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Complete The Daily Surveillance Logs

TASK NUMBER: 4010010201

JPM NUMBER: 305H-JPM.ZZ017 REV #: 01

NRC ADMIN JPM SRO A2

SAP BET: NOH05JPZZ17E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

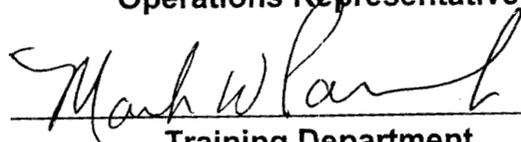
SRO

DEVELOPED BY: J. Berglund DATE: 11/8/08

Instructor

REVIEWED BY:  DATE: 12/12/08

Operations Representative

APPROVED BY:  DATE: 12/12/08

Training Department

STATION: Hope Creek

JPM NUMBER: ZZ017

REV: 01

SYSTEM: Conduct of Operations

TASK NUMBER: 4010010201

TASK: Complete The Daily Surveillance Logs

ALTERNATE PATH:

K/A NUMBER: 2.1.18

IMPORTANCE FACTOR: 3.6 3.8

APPLICABILITY:

RO SRO

EO RO STA SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-DL.ZZ-0026 Rev 113

TOOLS, EQUIPMENT AND PROCEDURES:

Paper copies of HC.OP-DL.ZZ-0026 Attachment 1 Page 1 of 1

ESTIMATED COMPLETION TIME: 10 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations**TASK:** Complete The Daily Surveillance Logs**TASK NUMBER:** 4010010201**INITIAL CONDITIONS:**

1. The Plant is in OPCON 1 at 35% power
2. A plant startup from a forced outage is in progress IAW HC.OP-IO.ZZ-0003.
3. The National Weather Service has forecast a Severe Storm Warning for New Castle and Salem Counties for the next 12 hours.
4. River temperature is 83 degF but is NOT expected to exceed 85 degF.
5. All EDGs, SACS, and SSW pumps are operable.
6. The SPV Effluent RMS is inoperable and has been C/T for repairs.

INITIATING CUE:

You are the Control Room Supervisor.

IMPLEMENT the Daily Surveillance Logs for today IAW HC.OP-DL.ZZ-0026 AND
IDENTIFY all required Attachments for current plant conditions.

JPM: ZZ017

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Complete The Daily Surveillance Logs**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue AND a paper copy of HC.OP-DL.ZZ-0026(Q).	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 2.1.			

JPM: ZZ017

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Complete The Daily Surveillance Logs

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.1	<p>Shift Manager/Control Room Supervisor - the SM/CRS is responsible to implement, review, and ensure completion of the log including (CRS has primary responsibility for all log reviews and documentation):</p> <p>2.1.1 The SM/CRS shall implement the log at the beginning of each day by completing Attachment 1, Section A; Log Initiation, listing those Attachments that require performance due to present conditions. Also, the present Operational Condition shall be listed.</p>	<p>Examiner Note: Examiner Copy Exhibit 1 is provided for reference.</p> <p>Operator determines Attachment 1 is required due to current Operational Condition.</p>			
		<p>Operator checks Attachment 1 on Attachment 1 Section A Log Initiation.</p>	*		
		<p>Operator determined Attachment 3j is required due to Severe Storm Warning that may affect Artificial Island..</p>			
		<p>Operator checks Attachment 3j on Attachment 1 Section A Log Initiation.</p>	*		
		<p>Operator determines Attachment 3h is required IAW Item 1 and T/S 4.7.1.3.b.1 due to current River Water temperature.</p>			
		<p>Operator checks Attachment 3h on Attachment 1 Section A Log Initiation.</p>	*		
		<p>Operator determines Attachment 3t is required IAW Item 42 due to SPV RMS Inoperable.</p>			
		<p>Operator checks Attachment 3t on Attachment 1 Section A Log Initiation.</p>	*		
		<p>Operator places a "1" in the Operational Condition blank.</p>			

JPM: ZZ017

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Complete The Daily Surveillance Logs**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.1	2.1.1 The SM/CRS shall implement the log at the beginning of each day by completing Attachment 1, Section A; Log Initiation, listing those Attachments that require performance due to present conditions. Also, the present Operational Condition shall be listed.	Operator checks Attachment 5 on Attachment 1 Section A Log Initiation. Examiner Note: Although not <i>specifically</i> required by the <i>current</i> conditions, Attachment 5 is typically used each day to track surveillance procedures and would be needed the first time a surveillance procedure with an action time is actually logged on.			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ017

TASK: Complete The Daily Surveillance Logs

TASK NUMBER: 4010010201

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

**ATTACHMENT 1
Surveillance Log**

Date _____

A. LOG INITIATION

1. Operational Condition _____ 1 _____

2. Check (✓) Attachments to be performed

1	<input checked="" type="checkbox"/>	3c	<input type="checkbox"/>	3g	<input type="checkbox"/>	3m	<input type="checkbox"/>	3s	<input type="checkbox"/>	3w	<input type="checkbox"/>	4a	<input type="checkbox"/>
2	<input type="checkbox"/>	3d	<input type="checkbox"/>	3h	<input checked="" type="checkbox"/>	3p	<input type="checkbox"/>	3t	<input checked="" type="checkbox"/>	3x	<input type="checkbox"/>	4b	<input type="checkbox"/>
		3e	<input type="checkbox"/>	3j	<input checked="" type="checkbox"/>	3q	<input type="checkbox"/>	3u	<input type="checkbox"/>	3y	<input type="checkbox"/>	4c	<input type="checkbox"/>
		3f	<input type="checkbox"/>	3k	<input type="checkbox"/>	3r	<input type="checkbox"/>	3v	<input type="checkbox"/>	3z	<input type="checkbox"/>	5	<input checked="" type="checkbox"/>

B. LOG PERFORMANCE

- Ensure compliance with T/S by using procedure steps 3.11 thru 3.15 T/S reference numbers and surveillance item note(s), as applicable, for any log item(s) requiring additional action.
- Operators signature below indicate appropriate subsection of Attachment 1 and any Attachment checked (✓) have been completed.

Attachment 1a Control Room	_____	_____	_____
Attachment 1b Auxiliary Bldg	_____	_____	_____
Attachment 1c Reactor Bldg	_____	_____	_____
Attachment 1d Turbine Bldg	_____	_____	_____
	DAY	EVE	MID

3. Signature below indicates review of all required attachments checked (✓) above has been completed, and approved for compliance with T/S requirements.

Day (Review Before 1300)	Eve (Review Before 2100)	Mid (Review Before 0500)
_____	_____	_____
SM/CRS	SM/CRS	SM/CRS

C. LOG COMPLETION

1. Operational Condition _____

2. Check (✓) Attachments that have been performed

1	<input type="checkbox"/>	3c	<input type="checkbox"/>	3g	<input type="checkbox"/>	3m	<input type="checkbox"/>	3s	<input type="checkbox"/>	3w	<input type="checkbox"/>	4a	<input type="checkbox"/>
2	<input type="checkbox"/>	3d	<input type="checkbox"/>	3h	<input type="checkbox"/>	3p	<input type="checkbox"/>	3t	<input type="checkbox"/>	3x	<input type="checkbox"/>	4b	<input type="checkbox"/>
		3e	<input type="checkbox"/>	3j	<input type="checkbox"/>	3q	<input type="checkbox"/>	3u	<input type="checkbox"/>	3y	<input type="checkbox"/>	4c	<input type="checkbox"/>
		3f	<input type="checkbox"/>	3k	<input type="checkbox"/>	3r	<input type="checkbox"/>	3v	<input type="checkbox"/>	3z	<input type="checkbox"/>	5	<input type="checkbox"/>

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The Plant is in OPCON 1 at 35% power
2. A plant startup from a forced outage is in progress IAW HC.OP-IO.ZZ-0003.
3. The National Weather Service has forecast a Severe Storm Warning for New Castle and Salem Counties for the next 12 hours.
4. River temperature is 83 degF but is NOT expected to exceed 85 degF.
5. All EDGs, SACS, and SSW pumps are operable.
6. The SPV Effluent RMS is inoperable and has been C/T for repairs.

INITIATING CUE:

You are the Control Room Supervisor.

IMPLEMENT the Daily Surveillance Logs for today IAW HC.OP-DL.ZZ-0026 AND IDENTIFY all required Attachments for current plant conditions.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Equipment Control

TASK: Authorize the Start of a Surveillance Test

TASK NUMBER: 2990250302

JPM NUMBER: 305H-JPM.ZZ037 REV #: 00

NRC ADMIN JPM SRO A3

SAP BET: NOH05JPZZ37E

ALTERNATE PATH:

APPLICABILITY:

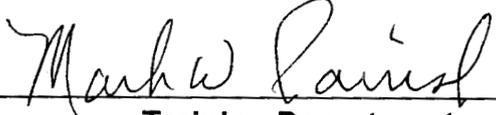
EO RO STA SRO

DEVELOPED BY: J. Berglund DATE: 11/7/08

Instructor

REVIEWED BY:  DATE: 12/12/08

Operations Representative

APPROVED BY:  DATE: 12/12/08

Training Department

STATION: Hope Creek

JPM NUMBER: ZZ037

REV: 00

SYSTEM: Equipment Control

TASK NUMBER: 2990250302

TASK: Authorize the Start of a Surveillance Test

ALTERNATE PATH:

K/A NUMBER: 2.2.12

IMPORTANCE FACTOR: 3.7 4.1

APPLICABILITY:

RO SRO

EO RO STA SRO

EVALUATION SETTING/METHOD: Classroom

REFERENCES: HC.OP-ST.ZZ-0001 Rev 29
Technical Specification 3.8.1.1

TOOLS, EQUIPMENT AND PROCEDURES:

Technical Specification 3.8.1.1, Blank copy of HC.OP-ST.ZZ-0001.

ESTIMATED COMPLETION TIME: 15 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: 50 Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: _____ Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Equipment Control

TASK: Authorize the Start of a Surveillance Test

TASK NUMBER: 2990250302

INITIAL CONDITIONS:

1. The plant is at 100% power, 3840 MWth.
2. Main Generator output is 1260 Mwe.
3. All 4.16KV 1E Buses are in a Normal 2 Bus alignment.
4. The "A" EDG was just declared INOPERABLE.

INITIATING CUE:

This is a Time Critical JPM with one Time Critical element.
Initiate and authorize the performance of the HC.OP-ST.ZZ-0001 to satisfy the one hour requirement of T/S 3.8.1.1 action b.

Examiner Copy

TQ-AA-106-0303

ATTACHMENT 1

Page 1 of 3

SM/CRS DATA AND SIGNATURE SHEET POWER DISTRIBUTION LINEUP - WEEKLY

1.0 PRETEST INFORMATION

1.1 Reason for the Test

1.1.1 Regular Surveillance

INITIALS

1.1.2 4.8.1.1.1.a ONLY

JMB

INITIALS

1.1.3 Retest/Other

INITIALS

1.1.4 IF not performing the complete test, **THEN LIST** subsection(s) to be performed, as well as marking N/A on the applicable subsection(s) on the Attachment(s) that will not be performed, OR that do not require an independent verification IAW OP-AA-108-101-1002, Component Configuration Control.

May list subsections in step 5.4

SUBSECTION(S)

1.2 Plant Conditions

1.2.1 Operational Condition

1

1.2.2 Reactor Power Level

100%/3840 MWth

1.2.3 MWe

1260 MWe

1.3 Permission to Perform the Test

1.3.1 Permission granted to perform this test.

Operator
SM/CRS

Today/Now
DATE-TIME

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power, 3840 MWth.
2. Main Generator output is 1260 Mwe.
3. All 4.16KV 1E Buses are in a Normal 2 Bus alignment.
4. The "A" EDG was just declared INOPERABLE.

INITIATING CUE:

This is a Time Critical JPM with one Time Critical element.
Initiate and authorize the performance of the HC.OP-ST.ZZ-0001 to satisfy the one hour requirement of T/S 3.8.1.1 action b.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water
Or Steam Filled Piping

TASK NUMBER: 2990740302

JPM NUMBER: 305H-JPM.ZZ032 REV #: 01

NRC ADMIN JPM SRO A4

SAP BET: NOH05JPZZ32E

ALTERNATE PATH:

APPLICABILITY:

EO RO STA SRO

DEVELOPED BY: J. Berglund DATE: 11/9/08
Instructor

REVIEWED BY: *[Signature]* DATE: 12/12/08
Operations Representative

APPROVED BY: *[Signature]* DATE: 12/12/09
Training Department

STATION: Hope Creek

JPM NUMBER: ZZ032

REV: 01

SYSTEM: Radiation Control

TASK NUMBER: 2990740302

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

ALTERNATE PATH:

K/A NUMBER: 2.3.11

IMPORTANCE FACTOR: 3.8 4.3

APPLICABILITY:

RO SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-GP.ZZ-0004 Rev 6

TOOLS, EQUIPMENT AND PROCEDURES:

Prepared copy of HC.OP-GP.ZZ-0004 (Attached)

ESTIMATED COMPLETION TIME: 15 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

TASK NUMBER: 2990740302

INITIAL CONDITIONS:

1. The plant is Operational Condition 2 with a startup in progress following a Refuel Outage.
2. Pressure has been raised to 905 psig, and preparations are being made to transition to Operational Condition 1.
3. Leakage into the Core Spray Loop A Injection Header has resulted in loop pressurization above normal ECCS Jockey Pump discharge pressure as observed at 1BEPISH-N654A (Panel 10C617) AND 1BEPI-R600A (Panel 10C650).
4. HC.OP-GP.ZZ-0004 REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE DETERMINATION was performed to determine the leakage rate.

INITIATING CUE:

PERFORM the CRS review of the completed HC.OP-GP.ZZ-0004 AND DETERMINE any required actions.

JPM: ZZ032

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue <u>AND</u> the attached prepared copy of HC.OP-GP.ZZ-0004.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
ATT.1	POST TEST INFORMATION	N/A			
2.1	The data acquired during the performance of this test has been reviewed for completeness and compliance with Technical Specification 3.4.3.2, Reactor Coolant System Operational Leakage and the test is considered:	Operator reviews completed HC.OP-GP.ZZ-0004.			

JPM: ZZ032

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11	<p>CALCULATE the leak rate through 1BE-V007 (HV-F005A) by dividing the volume recorded in Step 5.1.9 by the elapsed time recorded in Step 5.1.10. RECORD leak rate in gpm on Attachment 2.</p>	<p>Operator recognizes a math error was made when calculating Leak Rate in step 5.1.11. Actual leak rate is 6.3 gpm, <u>NOT</u> 0.63 gpm (6.25 gpm rounded up).</p>			
		<p>Operator ensures 5.1.11 ACTUAL block is corrected to 6.25 <u>OR</u> 6.3 gpm. Examiner Note: Operator may correct data or call Performer to correct data.</p>	*		
CUE	<p><u>IF</u> directed as Performer to correct data entered, THEN ROLE PLAY as Performer and CORRECT ACTUAL block as directed by Operator.</p>	N/A			

JPM: ZZ032

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11	<p>CALCULATE the leak rate through 1BE-V007 (HV-F005A) by dividing the volume recorded in Step 5.1.9 by the elapsed time recorded in Step 5.1.10. RECORD leak rate in gpm on Attachment 2.</p>	<p>Operator recognizes 5.1.11 ACTUAL Leak Rate exceeds REQUIRED Leak Rate of ≤ 5 GPM.</p>			
		<p>Operator ensures 5.1.11 SAT/UNSAT block is corrected to UNSAT. Examiner Note: Operator may correct data or call Performer to correct data.</p>	*		
CUE	<p><u>IF</u> directed as Performer to correct data entered, THEN ROLE PLAY as Performer and CORRECT SAT/UNSAT block as directed by Operator.</p>	N/A			

JPM: ZZ032

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
T/S 3.4.3.2	<p>Reactor coolant system leakage shall be limited to:</p> <p>d. 0.5 gpm leakage per nominal inch of valve size up to a maximum of 5 gpm from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1, at rated pressure.</p> <p>APPLICABILITY: OPCON 1,2,3</p> <p>ACTION:</p> <p>c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one closed manual or deactivated automatic or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.</p>	<p>Operator determines T/S 3.4.3.2 Action c applies:</p> <p>With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one closed manual or deactivated automatic or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.</p> <p>Examiner Note: Determining the SPECIFIC compensatory action is beyond the scope of the JPM. It is only necessary for the Operator to IDENTIFY the applicable Tech Spec Action.</p>	*		

JPM: ZZ032

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>AFTER</u> the Operator determines the applicable Tech Spec Action statement, THEN INFORM the Operator compensatory actions have been implemented.</p>	N/A			
ATT.1	POST TEST INFORMATION	N/A			
2.1.2	<p><u>UNSATISFACTORY AND</u> <u>IF</u> necessary the T.S. ACTION statement has been implemented.</p>	Operator signs UNSATISFACTORY block 2.1.2 of Attachment 1.			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, THEN RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ032

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

TASK NUMBER: 2990740302

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is Operational Condition 2 with a startup in progress following a Refuel Outage.
2. Pressure has been raised to 905 psig, and preparations are being made to transition to Operational Condition 1.
3. Leakage into the Core Spray Loop A Injection Header has resulted in loop pressurization above normal ECCS Jockey Pump discharge pressure as observed at 1BEPISH-N654A (Panel 10C617) AND 1BEPI-R600A (Panel 10C650).
4. HC.OP-GP.ZZ-0004 REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE DETERMINATION was performed to determine the leakage rate.

INITIATING CUE:

PERFORM the CRS review of the completed HC.OP-GP.ZZ-0004 AND **DETERMINE** any required actions.

PSEG NUCLEAR L.L.C.

HOPE CREEK GENERATING STATION

HC.OP-GP.ZZ-0004(Q) - Rev. 6

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE
LEAKAGE DETERMINATION

USE CATEGORY: I

- A. Biennial Review performed Yes ___ No ___ N/A
- B. Change Package(s) and Affected Document Number(s) incorporated into this revision.
- CP No. 80040594 CP Rev. No. 0 AD No. P059 AD Rev. No. 0 or None ___
- C. OTSC(s) incorporated into this revision:
- OTSC No(s) _____ or None

1.0 REVISION SUMMARY

- Changed title of Operations Superintendent (OS) to Shift Manager (SM) throughout procedure. These changes are based on changes made in Revision 9 to NC.NA-AP.ZZ-0002(Q), Organization, and can be considered editorial in nature.
- Attachment 2 - the notation associated which address the asterisk and acceptance criterion have been re-worded for procedure clarity. These changes are considered **editorial** based on an allowance in NC.DM-AP.ZZ-0001(Q), for rewording or adding text for clarification.
- DCP 80040594** - the following changes have been incorporated to address the DCP associated with the removal of the RPV head spray header:
 - Section 2.7 & 5.7 & Attachment 2 [Section 1.7] have been revised to delete the reference to RPV Head Spray Header.
 - Step 2.7.5 has been revised to delete the reference to RPV Spray Header
 - Step 5.7.11 has been revised to delete 1-BC-V020 (HV-F023). Attachment 2 has been revised to reflect this change.
- Section 4.0 has been changed to a bulleted list. *Editorial*

IMPLEMENTATION REQUIREMENTS

Effective date _____

Pending closure of DCP 80040594

APPROVED: _____

Manager - Hope Creek Operations

_____ Date

**REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE
DETERMINATION**

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REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE DETERMINATION

1.0 PURPOSE

This procedure can be used to determine if the leakage rate past the Reactor Coolant System Pressure Isolation Valves specified in Technical Specification Table 3.4.3.2-1 is in compliance with Technical Specification 3.4.3.2, Reactor Coolant System Operational Leakage.

This procedure may also be used whenever an abnormal increase, or incident of high header pressure is observed at any of the following instruments:

- 1BEPISH-N654A / 1BEPI-R600A
- 1BEPISH-N654B / 1BEPI-R600B
- 1BCPISH-N653A
- 1BCPISH-N653B
- 1BCPISH-N653C / 1BCPI-N053C
- 1BCPISH-N653D / 1BCPI-N053D
- 1BCPISH-N657

2.0 PREREQUISITES

2.1 Core Spray Loop A Injection Header Leak Rate Test

- 2.1.1 Permission to perform this test has been obtained from the SM/CRS as indicated by the completion of Attachment 1, Section 1.0. JMB
- 2.1.2 All personnel involved in the performance of this procedure, should complete Attachment 1, Section 3.0, prior to performing any part of this procedure. JMB
- 2.1.3 No other testing or maintenance is in progress that will adversely affect the performance of this test. JMB
- 2.1.4 The Core Spray System is in a standby lineup. JMB
- 2.1.5 Leakage into the Core Spray Loop A Injection Header has resulted in loop pressurization above normal ECCS Jockey Pump discharge pressure as observed at 1BEPISH-N654A (Panel 10C617) OR 1BEPI-R600A (Panel 10C650). JMB

- 2.1.6 Radiation Protection should be contacted prior to performing venting and/or draining in this procedure. The individual(s) performing the venting and or draining should obtain instructions AND approval from the Radiation Protection Shift Technician OR the Radiation Protection Supervisor.

SM/CRS

2.2 Core Spray Loop B Injection Header Leak Rate Test

- 2.2.1 Permission to perform this test has been obtained from the SM/CRS as indicated by the completion of Attachment 1, Section 1.0. N/A
- 2.2.2 All personnel involved in the performance of this procedure, should complete Attachment 1, Section 3.0, prior to performing any part of this procedure. N/A
- 2.2.3 No other testing or maintenance is in progress that will adversely affect the performance of this test. N/A
- 2.2.4 The Core Spray System is in a standby lineup. N/A
- 2.2.5 Leakage into the Core Spray Loop B Injection Header has resulted in loop pressurization above normal ECCS Jockey Pump discharge pressure as observed at 1BEPISH-N654B (Panel 10C618) OR 1BEPI-R600B (Panel 10C650). N/A
- 2.2.6 Radiation Protection should be contacted prior to performing venting and/or draining in this procedure. The individual(s) performing the venting and or draining should obtain instructions AND approval from the Radiation Protection Shift Technician OR the Radiation Protection Supervisor. N/A

2.3 RHR SDC Supply Header from B Recirc Loop

- 2.3.1 Permission to perform this test has been obtained from the SM/CRS as indicated by the completion of Attachment 1, Section 1.0. N/A
- 2.3.2 All personnel involved in the performance of this procedure, should complete Attachment 1, Section 3.0, prior to performing any part of this procedure. N/A
- 2.3.3 No other testing or maintenance is in progress that will adversely affect the performance of this test. N/A
- 2.3.4 The RHR System is in a standby lineup. N/A

2.7 **RHR B LPCI Injection Header / SDC Return Header to B Recirc Loop**

- 2.7.1 Permission to perform this test has been obtained from the SM/CRS as indicated by the completion of Attachment 1, Section 1.0. N/A
- 2.7.2 All personnel involved in the performance of this procedure, should complete Attachment 1, Section 3.0, prior to performing any part of this procedure. N/A
- 2.7.3 No other testing or maintenance is in progress that will adversely affect the performance of this test. N/A
- 2.7.4 The RHR System is in a standby lineup. N/A
- 2.7.5 Leakage into the RHR B LPCI Injection and SDC Return Header to B Recirc Loop Header has resulted in loop pressurization above normal ECCS Jockey Pump discharge pressure as observed at 1BCPISH-N653B. (Panel 10C618) N/A
- 2.7.6 Radiation Protection should be contacted prior to performing venting and/or draining in this procedure. The individual(s) performing the venting and or draining should obtain instructions AND approval from the Radiation Protection Shift Technician OR the Radiation Protection Supervisor. N/A

3.0 **PRECAUTIONS AND LIMITATIONS**

3.1 **Precautions**

- 3.1.1 IF at any time during the performance of this test a step cannot be completed or is observed to be unsatisfactory the NCO AND the SM/CRS should be immediately notified. [CD-927E] IMB
- 3.1.2 This system contains potentially radioactive contaminated fluid. **OBSERVE** good radiological practices to prevent the spread of contamination. IMB
- 3.1.3 IF leak rate is excessive AND prevents depressurizing piping through any of the specified depressurization points, THEN the specified point should be closed AND the SM/CRS informed of the condition. IMB

3.2 **Limitations**

Performance of all subsections may not be necessary. IF not performing all subsections, the performer should determine which subsections are to be performed. All steps within each subsection are to be performed in sequence unless otherwise specified.

JMB

3.3 **Other**

The I&C Technician should install the Measuring and Test Equipment (M&TE) specified in this procedure.

JMB

4.0 **EQUIPMENT REQUIRED**

- Calibrated stop watch
- One poly bottle
- Two-way radios or equivalent
- Pressure indicator ($\pm 2\%$ of full scale accuracy) for injection header pressure determination. Range of instrument must be 0 - 450 psig or less.
- One Graduated Cylinder (or equivalent measuring device).

5.0 **PROCEDURE****NOTE 5.0**

All operations are performed locally unless otherwise noted.

5.1 **Core Spray Loop A Injection Header Leak Rate Test**

- 5.1.1 **IF** this is the first subsection of the procedure to be performed, **LOG** test start time in the Control Room log(s) *JMCB*
- 5.1.2 **ENSURE** that all prerequisites have been satisfied IAW Section 2.1 of this procedure. *JMCB*
- 5.1.3 **IF** this is the first subsection of the procedure to be performed. **ENSURE** Attachment 1, Section 1.0 of the SM/CRS Data and Signature Sheet has been completed, *JMCB*
- 5.1.4 **RECORD** M&TE identification numbers and calibration due dates on Attachment 2. *JMCB*
- 5.1.5 **ENSURE** 1AP-V041 Condensate Transfer Supply to A CS Loop is closed. (RB 102' Rm 4331) *JMCB*
- 5.1.6 **ENSURE** 1-BE-V088 Jockey Pump Supply to A CS Loop is closed. (RB. 54' Rm 4116B) *JMCB*
- 5.1.7 **OPEN** P-BE-V9996 Instrument Root Valve for A Core Spray Pump Discharge Header Pressure Indicator BE-PI-4578A (RB 54' Rm 4118A). **INITIAL** Attachment 2. *JMCB*
- 5.1.8 **RECORD** on Attachment 2, the A Core Spray Pump Discharge Header Pressure Indication from BE-PI-4578A. *JMCB*

- 5.1.9 **REDUCE** Core Spray Loop A Injection Header pressure to 100 psig
AND COLLECT leakoff as follows: *JMB*
- A. **REDUCE** header pressure by draining into a poly bottle via P-BE-V9992
AND P-BE-V9992 DRI C CS Pump Discharge Pressure Indicator
(BE-PI-4578C) Root and Drain Valves (RB 54' Rm 4116). *JMB*
- B. **WHEN** Core Spray A Injection piping pressure
as indicated on BE-PI-4578A reaches 100 psig,
START the stopwatch and
CLOSE AND CAP P-BE-V9992 DRI. *JMB*
- C. **CLOSE** P-BE-V9992. *JMB*
- D. **DETERMINE** volume of fluid collected
(use a graduated cylinder if necessary,
AND TAKE into account any fluid dumped).
RECORD volume on Attachment 2. *JMB*
- 5.1.10 **WHEN** A Core Spray Pump discharge header pressure
indication on BE-PI-4578A reaches the initial value
recorded in Step 5.1.8,
STOP the stop watch
AND RECORD elapsed time in Attachment 2. *JMB*
- 5.1.11 **CALCULATE** the leak rate through 1BE-V007 (HV-F005A)
by dividing the volume recorded in Step 5.1.9 by the
elapsed time recorded in Step 5.1.10.
RECORD leak rate in gpm on Attachment 2. *JMB*
- 5.1.12 **CLOSE** P-BE-V9996 Instrument Root Valve for A Core Spray
Pump discharge header pressure indicator BE-PI-4578A.
INITIAL Attachment 2. *JMB*
- 5.1.13 **IF** required,
OPEN Condensate Transfer Supply to A CS Loop -
1-AP-V041. (RB 102' Rm 4331) *JMB*
- 5.1.14 **OPEN** Jockey Pump Supply to A CS Loop 1-BE-V088. *JMB*
- 5.1.15 **PERFORM** independent verification that the A Core Spray System
has been returned to normal by completing Attachment 2. *AET*

- | | | |
|--------|--|------------|
| 5.1.16 | <u>IF</u> this is the final subsection of the procedure to be performed,
LOG test end time in the Control Room log(s) | <i>IMB</i> |
| 5.1.17 | <u>IF</u> this is the final subsection of the procedure to be performed,
SUBMIT this procedure to the SM/CRS for review
<u>AND</u> completion of Attachment 1. | <i>IMB</i> |
| 5.2 | <u>Core Spray Loop B Injection Header Leak Rate Test</u> | |
| 5.2.1 | <u>IF</u> this is the first subsection of the procedure to be performed,
LOG test start time in the Control Room log(s) | <u>N/A</u> |
| 5.2.2 | ENSURE that all prerequisites have been satisfied IAW Section 2.2
of this procedure. | <u>N/A</u> |
| 5.2.3 | <u>IF</u> this is the first subsection of the procedure to be performed,
ENSURE Attachment 1, Section 1.0 of the SM/CRS
Data and Signature Sheet has been completed,. | <u>N/A</u> |
| 5.2.4 | RECORD stop watch M&TE identification number and
calibration due date on Attachment 2. | <u>N/A</u> |
| 5.2.5 | ENSURE 1-AP-V062 Condensate Transfer Supply to B CS Loop is closed.
(RB 102' Rm 4322B) | <u>N/A</u> |
| 5.2.6 | ENSURE 1-BE-V083 Jockey Pump Supply to B CS Loop is closed.
(RB 54' Rm 4105A) | <u>N/A</u> |
| 5.2.7 | OPEN P-BE-V9986 Instrument Root Valve for B Core Spray
Pump discharge header pressure indicator BE-PI-4578B
(RB 54' Rm 4104B).
INITIAL Attachment 2. | <u>N/A</u> |
| 5.2.8 | RECORD on Attachment 2, the B Core Spray Pump discharge
header pressure indication from BE-PI-4578B. | <u>N/A</u> |

- 5.7.13 **REMOVE** B LPCI Injection header Discharge pressure M&TE as follows
AND INITIAL Attachment 2: N/A
 - A. **CLOSE** Test Connection Valve P-BC-V9958. N/A
 - B. **REMOVE** M&TE pressure indicator at test connection PP-N058B. N/A
 - C. **CAP** Test Connection PP-N058B. N/A
- 5.7.14 **PERFORM** independent verification that the RHR system has been returned to normal by completing Attachment 2. N/A
- 5.7.15 IF this is the final subsection of the procedure to be performed, **LOG** test end time in the Control Room log(s). N/A
- 5.7.16 IF this is the final subsection of the procedure to be performed, **SUBMIT** this procedure to the SM/CRS for review AND completion of Attachment 1. N/A

6.0 **RECORDS**

- 6.1 **RETAIN** the following IAW NC.NA-AP.ZZ-0011(Q); Records Management Program:
 - Procedure cover page
 - Attachment 1 - SM/CRS Data and Signature Sheet
 - Attachment 2 - Inplant Data Sheet

7.0 **REFERENCES**

- 7.1 **P&ID:** M-51-1
M-52-1

7.2 **Procedures**

- NC.NA-AP.ZZ-0005(Q) Station Operating Practices
- NC.NA-AP.ZZ-0012(Q) Technical Specification Surveillance Program
- NC.DE-AP.ZZ-0030(Q). Control of Temporary Modification

7.3 **Commitment Documents**

- CD-927E NRC INFO 97-25
- CD-358F

**ATTACHMENT 1
SM/CRS DATA AND SIGNATURE SHEET
REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE
DETERMINATION**

1.0 PRETEST INFORMATION

1.1 Reason for the Test

1.1.1 Regular Surveillance _____
INITIALS

1.1.2 Retest/Other _____
gmg
INITIALS

1.1.3 IF not performing the complete test,
THEN LIST subsection(s)/ valve(s) to be performed, as well
as marking N/A on the applicable subsection(s)/ valve(s) on
the Attachment(s) that will not be performed,
OR that do not require an independent verification IAW
NC.NA-AP.ZZ-0005(Q); Station Operating Practices.

**5.1 Core Spray Loop A Injection Header ONLY
SUBSECTION(S)/VALVES**

1.2 Plant Conditions

1.2.1 Operational Condition _____ **2**

1.2.2 Reactor Power Level _____ **7%**

1.2.3 Reactor Pressure _____ **905 psig**

1.3 Permission to Perform the Test

1.3.1 Permission granted to perform this test.

Joe Johnson Today/3 hours ago
SM/CRS DATE-TIME

1.3.2 Order No. _____

**ATTACHMENT 1
SM/CRS DATA AND SIGNATURE SHEET
REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE
DETERMINATION**

2.0 POST TEST INFORMATION

2.1 The data acquired during the performance of this test has been reviewed for completeness and compliance with Technical Specification 3.4.3.2, Reactor Coolant System Operational Leakage and the test is considered:

2.1.1 SATISFACTORY

_____/_____
SM/CRS DATE-TIME

2.1.2 UNSATISFACTORY AND
IF necessary the T.S. ACTION statement has been implemented.

_____/_____
SM/CRS DATE-TIME

2.1.3 Order No. _____

2.1.4 Remarks _____

JOB PERFORMANCE MEASURE

**ATTACHMENT 2
INPLANT DATA SHEET
REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE
DETERMINATION**

1.1 Core Spray Loop A Injection Header Leak Rate Test

STEP	TEST EQUIPMENT	INST. TAG/MTE NO.	CAL DUE DATE	NOTES
5.1.4	STOP WATCH	LDC-1	4/30/09	

STEP	NOMENCLATURE	REQ POSITION	PERF
5.1.7	P-BE-V9996 BE-PI-4578A ROOT VLV	OPEN	<i>GMB</i>

STEP	NOMENCLATURE	REQUIRED	ACTUAL	SAT/UNSAT	PERF
5.1.8	CS PMP A DISCH PRESS BE-PI-4578A	N/A	400 PSIG	N/A	<i>GMB</i>
5.1.9.D	VOLUME OF FLUID COLLECTED	N/A	2.5 GAL	N/A	<i>GMB</i>
5.1.10	ELAPSED TIME FOR PRESSURE INCREASE	N/A	0.4 MIN	N/A	<i>GMB</i>
5.1.11	LEAK RATE THROUGH 1BEV007 (5.1.9.D ÷ 5.1.10)	≤ 5 GPM	0.63 GPM	SAT	<i>GMB</i> *

* The asterisk indicates acceptance criteria - in order to satisfy the requirements of the acceptance criteria, the SAT/UNSAT block must be marked SAT.

STEP	NOMENCLATURE	REQ POSITION	PERF	VERIF
5.1.15	P-BE-V9996 BE-PI-4578A ROOT VLV	CLOSED	<i>GMB</i>	<i>AE7</i>
	1-BE-V088 CS LOOP A JOCK PMP TIE-IN ISLN	OPEN	<i>GMB</i>	<i>AE7</i>
	P-BE-V9992 BE-PI-4578C ROOT VLV	CLOSED	<i>GMB</i>	<i>AE7</i>
	P-BE-V9992 DRI BE-PI-4578C DRAIN VLV	CLOSED & CAPPED	<i>GMB</i>	<i>AE7</i>

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Administrative Duties/Reporting Requirements

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

TASK NUMBER: 2000500302/2000020505

JPM NUMBER: 305H-JPM.ECG006 REV #: 04

NRC ADMIN JPM SRO A5

SAP BET: NOH05JPCL06E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: Jim Berglund

Instructor

DATE: 12/12/08

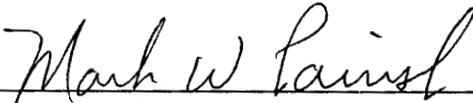
REVIEWED BY:



Operations Representative

DATE: 12/12/08

APPROVED BY:



Training Department

DATE: 12/12/08

STATION: Hope Creek

JPM NUMBER: ECG006

SYSTEM: Administrative Duties/Reporting Requirements

TASK NUMBER: 2000500302/2000020505

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

ALTERNATE PATH:

K/A NUMBER: 2.4.38

IMPORTANCE FACTOR: 2.2 4.0

APPLICABILITY:

RO SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: Hope Creek Event Classification Guide, TOC Rev 81

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 15 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: 15/13 Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: / _____ Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Administrative Duties/Reporting Requirements

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

TASK NUMBER: 2000500302/2000020505

INITIAL CONDITIONS:

1. With the plant operating at 100% power, Hope Creek experiences an earthquake which indicates a magnitude of $> 0.1g$.
2. Control Room Annunciator C6-C4 is in.
3. ON Panel 10C673:
 1. The SMA-3 Event Indicator is White
 2. The Strong Motion Accelerograph Tape Machines have advanced but are not currently running
 3. The AMBER alarm light on the Seismic Switch Power Supply Drawer is lit
4. Numerous amber lights and 3 red lights are lit on the response spectrum analyzer.
5. A LOCA results. The Reactor is successfully scrammed, with RPV level dropping rapidly to $-250''$; then stabilizing between $-225''$ and $-205''$, being maintained using all available ECCS.
6. Drywell Pressure peaked at 44 psig, then dropped to <2 psig over the next 90 seconds.
7. Drywell Pressure is 1.95 psig and continuing to slowly drop.
8. The current 33 ft. elevation wind direction is from 275° at 7 mph.
9. Plant Effluent activity is $1.17E+01$ $\mu\text{Ci/sec}$ Noble Gas and $1.17E-02$ $\mu\text{Ci/sec}$ I-131.

INITIATING CUE:

Based on this information, **CLASSIFY** this event AND **MAKE** the initial notifications.

This is a Time Critical Task, and has two Time Critical elements.

Time zero for this event is now.

ECG006

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**

TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains Hope Creek Event Classification Guide.			
ECG Section i.IV.C	Classification: To use this ECG volume, follow this sequence: 1. ASSESS the event and/or plant conditions and DETERMINE which ECG section(s) is most appropriate.	Operator assesses the initial conditions, and determines that Table 3, Fission Product Barriers, and 9.0, Hazards-Internal/External, are the appropriate ECG sections.			
ECG Section i.IV.C	2. REFER to Section EAL/RAL Flowchart diagram(s), and identify the Initiating Conditions that are related to the event/condition that has occurred or is ongoing.	Operator refers to Table 3.0 and Flowchart Diagrams and identifies that the Initial Conditions for Table 3.0 and EAL 9.5.2 are related to the event that has occurred.			

ECG006

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**

TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section i.IV.C	<p>3. REVIEW the associated EALs or RALs as compared to the event and SELECT the <u>highest</u> appropriate emergency or reportable action level. If identification of an EAL is questionable, refer to paragraph IV.A above.</p> <p>If there is any doubt with regard to assessment of a particular EAL or RAL, the <u>ECG Technical Basis Document</u> should be reviewed. Words contained in an EAL or RAL that are bold face are either threshold values associated with that action level or are words that are defined in the basis for that specific EAL/RAL.</p>	<p>Operator reviews the EALs in section 9.5, and determines that EAL #9.5.2 is the highest emergency action level met or exceeded (ALERT).</p>			

ECG006

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____
DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**

TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section. i.IV.C	<p>4. If an EAL has been entered, then equal level EALs or lower level EALs and RALs are not required to be reported as long as the applicable information is communicated to the NRC using Attachment 5, NRC Data Sheet.</p> <p>If a RAL has already been reported and other conditions subsequently appear that meet the requirements for another RAL, whether or not it is a consequence of the original RAL conditions, then a separate RAL report shall be made. However, multiple RALs may be reported in a single notification provided the time requirements for all the RALs being reported are met.</p>	<p>Examiner Note: Filling out the NRC Data Sheet is beyond the scope of this JPM.</p>			
Table 3.0 1.	<p>In the table review the Emergency Action Levels of all columns and identify which need further review.</p>	<p>Operator reviews the EALs of all columns, and determines that all columns need further review.</p>			

ECG006

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Administrative Duties/Reporting Requirements

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)															
Table 3.0 2.	For each of the three barriers, determine the EAL with the highest point value, and circle the EAL # and point value. No more than one EAL should be selected for each barrier.	Operator determines that the following EALs have been exceeded and represent the highest value met or exceeded for the respective column: 3.1.1.b; 3.2.2.b or 3.2.1.b; 3.3.2.b or 3.3.2.d. Operator circles the EAL numbers and point values for the EALs listed above.																		
Table 3.0 3.	Add the point values circled for the three barriers and enter the total below: _____	Operator adds the values (should be circled), and enters the value 10 in the appropriate space.																		
Table 3.0 4.	Classify based on the point value sum as follows: <table border="1"> <thead> <tr> <th>If the sum is:</th> <th>Classify as:</th> <th>Refer to:</th> </tr> </thead> <tbody> <tr> <td>1,2</td> <td>UNUSUAL EVENT</td> <td>ATT. 1</td> </tr> <tr> <td>3,4</td> <td>ALERT</td> <td>ATT. 2</td> </tr> <tr> <td>5,6,7,8</td> <td>SITE AREA</td> <td>ATT. 3</td> </tr> <tr> <td>9,10</td> <td>GENERAL</td> <td>ATT. 4</td> </tr> </tbody> </table>	If the sum is:	Classify as:	Refer to:	1,2	UNUSUAL EVENT	ATT. 1	3,4	ALERT	ATT. 2	5,6,7,8	SITE AREA	ATT. 3	9,10	GENERAL	ATT. 4	Operator determines that this classification is higher than the classification on EAL 9.5.2 and classifies the event as a General Emergency based on Table 3.0			
If the sum is:	Classify as:	Refer to:																		
1,2	UNUSUAL EVENT	ATT. 1																		
3,4	ALERT	ATT. 2																		
5,6,7,8	SITE AREA	ATT. 3																		
9,10	GENERAL	ATT. 4																		

ECG006

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____
DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**

TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section i.IV.C	5. The STA is responsible to perform an independent verification of the EAL classification. The STA verification does not alleviate the requirement of the SM to make a timely classification. Should the SM fill the STA role, independent verification of the EAL classification will be delegated to another on-shift SRO.	<p><u>IF</u> time permits, <u>THEN</u> Operator requests STA/IA verification of classification.</p> <p>Examiner Note: Due to time spent assessing and/or nature of JPM administration, Operator may not request a verification.</p>			
CUE	<u>IF</u> the Operator requests the STA/IA to independently verify the EAL Classification, <u>THEN INFORM</u> the Operator the STA/IA is not available.	N/A			
ECG Section i.IV.C	6. IDENTIFY and IMPLEMENT the referenced Attachment under Action Required.	Operator identifies and implements ECG Attachment 4.			

ECG006

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Administrative Duties/Reporting Requirements

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 4	2. ACTIVATE "ERO Emergency Callout" per posted instructions titled: "Emergency Callout Activation" (EP96-003)	Operator activates the ERO. Examiner Note: This step cannot be simulated in the classroom.			
CUE	INFORM the operator the Emergency Callout System has been activated.	N/A			
ECG Att. 4	3. MAKE A PAR as follows: a. REFER to Predetermined PAR Flowchart on Pg. 3 and DETERMINE the appropriate PAR. b. <u>IF</u> a Radiologically Based PAR is <u>IMMEDIATELY</u> available, <u>THEN COMPARE</u> the two PARs and choose the most appropriate for inclusion on the ICMF.	Operator Refers to APPENDIX 1, determines that a GE Based 10 Points PAR is appropriate [EVACUATE ALL SECTORS 0-5 MILES, EVACUATE DOWNWIND ±1 SECTOR 5-10 MILES(ENE-E-ESE), SHELTER ALL REMAINING SECTORS, 5-10 MILES].	*		
CUE	<u>IF</u> asked, <u>THEN INFORM</u> the operator a Radiologically Based PAR is not available.	N/A			

ECG006

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**

TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 4	4. COMPLETE the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment).	Operator Completes the ICMF. Examiners Note: See the attached ICMF for an example of what the form should look like when filled out properly. Note that the exact words do not have to be in the "DESCRIPTION OF EVENT", but the description must convey the sense of the Initiating Condition for EALs 3.1.1.b, 3.2.2.b/3.2.1.b, 3.3.2.b/3.3.2.d. The operator may place the Examiner's name as the Communicator or tell the Examiner to place his/her name as the Communicator.	*		
	5. PROVIDE the ICMF to the Primary Communicator (CM1) and DIRECT the Communicator to implement ECG Attachment 6.	Operator provides the ICMF to CM1 and directs implementation of Att.6.	*		
CUE	LOG the time the ICMF is provided to CM1. LOG TIME: _____ ROLE-PLAY as CM1 and REPEAT BACK the direction as given.	Examiners Note: The difference between the "DECLARED AT" TIME and this LOG TIME is the second critical time (13 min.)			

ECG006

OPERATOR TRAINING PROGRAM
 JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**

TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 4	6. DIRECT the Secondary Communicator (CM2) to implement ECG Attachment 8 for a GENERAL EMERGENCY.	Operator directs CM2 to implement Att.8 for a GENERAL EMERGENCY.			
CUE	ROLE-PLAY as CM2 and REPEAT BACK the direction as given.	N/A			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time. REPEAT BACK any message from the operator on the status of the JPM, and then state " This JPM is complete ". STOP TIME:	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ECG006

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event
And/Or Plant Condition

TASK NUMBER: 2000500302/2000020505

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. With the plant operating at 100% power, Hope Creek experiences an earthquake which indicates a magnitude of $> 0.1g$.
2. Control Room Annunciator C6-C4 is in.
3. ON Panel 10C673:
 - a. The SMA-3 Event Indicator is White
 - b. The Strong Motion Accelerograph Tape Machines have advanced but are not currently running
 - c. The AMBER alarm light on the Seismic Switch Power Supply Drawer is lit
4. Numerous amber lights and 3 red lights are lit on the response spectrum analyzer.
5. A LOCA results. The Reactor is successfully scrammed, with RPV level dropping rapidly to $-250"$; then stabilizing between $-225"$ and $-205"$, being maintained using all available ECCS.
6. Drywell Pressure peaked at 44 psig, then dropped to <2 psig over the next 90 seconds.
7. Drywell Pressure is 1.95 psig and continuing to slowly drop.
8. The current 33 ft. elevation wind direction is from 275° at 7 mph.
9. Plant Effluent activity is $1.17E+01$ $\mu\text{Ci}/\text{sec}$ Noble Gas and $1.17E-02$ $\mu\text{Ci}/\text{sec}$ I-131.

INITIATING CUE:

Based on this information, **CLASSIFY** this event AND **MAKE** the initial notifications.

This is a Time Critical Task, and has two Time Critical elements.
Time zero for this event is now.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Perform A Shift Turnover As On-Coming/Off-Going NCO

TASK NUMBER: 2990630301

JPM NUMBER: 305H-JPM.ZZ012

REV #: 02

NRC ADMIN JPM RO A1

SAP BET: NOH05JPZZ12E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

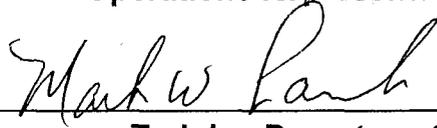
SRO

DEVELOPED BY: J. Berglund
Instructor

DATE: 11/2/08

REVIEWED BY: 
Operations Representative

DATE: 12/12/08

APPROVED BY: 
Training Department

DATE: 12/12/08

STATION: Hope Creek

JPM NUMBER: ZZ012

REV: 02

SYSTEM: Conduct of Operations

TASK NUMBER: 2990630301

TASK: Perform A Shift Turnover As On-Coming/Off-Going NCO

ALTERNATE PATH:

K/A NUMBER: 2.1.3

IMPORTANCE FACTOR: 3.7 3.9

APPLICABILITY:

RO SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: OP-AA-112-101 Rev 2
OP-HC-112-101-1001 Rev 3

TOOLS, EQUIPMENT AND PROCEDURES: Red pen,
Blank OP-HC-112-101-1001 Attachment 6 with Control Room Key Audit initialed for Days.

ESTIMATED COMPLETION TIME: 15 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations**TASK:** Perform A Shift Turnover As On-Coming/Off-Going NCO**TASK NUMBER:** 2990630301**INITIAL CONDITIONS:**

1. The plant is at 100% power.
2. The 'D' SSW pump is C/T for scheduled maintenance.
3. The 10F104 and 00F104 Instrument Air Dryers are in service and the 1AF104 Instrument Air Dryer is in Standby.
4. Salem Units 1 and 2 are in service, Salem Unit 3 is available but NOT in service.
5. Preparations for shift relief are in progress.

INITIATING CUE:

You are the Off-Going Day Shift Reactor Operator of "A" Shift.
Complete the Equipment Status Checklist, Attachment 6 of OP-HC-112-101-1001, with the exception of the Control Room Key Audit.
The Control Room Key Audit has been performed by another operator.

JPM: ZZ012

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Perform A Shift Turnover As On-Coming/Off-Going NCO**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue <u>AND</u> a blank copy of OP-HC-112-101-1001 Attachment 6 <u>WITH</u> the Control Room Key Audit completed (initialed).	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	OP-HC-112-101-1001	N/A			

JPM: ZZ012

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Perform A Shift Turnover As On-Coming/Off-Going NCO

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.2.3	Utilize appropriate attachment from this document to document the turnover.	Operator completes OP-HC-112-101-1001 Attachment 6 with the exception of the Control Room Key Audit. Examiner Note: Refer to attached example of completed turnover sheet and the following critical aspects of completion.			
		Operator circles and/or crosses out operating equipment with $\geq 80\%$ accuracy. Examiner Note: There are 180 total opportunities, ≤ 36 errors is passing.	*		
		Operator places an "X" over the 'D' SSW pump.	*		
		Operator recognizes HPCI Flow Controller is in MAN and should be in AUTO and reports to CRS. Examiner Note: Flow controller is failed and CANNOT be restored to AUTO.	*		

JPM: ZZ012

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Perform A Shift Turnover As On-Coming/Off-Going NCO**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>AFTER</u> Operator recognizes HPCI Flow Controller is in MAN and reports to CRS, <u>THEN INFORM</u> Operator the mis-positioning will be investigated and corrected by another Operator.</p>	N/A			
4.2.3	Utilize appropriate attachment from this document to document the turnover.	Operator logs HPCI Flow Controller position as being in Manual.	*		
Operator red-circles HPCI Flow Controller entry.					
<u>WHEN</u> Checklist is complete, <u>THEN</u> Operator signs in Off-Going Operator block.					
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ012

TASK: Perform A Shift Turnover As On-Coming/Off-Going NCO

TASK NUMBER: 2990630301

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

Examiner Copy

ATTACHMENT 6 EQUIPMENT STATUS CHECKLIST (Page 1 of 7)

[CD-421Y]

Shift On-Duty A Days X Nights Date TODAY

To be completed by the off-going RO/PO for turnover to the oncoming RO/PO.
Circle designator for equipment in service,
X over designator for INOP/Bypassed equipment.

Cooling Water

SSWS:	<input type="radio"/> A	<input type="radio"/> C	<input type="radio"/> B	<input checked="" type="radio"/> D	Remarks
SACS:	<input type="radio"/> A	<input type="radio"/> C	<input type="radio"/> B	<input type="radio"/> D	'D' SSW C/T
TACS Loop:	<input type="radio"/> A	<input type="radio"/> B			
RACS:	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C		

Condenser/Condensate

CW:	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	
SJAE:	<input type="radio"/> A	<input type="radio"/> B			
Offgas Train:	<input type="radio"/> Unit 1		<input type="radio"/> Common		
PCP:	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C		
SCP:	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C		
HWCI:	<input type="radio"/> RUN		<input type="radio"/> STOP		

Reactor Feedwater

A RFP:	<input type="radio"/> AUTO	<input type="radio"/> MANUAL		
B RFP:	<input type="radio"/> AUTO	<input type="radio"/> MANUAL		
C RFP:	<input type="radio"/> AUTO	<input type="radio"/> MANUAL		
Startup Valves	<input type="radio"/> AUTO	<input type="radio"/> MANUAL	<input type="radio"/> CLOSED	

Reactor

RWCU Pump:	<input type="radio"/> A	<input type="radio"/> B		
RWCU Filter-Demin:	<input type="radio"/> A	<input type="radio"/> B		
Reactor Recirc Pumps:	<input type="radio"/> A	<input type="radio"/> B		
Recirc Control:	<input type="radio"/> A	<input type="radio"/> B		
	<input type="radio"/> AUTO	<input type="radio"/> MAN	<input type="radio"/> AUTO	<input type="radio"/> MAN
CRD Pumps:	<input type="radio"/> A	<input type="radio"/> B		
CRD Stabilizer:	<input type="radio"/> A	<input type="radio"/> B		
CRD Flow Control:	<input type="radio"/> A	<input type="radio"/> B		

Nuclear Instrumentation

APRM:	<input type="radio"/> A	<input type="radio"/> C	<input type="radio"/> E	<input type="radio"/> B	<input type="radio"/> D	<input type="radio"/> F	
IRM:	<input type="radio"/> A	<input type="radio"/> C	<input type="radio"/> E	<input type="radio"/> G	<input type="radio"/> B	<input type="radio"/> D	<input type="radio"/> F
SRM:	<input type="radio"/> A	<input type="radio"/> C			<input type="radio"/> B	<input type="radio"/> D	
FLOW UNITS:	<input type="radio"/> A	<input type="radio"/> C			<input type="radio"/> B	<input type="radio"/> D	
RBM:	<input type="radio"/> A				<input type="radio"/> B		
RWM:		<input type="radio"/> Operable			<input type="radio"/> Inoperable		

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ATTACHMENT 6 EQUIPMENT STATUS CHECKLIST (Page 2 of 7)

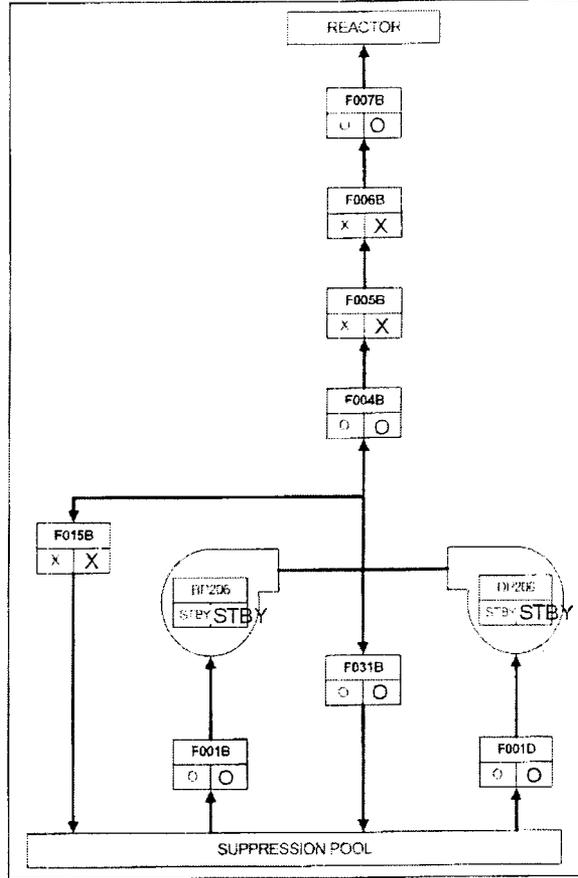
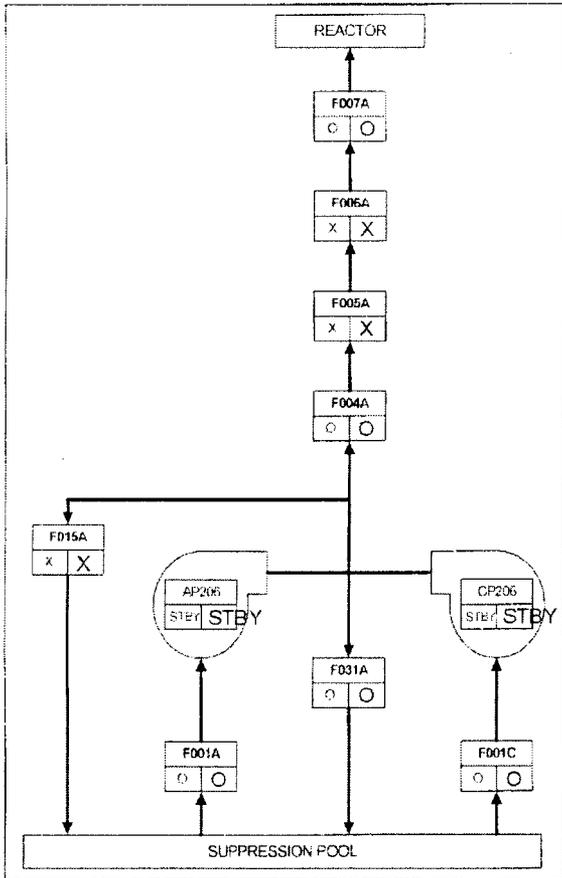
										Remarks
<u>Turbine:</u>										
T/G Oil Pump OP111										
Motor Suction Pump OP108										
Emergency Bearing Oil Pump OP112										
EHC Pumps:	(A)							B		
Lift Pumps:	A	B	C	D	E	F	G	H	J	
Seals:	(SSE)							AUX		
<u>Main Generator:</u>										
Voltage Regulator:	(AUTO)							MANUAL		
Auto Track:	(ON)							OFF		
Stabilizer:	(ON)							OFF		
Stator Cooling:	(A)							B		
SALEM Units On-line:	(1)	(2)						3		
<u>Diesel Generator:</u>										
	A	B	C	D						
<u>Chilled Water:</u>										
Turbine Bldg (K111):	(A)	(B)	C	D						
TB CW Pumps:	(A)	(B)	C							
TSC Chiller (K403):	(A)		B							
Control Area Chiller (K400):	(A)		B							
<u>Ventilation:</u>										
CREF:	A							B		
FRVS Recirc:	A	C	E		B	D	F			
FRVS Vent:	A				B					
Fans In Lockout:										
<u>H2/O2 Analyzers:</u>										
	A							B		
<u>Fuel Pool Cooling Pumps:</u>										
	(A)							B		
<u>BOP System Bypass:</u>										
	(Yes)							No		(Consistent With Plant Condition)
<u>Feedwater Heaters:</u>										
	(Normal)									
<u>Air Systems:</u>										
Instrument Air Dryers:	(10F104)	(00F104)	1AF104							
Service Air:	(10K107)		00K107							
Emergency Instrument Air:	10K100									
PCIG:	(A)				(B)					
	AUTO/AULD	(AULD)	(AULD)							
<u>Aux Boiler:</u>										
	X	(B)	C							"A" Boiler Removed

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OP-HC-112-101-1001
Revision 3
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ATTACHMENT 6 EQUIPMENT STATUS CHECKLIST (Page 3 of 7)

CORE SPRAY SYSTEM



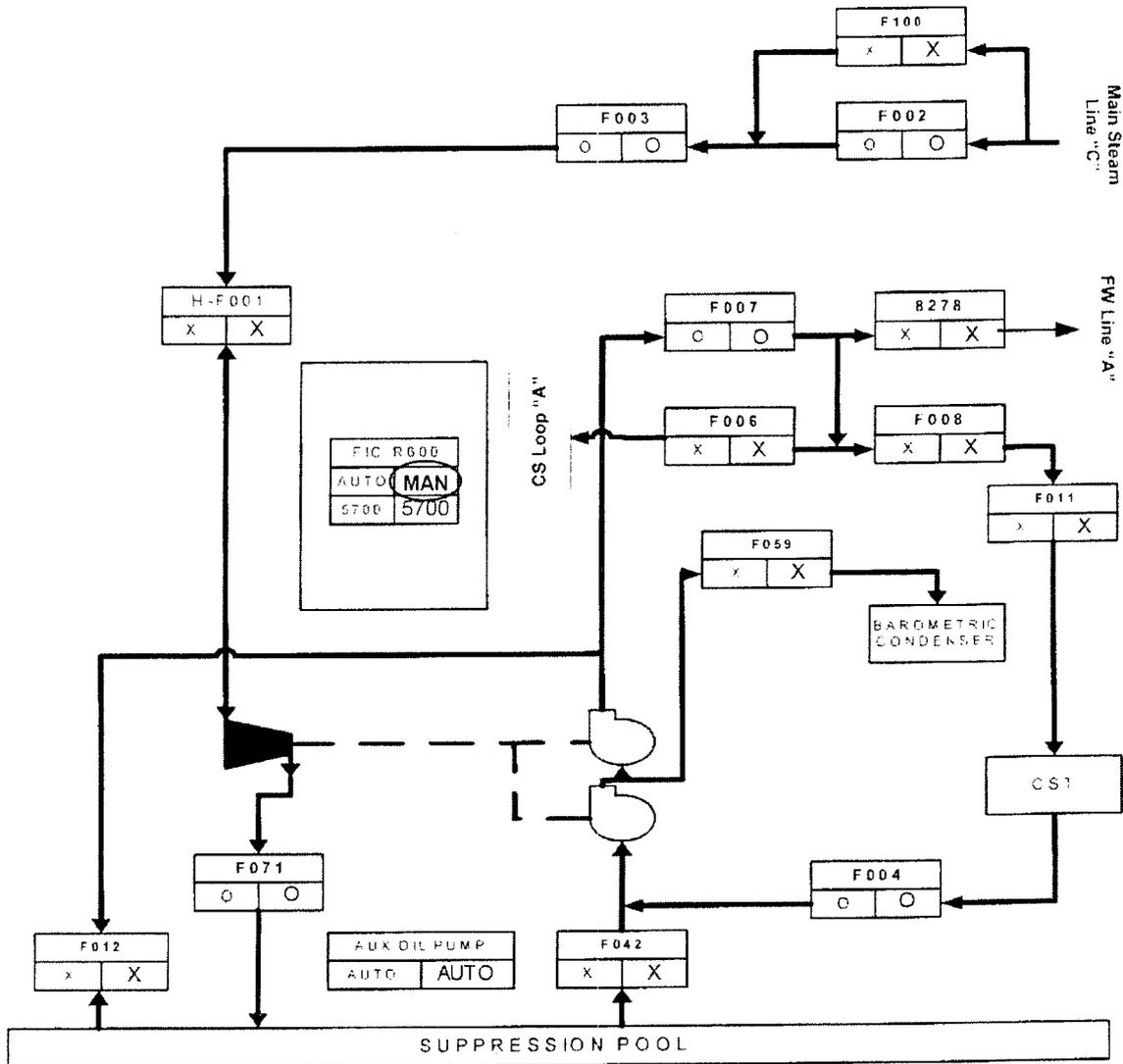
REMARKS: _____

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Revision 3
Page 17 of 22

ATTACHMENT 6 EQUIPMENT STATUS CHECKLIST (Page 4 of 7)

HPCI SYSTEM



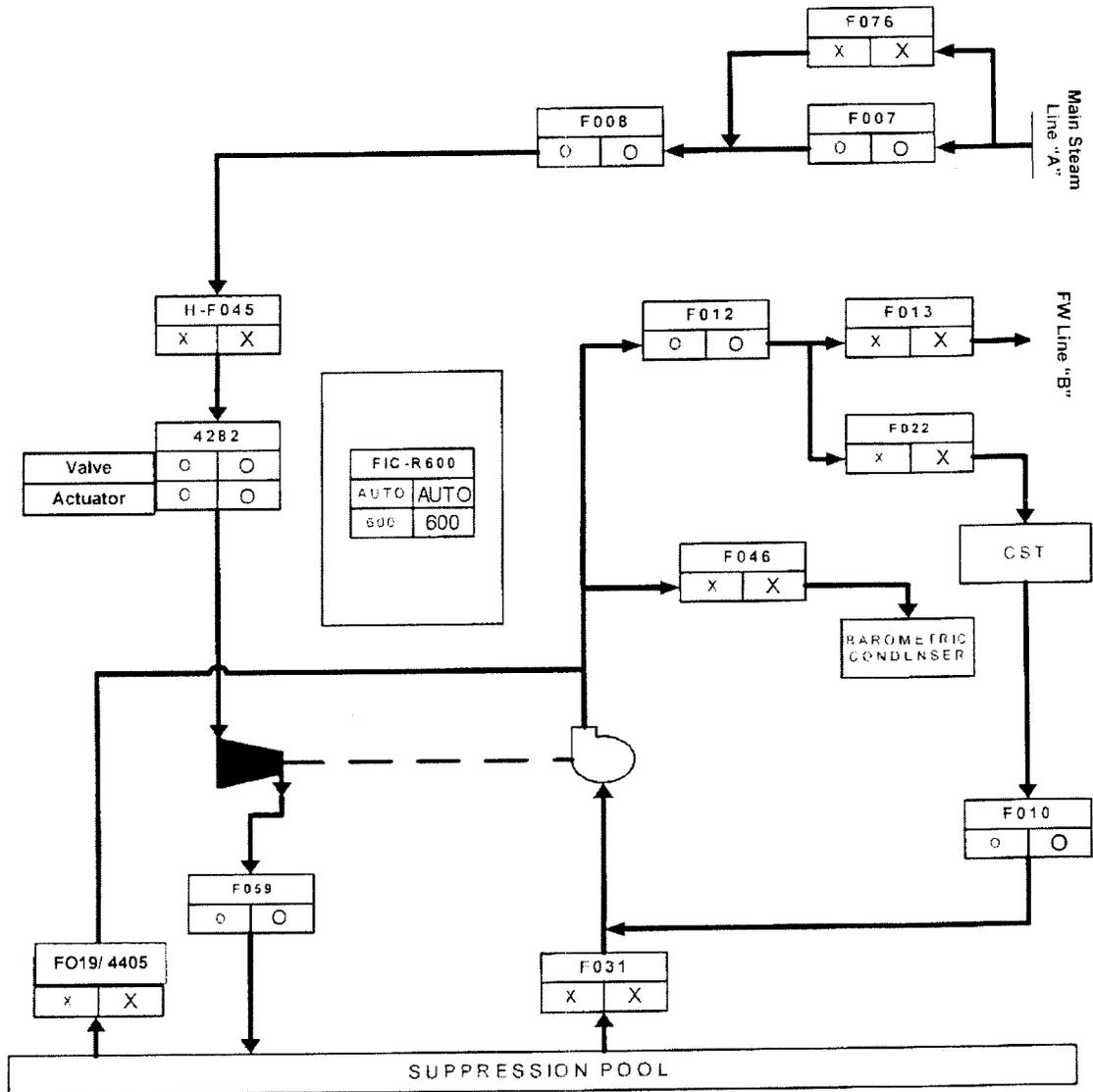
REMARKS: _____

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Revision 3
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ATTACHMENT 6 EQUIPMENT STATUS CHECKLIST (Page 5 of 7)

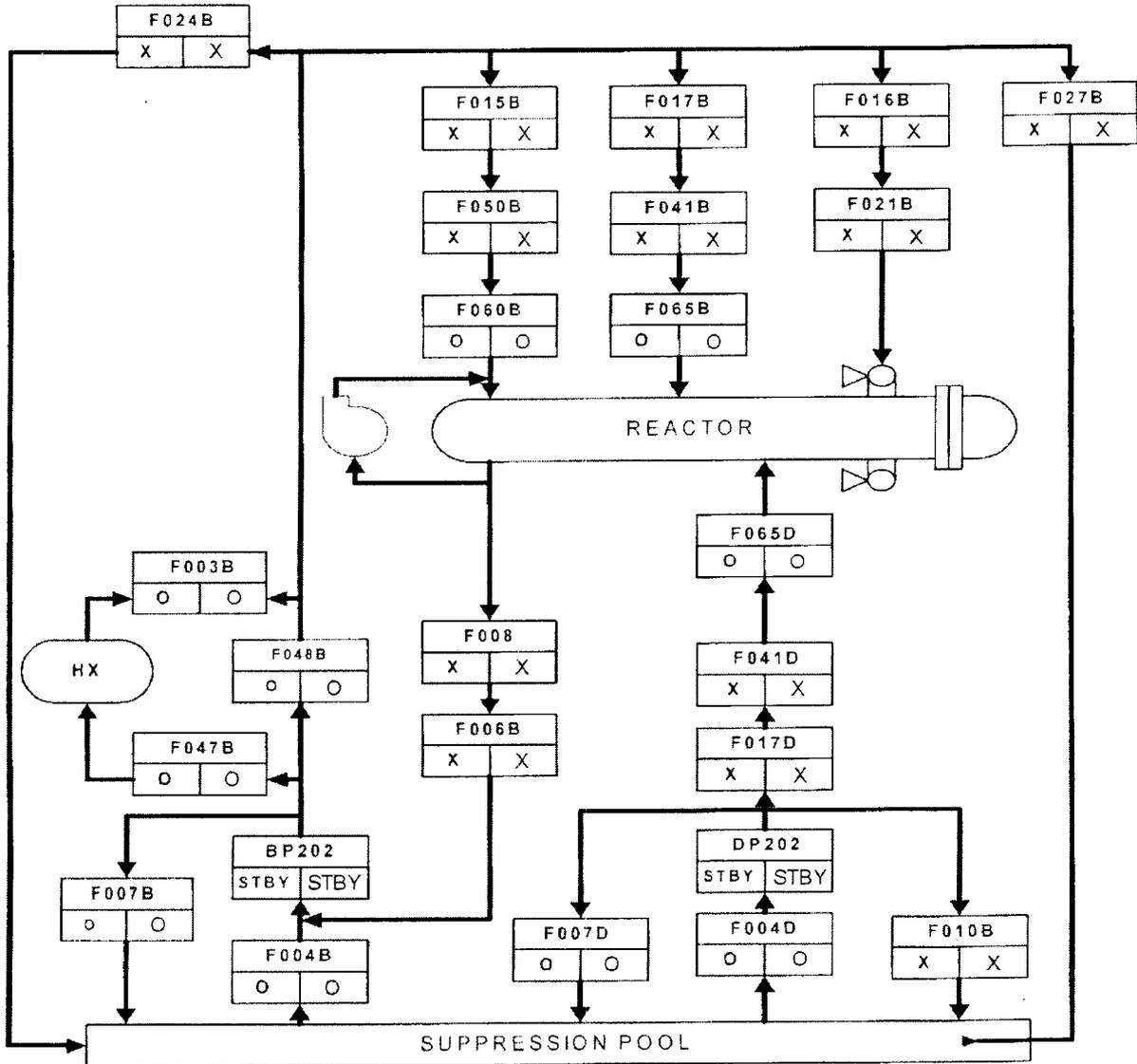
RCIC SYSTEM



REMARKS: _____

ATTACHMENT 6 EQUIPMENT STATUS CHECKLIST (Page 6 of 7)

RHR "B"



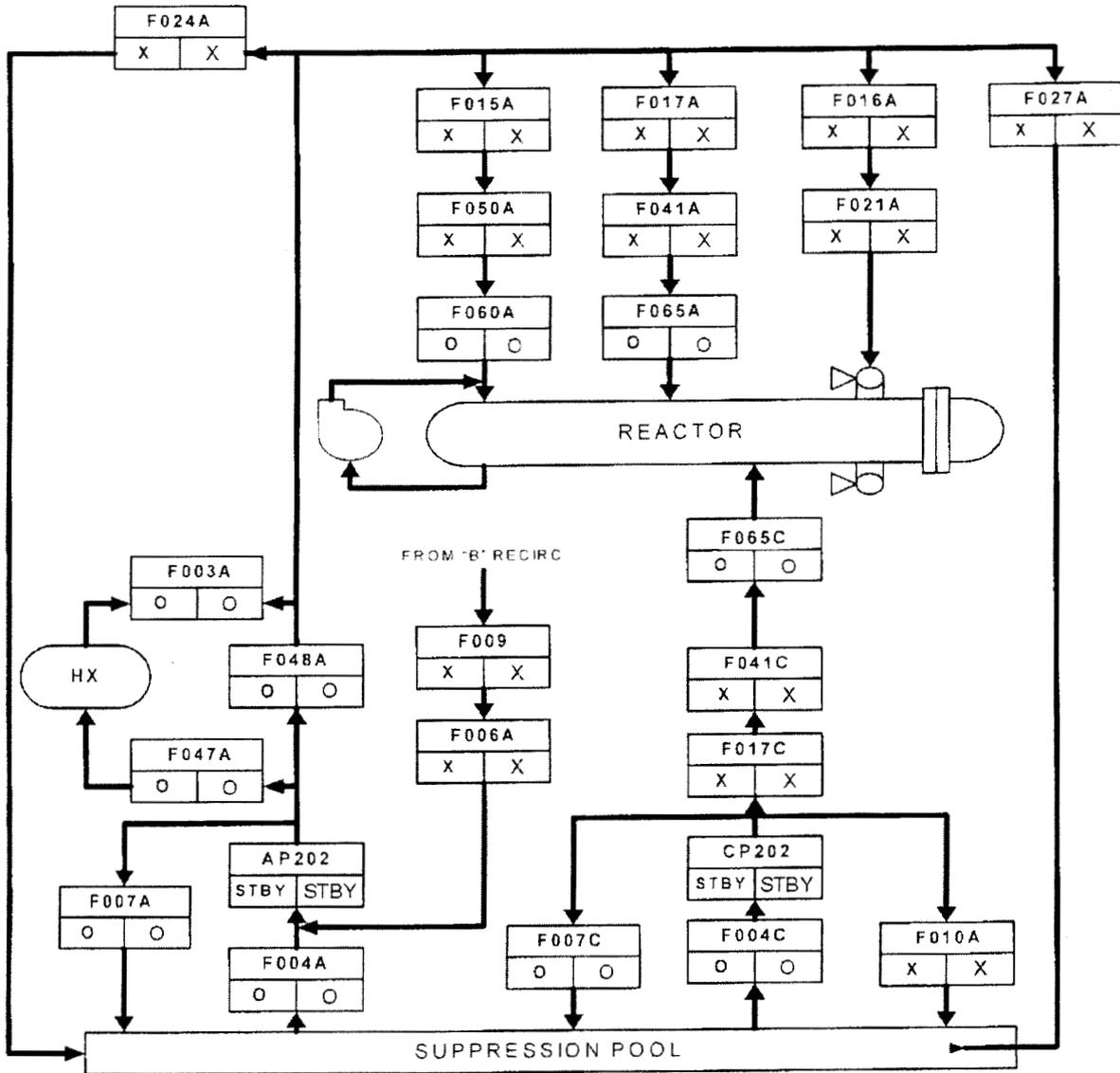
REMARKS: _____

Examiner Copy

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Revision 3
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ATTACHMENT 6 EQUIPMENT STATUS CHECKLIST (Page 7 of 7)

RHR "A"



REMARKS: _____

Control Key Audit
Performed By:

QMB
Initials

Checklist
Performed By:

Signature
Off-going Operator

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
----------------	--

INITIALIZE the simulator to 100%.

ENSURE equipment alignment matches attached checklist.

PLACE the HPCI Flow Controller in MANUAL.

ENSURE the 'B' SSW pump is in service.

C/T 'D' SSW pump as follows:

1. **INSERT** Malfunction **CW05D**
2. **START** the 'D' SSW pump and allow to trip
3. **ACKNOWLEDGE** alarms
4. **PLACE** HV-2198D in LOCKOUT
5. **PLACE** HV-2197D in LOCKOUT

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
----------------	-------------

PLACE red bezel on DP502 SSW pump.

PLACE red bezel cover on HV-2198D discharge valve.

PLACE red bezel cover on HV-2197D backwash valve.

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:
	2	EVENT ACTION: COMMAND: PURPOSE:

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CW05D Trip of DP501 SSW pump	---	---	NONE	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CW24 HV-2197D Backwash Valve breaker	---	---	NONE	---	OPEN

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	5A23 A1 LO DP502 OVLD/PWR FAIL light	---	---	NONE	---	OFF
	5A23 A2 LO DP502 INOP light	---	---	NONE	---	ON
	5A23 F LO DP502 SSW pump STOP	---	---	NONE	---	OFF
	5A41 A LO HV-2198D OVLD/PWR FAIL	---	---	NONE	---	ON
	5A41 E DI HV-2198D OPEN PB	---	---	NONE	---	ON
	5A41 F LO HV-2198D CLOSE light	---	---	NONE	---	OFF
	9A2 B DI HPCI FIC-R600 AUTO Pushbutton	---	---	NONE	---	OFF

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. The 'D' SSW pump is C/T for scheduled maintenance.
3. The 10F104 and 00F104 Instrument Air Dryers are in service and the 1AF104 Instrument Air Dryer is in Standby.
4. Salem Units 1 and 2 are in service, Salem Unit 3 is available but NOT in service.
5. Preparations for shift relief are in progress.

INITIATING CUE:

You are the Off-Going Day Shift Reactor Operator of "A" Shift.
Complete the Equipment Status Checklist, Attachment 6 of OP-HC-112-101-1001, with the exception of the Control Room Key Audit.
The Control Room Key Audit has been performed by another operator.

JOB PERFORMANCE MEASURE

STATION: Hope Creek
SYSTEM: Conduct of Operations
TASK: Generate An SAP System Valve/Breaker Alignment
TASK NUMBER: 2990090301

JPM NUMBER: 305H-JPM.ZZ030 **REV #:** 01

NRC ADMIN JPM RO A2

SAP BET: NOH05JPZZ30E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

SRO

DEVELOPED BY: J. Berglund **DATE:** 11/8/08

Instructor

REVIEWED BY:  **DATE:** 12/12/08

Operations Representative

APPROVED BY:  **DATE:** 12/12/08

Training Department

STATION: Hope Creek

JPM NUMBER: ZZ030

REV: 01

SYSTEM: Conduct of Operations

TASK NUMBER: 2990090301

TASK: Generate An SAP System Valve/Breaker Alignment

ALTERNATE PATH:

K/A NUMBER: 2.1.29

IMPORTANCE FACTOR: 4.1 4.2

APPLICABILITY:

RO SRO

EO RO STA SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-DL.ZZ-0015 Rev 21
SH.WM-DG.ZZ-0015 Rev 6

TOOLS, EQUIPMENT AND PROCEDURES: SAP Computer and accessible SAP printer.

ESTIMATED COMPLETION TIME: 15 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

TASK NUMBER: 2990090301

INITIAL CONDITIONS:

1. The plant is at 100% power steady state.
2. The current time is 3:30 am.

INITIATING CUE:

You are the Tuesday Night Shift Plant Operator.

PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) for the Shift Routine.

JPM: ZZ030

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	SETUP Logon to the SAP Training Client Using: User: TRAIN20 Password: WELCOME9 Ensure the "WCM: Area Menu" is open (Fast Path ZWCMM)	N/A			
CUE	PROVIDE the operator the initiating cue <u>AND</u> the following: <input type="checkbox"/> A prepared copy of HC.OP-DL.ZZ-0015 with an Attachment 1 completed for Dayshift (Attached) <input type="checkbox"/> SH.WM-DG.ZZ-0015	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	HC.OP-DL.ZZ-0015	N/A			
3.6.1. A	PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) <u>AND FILE</u> in the Control Room	Examiner Note: Refer to steps below for Standards associated with this step.			

JPM: ZZ030

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**

TASK: **Generate An SAP System Valve/Breaker Alignment**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	IF necessary, THEN Operator obtains the correct procedure.	Operator obtains procedure SH.WM-DG.ZZ-0015. Examiner Note: The procedure is only a desktop guide and the operator may be proficient at the task and <u>NOT</u> reference the desktop guide.			
	SH.WM-DG.ZZ-0015	N/A			
5.3.6	Printing/Reviewing Off-Normal From the WCM: Area Menu A. Click "WCM Reports" menu, then click "Off Normal Report (Version 1)".	Operator Clicks: "WCM Reports" menu. Operator then clicks "Off Normal Report (Version 1)".			
	B. Complete "Object Info" section for report to be obtained.	Operator enters the following Object Info: Planning Plant: NNUC	*		
		Plant Section: HC	*		
		Mode: 01	*		
		Type: F	*		
		Technical Object: * <u>OR H*</u> <u>OR H1*</u>	*		
	C. Select desired "Display Filter" either "Off Normal" or "Tagged" or both.	Operator selects "Display Filter" for "Off Normal" <u>ONLY</u> .	*		

JPM: ZZ030

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	D. If printing report:	Based on Initiating Cue, Operator determines printing the report <u>IS</u> required. Examiner Note: It is <u>NOT</u> critical in the following steps <u>HOW</u> the Operator prints the Report. For instance, may select preview mode and then use printer icon. It is also <u>NOT</u> critical to actually retrieve the printout. (Not all SAP printers work in the Training Client) Critical portion is to execute steps to generate a printout.			
	<ul style="list-style-type: none"> Under "Program" select "Execute and Print". 	Under "Program", Operator selects "Execute and Print".	*		
CUE	IF in the LDC, <u>THEN PROVIDE</u> the Operator with an accessible SAP printer number. PRINTER PROVIDED: _____	N/A			
	<ul style="list-style-type: none"> Select output device then click "Continue". 	Operator Selects an output device then clicks "Continue".	*		
	E. If reviewing report, click "Execute".	Based on Initiating Cue, Operator determines this step is not required.			
	F. Click "Back".	Operator clicks "Back" to exit.			

JPM: ZZ030

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	HC.OP-DL.ZZ-0015	N/A			
CUE	RETRIEVE printed Off-Normal AND INFORM the operator the Report has been filed.	N/A			
3.6.1. A	PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) AND FILE in the Control Room	WHEN printed Off-Normal is filed, THEN Operator enters time (simulated to be 03:30) AND initials Attachment 1.			
CUE	WHEN operator informs you the task is complete, OR the JPM has been terminated for other reasons, THEN RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ030

TASK: Generate An SAP System Valve/Breaker Alignment

TASK NUMBER: 2990090301

QUESTION: _____

RESPONSE: _____

RESULT: SAT UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: SAT UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power steady state.

INITIATING CUE:

You are the Tuesday Night Shift Plant Operator.

PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) for the Shift Routine.

JOB PERFORMANCE MEASURE

ATTACHMENT 1
 (Page 1 of 1)
TUESDAY SHIFT ROUTINE LOG

Date: TODAY

REQUIRED	ROUTINES	0600 - 1800	1800 - 0600
1 X Shift	3.6.1.B PERFORM lamp test on all possible Sections of 10C800.	99	
NOTE	3.6.3 MARK all Control Room strip charts (Date & Initial), VERIFIED status of Paperless Recorders. NOTIFIED I&C if Memory Space digital reading \geq 20%.	99	

NOTE - Only recorders that are Operating or Operable need be checked.

REQUIRED	ROUTINES	TIME COMPLETED	INITIALS
1800 - 0600	3.6.1.A PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) AND FILE in the Control Room		
1800 - 0600	3.6.2 Control Room cleanup		
1800 - 0600	3.6.4 Attachment 2 of SH.OP-DL.ZZ-0027(Z), has been completed and Temporary Log package for the next day has been prepared.		
1800 - 0600	3.6.5 PLACE the out-of-service TSC Chilled Water Pump 1A(B)-P-414 in-service (pump only) for a 1-hour run to purge any air from piping high points IAW HC.OP-SO.GJ-0002(Q), A(B)K403 1E Panel Room Chilled Water System Operation.. [70036044]		
1800 - 0600	3.6.6 PLACE the out-of-service Control Area Chilled Water Pump 1A(B)-P-400 in-service (pump only) for a 1-hour run to purge any air from piping high points IAW HC.OP-SO.GJ-0001(Q), Control Area Chilled Water System Operation. [70086974]		

Performed By: John Jones

Supervisor Review: Tim Johnson

0600-1800

1800-0600

HOPE CREEK GENERATING STATION

HC.OP-DL.ZZ-0015(Q) - Rev. 21

TUESDAY SHIFT ROUTINE LOG

USE CATEGORY: II

- Biennial Review Performed: Yes No NA
 - Packages and Affected Document Numbers incorporated into this revision:
 CP No. _____ CP Rev. AD No. Rev No. _____ None
 - The following OTSCs were incorporated into this revision: None
-

REVISION SUMMARY

This revision adds Step 3.6.6 and instruction to Attachment 1 for a Control Area Chilled Water Pump 1A(B)-P-400 - Weekly Run. This Step places the out-of-service Control Area Chilled Water Pump in-service (pump only) for a 1-hour run to purge any air from piping high points IAW HC.OP-SO.GJ-0001(Q), A(B)K400 Control Area Chilled Water System Operation.
 Applicable References added to Section 5.0. [CRCA 70086974]

IMPLEMENTATION REQUIREMENTS

Effective date 8/15/2008

None

TUESDAY SHIFT ROUTINE LOG

1.0 PURPOSE

The purpose of this log is to record completion and results or schedule the performance of activities required at a frequency of one week or less.

2.0 RESPONSIBILITY

- 2.1 Shift Manager/Control Room Supervisor - the SM/CRS is responsible to review this Log once per shift and note the review where indicated. CRS has primary responsibility for completion and documentation of log reviews.
- 2.2 Nuclear Control Operator (NCO) - NCO completes or directs completion of all sections applicable to the shift on duty.
- 2.3 Operations Staff - transmits the completed log to TDR for completion.

3.0 PROCEDURE

- 3.1 Attachment 1 is completed every Tuesday. Attachment 1 schedules activities or additional data sheets that the NCO must complete or direct completion.
- 3.2 The NCO performs and initials activities conducted at the NCO watch station.
- 3.3 The NCO directs performance and initials completion of activities performed outside the NCO area of responsibility.
- 3.4 The SM/CRS is notified when an activity is not completed or an entry is out-of-specification.
- 3.5 Completed logs are filed at the end of the day in the Control Room file with the remainder of completed logs for that day.

3.6 Procedures for each routine are provided below listed by the corresponding routine number.

3.6.1. **Shiftly Routines**

- A. Once daily,
GENERATE the WCM Off-Normal Report
USING the REPORTS/OFF-NORMAL REPORT function
(Off-Normal and NOT Tagged)
AND FILE in the Control Room.
- B. **PERFORM** a lamp check on all possible Sections of 10C800.
REPLACE all observed burned out bulbs.
- C. Once daily,
FILE all closed WCDs in the marked file in the WCC.
- D. At the end of each month
TRANSFER all closed tagouts from the current month file to the
two year file in the Operations supply room.
REMOVE and **DISCARD** all tagouts greater than two years old.

3.6.2. **Control Room Cleanup**

- **CLEAN** the Control Room CRT screens.
- **DUST** the Control Console.
- **TAKE** out trash.
- **CLEAN UP** unnecessary papers from the Control Room.

NOTE

Only recorders that are Operating or Operable need be checked in this section.

3.6.3. **Control Room Strip Charts & Paperless Recorders**

A. **Control Room Strip Charts**

The NCO shall use chart stamp or black ink pen on each Control Room chart, dating & initialing where required. **RESET** to correct time if required.

B. **Paperless Recorders**

On the recorder Status Bar **PERFORM** the following:

- **VERIFY** Memory Space Icon is illuminated "green."
- **VERIFY** PC Card Icon is illuminated "green."
- **VERIFY** Memory Space Indicator indicating "orange" if recording or "gray" if not recording.
- **VERIFY** Memory Space digital reading < 20%
IF reading ≥ 20%, **NOTIFY** I&C.

[REFERENCE VTD 325037, page 28]

3.6.4. **Temporary Logs**

The Nuclear Control Operator (NCO) should **ENSURE** the completion of Attachment 2 of SH.OP-DL.ZZ-0027(Z); Temporary Reading Log & Log Supplements **AND PREPARE** the Temporary Log package for the next day.

NOTE

IF it has been over a week since the out of service Chilled Water Pump has been started, it may trip due to air intrusion. [80077941]

3.6.5. **TSC Chilled Water Pump 1A(B)-P-414 - Weekly Run**
[70036044]

PLACE the out-of-service TSC Chilled Water Pump 1A(B)-P-414 in-service (pump only) for a 1-hour run to purge any air from piping high points IAW HC.OP-SO.GJ-0002(Q), A(B)K403 1E Panel Room Chilled Water System Operation.

NOTE

IF it has been over a week since the out of service Chilled Water Pump has been started, it may trip due to air intrusion. [70086974]

3.6.6. **Control Area Chilled Water Pump 1A(B)-P-400 - Weekly Run**
[70086974]

PLACE the out-of-service Control Area Chilled Water Pump 1A(B)-P-400 in-service (pump only) for a 1-hour run to purge any air from piping high points IAW HC.OP-SO.GJ-0001(Q), A(B)K400 Control Area Chilled Water System Operation.

4.0 ATTACHMENTS

4.1 Attachment 1, Tuesday Shift Routine Log

5.0 REFERENCES

P&ID; M-15-0, Sht. 1

Order 70036044 - 1A-P-414 Trips Due To Air Intrusion

Order 70086974 - Control Area Chilled Water Pump Trip On Low Flow.

80077941

70086974

SH.OP-DL.ZZ-0027(Z); Temporary Reading Log & Log Supplements

HC.OP-SO.GJ-0001(Q), A(B)K400 Control Area Chilled Water System Operation.

HC.OP-SO.GJ-0002(Q), A(B)K403 1E Panel Room Chilled Water System Operation.

5.3.2. Change Current Position
From the WCM: Area Menu

- A. Click "Work Clearance Management", go to "Current Positions", then double click "Create/Change".
- B. Enter functional location preceded by an "F" in the previous box, click "Enter".

NOTE

Remark is required when changing position to off-normal or back to normal.

- C. Enter position in "Current Position" field and reason for change in "Comments" field, click "Save".

5.3.3. Display Functional Location Current Position
From the WCM: Area Menu

- A. Click "Work Clearance Management", go to "Current Positions", then double click "Display"
- B. Enter functional location preceded by an "F" in the previous box, click "Enter".
- C. After reviewing Blocking Point (item), click "Back".

5.3.4. Viewing Information Page
To view Information Page (IP) open another SAP Session

- A. Enter "ZCD2" in Fast Path screen.
- B. Enter Functional Location and Planning Plant data and click "Enter".
- C. Select "FLOCDet" icon.
- D. The Information Page (IP) is located under Blocking Points Comments section.

- 5.3.5. Updating Location details and IP page of Components
To update Information Page (IP) open another SAP Session
- A. Enter "ZCD2" in Fast Path screen.
 - B. Enter Functional Location and Planning Plant data and click "Enter".
 - C. Select "FLOCDet" icon.
 - D. Click "ChangeMode"
 - E. Type in desired special Location detail information in Location box.
 - F. Type in desired special instructions into Blocking Point Comments boxes.
 - G. Click "Save".
 - H. Click "Back"
 - I. Click "Back" again to exit the component data module and save all entries.
- 5.3.6. Printing/Reviewing Off-Normal
From the WCM: Area Menu
- A. Click "WCM Reports" menu, then click "Off Normal Report (Version 1)".
 - B. Complete "Object Info" section for report to be obtained.
 - C. Select desired "Display Filter" either "Off Normal" or "Tagged" or both.
 - D. If printing report:
 - Under "Program" select "Execute and Print".
 - Select output device then click "Continue".
 - E. If reviewing report, click "Execute".
 - F. Click "Back".

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Equipment Control

TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator

TASK NUMBER: 2990010101

JPM NUMBER: 305H-JPM.ZZ035
NRC ADMIN JPM RO A3

REV #: 00

SAP BET: NOH05JPZZ35E

ALTERNATE PATH:

APPLICABILITY:

EO

RO

STA

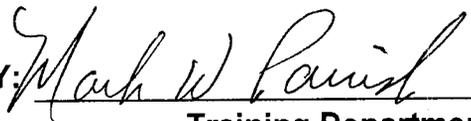
SRO

DEVELOPED BY: J. Berglund
Instructor

DATE: 11/15/08

REVIEWED BY: 
Operations Representative

DATE: 12/12/08

APPROVED BY: 
Training Department

DATE: 12/14/08

STATION: Hope Creek

JPM NUMBER: ZZ035

REV: 00

SYSTEM: Equipment Control

TASK NUMBER: 2990010101

TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator

ALTERNATE PATH:

K/A NUMBER: 2.2.23

IMPORTANCE FACTOR: 3.2 4.2

APPLICABILITY:

RO SRO

EO RO STA SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-DL.ZZ-0026 Rev 113
HC.IC-FT.SK-0006 Rev 15

TOOLS, EQUIPMENT AND PROCEDURES:

Blank HC.OP-DL.ZZ-0026 Attachment 5, Prepared HC.IC-FT.SK-0006 Ops Info Sheet

ESTIMATED COMPLETION TIME: 10 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____ GRADE: SAT UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ DATE: _____

NAME: _____

DATE: _____

SYSTEM: Equipment Control

TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator

TASK NUMBER: 2990010101

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. I&C is performing scheduled functional test HC.IC-FT.SK-0006, RWCU NSSSS Division 4 Steam Leak Detection.
3. I&C requires opening breaker 52-242081 for the RWCU BG-HV-F004 valve to perform the test.
4. Applicable OHAs have been flagged.

INITIATING CUE:

You are the Reactor Operator.

LOG the I&C functional test onto HC.OP-DL.ZZ-0026 Attachment 5 (provided).

The applicable Technical Specification is 3.6.3 (Active) and the Required Action time is four hours.

JPM: ZZ035

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**

TASK: **Perform the Watchstanding Duties of the Nuclear Control Room Operator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue AND: <ul style="list-style-type: none"> • The attached Operations Information Sheet • A blank copy of HC.OP-DL.ZZ-0026 Attachment 5 	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	OP-HC-108-115-1001	N/A			
3.	RESPONSIBILITIES	N/A			
3.4	Nuclear Control Operator (NCO): Complete HC.OP-DL.ZZ-0026(Q), Surveillance Log, Attachment 5 as required by Step 5.3.3.	Examiner Note: Refer to steps below and Examiner Copy of Attachment 5 for Standards associated with this step.			

JPM: ZZ035

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**

TASK: **Perform the Watchstanding Duties of the Nuclear Control Room Operator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.3	- COMPLETE Attachment 5 of HC.OP-DL.ZZ-0026(Q), to track allowable outage times before actions (either by Operations or other departments) are required.	Operator enters current date on Attachment.			
		Operator enters Order 60001111 in ORDER block of Attachment.			
5.3.3	- COMPLETE Attachment 5 of HC.OP-DL.ZZ-0026(Q), to track allowable outage times before actions (either by Operations or other departments) are required.	Operator enters "HC.IC-FT.SK-0006" in SURVEILLANCE NUMBER(S) block of Attachment.			
		Operator enters surveillance title <u>OR</u> description of surveillance in DESCRIPTION/PROCEDURE TITLE block of Attachment.			
		Operator enters "3.6.3" in T/S NUMBER(s) block of Attachment.	*		
		Operator enters "ACTIVE" in LCO STATUS ACTIVE/TRACKING block of Attachment.	*		

JPM: ZZ035

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**

TASK: **Perform the Watchstanding Duties of the Nuclear Control Room Operator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.3	- COMPLETE Attachment 5 of HC.OP-DL.ZZ-0026(Q), to track allowable outage times before actions (either by Operations or other departments) are required.	Operator enters current time, date, and initials in LOG ON TIME/DATE RO INIT block of Attachment.			
CUE	<u>IF</u> the Operator indicates they would normally wait until the breaker was actually opened to enter a time, <u>THEN DIRECT</u> the Operator to consider the breaker open as of NOW.	N/A			
5.3.3	- COMPLETE Attachment 5 of HC.OP-DL.ZZ-0026(Q), to track allowable outage times before actions (either by Operations or other departments) are required.	Operator enters current date and current time plus ≤ 4 hours in ACTION REQUIRED TIME/DATE.	*		

JPM: ZZ035

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**

TASK: **Perform the Watchstanding Duties of the Nuclear Control Room Operator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ035

TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator

TASK NUMBER: 2990010101

QUESTION: _____

RESPONSE: _____

RESULT: SAT UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: SAT UNSAT

**ATTACHMENT 5
Surveillance Log**

T/S Surveillance and Planned Evolution AOT Tracking Log

Date: TODAY

ORDER	SURVEILLANCE NUMBERS(S) [NOTE 1]	DESCRIPTION/ PROCEDURE TITLE	T/S NUMBER(S)	LCO STATUS ACTIVE/ TRACKING	LOG ON TIME/DATE RO INIT	ACTION REQUIRED TIME/DATE [NOTE 2]	LOG OFF TIME/DATE RO INIT
60001111	HC.IC-FT.SK-0006	RWCU Div 4 Leak Detection	3.6.3	ACTIVE	TODAY/NOW	TODAY/NOW +4hrs	

Examiner Copy

NOTES:
 1. ALL ENTRIES WHICH ARE NOT LOGGED OFF BY THE END OF THE DAY (i.e.: 0700), SHALL BE CARRIED OVER TO THE FOLLOWING DAY'S LOG.
 2. THE ACTION REQUIRED TIME/DATE SHOULD BE DETERMINED BY THE SM/CRS IAW HC.OP-AP.ZZ-0108 (Q), OPERABILITY ASSESSMENT AND EQUIPMENT CONTROL PROGRAM, AND FILLED IN. IF THE ACTION REQUIRED TIME IS REACHED, THE SM/CRS WILL IMPLEMENT THE REQUIRED ACTIONS IAW SH.OP-AP.ZZ-0108(Q).

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. I&C is performing scheduled functional test HC.IC-FT.SK-0006, RWCU NSSSS Division 4 Steam Leak Detection.
3. I&C requires opening breaker 52-242081 for the RWCU BG-HV-F004 valve to perform the test.
4. Applicable OHAs have been flagged.

INITIATING CUE:

You are the Reactor Operator.

LOG the I&C functional test onto HC.OP-DL.ZZ-0026 Attachment 5 (provided).

The applicable Technical Specification is 3.6.3 (Active) and the Required Action time is four hours.

OPERATOR COPY

HC.IC-FT.SK-0006(Q)

EXHIBIT 1

OPERATIONS INFORMATION SHEET (1 of 2)

Procedure Title: RWCU - DIVISION 4 (AMB T, dT)
NSSSS - DIVISION 4
STEAM LEAK DETECTION TEMPERATURE MONITOR
1SKXR-11499

Order #: 60001111

Performer Name: Mack Strong TODAY NOW
Date Time

NOTE

Technical Specification 3.3.2 is applicable for the following:

RWCU Differential Temperature Trip Channels A2-1, A2-2, A2-3, A2-4, A2-5, AND A2-6
RWCU Ambient Trip Channels A3-1, A3-2, A3-3, A3-4, A3-5, AND A3-6
NSSSS Logic D trip channels A1-3, A1-4, A4-1, AND A4-2

Technical Specification 3.6.3 AND ACTION 3.3.7.5 is applicable when valve breaker for H1BG -BG-HV-F004 is opened.

Annunciators

- ◆ C1 C2, RWCU SYSTEM TROUBLE
- ◆ C8 A4, NSSSS MSIV LOGIC D INITIATED
- ◆ C8 C4, NSSSS ISLN SIG-STM TNL TEMP HI
- ◆ D1 E1, RRCS TROUBLE
- ◆ D1 B3, CONTAINMENT ISOLATION VALVE O/PF
- ◆ D3 A3, MN STM/RWCU AREA LEAK TEMP HI
- ◆ D3 D3, LEAK DET SYSTEM TROUBLE

Status Lights

MCP Location: D/B RRCS

- ◆ CHANNEL B, RRCS LOGIC A TROUBLE

MCP Location: NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM

- ◆ TRIP LOGIC D, MSIV TRIP LOGIC TRIPPED

EXHIBIT 1

OPERATIONS INFORMATION SHEET (2 of 2)

Computer Points

- ◆ D2088, MAIN STEAM LINE D LEAK DETECT
- ◆ D2393, STEAM LEAK DET CH D CARD AT4
- ◆ D3144, RWCU OUTBD ISLN HV-F004 OPF
- ◆ D4675, CONTAINMENT ISOLATION MOV OPF
- ◆ D5868, RWCU/MAIN ST LEAK DET TMP CH Z

Functions

- ◆ NSSSS Logic D Trip on High Steam Tunnel Temperature (Steam Leak Detection)
- ◆ RWCU outboard isolation, valve 1-BG-V004 (HV-F004), on High Ventilation D/T (Steam Leak Detection); (function defeated by opening valve breaker)
- ◆ RWCU outboard isolation, valve 1-BG-V004 (HV-F004), on Area High Temperature (Steam Leak Detection); (function defeated by opening valve breaker)

JOB PERFORMANCE MEASURE

STATION: Hope Creek
SYSTEM: Radiation Control
TASK: Perform Alternate RCS Leakage Determination (Floor Drains)
TASK NUMBER: 3660020201
JPM NUMBER: 305H-JPM.ZZ036 **REV #:** 00
NRC ADMIN JPM RO A4
SAP BET: NOH05JPZZ36E

ALTERNATE PATH:

APPLICABILITY:

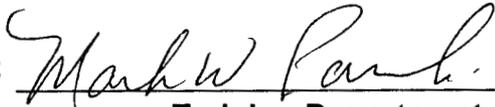
EO RO STA SRO

DEVELOPED BY: J. Berglund **DATE:** 11/16/08

Instructor

REVIEWED BY:  **DATE:** 12/12/08

Operations Representative

APPROVED BY:  **DATE:** 12/12/08

Training Department

STATION: Hope Creek

JPM NUMBER: ZZ036

REV: 00

SYSTEM: Radiation Control

TASK NUMBER: 3660020201

TASK: Perform Alternate RCS Leakage Determination (Floor Drains)

ALTERNATE PATH:

K/A NUMBER: 2.3.11

IMPORTANCE FACTOR: 3.8 4.3

APPLICABILITY:

RO

SRO

EO

RO

STA

SRO

EVALUATION SETTING/METHOD: Perform/Classroom

REFERENCES: HC.OP-ST.SK-0001 Rev 7

HC.OP-DL.ZZ-0026 Rev 113

Tech Spec 3.4.3.2.e and 4.4.3.2.1.b

TOOLS, EQUIPMENT AND PROCEDURES:

Prepared copies of HC.OP-ST.SK-0001 and HC.OP-DL.ZZ-0026 Att 3z (Attached)

ESTIMATED COMPLETION TIME: 12 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: SAT

UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Alternate RCS Leakage Determination (Floor Drains)

TASK NUMBER: 3660020201

INITIAL CONDITIONS:

1. The plant at 100% power.
2. The Drywell Floor Drain RMS has failed and repairs are expected to take 48 hours.
3. Drywell Floor Drain inleakage is being determined manually IAW HC.OP-ST.SK-0001 with a multimeter and stopwatch once per hour.
4. I&C has just completed taking the 0700 Final Milliamp reading.

INITIATING CUE:

You are the Extra NCO.

COMPLETE the hourly calculation of Drywell Floor Drain inleakage IAW HC.OP-ST.SK-0001 (Provided) **AND RECORD** the result on HC.OP-DL.ZZ-0026 Attachment 3z (Provided).
The current time is 0700.

JPM: ZZ036

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Alternate RCS Leakage Determination (Floor Drains)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue <u>AND</u> : <ul style="list-style-type: none"> • A prepared copy of HC.OP-ST.SK-0001 (Attached) • A prepared DL.ZZ-0026 Att. 3z to record final reading on (Attached) 	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<u>IF</u> excessive time is taken reviewing precautions and limitations, THEN INFORM operator that all are satisfied.	N/A			

JPM: ZZ036

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Alternate RCS Leakage Determination (Floor Drains)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.10	CALCULATE Differential Milliamp "Diff mA" AND Differential Time "Diff Time" AND RECORD on Attachment 2, Section 2.3.	Operator calculates Differential Milliamps of 0.257 - 0.26 and records on Attachment 2. $12.393 - 12.136 = 0.257$ Examiner Note: Rounding to 0.26 mA is acceptable.	*		
		Operator calculates Differential Time of 60 minutes and records on Attachment 2.	*		
5.1.11	CALCULATE "Inleakage (GPM)", using formula at bottom of Attachment 2, Section 2.3 AND RECORD the rate, date, AND INITIALS on the Attachment.	Operator calculates inleakage of 0.0998 gpm and records 0.0998 - 0.101 on Attachment 2. $\frac{0.257 \times 23.31}{60 \text{ minutes}} = 0.0998 \text{ gpm}$ Examiner Note: Rounding to 0.1 gpm is acceptable.	*		
5.1.12	RECORD required leak rate readings from Attachments IAW HC.OP-DL.ZZ-0026(Q); Surveillance Log.	Operator records leak rate on HC.OP-DL.ZZ-0026 Attachment 3z.	*		

JPM: ZZ036

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Alternate RCS Leakage Determination (Floor Drains)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CAUT 5.1.13	Allow for enough time when obtaining the next reading so that the calculated leak rate is obtained at least once every four hours IAW T/S 3.4.3.1 ACTION a.1.	N/A			
5.1.13	CONTINUE calculating inleakage rate using steps 5.1.7 through 5.1.11 <u>UNTIL</u> the capability to obtain leak rate information from the RMS, for Drywell Floor Drain System has returned, <u>THEN PROCEED</u> to step 5.1.29 to exit this procedure.	Operator determines capability to obtain leak rate information from RMS is not yet available and does <u>NOT</u> exit the procedure.			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state " This JPM is complete ". STOP TIME:	N/A			

**ATTACHMENT 3z
Action Statement Surveillance**

Generic Action Statement Surveillance Sheet
Applicability:

When entering a T/S Action Statement that
requires increased surveillance.

Action Statement Number LDC-1

Date TODAY

SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS			DAY	EVE	MID	COMMENTS
		MIN	NORM	MAX				
					N/A	N/A	N/A	
					N/A	N/A	N/A	

SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS			0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700
		MIN	NORM	MAX											
Drywell Floor Drain Flow ST.SK-0001	1,2,3			5 gpm	0.01										

1800	1900	2000	2100	2200	2300	0000	0100	0200	0300	0400	0500	0600	COMMENTS

SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS			0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700
		MIN	NORM	MAX											

1800	1900	2000	2100	2200	2300	0000	0100	0200	0300	0400	0500	0600	COMMENTS

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ036

TASK: Perform Alternate RCS Leakage Determination (Floor Drains)

TASK NUMBER: 3660020201

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant at 100% power.
2. The Drywell Floor Drain RMS has failed and repairs are expected to take 48 hours.
3. Drywell Floor Drain inleakage is being determined manually IAW HC.OP-ST.SK-0001 with a multimeter and stopwatch once per hour.
4. I&C has just completed taking the 0700 Final Milliamp reading.

INITIATING CUE:

You are the Extra NCO.

COMPLETE the hourly calculation of Drywell Floor Drain inleakage IAW HC.OP-ST.SK-0001 (Provided) **AND RECORD** the result on HC.OP-DL.ZZ-0026 Attachment 3z (Provided).
The current time is 0700.

HC.OP-ST.SK-0001(Q) - Rev. 7

ALTERNATE RCS LEAKAGE DETERMINATION

USE CATEGORY: I

REVISION SUMMARY CONTINUATION SHEET

Rev. 7

5. Organizational title changes were made in this revision to bring the procedure in line with guidelines, as contained in NC.NA-AP.ZZ-0002(Q), Nuclear Business Unit Organization, Attachment 1 and are considered editorial based on an allowance in NC.NA-AP.ZZ-0001(Q), Attachment 7 for "changing personnel titles to reflect organizational changes (without changing authority or responsibilities)." Due to the extensive changes, revision bars were omitted.
6. Based on comments the following changes were made: Removed Caution 5.0 as being redundant to Precaution 3.1; Removed Precaution 3.1.2 as being redundant to Cautions 5.1.6.A and 5.2.5.A.

ALTERNATE RCS LEAKAGE DETERMINATION

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ALTERNATE RCS LEAKAGE DETERMINATION

1.0 **PURPOSE**

The purpose of this procedure is to determine Reactor Coolant System leak rate in the event the normal Drywell Floor and/or Equipment Drain Sump Monitoring System is inoperable and to satisfy Tech. Spec. 3.4.3.1.a and 4.4.3.2.1.b.

2.0 **PREREQUISITES**

2.1 **Determining Drywell Floor Drain Leak Rate**

- 2.1.1 Permission to perform this test has been obtained from the OS/CRS/WCCS as indicated by the completion of Attachment 1, Section 1.0. SMCB
- 2.1.2 All personnel involved in the performance of this procedure, should complete Attachment 1, Section 3.0, prior to performing any part of this procedure. SMCB
- 2.1.3 The RO/PO has been informed that the following test is to be performed. SMCB
- 2.1.4 No other testing or maintenance is in progress that will adversely affect the performance of this test. SMCB
- 2.1.5 The ability to read Drywell Floor Drain inleakage on RMS modules 1SKLI-4930 (Panel 10C604) OR 1SKLI-4930A (Control & Diesel Generator Bldg. El. 124') is lost. SMCB
- 2.1.6 I&C personnel are available to connect multimeter and/or chart recorder at Panel 1DC695. SMCB

2.2 **Determining Drywell Equipment Drain Leak Rate**

- 2.2.1 Permission to perform this test has been obtained from the OS/CRS/WCCS as indicated by the completion of Attachment 1, Section 1.0. N/A
- 2.2.2 All personnel involved in the performance of this procedure, should complete Attachment 1, Section 3.0, prior to performing any part of this procedure.
- 2.2.3 The RO/PO has been informed that the following test is to be performed. N/A
- 2.2.4 No other testing or maintenance is in progress that will adversely affect the performance of this test. N/A
- 2.2.5 The ability to read Drywell Equipment Drain inleakage on RMS modules 1SKLI-4930 (Panel 10C604) OR 1SKLI-4930A (Control & Diesel Generator Bldg. - El. 124') is lost. N/A
- 2.2.6 I&C personnel are available to connect multimeter and/or chart recorder at Panel 1DC695. N/A

3.0 **PRECAUTIONS AND LIMITATIONS**

3.1 **Precautions**

IF at any time during the performance of this test, a step cannot be completed OR is observed to be unsatisfactory;
THEN IMMEDIATELY NOTIFY the RO/PO
AND the OS/CRS/WCCS. [CD-927E] MCB

3.2 **Limitations**

- 3.2.1 All steps within each section within the body of this procedure are to be completed in sequence unless otherwise specified. MCB
- 3.2.2 **ENSURE** leak rate is in compliance with T/S 3.4.3.2, during Conditions 1, 2, and 3. MCB
- 3.2.3 Section 5.1 and 5.2 may be performed concurrently. MCB

4.0 **EQUIPMENT REQUIRED**

- Keithly Model 197 Multimeter or equivalent
- Gould Model 2200S Chart Recorder or equivalent
- Calibrated Stopwatch

5.0 **PROCEDURE**

NOTE 5.0

- A. All operations are performed locally at Junction Box 1DC695 unless otherwise noted.
- B. Junction Box 1DC695 is located in the Control & Diesel Generator Bldg. - EI. 124' -Room 5448.

5.1 **Determining Drywell Floor Drain Leakage**

- 5.1.1 IF this is the first subsection of the procedure to be performed THEN LOG test start time in the Control Room log(s). MCB
- 5.1.2 **ENSURE** that all prerequisites have been satisfied IAW Section 2.1. MCB
- 5.1.3 **ENSURE** Attachment 1, Section 1, of the OS/CRS/WCCS Data and Signature Sheet has been completed and Regular Surveillance or Retest is indicated. MCB
- 5.1.4 **RECORD** the M&TE identification and calibration due dates for test equipment to be utilized for this test on Attachment 2. MCB

NOTE 5.1.5

If failure to read Drywell Floor Drain Sump level at 1SKLI-4930 and 1SKLI-4930A was by power failure to the RM-80 Motherboard or failure of 1SKLT-4931, proceed to step 5.1.14

5.1.5 Floor Drain Sump levels should be monitored
AND a leak rate calculated using the time intervals between readings specified on Attachment 3. *MCB*

5.1.6 **DIRECT** I&C to **CONNECT** a Keithley Model 197 Multimeter set to read milliamps DC or equivalent as follows: *MCB*

CAUTION 5.1.6.A

The Action Pack Isolator is removed prior to connecting the Multimeter, as an accidental short circuit while disconnecting or connecting wiring may cause a failure of the Action Pack Isolator.

- A. **REMOVE** A-2 Action Pack Isolator. *AE7*
- B. **LIFT** lead from 1SKLT-4931 //Drywell Floor Drain Sump Level Transmitter// at terminal 4, TB4
AND INITIAL Attachment 2, Section 2.1. *AE7*
- C. **CONNECT** one input of multimeter to lifted lead
AND INITIAL Attachment 2, Section 2.1. *AE7*
- D. **CONNECT** the other input of multimeter to terminal 4, TB4
AND INITIAL Attachment 2, Section 2.1. *AE7*

Continued Next Page

5.1.6 (Continued)

NOTE 5.1.6.E

If multimeter indication is offscale high or low, NOTIFY OS/CRS/WCCS that the Drywell Floor Drain Sump level may be out of normal range or possible failure of 1SKLT-4931.

E. **ENSURE** multimeter indicates 4 - 20 milliamps. AEF

F. **INSERT** A-2 Action Pack Isolator. AEF

NOTE 5.1.7

The following steps will be performed to obtain data in order to calculate leak rate. A calibrated stop watch should be used for accuracy in timing reading intervals.

5.1.7 **PRESS** START Pb on //DRYWELL FLOOR DRAIN SUMP BT267 pump// C(D)P267 (10C650D). MCB

5.1.8 WHEN the sump pump stops automatically on low sump level, **SIMULTANEOUSLY START** the stopwatch. **RECORD** the "Initial Milliamp" reading on the Multimeter AND "Initial Time" on Attachment 2, Section 2.3. AEF

NOTE 5.1.9

The initial time interval between taking the "Initial Milliamp" reading and the "Final Milliamp" reading should be obtained from Attachment 3, and based on the last recorded reading for HC.OP-DL.ZZ-0026(Q), Drywell Floor Drain leakage. Subsequent time intervals should be obtained from Attachment 3 and based on what the last calculated Inleakage reading was. Using the time interval between readings, allows for a continuous fill of the sump readings without an automatic start of the sump pump on level. This would prevent obtaining a valid calculated reading using this method.

5.1.9 At the interval specified in Attachment 3, AND using the running stopwatch for accuracy, **RECORD** "Final Time", AND "Final Milliamps" on Attachment 2, Section 2.3. AEF

- 5.1.10 **CALCULATE** Differential Milliamp “Diff mA”
AND Differential Time “Diff Time”
AND RECORD on Attachment 2, Section 2.3. _____
- 5.1.11 **CALCULATE** “Inleakage (GPM)”, using formula at bottom of
Attachment 2, Section 2.3
AND RECORD the rate, date,
AND INITIALS on the Attachment. _____
- 5.1.12 **RECORD** required leak rate readings from Attachments IAW
HC.OP-DL.ZZ-0026(Q); Surveillance Log. _____

CAUTION 5.1.13

Allow for enough time when obtaining the next reading so that the calculated leak rate is obtained at least once every four hours IAW T/S 3.4.3.1 ACTION a.1.

- 5.1.13 **CONTINUE** calculating inleakage rate using steps 5.1.7 through 5.1.11
UNTIL the capability to obtain leak rate information from the RMS,
for Drywell Floor Drain System has returned,
THEN PROCEED to step 5.1.29 to exit this procedure. _____
- 5.1.14 **DIRECT** I&C to **CONNECT** a Gould Model 2200S Chart Recorder
OR equivalent as follows: N/A
 - A. **CONNECT** positive input of recorder to terminal 7, TB3
AND INITIAL Attachment 2, Section 2.1. N/A
 - B. **CONNECT** negative input of recorder to terminal 8, TB3
AND INITIAL Attachment 2, Section 2.1. N/A
 - C. **SET** recorder pin to center scale with a gain of 5 VDC per
major division. N/A
 - D. **SET** recorder chart speed at 5 mm/min. N/A
- 5.1.15 **PRESS** START Pb on //DRYWELL FLOOR DRAIN SUMP BT267
pump// C(D)P267 (10C650D). N/A

NOTE 5.1.16

The recorder pin will indicate 0 VDC when the Floor Drain Sump Pump(s) is running and 5 VDC when the pump is not running.

- 5.1.16 **OBSERVE** recorder pin indicates 0 VDC while pump is running. N/A
- 5.1.17 **ALLOW** pump to stop automatically on low sump level. N/A
- 5.1.18 **RECORD** on the chart the time, date and initials at point where pump stopped (chart should indicate 5 VDC). N/A
- 5.1.19 **RECORD** "Pump Stop Time" on Attachment 2, Section 2.2. N/A

NOTE 5.1.20

The recorder pin will indicate 0 VDC when the Floor Drain Sump Pump(s) is running and 5 VDC when the pump is not running.

- 5.1.20 At the interval specified by Attachment 3, and based on the last recorded reading for HC.OP-DL.ZZ- 0026(Q), Drywell Floor Drain leakage, **CONTINUE** to observe the recorder at each interval for indication of a sump pumpout. N/A
- 5.1.21 IF there has not been a pumpout AND the required T/S 4 hour reading is due THEN GO TO step 5.1.27. N/A
- 5.1.22 IF there was a sump pumpout, THEN CALCULATE "Pump Start Time" and "Pump Stop Time" from the chart by measurement from the previous stop time (5 mm/min.), AND RECORD on Attachment 2, Section 2.2. N/A
- 5.1.23 **RECORD** Differential Time "Diff Time" from the previous Pump Stop Time (auto shutdown) to the last Pump Start Time on Attachment 2, Section 2.2. N/A

- 5.1.24 Using Equation on Attachment 2, Section 2.2, **CALCULATE AND RECORD** “Inleakage (GPM)”, “Date” **AND** “Initials” on Attachment. N/A

- 5.1.25 **CONTINUE** to monitor and calculate leak rates using steps 5.1.21 through 5.1.24 so that the leak rate is obtained at least once every four hours IAW T/S 3.4.3.1 ACTION a.1. N/A

- 5.1.26 **RECORD** required leak rate readings from Attachments IAW HC.OP-DL.ZZ-0026(Q); Surveillance Log. N/A

- 5.1.27 IF there was NOT a pumpout, **THEN RECORD** the “Inleakage (GPM)” as less than the value specified in Table 5.1.27. N/A

TABLE 5.1.27			
Time from Last Pumpout	Inleakage (GPM)	Time from Last Pumpout	Inleakage (GPM)
8 Hours	< 0.19		
7 Hours	< 0.21	45 Minutes	< 1.97
6 Hours	< 0.25	30 Minutes	< 2.96
5 Hours	< 0.30	18 Minutes	< 4.94
4 Hours	< 0.37	15 Minutes	< 5.92
3 Hours	< 0.49		
2 Hours	< 0.78		
1 Hour	< 1.48		

- 5.1.28 WHEN the capability to obtain leak rate information from the RMS for Drywell Floor Drain System has returned, **THEN CONTINUE** with the next step. N/A

5.1.29 IF this is the final subsection of this procedure to be performed
THEN:

- A. **DIRECT** I&C to **REMOVE** recorder and multimeter (if used)
AND RETURN lifted lead to terminal 4 at TB4
AND INITIAL Attachment 2, Section 2.1. (I&C and OPS). _____
- B. **LOG** test end time in the Control Room log(s). _____
- C. **SUBMIT** this procedure to the OS/CRS/WCCS for review
AND completion of Attachment 1. _____

RECORDS

6.1 **RETAIN** the following IAW NC.NA-AP.ZZ-0003(Q); Document Management Program:

- Procedure cover page
- Attachment 1 - OS/CRS/WCCS Data and Signature Sheet
- Attachment 2 - Inplant Data Sheet

7.0 REFERENCES

7.1 P&ID: M-25-1, Sht. 1
 M-61-1, Sht. 1
 M-61-1, Sht. 2

7.2 J-R 1000-0

7.3 J-373Q-87-4

7.4 DCP: 4HM-0323
 4HC-0074, Pkg. 5

7.5 Commitment Document

CD-927E (NRC INFO 87-25)

**ATTACHMENT 1
OS/CRS/WCCS DATA AND SIGNATURE SHEET
ALTERNATE RCS LEAKAGE DETERMINATION
Page 1 of 3**

1.0 PRETEST INFORMATION

1.1 Reason for the Test

1.1.1 Regular Surveillance _____
INITIALS

1.1.2 Retest/Other _____
mg
INITIALS

1.1.3 If not performing the complete test, list subsection(s)/valves to be performed, as well as marking N/A on the applicable subsection(s)/valves on the Attachment(s) that will not be performed, or, that do not require an independent verification IAW NC.NA-AP.ZZ-0005(Q); Station Operating Practices.

5.1 Floor Drain Inleakage Determination with Multimeter

SUBSECTION(S)

1.2 Plant Conditions

1.2.1 Operational Condition _____ **1**

1.2.2 Reactor Power Level _____ **100%**

1.2.3 GMWe _____ **1260**

1.3 Permission to Perform the Test

1.3.1 Permission granted to perform this test.

Joe Johnson
OS/CRS/WCCS

Today/0400
DATE-TIME

1.3.2 Work Order No. _____

ATTACHMENT 1
OS/CRS/WCCS DATA AND SIGNATURE SHEET
ALTERNATE RCS LEAKAGE DETERMINATION
Page 2 of 3

2.0 POST TEST INFORMATION

2.1 The data acquired during the performance of this test has been reviewed for completeness and compliance with Technical Specification 3.4.3.2, Reactor Coolant System Operational Leakage and the test is considered:

2.1.1 SATISFACTORY

_____/_____
OS/CRS/WCCS DATE-TIME

2.1.2 UNSATISFACTORY AND
IF necessary the T.S. ACTION statement has been implemented.

_____/_____
OS/CRS/WCCS DATE-TIME

2.1.3 Order No. _____

2.1.4 Remarks _____

**ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION
Page 1 of 5**

1.0 TEST INFORMATION

2.1 Alternate RCS Leakage Determination Instrumentation Setup and Removal

STEP	TEST EQUIPMENT	INST. TAG/MTE NO.	CAL DUE DATE	NOTES
5.1.4	Stopwatch	LDC-1	4/30/09	
	Multimeter	LDC-2	4/30/09	
5.2.4				

STEP	NOMENCLATURE	REQ POSITION	PERF	VERIF
5.1.6.B	Lifted Lead from Term. 4, TB4	Lifted	<i>AE7</i>	<i>KA7</i>
5.1.6.C	Multimeter connected to Lead	Connected	<i>AE7</i>	<i>KA7</i>
5.1.6.D	Multimeter connected to Term. 4, TB 4	Connected	<i>AE7</i>	<i>KA7</i>
5.1.14.A	Positive Input connected to Term. 7, TB3	Connected	N/A	N/A
5.1.14.B	Negative Input connected to Term. 8, TB3	Connected	N/A	N/A
5.1.29.A	Recorder and Multimeter (if used)	Removed	N/A	N/A
5.1.29.A	Lifted Lead from Term. 4, TB4	Terminated	N/A	N/A
5.2.5.B	Lifted Lead from Term. 1, TB4	Lifted	N/A	N/A
5.2.5.C	Multimeter connected to Lead	Connected	N/A	N/A
5.2.5.D	Multimeter connected to Term. 1, TB4	Connected	N/A	N/A
5.2.6.A	Positive Input connected to Term. 1, TB3	Connected	N/A	N/A
5.2.6.B	Negative Input connected to Term. 2, TB3	Connected	N/A	N/A
5.2.16.A	Recorder and Multimeter (if used)	Removed	N/A	N/A
5.2.16.A	Lifted Lead from Term. 1, TB4	Terminated	N/A	N/A

ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION
 Page 2 of 5

2.2 Determining Drywell Floor Drain Leak Rate Using Chart Recorder

Pump Stop Time	Pump Start Time	Diff. Time (Minutes)	Inleakage (GPM)	Date	Initials
N/A	N/A	N/A	N/A	N/A	N/A

Pump Start at High Level Alarm

$$\frac{97.7 \text{ Gallons}}{\text{Diff. Minutes}} = \text{Inleakage (GPM)}$$

**ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION
Page 3 of 5**

2.3 Determining Drywell Floor Drain Leak Rate Using Multimeter

5.1.8		5.1.9		5.1.10		5.1.11	
Initial Time	Initial Milliamps	Final Milliamps	Final Time	Diff mA	Diff Time (Min)	Inleakage (GPM)	Init/ Date
06:00	12.136	12.393	07:00				

$$\frac{(\text{Diff. MA}) \times (23.31)}{\text{Diff. Time (Minutes)}} = \text{Inleakage (GPM)}$$

**ATTACHMENT 2
INPLANT DATA SHEET
ALTERNATE RCS LEAKAGE DETERMINATION
Page 4 of 5**

2.4 Determining Drywell Equipment Drain Leak Rate Using Chart Recorder

Time	Pump Stop Time	Pump Start Time	Diff. Time (Minutes)	Inleakage (GPM)	Date	Initials
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Pump Start at High Level Alarm

$$\frac{178.4 \text{ Gallons}}{\text{Diff. Minutes}} = \text{Inleakage (GPM)}$$

ATTACHMENT 2
ALTERNATE RCS LEAKAGE DETERMINATION
INPLANT DATA SHEET
Page 5 of 5

2.5 Determining Drywell Equipment Drain Leak Rate Using Multimeter

Time	Milliamps	Volume (Gallons)	Diff Volume (Gallons)	Diff Time (Minutes)	Inleakage (GPM)	Date	Initials
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Diff. Volume (Gallons) = Inleakage (GPM)
Diff. Time (Minutes)

ATTACHMENT 3
1SKLT-4931 OUTPUT (Ma)
FLOOR DRAIN SUMP PUMPDOWN INTERVALS
Page 1 of 1

Time Intervals between obtaining Sump Level Readings based on Inleakage Flow Rate

<u>Time Interval</u>	<u>Inleakage Flow Rate (GPM)</u>
1 Hour	≤ 1.0
30 Minutes	> 1.0 but ≤ 2.0
15 Minutes	> 2.0

**ATTACHMENT 3z
Action Statement Surveillance**

Generic Action Statement Surveillance Sheet
Applicability:

When entering a T/S Action Statement that
requires increased surveillance.

Action Statement Number LDC-1

Date TODAY

SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS			DAY	EVE	MID	COMMENTS
		MIN	NORM	MAX				
					N/A	N/A	N/A	
					N/A	N/A	N/A	

SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS			0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700
		MIN	NORM	MAX											
Drywell Floor Drain Flow ST.SK-0001	1,2,3			5 gpm											

1800	1900	2000	2100	2200	2300	0000	0100	0200	0300	0400	0500	0600	COMMENTS

SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS			0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700
		MIN	NORM	MAX											

1800	1900	2000	2100	2200	2300	0000	0100	0200	0300	0400	0500	0600	COMMENTS