

Facility: Shearon Harris Task No.: 301136H601

Task Title: Vent An Unisolable SI Accumulator during a Steam Generator Tube Rupture Event JPM No.: 2013 NRC Retest Exam JPM a

K/A Reference: 006 A4.02 RO 4.0 SRO 3.8 **ALTERNATE PATH - YES**

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The unit was operating at 100% power when a leak developed in the 'A' Steam Generator. The crew entered AOP-016, Excessive Primary Plant Leakage. While implementing AOP-016 the leak rate increased and exceeded VCT makeup capability. The Reactor was manually tripped and a Safety Injection was activated. The crew has completed EOP E-0 and transitioned to and are implementing EOP-E-3, Steam Generator Tube Rupture.

The crew has just completed E-3 step 89.

Initiating Cue: You are directed to continue implementing E-3 beginning at step 90.

Task Standard: Identify an Accumulator that cannot be isolated as directed by E-3, Steam Generator Tube Rupture and perform actions of OP-110, Safety Injection to vent the unisolable Accumulator.

Required Materials: EOP E-3, Steam Generator Tube Rupture, Rev. 0 and OP-110 Section 8.3, Rev. 43

General References: EOP E-3, Steam Generator Tube Rupture, Rev. 0 and OP-110 Section 8.3, Rev. 43

Time Critical Task: No

Validation Time: 15 minutes

Critical Step Justification	
Step 3	Must have power turned on to breakers for the valves to operate
Step 4	Must shut the Accumulator discharge valves to isolate the Accumulator or Nitrogen could be injected into the RCS potentially preventing loop flow as RCS pressure is decreased
Step 12	Shutting the Nitrogen supply valve to the Accumulators prevents increasing the Accumulator pressure which would occur if the vent valve was opened
Step 14	Opening the 'A' Accumulator vent valve will line up the 'A' Accumulator vent path to the Containment.

2013 HNP NRC Retest Exam - SIMULATOR SETUP**Simulator Operator**

- Reset to IC-161 (password: HR2014301)
- Go to run
- Roll 86 Relays to trip position:
 - Run AMS file – Roll Gen 86 Relays

Silence and Acknowledge annunciators

GO TO FREEZE and inform the lead examiner the Simulator is ready. DO NOT GO TO RUN until directed by the lead examiner. (The examiner has provided to the candidate with initial conditions and the initiating cues prior to placing the simulator in RUN.)

To recreate the IC setup for this JPM:

- Initial Simulator IC was IC-19
- Place the Simulator in RUN
- Insert a SG tube rupture on the 'A' SG of 420 gpm
(I made it trigger 1 with a 30 second ramp time)
 - Imf sgn07a (1 0 0) 420 00:00:30 0
- Insert a failure of 1SI-246 to open ('A' accumulator discharge valve)
 - ior xaai067 (n 0 0) ASIS
- Activate trigger 1, when RCS leakage exceeds CVS makeup capability manually trip the Reactor and activate an SI
- Secure the RCPs when SI flow is > 200 gpm and RCS pressure is < 1400#
- Implement the other actions of E-0 up to the point to transition to E-3, implement the actions of E-3 up to step 90
 - Other things I did to get to a stable IC
 - Adjusted AFW flows prior to SG depressurization and after stabilization
 - Performed a rapid SG depressurization to cooldown the RCS using Steam Dumps (after securing the 'A' MSIV, B and C MSIV remain open)
 - Set 'A' SG PORV to 88%, set 'B' and 'C' SG PORV to maintain RCS temp at ~515°F
 - Depressurized the RCS to = 'A' SG pressure
 - Don't be in a hurry to do this next step or you will cool down the RCS too much...To get the RCS to < 1000 # you will also have to depressurize the 'A' SG to ~ 950 psig by opening the 'A' SG PORV and correspondingly opening the PZR spray valves again to lower RCS pressure to < 1000 psig (approximately equal to 'A' SG pressure)
 - I placed all 3 letdown orifices in service to avoid going solid on the PZR
 - In the final setting prior to freezing the Simulator I had both PZR spray valves open ~10-15% to maintain RCS pressure stable and < 1000#
- Silence Acknowledge and Reset Annunciators
- Freeze and Snap these conditions to your exam IC

Simulator Operator:	<i>When directed by the Lead Examiner go to Run.</i>
----------------------------	---

START TIME: _____**Performance Step: 1 OBTAINS PROCEDURE**

Standard: Obtains a copy of EOP E-3, Steam Generator Tube Rupture and reviews step 90.

Evaluator Note:	The candidate may take a minute to review E-3 steps prior to step 90 to understand what the current plant conditions and configuration is at this point in time.
------------------------	---

Comment:

Performance Step: 2 E-3, Step 90.a
Check If SI Accumulators Should Be Isolated:
RCS pressure - LESS THAN 1000 PSIG

Standard: Reviews ERFIS/Main Control Board RCS pressure instruments to identify current RCS pressure.
Identifies that RCS pressure is < 1000 psig

Comment:

PERFORMANCE INFORMATION

<p>✓ Performance Step: 3</p>	<p>E-3 Step 90.b</p> <p>Locally unlock AND close both breakers for each SI accumulator discharge valve:</p> <p>1SI-246 (MCC-1A21-SA-5C) 1SI-247 (MCC-1B21-SB-5C) 1SI-248 (MCC-1A21-SA-3D)</p>
<p>Standard:</p>	<p>Contacts an Auxiliary Operator to locally unlock AND close both breakers for each SI accumulator discharge valve:</p> <p>1SI-246 (MCC-1A21-SA-5C) 1SI-247 (MCC-1B21-SB-5C) 1SI-248 (MCC-1A21-SA-3D)</p>

<p>Simulator Operator:</p>	<p>When contacted by candidate: Acknowledge request to locally unlock AND close both breakers for each SI accumulator discharge valve:</p> <p>1SI-246 (MCC-1A21-SA-5C) 1SI-247 (MCC-1B21-SB-5C) 1SI-248 (MCC-1A21-SA-3D)</p> <p>To turn on power to these valves: RUN AMS file – sis/SI Accum Power Apply</p> <p>NOTE: the AMS file takes approximately 90 seconds to run</p> <p>When the AMS file is complete then: Report by radio to MCR that all 3 valves have power</p>
-----------------------------------	---

Comment:

PERFORMANCE INFORMATION

Evaluator Note:	1SI-246 is failed as is and will not shut when the candidate attempts to shut the MCB position switch. This will require the candidate to use an Alternate Path to accomplish this task.
------------------------	--

✓ **Performance Step: 4** **E-3 Step 90.c**
Shut SI accumulator discharge valves:

1SI-246
1SI-247
1SI-248

Standard: Locates MCB SI accumulator discharge valve position switches and takes switch to shut for each valve.

- Identifies that **1SI-246** ('A' Accumulator discharge) will not shut
- Informs the CRS
- Reads RNO statement and performs RNO actions for 1SI-246 (ONLY)

Comment:

Evaluator Cue:	Acknowledge the communication IF the CRS is informed that 1SI-246 will not SHUT.
-----------------------	---

Alternate Path begins here – E-3 Step 90.c RNO

Performance Step: 5 Vent any unisolable accumulator using OP-110, "SAFETY INJECTION", Section 8.3.

Standard: Reads step and obtains a copy of OP-110, "SAFETY INJECTION", Section 8.3

Comment:

PERFORMANCE INFORMATION

OP-110, Section 8.3, Venting the SI Accumulators**Section 8.3.1 - Initial Conditions****Performance Step: 6**

1. Accumulator pressure is approaching Technical Specification or alarm limit.
- OR
2. Accumulator is to be depressurized.
3. If Personnel are in Containment, Health Physics has been notified to monitor Containment O2 while venting SI Accumulators.
4. If the Accumulator is to be depressurized, the area 20 feet on either side of the vent on 236 foot elevation should be taped off with red and black warning tape and posted per SAF-NGGC-2172 to restrict access to this area.

NOTE: Accumulators were vented at beginning of R17 with purge secured. This resulted in low oxygen levels which required Containment to be evacuated. Containment Purge, Normal or Pre-entry, should be aligned if possible.

5. If Personnel are in Containment, Containment Purge is in service if available.

Standard:

Reviews the initial conditions and determines the following:

Item 1 – N/A

Item 2 – this is the reason for venting the 'A' Accumulator - to depressurize the Accumulator, initials step

Item 3 – N/A - no personnel are in Containment

Items 4 and 5 – N/A without personnel in Containment

Reads NOTE between initial condition steps 4 and 5, circle/slashes note to identify it was read

Comment:**Evaluator Cue:**

IF asked: There are NO personnel inside Containment.
IF requested to tape off area for step 4: The Shift Manager will not approve Containment Entry. At this time taping the area off is not required.

OP-110, Section 8.3.2, Note prior to Step 1

Performance Step: 7 **NOTE:** To minimize any potential sluicing between Accumulators through leaking valves, Accumulator pressures should normally be left approximately equal (at or below 4 psid between lowest and highest ERFIS indications) at the completion of this Section.

Standard: Reads and circle/slashes NOTE

Comment:

OP-110, Section 8.3.2, Step 1

Performance Step: 8 **PERFORM** the following Steps on only **ONE** Accumulator at a time.

Standard: Reads and initials step

Comment:

OP-110, Section 8.3.2, Step 2**Performance Step: 9**

At the MCB, **PERFORM** the following:

NOTE: Nitrogen is the primary motive force to LTOPS. The impact on LTOPS operability should be determined prior to shutting 1SI-287 per Precaution and Limitation 4.0.6.

Standard:

Reads and circle/slashes NOTE

Comment:**OP-110, Section 8.3.2, Step 2.a****Performance Step: 11**

IF necessary, **THEN INITIATE** an EIR.

Standard:

N/A

Comment:**Evaluator Cue:**

IF requested to initiate an EIR: Acknowledge the request.

OP-110, Section 8.3.2, Step 2.b**✓ Performance Step: 12**

SHUT 1SI-287, ACCUMULATORS & PRZ PORV N₂ SUPPLY.

Standard:

Locates 1SI-287, ACCUMULATORS & PRZ PORV N₂ SUPPLY switch and places it to shut

Comment:

OP-110, Section 8.3.2, Step 2.c

Performance Step: 13 **DECLARE** the associated Accumulator inoperable per Tech Spec 3.5.1, due to being connected to Non-Safety piping (a one hour action statement in Modes 1 through 3 above 1000 psig).

Standard: N/A (RCS pressure is < 1000 psig)

Comment:

OP-110, Section 8.3.2, Step 2.d

✓ **Performance Step: 14** **OPEN** the ACCUMULATOR N₂ SUPPLY & VENT for the Accumulator to be vented:

1SI-295, ACCUMULATOR A N₂ SUPPLY & VENT.

Standard: Locates MCB switch for 1SI-295, ACCUMULATOR A N₂ SUPPLY & VENT and takes switch to Open

Comment:

OP-110, Section 8.3.2, Caution prior to Step 3**Performance Step: 15****CAUTION**

In modes 1, 2, and 3, ensure Accumulators are maintained within Technical Specification limits for pressure and level when venting SI Accumulators.

Standard:

Reads then circle/slashes CAUTION

Comment:**OP-110, Section 8.3.2, Step 3****✓ Performance Step: 16**

SLOWLY ADJUST HC-936, 1SI-298 ACCUM VENT PRESS CNTL, control potentiometer output signal to open 1SI-298 and vent the Accumulator.

Standard:

Locates MCB potentiometer for 1SI-298 and slowly increases the output signal to open the valve.

Comment:

OP-110, Section 8.3.2, Step 4

Performance Step: 17 **IF** the Accumulator is being depressurized with personnel in containment **AND** the oxygen concentration outside the taped off area decreases below 19.5%,
THEN STOP venting until the concentration is restored to greater than 19.5% oxygen.

Standard: Marks step N/A, no personnel are in Containment

Comment:

OP-110, Section 8.3.2, Step 5

Performance Step: 18 **VENT** the Accumulator to the desired pressure as indicated by the associated instruments:

- PI-921, 923, ACCUMULATOR TK A PRESS.

Standard: Observes pressure decreasing on PI-921 and PI-923
(pressure instrumentation associated with the 'A' Accumulator)

Evaluator Note:

In addition to MCB indication the candidate can monitor the 'A' Accumulator pressure via multiple methods using the computer. (ERFIS or OSI-PI) During the pressure decrease annunciator ALB-01-7-1, ACCUMULATOR TANK A HIGH-LOW PRESS, will alarm (the low pressure setpoint is 602 psig). With all associated vent valves full open 'A' Accumulator pressure will decrease at ~10 psig per minute.

Evaluator Cue:

To continue with OP-110 vent isolation the following information can be used at Evaluator discretion.

After observing the 'A' Accumulator High-Low pressure alarm and a decreasing trend on 'A' Accumulator pressure then cue the candidate:

Using time compression – the 'A' Accumulator pressure now reads zero psig.

Comment:

OP-110, Section 8.3.2, Step 6

Performance Step: 19 **ADJUST** HC-936 to 0% to shut 1SI-298.

Standard: Locates MCB controller HC-936 and turns dial to 0% to shut 1SI-298.

Comment:

OP-110, Section 8.3.2, Step 7

Performance Step: 20 **SHUT** the ACCUMULATOR N₂ SUPPLY & VENT for the Accumulator that was vented:

- 1SI-295, ACCUMULATOR A N₂ SUPPLY & VENT.

Standard: Locates MCB switch for 1SI-295 and places controller to shut.

Comment:

OP-110, Section 8.3.2, Step 8

Performance Step: 21 At the MCB, **OPEN** 1SI-287.

Standard: Locates MCB switch for 1SI-287 and places controller to open.

Comment:

OP-110, Section 8.3.2, Step 9**Performance Step: 22 COMPLETE** Attachment 6.**Standard:** Turns to Attachment 6 – Accumulator Pressurization/Venting Restoration Checklist.**Comment:**

Evaluator Cue:	After applicant completes 'A' Accumulator vent isolation and starts filling out Attachment 6 component position check cue: Another operator will perform the verification of valve positions.
-----------------------	--

Evaluation on this JPM is complete.

Announce "I have the shift" END OF JPM

Direct the Simulator Operator to go to Freeze.

STOP TIME: _____

Simulator Operator:	When directed by the Lead Examiner then go to Freeze.
----------------------------	--

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2013 HNP NRC Retest Exam JPM CR a
Vent An Unisolable SI Accumulator during a Steam
Generator Tube Rupture Event (E-3 and OP-110)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

Initial Conditions:	<p>The unit was operating at 100% power when a leak developed in the 'A' Steam Generator. The crew entered AOP-016, Excessive Primary Plant Leakage. While implementing AOP-016 the leak rate increased and exceeded VCT makeup capability. The Reactor was manually tripped and an Safety Injection was activated. The crew has completed EOP E-0 and transitioned to and are implementing EOP-E-3, Steam Generator Tube Rupture.</p> <p>The crew has just completed E-3 step 89.</p>
----------------------------	--

Initiating Cue:	<p>You are directed to continue implementing E-3 beginning at step 90.</p>
------------------------	--

Facility: Shearon Harris Task No.: 301150H601

Task Title: Transfer To Hot Leg Recirculation JPM No.: 2013 NRC Retest Exam JPM CR b

K/A Reference: 011-EK3.13 RO 3.8 / SRO 4.2 ALTERNATE PATH - **YES**

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

The plant has experienced a Large Break LOCA. The plant is presently aligned for cold leg recirculation per EOP ES-1.3, Transfer to Cold Leg Recirculation.

Initiating Cue:

6.5 hours have passed since the LOCA occurred. The CRS directs you to implement EOP ES-1.4, Transfer Between Cold Leg and Hot Leg Recirculation and perform steps 1 – 5 to transfer to Hot Leg recirculation.

The BOP will acknowledge annunciators not associated with your task.

Task Standard: Transfer to hot leg recirculation is accomplished IAW ES-1.4.

Required Materials: None

General References: EOP ES-1.4, Rev. 0

Time Critical Task: No

Validation Time: 20 minutes

Critical Step Justification	
Step 6	Without shutting 1SI-340 and 1SI-341 RHR flow would continue to flow to the cold legs
Step 7	Without opening 1SI-359 RHR flow would not be lined up to deliver flow to the hot legs therefore hot leg recirculation would not occur.
Step 11	Secures CSIP flow to prevent dead head conditions (no mini-flow protection) during flow path realignment
Steps 14 and 15	Must reopen 1SI-52 and restart 'A' CSIP to re-establish cold leg High Head Safety Injection flow in accordance with RNO action
Step 18	Secures CSIP flow to prevent dead head conditions (no mini-flow protection) during flow path realignment
Step 19	Without shutting 1SI-3 AND 1SI-4 CSIP flow would continue to flow to the RCS cold legs
Step 20	Must open 1SI-86 to establish flow path for 'B' CSIP to hot legs
Step 21	Restarts CSIP to re-establish High Head Safety Injection flow to the hot legs
Step 23	Secures CSIP flow to deadheading CSIP during subsequent valve lineup
Step 24	Must shut 1SI-52 to prevent CSIP flow to cold legs
Step 25 and 26	Must open miniflow isolation valves to relieve pressure locking on 1SI-107
Step 27	Must restart the 'A' CSIP to establish flow to the hot legs
Step 28	Must open valve to establish a Hot leg Recirc flow path
Step 29	Must secure mini-flow lineup to complete 'A' CSIP flow path to the hot legs
Step 30	Must secure mini-flow lineup to complete 'A' CSIP flow path to the hot legs

2013 NRC Retest Exam - SIMULATOR SETUP**Simulator Operator**

- Reset to IC-162
- Password "HR2014301"
- Go to RUN
- Silence and Acknowledge annunciators
- GO TO FREEZE and inform the lead examiner the Simulator is ready. **DO NOT GO TO RUN** until directed by the lead examiner. (The examiner has provided to the candidate with initial conditions and the initiating cues prior to placing the simulator in RUN.)

The following setup information is how IC-162 was developed.

- Initial Simulator IC was IC-19
- GO to RUN
- Insert a malfunction to maintain 1SI-107 shut
 - lor xa1i102 (n 0 0) ASIS
- INSERT LBLOCA
 - IMF RCS01A 0 100
- Trip all RCPs when RCS pressure is < 1400 psig and SI flow is > 200 gpm
- Perform actions of E-0 (including energizing 1A1 and 1B1 and adjusting AFW flows as necessary) then transition to E-1
- Energize Accumulator discharge valves – run AMS file cvc\path-1 Att. 6
- Allow RWST level to decrease until < 23.4%
- Perform EOP ES-1.3 Cold Leg Recirc Lineup
- Stabilize the plant
- Perform E-1 steps 15-24
- The "A" and "B" RHR pumps are operating.
- The "A" and "B" CSIPs are operating.
- RCS pressure is approximately 20 PSIG.
- Plant for cold leg recirculation IAW ES-1.3
- Silence Acknowledge and Reset Annunciators
- FREEZE and Snap these conditions to your exam IC

PERFORMANCE INFORMATION

Evaluator Note:

During the performance of this JPM a RED path condition may occur for RCS Integrity. This is expected since the RCS has depressurized from the LB LOCA event. Since RCS pressure is < 230 psig and RHR Hx header flow is > 1000 gpm the actions are to return to procedure and step in effect.

IF the candidate stops progressing with the procedure in effect cue them that EOP-FR-P.1, Response To Imminent Pressurized thermal Shock has already been addressed. Continue with your actions.

Simulator Operator:

When directed by the Lead Examiner go to Run.

START TIME: _____**OBTAIN PROCEDURE****Performance Step: 1**

Procedure EOP ES-1.4 obtained

Standard:

Locates a copy of EOP ES-1.4 and goes to Step 1

Comment:**EOP ES-1.4, Note prior to Step 1****Performance Step: 2**

NOTE: IF an RHR pump and/or CSIP has been secured to mitigate blockage of the associated recirculation sump, **THEN** it should **NOT** be restarted during implementation of this procedure. All valve alignments; however, should be performed.

NOTE: Monitoring for degraded recirculation sump performance and evaluation of potential mitigating actions is to continue during implementation of and following transition from this procedure

Standard:

Reviews and circle/slashes Note prior to step 1.

Evaluator Cue:

IF asked: There are no indications of Sump Blockage or Degraded Recirculation Sump Performance

Comment:

PERFORMANCE INFORMATION

EOP ES-1.4, Step 1**Performance Step: 3**

Check Charging System Status:
a. Check charging line - ISOLATED

Standard:

Locates charging line flow indicator or isolation valve indicators and determines that flow through charging line is isolated. Proceeds to step 2 of ES-1.4

Comment:**EOP ES-1.4, Step 2****Performance Step: 4**

Check SI Systems - ALIGNED FOR COLD LEG RECIRCULATION

Standard:

Determines that SI systems are aligned for Cold Leg Recirculation. (Also part of turnover)

Comment:**EOP ES-1.4, Note prior to Step 3****Performance Step: 5**

Steps 3, 4 AND 5 will transfer the SI system from cold leg recirculation to hot leg recirculation.

Standard:

Reviews and circle/slashes Note prior to step 3.

Comment:

EOP ES-1.4, Step 3.a

- ✓ **Performance Step: 6** Align RHR Pumps For Hot Leg Recirculation:
- a. Shut low head SI to cold leg valves:
 - 1SI-340
 - 1SI-341

- Standard:**
- 1. Verifies that 1SI-340 is shut
 - 2. Locates 1SI-341 control switch, energizes control power
 - 3. Takes 1SI-341 switch to SHUT

Comment:

EOP ES-1.4, Step 3.b

- ✓ **Performance Step: 7** b. Open low head SI to hot leg valve:
- 1SI-359

- Standard:**
- a. Locates 1SI-359 control switch
 - b. Energizes control power
 - c. And takes the valve to OPEN

Comment:

EOP ES-1.4, Caution prior to Step 4

Performance Step: 8 CAUTION: Simultaneous flow through two injection headers by one CSIP may cause pump run out (as indicated by oscillating discharge pressure).

Standard: Reviews and circle/slashes Caution prior to step 4.

Comment:

EOP ES-1.4, Step 4.a

Performance Step: 9 Align Train A CSIP For Hot Leg Recirculation:
a. Check Train A CSIP - RUNNING

Standard: Identifies CSIP A is running

Comment:

EOP ES-1.4, Step 4.b

Performance Step: 10 b. Check alternate high head SI to cold leg valve – OPEN
 • 1SI-52

Standard: Identifies 1SI-52 is OPEN

Comment:

EOP ES-1.4, Step 4.c

✓ **Performance Step: 11** c. Stop Train A CSIP.

Standard: Locates CSIP A control switch and takes the pump to STOP.

Comment:

EOP ES-1.4, Step 4.d

Performance Step: 12 d. Shut alternate high head SI to cold leg valve:
 • 1SI-52

Standard: Locates 1SI-52 control switch and takes the valve to SHUT

Comment:

PERFORMANCE INFORMATION

EOP ES-1.4, Step 4.e**Performance Step: 13**

- e. Open alternate high head SI to hot leg valve:
- 1SI-107

Standard:

- a. Locates 1SI-107 control switch
b. Energizes control power
c. And takes the valve to OPEN

Identifies that 1SI-107 will not open. Informs the CRS that 1SI-107 will not open and implements the RNO for step 4.e

Comment:**Evaluator Cue:**

Acknowledge any communication that 1SI-107 will not open and communications with alternate path activities (1SI-52 and 'A' CSIP restart).

Alternate Path starts here: RNO EOP ES-1.4, Step 4.e**✓ Performance Step: 14**

- e. Perform the following:
- 1) **Reopen alternate high head SI to cold leg valve: 1SI-52**
 - 2) Consult the plant operations staff to evaluate use of Attachment 1 to open the alternate high head SI to hot leg valve while continuing with this procedure.

Standard:

Locates control switch for 1SI-52 and takes switch to OPEN.
Contacts plant operations staff (or informs CRS to contact plant operations staff) to evaluate use of Attachment 1

Comment:

**Evaluator OR
Simulator Operator
Cue:**

**CRS acknowledge need to contact plant operations staff OR
if plant staff is contacted then acknowledge request to
evaluate use of Attachment 1**

EOP ES-1.4, Step 4.f

Performance Step: 15 f. Restart the Train A CSIP.

✓ **Standard:** Locates CSIP A control switch and takes the pump to START.

Comment:

EOP ES-1.4, Step 5.a

Performance Step: 16 Align Train B CSIP For Hot Leg Recirculation:
a. Check Train B CSIP - RUNNING

Standard: Identifies CSIP B is running

Comment:

EOP ES-1.4, Step 5.b

Performance Step: 17 b. Check any BIT outlet valve – OPEN

- 1SI-3
- 1SI-4

Standard: Identifies 1SI-3 and 1SI-4 are OPEN

Comment:

PERFORMANCE INFORMATION

Evaluator Note:

With the current plant configuration when the 'B' CSIP is stopped the Alternate Seal Injection (ASI) timers will start due to RCP seal water flow decreasing to < 4 gpm. (Flow is provided by the 'B' CSIP only at this time) If flow is not restored by restarting the 'B' CSIP within 2 minutes and 30 seconds the ASI squib valves will actuate and the ASI pump will start 15 seconds later. This will not change the hot leg injection line up but...if the ASI pump starts the candidate may refer to AOP-018, the annunciator directions, or OP-185 to secure the ASI pump operation.

IF the candidate stops performing the actions of ES-1.4 to address the ASI system then cue them: Continue you're your current task...another operator will address the ASI system response.

EOP ES-1.4, Step 5.c

- ✓ **Performance Step: 18** c. Stop Train B CSIP.

Standard: Locates CSIP B control switch and takes the pump to STOP.

Comment:

EOP ES-1.4, Step 5.d

- ✓ **Performance Step: 19** d. Shut BIT outlet valves:
- 1SI-3
 - 1SI-4

Standard: Locates 1SI-3 and 1SI-4 control switches and takes the valves to SHUT

Comment:

EOP ES-1.4, Step 5.e

- ✓ **Performance Step: 20** e. Open high head SI to hot leg valve:
- 1SI-86
- Standard:**
- a. Locates 1SI-86 control switch
 - b. Energizes control power
 - c. Takes control switch to OPEN for 1SI-86

Comment:**EOP ES-1.4, Step 5.f**

- ✓ **Performance Step: 21** f. Restart the Train B CSIP.
- Standard:** Locates CSIP B control switch and takes the pump to START.
- NOT CRITICAL:** Reports to CRS that 'A' CSIP is still in Cold Leg Recirc due to 1SI-107 not opening and 'B' CSIP is in Hot Leg Recirc line up.

Comment:**Acknowledge report.**

Evaluator Cue: Inform candidate: Plant operations staff has completed an evaluation of using Attachment 1 and are requiring you to perform Attachment 1 step 1 to attempt to open 1SI-107. Report result of Attachment 1 step 1 to CRS when complete.

* **Simulator Operator:** Delete failure of 1CS-107 (xa1i102) to allow the candidate to open 1CS-107.

* **Evaluator:** Ensure that the Simulator Operator has deleted the malfunction of 1CS-107.

PERFORMANCE INFORMATION

EOP ES-1.4, Attachment 1 Note and Caution prior to step 1

Performance Step: 22 **NOTE:** This attachment provides guidance to open high head injection valves that are pressure locked. The effects of pressure locking are relieved by operating the associated CSIP.

CAUTION: CSIPs should **NOT** be operated unless the associated normal miniflow isolation valves are open.

Standard: Reads both Note and Caution and circle/slashes both.

Comment:

EOP ES-1.4, Attachment 1, step 1

✓ **Performance Step: 23** To Open Alternate Hot Leg Valve (1SI-107) Perform The Following:

- a. Stop Train A CSIP.

Standard: Locates MCB control switch for 'A' CSIP and places switch to stop.

Comment:

EOP ES-1.4, Attachment 1, step 1

- ✓ **Performance Step: 24**
- b. Shut alternate high head SI to cold leg valve:
1SI-52

Standard: Locates 1SI-52 control switch and takes the valve to SHUT

Comment:

EOP ES-1.4, Attachment 1, step 1

- ✓ **Performance Step: 25** c. Open the common CSIP normal miniflow isolation valve:
1CS-214

Standard: Locates 1CS-214 control switch and takes switch to OPEN

Comment:

EOP ES-1.4, Attachment 1, step 1

- ✓ **Performance Step: 26** d. Open the associated Train A CSIP normal miniflow
isolation valve:
☐ **1CS-182 (CSIP 1A-SA)**
☐ 1CS-210 (CSIP 1C-SAB)

Standard: Locates 1CS-182 control switches and takes each switch to
OPEN

Comment:

EOP ES-1.4, Attachment 1, step 1

- ✓ **Performance Step: 27** e. Restart the Train A CSIP.

Standard: Locates the control switch for 'A' CSIP and STARTS the pump

Comment:

EOP ES-1.4, Attachment 1, step 1

- ✓ **Performance Step: 28** f. Open alternate high head SI to hot leg valve:
1SI-107

Standard: Locates 1SI-107 control switch and takes it to OPEN
(Valve opens)
Informs CRS that 1SI-107 has opened.

Comment:

Evaluator Cue: Acknowledge information.

EOP ES-1.4, Attachment 1, step 1

- ✓ **Performance Step: 29** g. Shut the common CSIP normal miniflow isolation valve:
1CS-214

Standard: Locates 1CS-214 and takes switch to SHUT

Comment:

EOP ES-1.4, Step 6✓ **Performance Step: 30**

h. Shut the associated Train A CSIP normal miniflow isolation valve:

☐ **1CS-182 (CSIP 1A-SA)**☐ 1CS-210 (CSIP 1C-SAB)**Standard:**

Locates 1CS-182 control switches and takes each switch to SHUT

Reports to CRS that 1SI-107 has opened and the 'A' CSIP is in the Hot Leg Recirc lineup

Comment:**Evaluator Cue:****CRS acknowledge report.****After the candidate has reported completion of Attachment 1 step 1: Evaluation on this JPM is complete.****Announce: I have the shift, END OF JPM****Inform Simulator Operator to place the Simulator in Freeze.****STOP TIME:** _____**Simulator Operator:****When directed by the Lead Examiner then go to Freeze.**

Job Performance Measure No.: 2013 NRC Retest Exam JPM CR b

Transfer to Hot Leg Recirculation
IAW EOP ES-1.4.

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

Initial Conditions:	The plant has experienced a Large Break LOCA. The plant is presently aligned for cold leg recirculation per EOP ES-1.3, Transfer to Cold Leg Recirculation.
----------------------------	---

Initiating Cue:	<p>6.5 hours have passed since the LOCA occurred. The CRS directs you to implement EOP ES-1.4, Transfer Between Cold Leg and Hot Leg Recirculation and perform steps 1 – 5 to transfer to Hot Leg recirculation.</p> <p>The BOP will acknowledge annunciators not associated with your task.</p>
------------------------	--

PERFORMANCE INFORMATION

Facility: Shearon Harris Task No.: 301053H401

Task Title: Fuel Handling Accident (AOP-013) JPM No.: 2013 NRC Retake Exam CR JPM c

K/A Reference: 034 A2.01 RO 3.6 SRO 4.4 **ALTERNATE PATH - YES**

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

NOTE: We are simulating Mode 6 conditions with equipment in normal alignment. The unit is stable.

The unit has been taken off line and is shut down due to a fuel leak.
Current plant conditions are:

- Mode 6 and a core off-load in progress.
- Both A and B RHR pumps are in operation.
- RCS temperature is ~124°F
- RCS temperature band is 120°F - 130°F
- Cavity water level is 23 feet 10 inches
- 'A' and 'B' CT Spray pumps, 'B' and 'C' CSIP's, 'B' RMW pump, 'A' and 'B' MDAFW pumps and the TDAFW pump are all under clearance IAW GP instructions.
- Work is being performed on the "B" RCP seal package

Initiating Cue:

The Refueling SRO has reported to the MCR that while the refuel crew was moving an assembly from the Reactor to the upender the assembly unlatched and has been dropped. The assembly has ruptured. One large bubble of gas and a lot of smaller gas bubbles have surfaced. The Refueling Bridge Crane rad monitor is in alarm as well as the local Containment area rad monitors on the refueling floor. The Refueling crew has all left the Refueling Bridge Crane. You are to take actions per AOP-013, Fuel Handling Accident.

Task Standard: Containment Evacuation, plant announcements and alarms sounded. In addition, all required air handlers and dampers positioned for a dropped fuel assembly event.

Required Materials: None

General References: AOP-013, Rev. 15

Time Critical Task: No

Validation Time: 15 minutes

Critical Step Justification	
Step 7	Must be able to warn plant personnel of dangerous situations.
Step 16	Must be able to locate and isolate Containment Purge to prevent a possible release of contamination.
Step 17	Must be able to locate and isolate Containment Purge dampers that have not correctly positioned to prevent a possible release of contamination.

PERFORMANCE INFORMATION

2013 NRC Retake Exam - SIMULATOR SETUP

- Reset to IC-163
- Password HR2014301
- Go to RUN
- **Assign AMS file 1CP-10 lights to Trigger 20 (each time sim is reset)**
- ERFIS screens - put 'A' RHR on one screen and INTEGRITY on another screen (normally the LTOP screen would be switched – you can do this if you have time but you will have to switch back each time you reset to a different JPM)
- Hang CIT's (all under clearance IAW GP Instructions)
 - 'A' and 'B' CNMT Spray Pumps
 - 'B' and 'C' CSIP's
 - 'B' RMUW pump
 - 'A' and 'B' MDAFW pumps
 - MS-70 and MS-72
- **Load but DO NOT RUN the following AMS file.** The file will be initiated when the JPM is started.
 - AMS file: 3502B increase

Silence and Acknowledge annunciators

GO TO FREEZE and inform the lead examiner the Simulator is ready. **DO NOT GO TO RUN** until directed by the lead examiner. (The examiner has provided to the candidate with initial conditions and the initiating cues prior to placing the simulator in RUN.)

- Initial Simulator IC was IC-21

For this JPM the plant is being simulated to be in Mode 6 by changing Pressurizer level to correspond to a cavity level of 23' 10". RCS temperature is ~116°F and refueling cavity water level 23' 10" (per GP-009).

- irf msc052 (n 0 0) REFUEL
- Modify Pressurizer hot cal level channels 459, 460 and 461 to 92%
 - imf lt:459 (n 00:00:00 00:00:00) 92.0 00:00:00
 - imf lt:460 (n 00:00:00 00:00:00) 92.0 00:00:00
 - imf lt:461 (n 00:00:00 00:00:00) 92.0 00:00:00
- Modify Pressurizer cold cal level channel 462 to 56%
 - imf lt:462 (n 00:00:00 00:00:00) 56.0 00:00:00

The following files will simulate that 1CP-10 damper is OPEN and will allow the operator to close the damper when the switch is taken to shut

- Load and run AMS file 1CP-10 lights (this will assign 2 events to Trigger 20)
- AFTER going to run assign 1CP-10 to Trigger 20
- Insert malfunction to prevent the Pre-Entry Purge Exhaust Fan from auto stopping and Isolation Dampers to close on high radiation level on REM-01LT-3502B (Cnmt Pre-Entry Purge Monitor)
 - imf z2718k2 (n 00:00:00 00:00:00) FAIL_ASIS
 - imf zrp614a (n 00:00:00 00:00:00) FAIL_ASIS
 - imf zrp614b (n 00:00:00 00:00:00) FAIL_ASIS
- On RM-11 rad monitor 3502B needs to have flow you must select the monitor and then push the "flow" button. Wait until both particulate and gas monitors are green.

PERFORMANCE INFORMATION

Run AMS file 3502 increase

Run AMS file (3502B increase) to cause Containment Pre-entry purge rad monitor 3502B, Containment RCS Leak Detection rad monitor 3502A, and Containment Isolation rad monitors 3561A-D to go into high alarm simulating a dropped fuel assembly during fuel movement.

- REM-01LT-3502B (Cnmt Pre-Entry Purge Monitor)
- REM-01LT-3502A (Cont RCS Leak Det)
- REM-1CR-3561A, B, C, D (Containment Isolation Sys. Rad. Monitors)

!Description of 3502B increase

+00:00:25 irf rms009 (n 00:00:00 00:00:00) 6.2E-3 00:00:00 -
 irf rms007 (n 00:00:00 00:00:00) 4.4E-3 00:00:00 -
 irf rms122 (n 00:00:00 00:00:00) 5.2E+2 00:00:00 -
 irf rms123 (n 00:00:00 00:00:00) 4.7E+2 00:00:00 -
 irf rms124 (n 00:00:00 00:00:00) 4.9E+2 00:00:00 -
 irf rms125 (n 00:00:00 00:00:00) 5.4E+2 00:00:00 -

+00:00:02 mrf rms009 (n 00:00:00 00:00:00) 9.1E-2 00:04:30 -
 mrf rms007 (n 00:00:00 00:00:00) 7.4E-2 00:04:30 -
 mrf rms122 (n 00:00:00 00:00:00) 6.2E+3 00:04:30 -
 mrf rms123 (n 00:00:00 00:00:00) 5.7E+3 00:04:30 -
 mrf rms124 (n 00:00:00 00:00:00) 5.5E+3 00:04:30 -
 mrf rms125 (n 00:00:00 00:00:00) 5.6E+3 00:04:30 -

+00:04:32 mrf rms009 (n 00:00:00 00:00:00) 6.6E-3 00:10:00 -
 mrf rms007 (n 00:00:00 00:00:00) 5.4E-3 00:10:00 -

 mrf rms122 (n 00:00:00 00:00:00) 2.2E+2 00:10:00 -
 mrf rms123 (n 00:00:00 00:00:00) 2.7E+2 00:10:00 -
 mrf rms124 (n 00:00:00 00:00:00) 2.5E+2 00:10:00 -
 mrf rms125 (n 00:00:00 00:00:00) 2.6E+2 00:10:00 -

- Silence Acknowledge and Reset Annunciators
- Freeze and Snap to an IC for future use

PERFORMANCE INFORMATION

<i>Simulator Operator:</i>	<p>Prior to allowing the candidate to see the Simulator setup for this JPM place the Simulator in run and activate APP file "3502B increase". Let the APP file run for 25 seconds so radiation conditions spike upwards on REM-01-3502A (CNMT RCS Leak Det) REM-01LT-3502B (CNMT Pre-Entry Purge Monitor) and REM-1CR-3561A, B, C, D (CNMT Isolation Sys. Rad. Monitors).</p> <p>Silence annunciators and GO TO FREEZE</p> <p><i>Bring in candidate and when directed by the Lead Examiner ensure the Simulator horns are on an GO to Run.</i></p>
-----------------------------------	---

START TIME: _____

Evaluator and Simulator Operator:	<p>Over the next 4 minutes and 30 seconds radiation levels sensed on the Containment Rad monitors will continue to increase. This will provide time for the candidate to perform the actions of AOP-013.</p> <p>The rad monitors will then peak and during the next 10 minutes slowly start to trend back down. After approximately 15 minutes all of the Containment Rad monitors that have increased in values will level out at a value higher than what they started at.</p>
--	--

Performance Step: 1 Implements AOP-013, Fuel Handling Accident as required.

Standard: Announces entry into AOP-013, no immediate actions then picks up a copy of AOP-013 and reads the purpose. Continues with procedure using Section 3.0

Evaluator Cue:	Acknowledge communications as necessary.
-----------------------	---

Comment:

PERFORMANCE INFORMATION

Section 3.0 note prior to Step 1**Performance Step: 2**

NOTE: This procedure contains no immediate actions. An accident involving only new fuel will not produce a significant radiation hazard.

Standard:

Reads and circle/slashes NOTE

Comment:**Section 3.0 Step 1****Performance Step: 3**

CHECK for one of the following, to determine if a spent fuel assembly is involved in the accident:

- A spent fuel assembly has been dropped
- The Spent Fuel Cask has been dropped
- A spent fuel assembly has collided with another object
- Any other fuel handling occurrence suspected of causing damage to a spent fuel assembly

Standard:

Identifies that a report has been made of a spent fuel assembly being dropped.

Comment:**Section 3.0 Step 2****Performance Step: 4**

CHECK that the fuel handling accident occurred in CNMT.

Standard:

Identifies that a fuel handling accident has occurred in Containment by the report and the Alarming Containment Area Radiation monitors.

Comment:

PERFORMANCE INFORMATION

Performance Step: 5 **Section 3.0 Step 3**
GO TO Section 3.2, Fuel Handling Accident in Containmentment.

Standard: Transitions to Section 3.2, Fuel Handling Accident in Containmentment

Comment:

Performance Step: 6 **Section 3.2, Step 1**
(Continuous Action step) CHECK that ALL CNMT area radiation monitor ALERT AND HIGH alarms are CLEARED. **(NO)**

Standard: Identifies that Containment area radiation monitors are currently in HIGH alarm
Reads RNO - GO TO STEP 3

Comment: **Caution pertains: after step 1 - CAUTION**
All personnel must evacuate CNMT immediately upon receipt of any CNMT area radiation alarm, and remain clear until Health Physics has surveyed the area and indicated that it is safe to enter.

Evaluator NOTE:

The candidate may determine that the Containment Pre-Entry purge did not secure as expected and secure the lineup without a procedure IAW AD-OP-ALL-1000 guidance. Air handler and damper lineups will be verified later using AOP-013.

PERFORMANCE INFORMATION

Step 3✓ **Performance Step: 7****PERFORM** an evacuation of CNMT:

- **SOUND** local evacuation alarm (use of either Local or Containment evacuation alarm acceptable).
- **MAKE** the following announcement on the PA:
“Attention plant personnel: A fuel handling accident has occurred in Containment. All personnel not specifically directed to remain must evacuate Containment and report to HP at the Containment exit.”
- **SOUND** local evacuation alarm (Containment evacuation alarm) **AND REPEAT** announcement.

NOT CRITICAL to direct the following:

- **DIRECT** Health Physics to survey personnel leaving the CNMT.
- **DIRECT** Security to verify all personnel are clear of the CNMT.

Standard:

Sounds local evacuation alarm, makes required PA announcements to evacuate the Containment. Repeats alarm and PA announcement. Contacts HP and security.

Comment:**Simulator Operator:**

Perform communications with candidate when Health Physics and Security are contacted appropriately.

NOTE prior to step 4**Performance Step: 8**

NOTE: A fuel handling accident or high area radiation levels may require initiation of the HNP Emergency Plan.

Standard:

Reads and circle/slashes NOTE

Comment:

Step 4 (AOP-002, Step 6.b)

Performance Step: 9 **REFER TO** PEP-110, Emergency Classification and Protective Action Recommendations, **AND ENTER** the EAL Matrix.

Standard: Informs Shift Manager to refer to PEP-110

Comment:

Evaluator Cue:	Acknowledge communications (as needed)
-----------------------	---

Step 5

Performance Step: 10 **REFER TO** the following as necessary, **AND CHECK** CNMT closure ESTABLISHED:

- ERFIS Safeguards Terminal
- OST-1029, Containment Penetration Test Outside Isolation Valve Verification Monthly Interval Modes 1-6
- OST-1034, Containment Penetrations Weekly Interval During Core Alterations and Movement of Irradiated Fuel Inside Containment
- OST-1091, Containment Closure Test Weekly Interval During Core Alterations and Movement of Irradiated Fuel Inside Containment

Standard: Using ERFIS Safeguards Terminal identifies that Cnmt Pre-Entry Purge has NOT secured.

NOTE: May use OP-168 Section 7.2 to secure Containment Pre-Entry Purge, or could secure without procedure IAW AD-OP-ALL-1000 or uses AOP-013 now or at a later time.

Contacts WCC to perform OST-1029, 1034, and 1091

(ESTABLISH CNMT closure within 120 minutes of event onset.)

Comment:

Evaluator Cue:	Another Operator will work with the WCC to establish Containment closure IAW the OST's. Continue with AOP-013.
-----------------------	---

Caution and Note prior to Step 6

Performance Step: 11 **CAUTION:** Airborne radiation may be present and gas bubbles may be visible if a fuel assembly is ruptured. Personnel should remain clear until Health Physics has established access controls.

NOTE: Kr-85 is the primary radiological concern for fuel off-loaded more than 6 months ago. Kr-85 is a beta hazard and will NOT be detected by personal dosimetry or area radiation monitors.

Standard: Reads and circle/slashes NOTE and CAUTION

Comment:

Step 6

Performance Step: 12 **DIRECT** Health Physics to perform the following:

- a. **EVALUATE** any radiation monitor alarms using HPP-780, Radiation Monitoring Systems Operator's Manual.
- b. **SURVEY** CNMT.
- c. **ESTABLISH** CNMT access controls.
- d. **DETERMINE** temporary shielding requirements.

Standard: Contacts Health Physics and asks them to perform the evaluation, survey, establish controls and determination of temporary shielding requirements.

Comment:

Simulator Operator:	Communicate as HP as required.
----------------------------	---------------------------------------

PERFORMANCE INFORMATION

Step 7

Performance Step: 13 **CHECK** REM-01LT-3502A SA, Cnmt RCS Leak Detection Monitor, HIGH alarm CLEARED.

Standard: Checks RM-11 and determines that REM-01LT-3502A SA, Cnmt RCS Leak Detection Monitor is in ALARM and performs actions of Step 7 RNO.

Comment:

Step 7 RNO

Performance Step: 14 VERIFY Normal Containment Purge ISOLATED:

VERIFY BOTH of the following fans STOPPED:
AH-82 A, Cnmt Normal Purge Supply
AH-82 B, Cnmt Normal Purge Supply

VERIFY ALL of the following dampers SHUT:
1CP-5 SA, Normal Purge Discharge
1CP-9 SA, Normal Purge Discharge
1CP-3 SB, Normal Purge Discharge
1CP-6 SB, Normal Purge Discharge

Standard: Verifies Normal Containment Purge is isolated:
AH-82 A, Cnmt Normal Purge Supply (**OFF**)
AH-82 B, Cnmt Normal Purge Supply (**OFF**)
1CP-5 SA, Normal Purge Discharge (**SHUT**)
1CP-9 SA, Normal Purge Discharge (**SHUT**)
1CP-3 SB, Normal Purge Discharge (**SHUT**)
1CP-6 SB, Normal Purge Discharge (**SHUT**)

Comment:

PERFORMANCE INFORMATION

Step 8

Performance Step: 15 **CHECK** REM-01LT-3502B, Cnmt Pre-Entry Purge Monitor, HIGH alarm CLEARED.

Standard: Checks RM-11 and determines that REM-01LT-3502B, Cnmt Pre-Entry Purge Monitor, is still in HIGH ALARM
Performs actions of Step 8 RNO

Comment:

Alternate Path begins here - Step 8 RNO

- ✓ **Performance Step: 16** **VERIFY** Containment Pre-Entry Purge ISOLATED:
a. **VERIFY** BOTH of the following fans STOPPED:
- E-5A, Cnmt Pre-Entry Purge Exhaust
 - E-5B, Cnmt Pre-Entry Purge Exhaust

Standard: Locates and verifies fans E-5A and E-5B are STOPPED
STOPS E-5A (May report to CRS that fan did not stop as expected)

Comment:

Step 8 RNO continued

- ✓ **Performance Step: 17** b. **VERIFY** ALL of the following dampers SHUT:
- 1CP-4 SA, Pre-Entry Purge Isolation
 - **1CP-10 SA, Pre-Entry Purge Isolation (OPEN – MUST SHUT)**
 - CP-D50, Cnmt Pre-Entry Purge Damper
 - 1CP-1 SB, Pre-Entry Purge Isolation
 - 1CP-7 SB, Pre-Entry Purge Isolation

Standard: Locates and verifies all dampers are SHUT except for 1CP-10 SA, Pre-Entry Purge Isolation which is **OPEN**. Takes MCB switch to **SHUT**, verifies green light **ON** and red light **OFF**.
(May report to CRS that 1CP-10 needed to be repositioned.)

Comment:

Evaluator Cue:	Acknowledge any communications and after verification of Pre-Entry Purge Isolation: Evaluation on this JPM is complete. Announce "I have the shift" END OF JPM Direct Simulator Operator to place the Simulator in FREEZE.
-----------------------	---

STOP TIME: _____

Simulator Operator:	When directed by the Lead Examiner place the Simulator in FREEZE.
----------------------------	--

Job Performance Measure No.: 2013 NRC Retest Exam CR JPM c
Fuel Handling Accident (AOP-013)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

Initial Conditions:	<p>NOTE: We are simulating Mode 6 conditions with equipment in normal alignment. The unit is stable.</p> <p>The unit has been taken off line and is shut down due to a fuel leak.</p> <p>Current plant conditions are:</p> <ul style="list-style-type: none">• Mode 6 and a core off-load in progress.• Both A and B RHR pumps are in operation.• RCS temperature is ~116°F• RCS temperature band is 110°F - 120°F• Cavity water level is 23 feet 10 inches• 'A' and 'B' CT Spray pumps, 'B' and 'C' CSIP's, 'B' RMW pump, 'A' and 'B' MDAFW pumps and the TDAFW pump are all under clearance IAW GP instructions. <p>Work is being performed on the "B" RCP seal package</p>
Initiating Cue:	<p>The Refueling SRO has reported to the MCR that while the Refuel crew was moving an assembly from the Reactor to the upender the assembly unlatched and has been dropped. The assembly has ruptured. One large bubble of gas and a lot of smaller gas bubbles have surfaced. The Refueling Bridge Crane rad monitor is in alarm as well as the local Containment area rad monitors on the refueling floor. The Refueling crew has all left the Refueling Bridge Crane. You are to take actions per AOP-013, Fuel Handling Accident.</p>

Facility: Shearon Harris

Task No.: 301011H401

Task Title: Local Makeup to the VCT using the
Manual Emergency Boration ValveJPM No.: 2013 NRC Retest Exam
JPM d

K/A Reference: 004 A2.14 3.8 / 3.9

NOTE: Inside RCA

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance: X

Actual Performance: _____

Classroom _____ Simulator _____ Plant X **READ TO THE EXAMINEE**

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions:

- The unit is operating at 100 percent power.
- The Reactor Makeup Control System is inoperable; FCV-113B and FCV-114A will not open.
- A Boric Acid pump and a Reactor Makeup Water pump are running but VCT level is slowly decreasing since makeup cannot be established.

Initiating Cue:

- You are the RAB NLO. The CRS has informed you that AOP-003, Attachment 2 is being performed in the MCR.
- You are to coordinate with the Main Control Room and establish makeup flow to the VCT.
- Go to the Emergency Boration Valve Gallery and contact the Control Room when you are there. The MCR will provide you with directions

Task Standard: 1CS-274 and 1CS-287 have been located and opening of these valves has been simulated.

Required Materials: None

General References: AOP-003 Rev. 28, Attachment 2

Time Critical Task: No

Validation Time: 10 Minutes

SIMULATOR SETUP

- N/A Evaluation will be performed by simulating in plant activities.
- Cues will be provided to the candidate by the examiner.

Critical Step Justification	
Step 2	Must locate then unlock both 1CS-274 and 1CS-287 in order to change the position of each valve to obtain flow through the valve
Step 3	Must throttle open 1CS-287 to obtain flow
Step 4	Must throttle open 1CS-274 to obtain flow
Step 5	Must shut and lock both 1CS-274 to prevent unwanted flow (reactivity addition)
Step 6	Must shut and lock 1CS-287 to prevent unwanted flow (reactivity addition)

PERFORMANCE INFORMATION

BEFORE YOU START THIS JPM**INPLANT JPM SAFETY CONSIDERATIONS:****CAUTION:** EQUIPMENT MAY AUTO START OR MAY BE ENERGIZED**- SIMULATE ONLY - DO NOT OPERATE ANY ACTUAL PLANT EQUIPMENT!!!**

Before entering the performance location of this JPM, ensure you **AND** the candidate have the proper PPE for the area you are going to go to or will travel through to get there.

Avoid contacting any plant equipment.

Follow ALARA practices in the RCA.

Do NOT remove ladders from their storage locations. Have the candidate simulate obtaining and using a ladder if one would be needed during the actual performance of this task.

Standard:

The RAB NLO would have the locked valve key, RAB cell phone and radio. The candidate should go to the 236' RAB Emergency Boration Valve Gallery and simulate contacting the MCR by radio (not in an area that is radio restricted) or by headset.

Evaluator NOTE:

NOTE: The RAB telephone does not receive a signal inside the Emergency Boration valve gallery area therefore communication by phone would have to be accomplished using the phone outside the room with another person relaying the information to the person in the room. For headset communication there is a connection in the room but a headset is not in the room. The closest place to obtain a headset is the Waste Process Building tool room area. **If the candidate states that he would communicate to the MCR via a headset ask where he would obtain one.**

The Control Room will direct the local operator from AOP-003 Attachment 2 starting at step 10-16 (attached).

The directions that would be communicated from the MCR to the local operator are written into this JPM.

Evaluator Cue:

(Inform the candidate by whatever means the candidate determined suitable for communication. There is no standard communication for this task. It could be a radio, headset or telephone.)

CUE: I will "simulate" all Control Room communications and provide you with verbal directions required to accomplish AOP-003 Attachment 2.

START TIME:

_____ (When at the Emergency Boration valve gallery area).

PERFORMANCE INFORMATION

MALFUNCTION OF REACTOR MAKEUP CONTROL

Attachment 2

Sheet 2 of 8

Manual Makeup in Modes 1 through 4

INSTRUCTIONS

RESPONSE NOT OBTAINED

- ☐ 5. DETERMINE required boric acid flow rate:

$$\begin{aligned}\dot{M}_{BA} &= [(C_{BLEND}) \times (\dot{M}_{BLEND})] / (C_{BAT}) \\ &= \left[\frac{\quad}{\text{Step 1}} \times \frac{\quad}{\text{Step 2}} \right] / \frac{\quad}{\text{Step 3}} \\ &= \quad \text{gpm}\end{aligned}$$

- ☐ 6. RECORD in Step 13a the result from the previous step.

- ☐ 7. DETERMINE required dilution flow rate:

$$\begin{aligned}\dot{M}_{DIL} &= (\dot{M}_{BLEND}) - (\dot{M}_{BA}) \\ &= \frac{\quad}{\text{Step 2}} - \frac{\quad}{\text{Step 5}} \\ &= \quad \text{gpm}\end{aligned}$$

- ☐ 8. RECORD in Step 13b the result from the previous calculation.

- ☐ 9. Independently VERIFY boric acid flow rate and dilution flow rate calculations made in Steps 5 and 7.

10. DIRECT an operator to perform the following:

- ☐ a. OBTAIN a radio and a locked valve key.
- ☐ b. ESTABLISH communication between 236' RAB Emergency Boration Valve Gallery and the Control Room.

(Continued on Next Page)

AOP-003

Rev. 28

Page 20 of 38

PERFORMANCE INFORMATION

MALFUNCTION OF REACTOR MAKEUP CONTROL

Attachment 2

Sheet 3 of 8

Manual Makeup in Modes 1 through 4**INSTRUCTIONS****RESPONSE NOT OBTAINED****10. (continued)****c. UNLOCK the following:**

- ☐ • 1CS-274, RMUW Manual Blend from RMWST
- ☐ • 1CS-287, Manual Alternate Emergency Boration

11. VERIFY the following:

- ☐ • One Boric Acid Transfer Pump—RUNNING
- ☐ • One Reactor Makeup Water Pump—RUNNING
- ☐ • 1CS-283 (FCV-113A), Boric Acid Filter to Boric Acid Blender Flow Control Valve—OPEN

- ☐ **12. Prior to continuing,**
CHECK that all previous steps are complete.

AOP-003

Rev. 28

Page 21 of 38

PERFORMANCE INFORMATION

MALFUNCTION OF REACTOR MAKEUP CONTROL

Attachment 2

Sheet 4 of 8

Manual Makeup in Modes 1 through 4

INSTRUCTIONS

RESPONSE NOT OBTAINED

NOTE

- Boric acid flow can be monitored on ERFIS point FCS0113A, or locally in 236' RAB Emergency Boration Valve Gallery.
- Dilution water flow can be monitored on ERFIS point FCS0110, or on FI-110 on the MCB.
- Actions in the next step should be performed as closely together as possible to achieve an even makeup.

13. As closely together as possible,
Locally **PERFORM** the following:

- ☐ a. THROTTLE OPEN 1CS-287,
Manual Alternate Emergency
Boration, to obtain _____ gpm
boric acid flow rate (from Step 5).
- ☐ b. THROTTLE OPEN 1CS-274,
RMUW Manual Blend from
RMWST, to obtain _____ gpm
dilution water flow rate
(from Step 7).

* ☐ 14. **MONITOR** the following for expected
response:

- Tavg
- Reactor power
- Control rod motion
- VCT level

AOP-003

Rev. 28

Page 22 of 38

PERFORMANCE INFORMATION

MALFUNCTION OF REACTOR MAKEUP CONTROL

Attachment 2

Sheet 5 of 8

Manual Makeup in Modes 1 through 4

INSTRUCTIONS

RESPONSE NOT OBTAINED

15. WHEN desired VCT level has been reached,
THEN:

a. Locally SHUT AND LOCK the following:

- ☐ • 1CS-274, RMUW Manual Blend from RMWST
- ☐ • 1CS-287, Manual Alternate Emergency Boration

☐ b. CHECK instrument air AVAILABLE.

☐ b. EXIT this attachment.

☐ c. SHUT 1CS-283 (FCV-113A), Boric Acid Filter to Boric Acid Blender Flow Control Valve.

☐ 16. EXIT this attachment.

☐ 17. DETERMINE required boric acid flow rate:

$$\begin{aligned} \dot{M}_{BA} &= [(C_{BLEND}) \times (120)] / (C_{BAT}) \\ &= \left[\frac{\quad}{\text{Step 1}} \times (120) \right] / \frac{\quad}{\text{Step 3}} \\ &= \quad \text{gpm} \end{aligned}$$

☐ 18. RECORD in Step 23a the result from the previous step.

☐ 19. Independently VERIFY boric acid flow rate calculation made in Step 17.

AOP-003

Rev. 28

Page 23 of 38

PERFORMANCE INFORMATION

Performance Step: 1 When at the Emergency Boration valve gallery location report to the MCR

Standard: Contacts the MCR and informs them they are ready to receive directions

Evaluator Cue: The Control Room directs you to UNLOCK 1CS-274, RMUW Manual Blend from RMWST and then UNLOCK 1CS-287, Manual Alternate Emergency Boration.

Standard: Acknowledges MCR directions with 3 way communications

Comment:

- ✓ **Performance Step: 2** Unlocks the following
- 1CS-274, RMUW Manual Blend From RMWST
 - 1CS-287, Manual Alternate Emergency Boration

Standard: Locates and unlocks 1CS-274 and 1CS-287 and reports completion to the MCR

Evaluator Cue:

1. The locks have been removed from 1CS-274 and 1CS-287
2. The MCR acknowledges that the locks have been removed.

Evaluator Cue: The Control Room directs you to perform the following as close together as possible to achieve an even makeup.
First throttle OPEN 1CS-287 until directed to STOP
Then throttle OPEN 1CS-274 until directed to STOP
(Candidate should simulate opening the valves until you tell them to stop.)

Standard: Acknowledges MCR directions with 3 way communications

Comment:

PERFORMANCE INFORMATION

- ✓ **Performance Step: 3** Locally perform the following:
Throttle open 1CS-287, Manual Alternate Emergency Boration,
to obtain the required boric acid flow rate.
NOTE: There is a local flow indicator in the room for Boration
flow but NOT for dilution flow.

Standard: Demonstrates opening valve and informs the Control Room that
he/she is throttling opening 1CS-287 and opens the valve until
the Control Room directs him/her to stop.

Evaluator Cue:	The MCR acknowledges that 1CS-287 is being throttled open. (Pause) The Control Room directions are to for you to STOP opening 1CS-287. The required flow has been established. (Once the candidate reports that they have stopped provide the next direction) Now throttle open 1CS-274 until you are directed to stop by the control room's mark.
-----------------------	---

Standard: Acknowledges MCR directions with 3 way communications

Comment:

PERFORMANCE INFORMATION

- ✓ **Performance Step: 4** Throttle OPEN 1CS-274, RMUW Manual Blend from RMWST, to obtain the required dilution water flow rate.

Standard: Informs the Control Room that he/she is throttling opening 1CS-274 and opens the valve until the Control Room directs him/her to stop.

Evaluator Cue:	<p>The Control Room directions are to STOP opening 1CS-274. The required flow has been established. The VCT is now filling.</p> <p>A few moments later inform the candidate:</p> <p>Time compression is being used and the VCT is now at the required level.</p> <p>The MCR is directing you to SHUT 1CS-274 then 1CS-287 then lock both valves and report when complete.</p>
-----------------------	---

Comment:

- ✓ **Performance Step: 5** Shuts and locks 1CS-274

Standard: Simulates shutting 1CS-274 and locking valve

Comment:

✓ **Performance Step: 6** Shuts and locks 1CS-287

Standard: Simulates shutting 1CS-287 and then locking valve.
Informs the Control Room that both valves are shut and locked using 3 way communications.
1CS-274 is SHUT and locked
1CS-287 is SHUT and locked

Evaluator Cue:

The MCR acknowledges that both 1CS-274 and 1CS-287 are SHUT and LOCKED.

END OF JPM

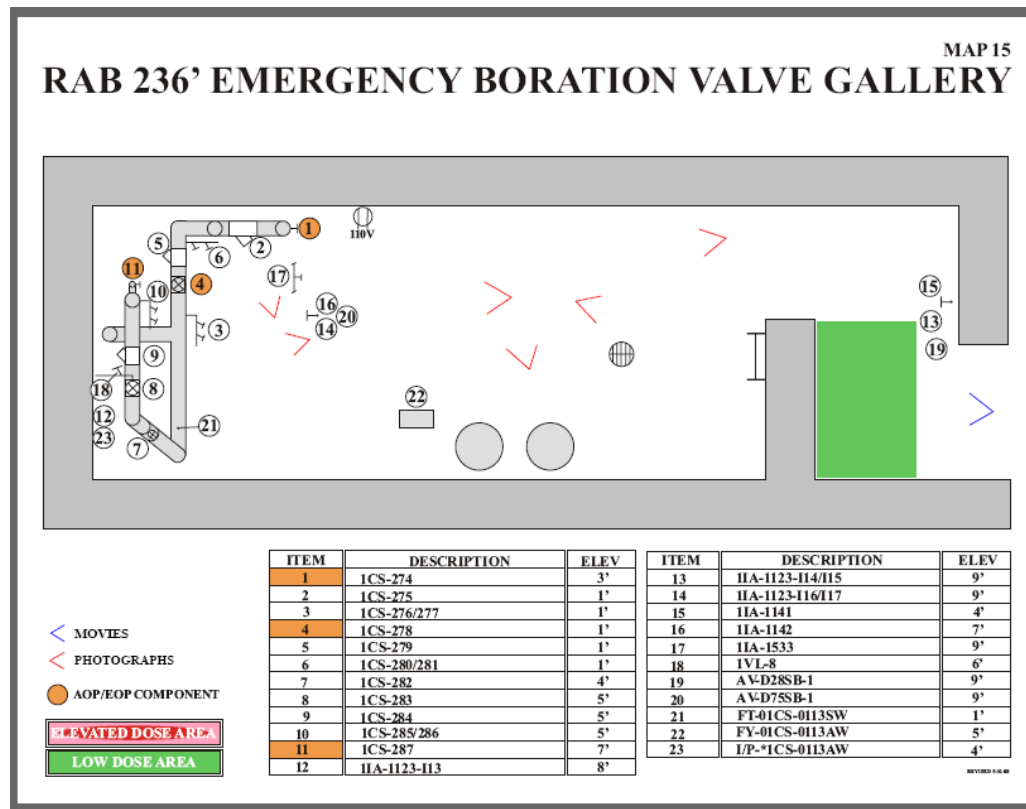
Comment:

Terminating Cue: The control room is informed that the lineup is secured.

STOP TIME: _____

PERFORMANCE INFORMATION

KEY



✓ - Denotes Critical Steps

2013 NRC Retest Exam JPM d Rev. 1

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2013 NRC Retest In-Plant JPM d (inside RCA)
Local Makeup to the VCT using the Manual Emergency
Boration Valve (AOP-003)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

BEFORE YOU START THIS JPM**INPLANT JPM SAFETY CONSIDERATIONS:****CAUTION:** EQUIPMENT MAY AUTO START OR MAYBE ENERGIZED**- SIMULATE ONLY - DO NOT OPERATE ANY ACTUAL PLANT EQUIPMENT!!!**

Before entering the performance location of this JPM, ensure you **AND** the examiner have the proper PPE for the area you are going to go to or will travel through to get there.

Avoid contacting any plant equipment,

Follow ALARA practices in the RCA.

Do NOT remove ladders from their storage locations. Simulate obtaining and using a ladder if one would be needed during the actual performance of this task.

Initial Conditions:

- The unit is operating at 100 percent power.
- The Reactor Makeup Control System is inoperable; FCV-113B and FCV-114A will not open.
- A Boric Acid pump and a Reactor Makeup Water pump are running but VCT level is slowly decreasing since makeup cannot be established.

Initiating Cue:

- You are the RAB NLO. The CRS has informed you that AOP-003, Attachment 2 is being performed in the MCR.
- You are to coordinate with the Main Control Room and establish makeup flow to the VCT.
- Go to the Emergency Boration Valve Gallery and contact the Control Room when you are there. The MCR will provide you with directions.

Facility: Shearon Harris Task No.: 012010H101

Task Title: Perform Local Actions For Placing an OTΔT Channel In TEST JPM No.: 2013 NRC Retest Exam In-Plant JPM e

K/A Reference: 012 A4.04 RO 3.3 SRO 3.6 ALTERNATE PATH - No

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this Job Performance Measure will be satisfied.

Initial Conditions: The unit is operating at 100% power when Loop 1 Hot Leg temperature input to Tav_g and OTΔT failed low.

Initiating Cue: To meet Technical Specifications, the CRS is directing you to perform the local actions of OWP-RP-01 for troubleshooting and tripping bistables for Loop 1 Tav_g and OTΔT. Inform the Control Room when all switches have been positioned to allow the Control Room to complete the actions required in the Control Room.

The CRS informs you that all Master Test Switches are to be placed in test for troubleshooting. The Control Room has placed Rod Control in MANUAL.

Evaluator: Provide candidate with a copy of the procedure now to review prior to getting to location of actions performed in this JPM.

Task Standard: Place the PIC Cabinet Master Test switches and bistables in the Test position.

Required Materials: None

General References: OWP-RP-01, Reactor Protection Rev 16

Time Critical Task: No

Validation Time: 15 minutes

SIMULATOR SETUP

- N/A Evaluation will be performed by Simulating in plant activities.
- Cues will be provided to the candidate by the examiner.

Critical Step Justification	
Step 6	Must locate then place Master Test switch SW1 to proper position to perform testing and troubleshooting
Step 7	Must locate then place Master Test switch SW2 to proper position to perform testing and troubleshooting
Step 8	Must locate then place Master Test switch SW4 to proper position to perform testing and troubleshooting
Step 9	Must locate then place Master Test switch SW5 to proper position to perform testing and troubleshooting
Step 10	Must locate then place switch for BS1 to proper position to perform testing and troubleshooting
Step 11	Must locate then place switch for BS2 to proper position to perform testing and troubleshooting
Step 12	Must locate then place switch for BS3 to proper position to perform testing and troubleshooting
Step 13	Must locate then place switch for BS1 to proper position to perform testing and troubleshooting
Step 14	Must locate then place switch for BS2 to proper position to perform testing and troubleshooting
Step 15	Must locate then place switch for BS3 to proper position to perform testing and troubleshooting
Step 16	Must locate then place switch for BS4 to proper position to perform testing and troubleshooting

BEFORE YOU START THIS JPM**INPLANT JPM SAFETY CONSIDERATIONS:****CAUTION:** EQUIPMENT MAY AUTO START OR MAY BE ENERGIZED**- SIMULATE ONLY - DO NOT OPERATE ANY ACTUAL PLANT EQUIPMENT!!!**

Before entering the performance location of this JPM, ensure you **AND** the candidate have the proper PPE for the area you are going to go to or will travel through to get there.

Avoid contacting any plant equipment,
Follow ALARA practices in the RCA.

Do NOT remove ladders from their storage locations. Have the candidate simulate obtaining and using a ladder if one would be needed during the actual performance of this task.

START TIME: _____**Performance Step: 1 OBTAIN PROCEDURE**

Standard: Reviews provided OWP-RP-01 and refers to Section for
Channel 1 Tavg/ ΔT

Comment:**OWP-RP-01, Step 6**

Performance Step: 2 **PRECAUTION:** To prevent a Reactor Trip, prior to removing a channel from service, verify the corresponding Trip Status lights for the other channels are de-energized.

Standard: Reviews precaution

Evaluator Cue: **The corresponding Trip Status lights for the other channels are de-energized.**

Comment:

PERFORMANCE INFORMATION

OWP-RP-01 TAVG/ Δ T Protection Channel 1 - On MCB**Performance Step: 3**

NOTE: The Rod Bank Selector should be restored last.

** For the purposes of this OWP, MAN can be any position on the Rod Bank Selector Switch except AUTO.

Standard:

Reviews note

Comment:**OWP-RP-01****Performance Step: 4**

On Main Control Board Place the Rod Bank Selector to MAN

Standard:

Per initial conditions provided in this JPM the Rod Bank Selector is in MAN.

Evaluator Cue:

If asked or if the candidate is heading for the Control room ask their intentions then state that the Control room reports rod bank selector is in manual.

Comment:

PERFORMANCE INFORMATION

Evaluator Note: There is a PIC room layout drawing in the PIC room that indicates where each cabinet is located. Additionally, the cabinet doors are hinged to open to the right. Since it is very difficult to see what the candidate is performing photos of the cabinet layout and close ups of the individual cards are included. If unable to view the candidates activities use the photos and ask them to show you which switches and how the switches will be manipulated.

OWP-RP-01

Performance Step: 5 NOTE: Master Test switches may be positioned to TEST for troubleshooting. They are not required to be in TEST to meet Tech Specs. Operating these switches before operating the bistable switches aids in troubleshooting by maintaining system conditions the same as they were when the trouble occurred.

Concurrent verification is preferred while tripping bistable.

Standard: Reviews note and Initiating Cue to determine that Master Test Switches are to be placed in TEST for troubleshooting

Evaluator Cue:	For this JPM only, assume that concurrent verification is being performed and that verifier agrees with all actions taken.
-----------------------	---

Comment:

OWP-RP-01

✓ **Performance Step: 6** In PIC 1 on Card C1-861: SW1 (TS/412F) Master Test Switch for TS/412D in TEST

Standard: Locates Card C1-861 and places SW1 in TEST position (UP)

Evaluator Cue:	(toggle switch 1 of 7) SW1 IS IN THE UP - TEST POSITION.
-----------------------	---

Comment:

OWP-RP-01

- ✓ **Performance Step: 7** In PIC 1 on Card C1-861: SW2 (TS/412G) Master Test Switch for TS/412B1 in TEST

Standard: Locates Card C1-861 and places SW2 in TEST position (UP)

Evaluator Cue: (toggle switch 2 of 7) SW2 IS IN THE UP - TEST POSITION.

Comment:

OWP-RP-01

- ✓ **Performance Step: 8** In PIC 1 on Card C1-863: SW4 (TS/412R) Master Test Switch for TS/412B2 in TEST

Standard: Locates Card C1-863 and places SW4 in TEST position (UP)

Evaluator Cue: (toggle switch 4 of 7) SW4 IS IN THE UP - TEST POSITION.

Comment:

OWP-RP-01

- ✓ **Performance Step: 9** In PIC 1 on Card C1-863: SW5 (TS/412S) Master Test Switch for TS/412B3

Standard: Locates Card C1-863 and places SW5 in TEST position (UP)

Evaluator Cue: (toggle switch 5 of 7) SW5 IS IN THE UP - TEST POSITION.

Comment:

OWP-RP-01

- ✓ **Performance Step: 10** In PIC 1 on Card C1-821: BS1 (TB/412D1 Low Tav) in TEST

Standard: Locates Card C1-821 and places BS1 in TEST position (UP)

Evaluator Cue:	(toggle switch 1 of 4) BS1 IS IN THE UP - TEST POSITION and the red test light is lit.
-----------------------	---

Comment:

OWP-RP-01

- ✓ **Performance Step: 11** In PIC 1 on Card C1-821: BS2 (TB/412D2 High Tav) in TEST

Standard: Locates Card C1-821 and places BS2 in TEST position (UP)

Evaluator Cue:	(toggle switch 2 of 4) BS2 IS IN THE UP - TEST POSITION and the red test light is lit.
-----------------------	---

Comment:

OWP-RP-01

- ✓ **Performance Step: 12** In PIC 1 on Card C1-821: BS3 (TB/412E Low Low Tav) in TEST

Standard: Locates Card C1-821 and places BS3 in TEST position (UP)

Evaluator Cue:	(toggle switch 3 of 4) BS3 IS IN THE UP - TEST POSITION and the red test light is lit.
-----------------------	---

Comment:

OWP-RP-01

- ✓ **Performance Step: 13** In PIC 1 on Card C1-822: BS1 (TB/412B1 OPΔT) in TEST

Standard: Locates Card C1-822 and places BS1 in TEST position (UP)

Evaluator Cue:	(toggle switch 1 of 4) BS1 IS IN THE UP - TEST POSITION and the red test light is lit.
-----------------------	---

Comment:

OWP-RP-01

- ✓ **Performance Step: 14** In PIC 1 on Card C1-822: BS2 (TB/412B2 OPΔT C-4) in TEST

Standard: Locates Card C1-822 and places BS2 in TEST position (UP)

Evaluator Cue:	(toggle switch 2 of 4) BS2 IS IN THE UP - TEST POSITION and the red test light is lit.
-----------------------	---

Comment:

OWP-RP-01

- ✓ **Performance Step: 15** In PIC 1 on Card C1-822: BS3 (TB/412C1 OTΔT) in TEST

Standard: Locates Card C1-822 and places BS3 in TEST position (UP)

Evaluator Cue:	(toggle switch 3 of 4) BS3 IS IN THE UP - TEST POSITION and the red test light is lit.
-----------------------	---

Comment:

OWP-RP-01

✓ **Performance Step: 16** In PIC 1 on Card C1-822: BS4 (TB/412C2 OTΔT C-3) in TEST

Standard: Locates Card C1-822 and places BS4 in TEST position (UP)

Evaluator Cue: (toggle switch 4 of 4) **BS4 IS IN THE UP - TEST POSITION and the red test light is lit.**

Standard: Reports to or contacts MCR to inform them that the test switches have been positioned IAW OWP-RP-01 for Tav Δ T Protection Channel 1

Evaluator Cue: **MCR acknowledges completion of the OWP section. MCR will verify correct bistables and complete OWP.**

After communications are complete announce: END OF JPM

NOTE: Prior to leaving the area ensure any cabinets opened during the performance of this JPM are properly secured.

Comment:

Evaluator Cue:

Evaluation on this JPM is complete.

STOP TIME: _____

Job Performance Measure No.: 2013 NRC Retest Exam In-Plant JPM e

Perform Local Actions For Placing an OTΔT Channel In
TEST (OWP-RP-01, Reactor Protection)

Examinee's Name:

Date Performed:

✓ - Denotes Critical Steps

2013 NRC Retest Exam In-Plant JPM e Rev. 1

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

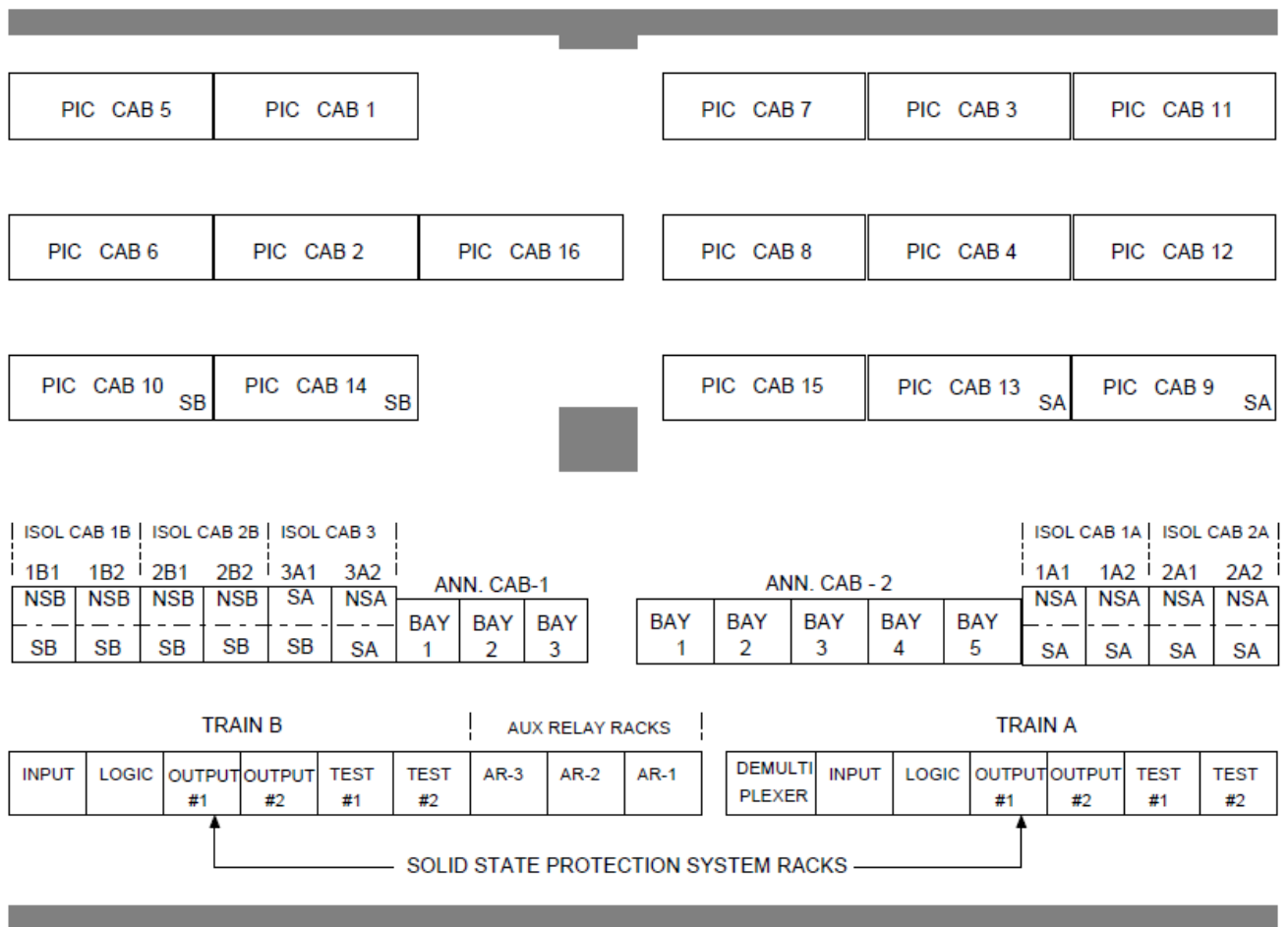
Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

PERFORMANCE INFORMATION



KEY

In PIC 1, this where the label locations are at for the cards and these are the 2 cards they should be manipulating switches on

Card C1-861 (far right card) Card C1-862 (next to Card C1-861)

KEY

On the other side of the cards are rows of switches.
The switches are numbered SW1 – SW7 from top to bottom.
UP is TEST, DOWN is NORMAL

KEY



The above cards are Bistable cards C1-0821 (far right) and C1-0822

PERFORMANCE INFORMATION



Opposite side of cards C1-0821 and C1-0822 are the Bistable switches. The switches are labeled 1-4 from top to bottom UP is TEST, DOWN is NORMAL When in TEST the RED light above the associated switch will light.

BEFORE YOU START THIS JPM**INPLANT JPM SAFETY CONSIDERATIONS:****CAUTION:** EQUIPMENT MAY AUTO START OR MAYBE ENERGIZED**- SIMULATE ONLY - DO NOT OPERATE ANY ACTUAL PLANT EQUIPMENT!!!**

Before entering the performance location of this JPM, ensure you **AND** the examiner have the proper PPE for the area you are going to go to or will travel through to get there.

Avoid contacting any plant equipment,
Follow ALARA practices in the RCA.

Do NOT remove ladders from their storage locations. Simulate obtaining and using a ladder if one would be needed during the actual performance of this task.

Initial Conditions:	The unit is operating at 100% power when Loop 1 Hot Leg temperature input to Tav _g and OT Δ T failed low.
----------------------------	---

Initiating Cue:	<p>To meet Technical Specifications, the CRS is directing you to perform the local actions of OWP-RP-01 for troubleshooting and tripping bistables for Loop 1 Tav_g and OT Room when all switches have been positioned to allow the Control Room to complete the actions required in the Control Room. <input type="checkbox"/></p> <p>The CRS informs you that all Master Test Switches are to be placed in test for troubleshooting. The Control Room has placed Rod Control in MANUAL.</p>
------------------------	---