



JOB PERFORMANCE MEASURE

JPM
Page 1 of 21

JPM TITLE: Perform RCS Leak Rate Determination

JPM NUMBER: PBN JPM P002.005a.COT **REV. 9**

TASK NUMBER(S) / TASK TITLE(S): P002.005.COT / Perform RCS Leak Rate Determinations

K/A NUMBERS: 009 EA 2.33 **K/A VALUE:** 3.3 / 3.8

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 25 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

Developed by:	_____	_____
	Instructor/Developer	Date
Reviewed by:	_____	_____
	Instructor (Instructional Review)	Date
Validated by:	_____	_____
	SME (Technical Review)	Date
Approved by:	_____	_____
	Training Supervision	Date
Approved by:	_____	_____
	Training Program Owner	Date



JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001} None



PBN JPM P002.005a.COT, Perform RCS Leak Rate Determination, Rev. 9

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1000) made to the material after initial approval.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0-5	See Historical Records				
Rev. 6	Updated for the 2016 Operational Exam.				
Rev. 7	Added to the initiating cue for the trainee to determine TS implication. Corrected typographical error in JPM step 5. Corrected JPM step 20 to match latest revision of procedure.				
Rev. 8	Updated for the 2017 NRC ILT Exam.				
Rev. 9	Updated for latest procedure revision.				

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

None

SIMULATOR MALFUNCTIONS:

None

SIMULATOR OVERRIDES:

None

SIMULATOR REMOTE FUNCTIONS:

None

Required Materials:

1. OI-55, Primary Leak Rate Calculation Calculator

General References:

1. OI-55, Primary Leak Rate Calculation Technical Specifications

Task Standards:

Accurately calculate RCS leakage and determine TSAC impact per OI-55.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Unit 1 is operating at stable full reactor power with indications of a primary leak.
- The Letdown Gas Stripper (LDGS) is bypassed per OI-17, Letdown Gas Stripper Operation.
- AOP-1A Unit 1 Reactor Coolant Leak was entered and is currently in progress.
- The PAB AO has reported the following Charging Pumps seal leak rates:
 - 1P-2A = 15 cc/min
 - 1P-2B = 5 cc/min
 - 1P-2C = 25 cc/min
- Steam Generator Tube Leakage (SGTL) $LR_{SGTL} = 0$
- Reactor Component Leak Rate $LR_{RC} = 0$
- Non RCPB Leakage $LR_{P3} = 0$
 - The following plant parameters were observed at time 0400:
 - RCS Tavg 575.6 °F
 - RCS T(Terr) 0 °F
 - PZR Level 46.00%
 - VCT Level 45.00%
 - U1 PRT level 74.7%
 - U1 RCDT Level 52 %
 - The following plant parameters were observed at time 0420:
 - RCS Tavg 575.6 °F
 - RCS T(Terr) 0 °F
 - PZR Level 45.50%
 - VCT Level 43.50 %
 - U1 PRT level 74.7%
 - U1 RCDT Level 52.5 %
- No borations, dilutions or diverts to HUT took place.
- There is no Chemistry sampling in progress.
- It is NOT desired to isolate Letdown Divert to HUT

INITIATING CUES (IF APPLICABLE):

OS1 directs you to perform OI-55, Primary Leak Rate Calculation

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	5.1 IF the Unit is in Mode 1, 2, 3, or 4, THEN determine RCS Leak Rate as follows: 5.1.1 IF desired to isolate letdown divert to HUT, THEN PERFORM the following:
Standard:	The examinee refers to the initial conditions and N/A's this step
Evaluator Cue:	IF asked, respond as OS1 that isolation of letdown divert to HUT is not desired.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 2 Critical N	5.1 IF the Unit is in Mode 1, 2, 3, or 4, THEN determine RCS Leak Rate as follows: 5.1.2 RECORD initial set of parameter readings on Attachment A, Primary Leak Rate Worksheet
Standard:	The examinee records data in Attachment A, Section 2.0
Evaluator Note:	<ul style="list-style-type: none"> • See JPM Performance Step 12. • No action is required for procedure step 5.1.2 because the parameter readings are given.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 3 Critical N	5.1.3 At time near end of selected time interval, ADJUST T _{avg} and T(error) meter to the same reading as recorded as in time one by moving rods, diluting, or borating if necessary.
Standard:	The examinee determines that T _{avg} and T(error) meter are the same already so no action is necessary.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 4 Critical N	5.1.4 Using the same instrumentation channels as for the first set of readings, RECORD second set of parameter readings when T (error) meter is the same as in initial data set.
Standard:	None, the second set of data is given to the examinee per initial conditions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Evaluator Note:	See JPM Performance Step 14.
Comments:	_____

Performance Step: 5 Critical N	5.1.5 IF dilution or boration took place, THEN CORRECT the leak rate by using the different totalizer readings.
Standard:	The examinee determines no dilution or boration took place.
Evaluator Cue:	IF asked, THEN remind the examinee that no boration or dilution occurred as delineated per the initial conditions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 6 Critical N	5.1.6 IF operator timed manual full divert was used, THEN CALCULATE the number of gallons diverted by multiplying the letdown flow in gpm times minutes diverted.
Standard:	The examinee determines no divert took place.
Evaluator Cue:	IF asked, THEN remind the examinee that no diverts took place as delineated per the initial conditions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 7 Critical N	5.1.7 QUANTIFY known contributors to RCS Identified leakage during performance of RCS leak rate calculation.
Standard:	The examinee calculates Identified RCS Leak Rate
Evaluator Cue:	IF asked, THEN refer the examinee to INITIAL CONDITIONS.
Evaluator Note:	Recorded in Attachment A, Section 4.1, See JPM Performance Step 18
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 8 Critical N	5.1.8 QUANTIFY known non-RCPB leakage during performance of RCS leak rate calculation.
Standard:	The examinee calculates Non Reactor Coolant Pressure Boundary leakage.
Evaluator Cue:	IF asked, THEN refer the examinee to INITIAL CONDITIONS.
Evaluator Note:	Recorded in Attachment A, Section 4.2, See JPM Performance Step 19
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 9 Critical N	5.1.9 CALCULATE and RECORD leak rate.
Standard:	The examinee calculates RCS Unidentified leakage.
Evaluator Note:	Recorded in Attachment A, Section 4.3, See JPM Performance Step 20
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step:10 Critical N	5.1.10 IF letdown divert to HUT was isolated in step 5.1.1, THEN PERFORM the following:
Standard:	The examinee N/A's this step
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step:11 Critical N	Attachment A 1.0 MONITOR <u>AND</u> MAINTAIN the following during the performance of this test: 1.1 Reactor Power Stable.
Standard:	The examinee verifies reactor power stable.
Evaluator Note:	Per initial conditions, reactor power has not changed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 12 Critical N	Attachment A 1.2 The Letdown Gas Stripper (LDGS) meets ONE of the following: 1.2.1 The LDGS is operating normally with controls in AUTO AND with no level adjustments being made 1.2.2 The LDGS is bypassed per OI-17, Letdown Gas Stripper Operation
Standard:	Determine LDGS is bypassed from given initial conditions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 13 Critical N	Attachment A 1.3 IF desired to isolate letdown divert to HUT, THEN PERFORM the following:
Standard:	The examinee refers to the initial conditions and N/A's this step
Evaluator Cue:	IF asked, respond as OS1 that isolation of letdown divert to HUT is not desired.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 14 Critical N	Attachment A 2.0 RECORD the following data: RCS LEAK RATE DATA
Standard:	The examinee records data accurately from the initial conditions and calculates the results. <ul style="list-style-type: none"> • Time change 20 minutes • RC T_{error} (Terr) change is 0°F • PZR Level change is 0.5 % = 32.45 gal. • VCT Level change is 1.5 % = 18.96 gal.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 15 Critical N	Attachment A 2.0 RECORD the following data: RMW AND BA ADDITIONS
Standard:	The examinee N/As this step as it does not apply or writes 0 for total gallons added.
Evaluator Note:	Per the initial conditions, no RMW or acid additions occurred.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 16 Critical N	Attachment A 2.0 RECORD the following data: DIVERT
Standard:	The examinee N/As this step as it does not apply or writes 0 for total gallons diverted.
Evaluator Note:	Per the initial conditions, no diverts occurred.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 17 Critical Y	Attachment A 3.0 Calculate RCS leak rate: CALCULATED RCS LEAK RATE
Standard:	The examinee calculates RCS leak rate of 2.571 gpm (2.50 to 2.70 gpm).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 18 Critical Y	Attachment A 4.0 CALCULATE RCS Unidentified Leak Rate as follows: 4.1 CALCULATE Identified RCS Leak Rate: IDENTIFIED RCS LEAK RATE DATA
Standard:	<ul style="list-style-type: none"> • Time change 20 minutes • PRT Level change 0 gpm • RCDT Level change 0.088 gpm • SG Tube Leakage (LR_{SGTL}) 0 gpm • Reactor Component Leak Rate (LR_{RC}) 0 gpm • RCS Identified Leak Rate (LR_{ID}) of 0.088 gpm (0.08 to 0.10 gpm).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 19 Critical Y	Attachment A 4.0 CALCULATE RCS Unidentified Leak Rate as follows: 4.2 CALCULATE Non Reactor Coolant Pressure Boundary : Non Reactor Coolant Pressure Boundary
Standard:	<ul style="list-style-type: none"> • Charging Pump Seals (LR_{P2}) 0.012 gpm (0.010 to 0.014 gpm) • Non RCPB Leakage (LR_{P3}) 0 gpm
Evaluator Note:	1P-1A, 1P-2B and 1P-2C Charging Pumps have pre-identified leakage of 15 cc/min, 5 cc/min and 25 cc/min respectively.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 20 Critical Y	4.0 CALCULATE RCS Unidentified Leak Rate as follows: 4.3 CALCULATE RCS Unidentified leakage: UNIDENTIFIED RCS LEAK RATE
Standard:	The examinee calculates Unidentified Leak Rate (LR _{UID}) 2.471 gpm (2.450 to 2.500 gpm)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 21 Critical N	Attachment A 5.0 IF letdown divert to HUT was isolated in step 5.1.1, THEN PERFORM the following:
Standard:	The examinee N/A's this step
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 22 Critical N	Attachment A 6.0 Primary Leak Rate calculation COMPLETE.
Standard:	The examinee indicates that the leak rate calculation is complete.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 23 Critical Y	Attachment A 7.0 Review Attachment C to determine if any Action Level thresholds have been met.
Standard:	The examinee reviews Attachment C. Determines that Action Level 3 has been met
Evaluator Cues:	IF asked, baseline mean is 0.017 gpm and standard deviation is 0.010 gpm. Acknowledge the report from the examinee and inform them that the Shift Manager and STA will take the actions for Action Level 3.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 24 Critical N	Attachment A 8.0 Primary Leak Rate calculation review COMPLETED.
Standard:	The examinee provides Attachment A to SRO for review.
Evaluator Cue:	Inform the examinee that the SRO review of the leak rate calculation is complete and to continue with OI 55.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 25 Critical N	5.2 IF the Unit is in Mode 5, THEN perform Attachment B, Cold Shutdown Primary Leak Rate Worksheet as follows:
Standard:	The examinee should determine this step is not applicable.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 26 Critical N	5.3 IF the plant is in Mode 1 through 4, AND Pressure Boundary leakage is detected, THEN ENTER Technical Specification LCO 3.4.13 Action Condition B.
Standard:	The examinee should determine that action condition entry is not required at this time.
Evaluator Cue:	Relief crew is preparing for a containment entry to inspect for pressure boundary leakage.
Evaluator Note:	The examinee may leave this open or N/A it.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

<p>Performance Step: 27 Critical N</p>	<p>5.4 IF RCS Unidentified Leakage shows a significantly increasing trend, OR reaches 0.15 gpm, THEN PERFORM the following actions:</p> <p>5.4.1 INFORM the Shift Manager and Duty Station Manager.</p> <p>5.4.2 CHECK the following at least once per hour:</p> <ul style="list-style-type: none"> a. Containment particulate monitor (RE 211) high and low values. b. Containment radiogas monitor (RE 212) high and low values. c. Containment humidity. <p>5.4.3 PERFORM the RCS leakrate calculation of Section 5.5 or 5.6 as applicable at least once per shift.</p> <p>5.4.4 OBTAIN a sump A sample and have Chemistry analyze to aid in determining the source of leakage.</p> <p>5.4.5 DIRECT Chemistry to sample and analyze Containment atmosphere for hydrogen content and REPORT the results to the SM.</p> <p>5.4.6 NOTIFY Engineering to review Containment Air Cooler performance and cleaning frequencies to determine if an adverse long term trend exists.</p> <p>5.4.7 IF a containment inspection is warranted to localize the source of leakage, THEN the inspection should consist of the following:</p> <ul style="list-style-type: none"> a. Evidence of steam in containment. b. Wetness on the floor. c. Boric Acid deposits. d. Abnormal packing or gasket leakage. <p>Note: A thorough examination should be performed of the reactor vessel head using binoculars or other methods allowed by RP.</p> <ul style="list-style-type: none"> e. Reactor vessel head locations as permitted by Health Physics.
<p>Evaluator Cue:</p>	<p>Shift Manager will have OS2 address actions contained in step 5.4</p>
<p>Standard:</p>	<p>The examinee identifies actions required as listed by procedure</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	<p>_____</p>

Performance Step: 29 Critical N	5.5 IF the RCS leak rate approaches 0.20 gpm and the cause is known, THEN the priority of the work order associated with the contributor SHALL be increased.
Standard:	The examinee should determine that this step is not applicable because the cause of the leakage is unknown.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 30 Critical Y	5.6 IF the plant is in Mode 1 through 4, AND Unidentified Leakage exceeds one gpm, THEN ENTER Technical Specification LCO 3.4.13 Action Condition.
Standard:	The examinee identifies RCS unidentified leakage >1 gpm is in excess of limit for Technical Specifications LCO 3.4.13.
Evaluator Cue:	If not discussed by the examinee, prompt the examinee to identify Technical Specification applicability.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 31 Critical N	5.7 IF Unidentified Leakage is greater than 1.0 gpm OR Identified Leakage is greater than 10 gpm, THEN INITIATE AOP 1A, Reactor Coolant Leak.
Standard:	The examinee identifies that AOP 1A is already in effect, per initial conditions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____



PBN JPM P002.005a.COT, Perform RCS Leak Rate Determination, Rev. 9

JPM
Page 19 of 21

Performance Step: 32 Critical N	5.8 IF the plant is in Mode 1 through 4, AND Identified Leakage exceeds 10 gpm, THEN ENTER Technical Specification LCO 3.4.13 Action Condition.
Standard:	The examinee identifies RCS identified leakage is less than 10 gpm.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Terminating Cues: When step 5.8 is completed, inform the examinee that the JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____



PBN JPM P002.005a.COT, Perform RCS Leak Rate Determination, Rev. 9

JPM
Page 20 of 21

Examinee: _____

Evaluator: _____

RO SRO STA Non-Lic SRO CERT

Date: _____

LOIT RO LOIT SRO

PERFORMANCE RESULTS: SAT: **UNSAT:**

Remediation required: YES **NO**

COMMENTS/FEEDBACK: (Comments shall be made for any steps graded unsatisfactory).

EXAMINER NOTE: ENSURE ALL EXAM MATERIAL IS COLLECTED AND PROCEDURES CLEANED, AS APPROPRIATE.

EVALUATOR'S SIGNATURE: _____

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 is operating at stable full reactor power with indications of a primary leak.
- The Letdown Gas Stripper (LDGS) is bypassed per OI-17, Letdown Gas Stripper Operation.
- AOP-1A Unit 1 Reactor Coolant Leak was entered and is currently in progress.
- The PAB AO has reported the following Charging Pumps seal leak rates:
 - 1P-2A = 15 cc/min
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 - 1P-2C = 25 cc/min
- Steam Generator Tube Leakage (SGTL) $LR_{SGTL} = 0$
- Reactor Component Leak Rate $LR_{RC} = 0$
- Non RCPB Leakage $LR_{P3} = 0$
 - The following plant parameters were observed at time 0400:
 - RCS Tavg 575.6 °F
 - RCS T(Terr) 0 °F
 - PZR Level 46.00 %
 - VCT Level 45.00 %
 - U1 PRT level 74.7%
 - U1 RCDT Level 52 %
 - The following plant parameters were observed at time 0420:
 - RCS Tavg 575.6 °F
 - RCS T(Terr) 0 °F
 - PZR Level 45.50%
 - VCT Level 43.50 %
 - U1 PRT level 74.7%
 - U1 RCDT Level 52.5 %
- No borations, dilutions or diverts to HUT took place.
- There is no Chemistry sampling in progress.
- It is NOT desired to isolate Letdown Divert to HUT

INITIATING CUES (IF APPLICABLE):

OS1 directs you to perform OI-55, Primary Leak Rate Calculation

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JOB PERFORMANCE MEASURE

JPM TITLE: Perform OP 3B Appendix A, Shutdown Margin Calculation

JPM NUMBER: PBN JPM P001.003f.COT **REV. 1**

TASK NUMBER(S) / TASK TITLE(S): PBN P001.003.COT / Perform shutdown margin calculations

K/A NUMBERS: 2.1.43 **K/A VALUE:** 4.1 / 4.3

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 40 Minutes Time Critical: No

Alternate Path [NRC]: No

Alternate Path [INPO]: No

Developed by:	_____	_____
	Instructor/Developer	Date
Reviewed by:	_____	_____
	Instructor (Instructional Review)	Date
Validated by:	_____	_____
	SME (Technical Review)	Date
Approved by:	_____	_____
	Training Supervision	Date
Approved by:	_____	_____
	Training Program Owner	Date



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13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001} None



PBN JPM P001.003f.COT, Perform OP 3B Appendix A, Shutdown Margin Calculation, Rev. 1

JPM
Page 3 of 24

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1000) made to the material after initial approval.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	Developed for the 2017 NRC ILT Audit Exam.				
Rev. 1	Updated for Unit 1 Cycle 40 and latest procedure revision				

SIMULATOR SET-UP: *(Only required for simulator JPMs)*
None

SIMULATOR SETUP INSTRUCTIONS:
None

SIMULATOR MALFUNCTIONS:
None

SIMULATOR OVERRIDES:
None

SIMULATOR REMOTE FUNCTIONS:
None

Required Materials: OP 3B Appendix A, Shutdown Margin Calculation
Rod Book containing U1C40 tables and graphs
COLR 2.2.1 (TRM 2.1) for Unit 1
Calculator

General References: OP 3B Appendix A, Shutdown Margin Calculation
Rod Book containing U1C40 tables and graphs
COLR 2.2.1 (TRM 2.1)

Task Standards: Given pre and post-trip information, complete OP 3B Appendix A,
Shutdown Margin Calculation.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are the fourth license.
- When you took the watch today, Unit 1 was operating at 100% steady-state conditions.
- At 0900 (30 minutes ago), Unit 1 automatically tripped as a result of a turbine protection relay failure.
- The trip was uncomplicated.

Unit 1 Pre-Trip Information	Unit 1 30 Minute Post-Trip Information
9001 mwd/mtu	9001 mwd/mtu
NOP, NOT, NOL	Tavg = 547°F and stable
[B] = 867 ppm (sampled at 0730)	No boration, dilution or safety injection since last chemistry sample
CBD @ 220 steps	CBD @ 0 (All Rods In)

INITIATING CUES (IF APPLICABLE):

- OS1 directs you to perform, OP-3B Appendix A, Shutdown Margin Calculation.
- PPCS is currently unavailable.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

<p>Performance Step: 1 Critical <u>Y</u>*</p>	<p>5.1 IF all rods with operable IRPIs are fully inserted AND Shutdown Margin determination will be performed using ROD 9, Reference Boron Concentrations, THEN PERFORM the following:</p> <p>5.1.1 RECORD current date and time</p> <p>5.1.2 RECORD core burnup from ROD 1.1, Current Burnup</p> <p>5.1.3 IF Tav_g is greater than or equal to 350°F, THEN RECORD boron concentration from ROD 9, Reference Boron Concentrations, Column 2</p> <p>5.1.4 IF Tav_g is less than 350°F, THEN RECORD boron concentration from ROD 9, Reference Concentrations, Column 3</p> <p>5.1.5 RECORD current RCS boron concentrations and sample data</p> <p>5.1.6 IF current RCS boron concentration is greater than or equal to the required boron concentration in Step 5.1.3 or 5.1.4, THEN Shutdown Margin is greater than or equal to Technical Specifications requirements AND Sections 5.2 through 5.11 are not required to be performed.</p>
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • Records current date and time (given - Today / 0930) • Records core burnup from ROD 1.1 (given – 9001 mwd/mtu) • Records boron concentration from ROD 9 (critical – 1534 ppm ± 0) • N/As step 5.1.4 • Records current boron concentration and sample data (given – 867 ppm / Today @ 0730) • N/As step 5.1.6 • Completes the performed by section (Initials / Date / Time)
<p>Evaluator Note:</p>	<p>*Only Step 5.1.3 is critical; information provided in the Initial Conditions section can be used to complete the other steps.</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	

<p>Performance Step: 2 Critical <u>N</u></p>	<p>5.2 Shutdown Data 5.2.1 RECORD date and time just prior to Reactor Trip or beginning of Power Reduction for shutdown 5.2.2 RECORD current date and time 5.2.3 RECORD Control bank position just prior to Reactor trip or beginning of power reduction for shutdown 5.2.4 RECORD current Control bank position 5.2.5 RECORD current Tav_g 5.2.6 RECORD Reactor power just prior to the Reactor trip or beginning of power reduction for shutdown 5.2.7 RECORD burnup from ROD 1.1, Current Burnup 5.2.8 RECORD RCS boron concentration just prior to the Reactor trip or beginning of power reduction for shutdown 5.2.9 RECORD current RCS boron concentration</p>
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • Records the date and time just prior to Reactor Trip or beginning of Power Reduction for shutdown (given – Today / 0900) • Records the current date and time (given – Today / 0930) • Records the Control bank position just prior to Reactor trip or beginning of power reduction for shutdown (given – CBD @ 220 steps) • Records the current Control bank position (given – CBD @ 0 (ARI)) • Records the current Tav_g (given - 547°F and stable) • Records the Reactor power just prior to the Reactor trip or beginning of power reduction for shutdown (given – 100%) • Records the burnup from ROD 1.1, Current Burnup (given – 9001 mwd/mtu) • Records the RCS boron concentration just prior to the Reactor trip or beginning of power reduction for shutdown (given – 867 ppm) • Records current RCS boron concentration (given – 867 ppm)
<p>Evaluator Note:</p>	<p>All information provided in the Initial Conditions section can be used to complete the steps.</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	



Performance Step: 3 Critical <u>Y</u>	5.3 <u>Reactivity Change Due to Power Defect</u> DETERMINE the power defect value from ROD 7, Power Defect vs. Burnup for core burnup and Reactor power level.
Standard:	The examinee determines the power defect value from ROD 7 (2220 pcm +/-10)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 4 Critical <u>Y</u>	5.4 <u>Reactivity Change Due to Control Rods</u> 5.4.1 DETERMINE control rod reactivity worth just prior to the Reactor Trip or beginning of power reduction for shutdown as follows: a. RECORD total rod worth using ROD 5, ROD Worth Summary – Stuck Rod Worth, (Bank D, C, B, A, S in) (HZP): b. RECORD inserted rod worth from ROD 3.1 PBNP HZP Rod Worth Table (Stepping In) c. CALCULATE control rod reactivity just prior to shutdown
Standard:	The examinee: <ul style="list-style-type: none"> Records total rod worth using ROD 5, ROD Worth Summary – Stuck Rod Worth, (Bank D, C, B, A, S in) (HZP) (6676 pcm) Records inserted rod worth from ROD 3.1 PBNP HZP Rod Worth Table (Stepping In) (3 pcm) Calculates control rod reactivity just prior to shutdown (6673 pcm)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

<p>Performance Step: 5 Critical Y</p>	<p>5.4 <u>Reactivity Change Due to Control Rods</u> 5.4.2 DETERMINE current control rod reactivity worth as follows: a. RECORD total rod worth using ROD 5, ROD Worth Summary – Stuck Rod Worth, (Bank D, C, B, A, S in) (HZP): b. RECORD inserted rod worth from applicable ROD: <ul style="list-style-type: none"> • IF the shutdown bank rods are fully withdrawn, THEN USE ROD 3.1, PBNP HZP Rod Worth Table (Stepping In) • IF the shutdown bank rods are fully inserted, THEN USE ROD 5, Rod Worth Summary – Stuck Rod Worth (Bank D, C, B, A, S in) (HZP) c. CALCULATE current control rod reactivity</p>
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • Records total rod worth using ROD 5, ROD Worth Summary – Stuck Rod Worth, (Bank D, C, B, A, S in) (HZP): (6676 pcm) • Records inserted rod worth from applicable ROD: <ul style="list-style-type: none"> • IF the shutdown bank rods are fully withdrawn, THEN USE ROD 3.1, PBNP HZP Rod Worth Table (Stepping In) (N/As this sub-step) • IF the shutdown bank rods are fully inserted, THEN USE ROD 5, Rod Worth Summary – Stuck Rod Worth (Bank D, C, B, A, S in) (HZP) (6676 pcm) • Calculates current control rod reactivity (0 pcm)
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	



Performance Step: 6 Critical <u>N</u>	5.4 Reactivity Change Due to Control Rods 5.4.3 IF 5.4.1.c equals Step 5.4.2.c, THEN ENTER zero for the reactivity change AND N/A Steps 5.4.4 and 5.4.5
Standard:	The examinee N/As Step 5.4.3.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 7 Critical <u>Y</u>	5.4 Reactivity Change Due to Control Rods 5.4.4 IF Step 5.4.1.c is greater than Step 5.4.2c, THEN CALCULATE the negative reactivity change.
Standard:	The examinee calculates the negative reactivity change. (-6673 pcm)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 8 Critical <u>N</u>	5.4 Reactivity Change Due to Control Rods 5.4.5 IF Step 5.4.2.c is greater than Step 5.4.1c THEN CALCULATE the positive reactivity change.
Standard:	The examinee N/As Step 5.4.5.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 9 Critical <u>N</u>	5.5 <u>Reactivity Change Due to Isothermal Temperature Defect</u> 5.5.1 IF current RCS temperature is Step 5.2.5 is between 537°F and 557°F, THEN ENTER zero for isothermal temperature defect AND N/A Steps 5.5.2 and 5.5.3.
Standard:	The examinee enters 0 pcm and N/As Steps 5.5.2 and 5.5.3.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 10 Critical <u>N</u>	5.6 <u>Reactivity Change Due to Xenon</u> 5.6.1 RECORD number of hours from the time of Reactor Trip or beginning of Power Reduction for shutdown to current time from Steps 5.2.1 and 5.2.2.
Standard:	The examinee records 0.5 hours for Step 5.6.1.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

<p>Performance Step: 11 Critical <u>N</u></p>	<p>5.6 <u>Reactivity Change Due to Xenon</u> 5.6.2 RECORD the absolute value of xenon reactivity at the time of shutdown from ROD 10, Xenon Reactivity Following Full Power Trip (N/A if not used): OR RECORD the absolute value of XEWORTH from the PPCS just prior to shutdown, if not from Full Power (N/A if not used):</p>
<p>Standard:</p>	<p>The examinee records 2717 pcm in the first blank and N/As the second blank.</p>
<p>Evaluator Cue:</p>	<p><u>I</u>F asked, inform the examinee that the PPCS is not available at this time.</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	

<p>Performance Step: 12 Critical <u>Y</u></p>	<p>5.6 <u>Reactivity Change Due to Xenon</u> 5.6.3 RECORD the absolute value of xenon reactivity at the current time as follows:</p> <ul style="list-style-type: none"> • IF the time since shutdown is greater than or equal to 80 hours, THEN ENTER zero for current xenon reactivity • IF the time since shutdown is less than 80 hours, THEN RECORD the absolute value of xenon reactivity from ROD 10, Xenon Reactivity Following Full Power Trip, or from the PPCS (Xenon program).
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • N/As the first bullet • Records the absolute value of xenon reactivity from ROD 10, Xenon Reactivity Following Full Power Trip (2920 pcm)
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	

Performance Step: 13 Critical <u>Y</u>*	5.6 Reactivity Change Due to Xenon 5.6.4 IF Step 5.6.2 equals Step 5.6.3, THEN ENTER zero for change in reactivity AND N/A Steps 5.6.6 and 5.6.7. 5.6.5 IF Step 5.6.2 is greater than Step 5.6.3, THEN CALCULATE the positive change in reactivity. 5.6.6 IF Step 5.6.3 is greater than Step 5.6.2, THEN CALCULATE the negative change in reactivity.
Standard:	The examinee: <ul style="list-style-type: none"> • N/As Step 5.6.4 • N/As Step 5.6.5 • Calculates the negative change in reactivity (-203 pcm)
Evaluator Note:	*Only Step 5.6.6 is critical.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 14 Critical <u>N</u>	5.7 Reactivity Change Due to a Change in Boron Concentration 5.7.1 IF Step 5.2.8 is equal to Step 5.2.9, THEN ENTER zero for the change in boron reactivity AND N/A Steps 5.7.2, 5.7.3 and 5.7.4
Standard:	The examinee enters zero for the change in boron reactivity AND N/As Steps 5.7.2, 5.7.3 and 5.7.4.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

<p>Performance Step: 15 Critical <u>Y</u></p>	<p>5.8 RECORD the following reactivity values AND CALCULATE the total reactivity change due to the following parameters and a redistribution uncertainty:</p> <p>5.8.1 Power Defect from Step 5.3:</p> <p>5.8.2 Control rods from Step 5.4.3, 5.4.4, or 5.4.5:</p> <p>5.8.3 Isothermal Temperature Defect from Step 5.5.1, 5.5.2, or 5.5.3:</p> <p>5.8.4 Xenon from Step 5.6.2, 5.6.5, 5.6.6, or 5.6.7:</p> <p>5.8.5 Change in boron reactivity from Step 5.7.1, 5.7.2, 5.7.3, or 5.7.4:</p> <p>5.8.6 Uncertainty due to redistribution and void content:</p> <p>5.8.7 Sum Steps 5.8.1 through 5.8.6 to obtain the Amount Shutdown.</p>
<p>Standard:</p>	<p>The examinee records:</p> <ul style="list-style-type: none"> • Power Defect from Step 5.3: (2220 pcm ± 10) • Control rods from Step 5.4.3, 5.4.4, or 5.4.5: (-6673 pcm) • Isothermal Temperature Defect from Step 5.5.1, 5.5.2, or 5.5.3: (0 pcm) • Xenon from Step 5.6.2, 5.6.5, 5.6.6, or 5.6.7 (-203 pcm) • Change in boron reactivity from Step 5.7.1, 5.7.2, 5.7.3, or 5.7.4: (0 pcm) • Uncertainty due to redistribution and void content: (given + 250 pcm) <p>AND</p> <ul style="list-style-type: none"> • Sums Steps 5.8.1 through 5.8.6 to obtain the Amount Shutdown. (-4406 pcm ± 10)
<p>Evaluator Cue:</p>	<p>IF asked, OS1 will review the entire document when complete.</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	

<p>Performance Step: 16 Critical <u>Y</u>*</p>	<p>5.9 <u>Shutdown Margin Calculation With Reactor Shutdown</u> 5.9.1 RECORD Amount Shutdown from Step (5.8.7) 5.9.2 RECORD reactivity available from withdrawn control rods from Step 5.4.2.c AND change the value to (-) 5.9.3 CALCULATE Stuck Rod Worth as follows: a. IF any control rods are withdrawn, THEN OBTAIN stuck rod worth from Reactor Engineering b. IF all control rods are FULLY inserted, THEN OBTAIN stuck rod worth from ROD 5, Rod Worth Summary – Stuck Rod Worth 5.9.4 Sum Steps 5.9.1 through 5.9.3 to obtain Shutdown Margin</p>
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • Records Amount Shutdown from Step (5.8.7) (-4406 pcm) • Records reactivity available from withdrawn control rods from Step 5.4.2.c AND change the value to (-) (0 pcm) • N/As 5.9.3.a • Calculates Stuck Rod Worth by obtaining stuck rod worth from ROD 5, Rod Worth Summary – Stuck Rod Worth (+651 pcm) • Sums Steps 5.9.1 through 5.9.3 to obtain Shutdown Margin (-3755 pcm ± 10)
<p>Evaluator Note:</p>	<p>*Only Step 5.9.3.b and 5.9.4 are critical.</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	



Performance Step: 17 Critical <u>N</u>	5.10 <u>Time to Minimum Shutdown Margin by Xenon Decay at Current Conditions</u> 5.10.1 RECORD nominal EOL burnup from ROD 1.1 5.10.2 RECORD current burnup from Step 5.2.7 5.10.3 CALCULATE percent of core burnup as follows:
Standard:	The examinee: <ul style="list-style-type: none"> Records nominal EOL burnup from ROD 1.1 (19700 mwd/MTU) Records current burnup from Step 5.2.7 (9001 mwd/mtu) Calculates percent of core burnup (45.7%)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

<p>Performance Step: 18 Critical</p>	<p>5.10 <u>Time to Minimum Shutdown Margin by Xenon Decay at Current Conditions</u> 5.10.4 RECORD Shutdown Margin as required by Technical Specifications LCO 3.1.1 for the applicable plant condition: (Multiply $\% \Delta k/k$ by 1000 to convert to pcm) <ul style="list-style-type: none"> • IF the plant is in MODE 2 with $K_{eff} < 1.0$ or MODE 3, THEN RECORD Shutdown Margin required by COLR 2.2.1 (TRM 2.1) 5.10.5 RECORD Shutdown Margin from Step 5.9.4 or value from SDMCALC.XLS 5.10.6 SUBTRACT the absolute value of Step 5.10.5 from the absolute value of Step 5.10.4 to obtain Excess Shutdown Margin</p>
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • Records Shutdown Margin as required by Technical Specifications LCO 3.1.1 for the applicable plant condition: (-2000 pcm) • Records Shutdown Margin from Step 5.9.4 (-3755 pcm +/-10) • Subtracts the absolute value of Step 5.10.5 from the absolute value of Step 5.10.4 to obtain Excess Shutdown Margin (-1755 pcm +/-10)
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	

<p>Performance Step: 19 Critical Y</p>	<p>5.10 <u>Time to Minimum Shutdown Margin by Xenon Decay at Current Conditions</u></p> <p>5.10.7 IF Excess Shutdown Margin is positive, THEN PERFORM the following:</p> <p>5.10.8 RECORD the current xenon reactivity value from one of the following sources (circle source used)</p> <ul style="list-style-type: none"> • Step 5.6.3 <p>5.10.9 SUBTRACT the absolute value of Step 5.10.8 from the absolute value of 5.10.6 to obtain the xenon value at which Shutdown Margin will be less than that required by Technical Specifications LCO 3.1.1 at current conditions:</p> <p>5.10.10 IF the result of Step 5.10.9 is positive, THEN PERFORM the following:</p> <p>5.10.11 DETERMINE the amount of time from Reactor Shutdown until xenon has decayed to the value in Step 5.10.9 using any of the following sources:</p> <ul style="list-style-type: none"> • ROD 10, Xenon Reactivity Following Full Power Trip <p>5.10.12 DETERMINE the date and time when Shutdown Margin will be less than that required by Technical Specifications LCO 3.1.1 at current conditions:</p>
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • N/As Step 5.10.7 • Records the current xenon reactivity value from Step 5.6.3 (-2920 pcm) • Subtracts the absolute value of Step 5.10.8 from the absolute value of 5.10.6 to obtain the xenon value at which Shutdown Margin will be less than that required by Technical Specifications LCO 3.1.1 at current conditions (-1165 pcm ± 10) • N/As Step 5.10.10 • Determines the amount of time from Reactor Shutdown until xenon has decayed to the value in Step 5.10.9 using ROD 10, Xenon Reactivity Following Full Power Trip (34.93 hours, allow 34.75 – 35.0) • Determines the date and time when Shutdown Margin will be less than that required by Technical Specifications LCO 3.1.1 at current conditions. (tomorrow at 19:56, allow 19:46-20:00)
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	

<p>Performance Step: 20 Critical <u>Y</u></p>	<p>5.11 <u>Minimum Boron Concentration to Maintain Required Shutdown Margin When Xenon Free for Current Conditions</u></p> <p>5.11.1 RECORD current boron concentration from Step 5.2.9 or SDMCALC.XLS</p> <p>5.11.2 RECORD reactivity change necessary to maintain required Shutdown Margin when xenon free from Step 5.10.9</p> <p>5.11.3 OBTAIN hot zero power boron worth at current boron concentration from ROD 6.2</p> <p>5.11.4 CALCULATE the required the required change in born concentration to remain sufficiently shutdown when xenon free</p> <p>5.11.5 SUM the values from Steps 5.11.1 and 5.11.4 to obtain the minimum boron concentration necessary to maintain required Shutdown Margin when xenon free for current conditions.</p>
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> • Records current boron concentration from Step 5.2.9 (867 ppm) • Records reactivity change necessary to maintain required Shutdown Margin when xenon free from Step 5.10.9 (-1165 pcm) • Obtains hot zero power boron worth at current boron concentration from ROD 6.2 (-7.31 pcm/ppm +/-0.05) • Calculates the required the required change in born concentration to remain sufficiently shutdown when xenon free (159.37 ppm +/- 3) • Sums the values from Steps 5.11.1 and 5.11.4 to obtain the minimum boron concentration necessary to maintain required Shutdown Margin when xenon free for current conditions (1026.37 ppm +/-3)
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Comments:</p>	



Performance Step: 21 Critical <u>N</u>	Complete the “Performed by” section and turn over to OS1 for review.
Standard:	The examinee completes the “Performed by” section and turns over procedure to OS1 for review.
Evaluator Cue:	OS1 acknowledges your report.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues:

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- You are the fourth license.
- When you took the watch today, Unit 1 was operating at 100% steady-state conditions.
- At 0900 (30 minutes ago), Unit 1 automatically tripped as a result of a turbine protection relay failure.
- The trip was uncomplicated.

Unit 1 Pre-Trip Information	Unit 1 30 Minute Post-Trip Information
9001 mwd/mtu	9001 mwd/mtu
NOP, NOT, NOL	Tavg = 547°F and stable
[B] = 867 ppm (sampled at 0730)	No boration, dilution or safety injection since last chemistry sample
CBD @ 220 steps	CBD @ 0 (All Rods In)

INITIATING CUES (IF APPLICABLE):

- OS1 directs you to perform, OP-3B Appendix A, Shutdown Margin Calculation.
- PPCS is currently unavailable.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JOB PERFORMANCE MEASURE

JPM
Page 1 of 18

JPM TITLE: PERFORM DIESEL GENERATOR TESTING

JPM NUMBER: PBN JPM P064.002c.AOT **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): P064.002.AOT / Perform diesel generator testing on G01/G02

K/A NUMBERS: 2.2.12 **K/A VALUE:** 3.7/4.1

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 35 Minutes Time Critical: No

Alternate Path [NRC]: No

Alternate Path [INPO]: No

Developed by: <u>Alan Johnson</u>	_____	_____
	Instructor/Developer	Date
Reviewed by: _____	_____	_____
	Instructor (Instructional Review)	Date
Validated by: _____	_____	_____
	SME (Technical Review)	Date
Approved by: _____	_____	_____
	Training Supervision	Date
Approved by: _____	_____	_____
	Training Program Owner	Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001} None



PBN JPM P064.002c.AOT, PERFORM DIESEL GENERATOR TESTING, Rev. 0

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1000) made to the material after initial approval.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	Developed for 2021 ILT Class Exam				

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

Admin Procedure Setup:

Step 4.1, place an X in the first blank, write in a Work Order number, and initial for performance.

Initial steps 4.2 through 4.4.

Sign, date, and time for Shift Management in step 4.5.

Required Materials:

1. IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01 updated for the performance of the JPM, printed single-sided.
2. Calculator
3. Wrist watch or Clock
4. Clipboard
5. Pictures #1 - #4 or the G-01 –API-1 L.B. and R.B at the various pressures needed for the JPM, printed on white paper.

General References:

IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01

Task Standards:

Pressure drop/ leak rate for DA-112 and DA-100, G-01 EDG K-4A/K-5A Start Air Discharge Check Valves is calculated to within the tolerance of the answer key, and results determined against the acceptance criteria, in accordance with IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01 is in progress.

INITIATING CUES (IF APPLICABLE):

- You are the Auxiliary Operator (performer) assigned to complete IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01.
- NOTE that time compression may be used during this JPM.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical <u>Y</u>	5.1.1 Test of DA-112, G-01 EDG K-4A Start Air Comp Discharge Check valve. a. RECORD G-01 left bank air pressure from G-01-API-2 L.B. pressure gauge on C-64A on Attachment A
Standard:	Examinee determines left bank air pressure is 190 psig (± 1 psig) and records it on the appropriate line in Attachment A.
Evaluator Cue:	When the examinee points to the correct gauge, hand them picture #1. (190 psig)
Evaluator Note:	The ± 1 psig allowance for parallax error. This is one half graduation on the gauge scale.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 2 Critical Y	b. PLACE K-4A in OFF AND RECORD time on Attachment A.
Standard:	The examinee informs the Control Room that G-01 NOT IN AUTO alarm will be received. The examinee rotates the K-4A control switch from AUTO to OFF on C-64A. The examinee records the start time in Attachment A.
Evaluator Note:	NOTE: Placing K-4A in OFF will cause NOT IN AUTO annunciator on panel C-64A to alarm, and will generate a common control room annunciator. The examinee should inform the Control Room prior to causing the alarm.
Evaluator Cue:	If informed, by the examinee, as the Control Room, acknowledge the pending NOT IN AUTO alarm. When the examinee simulates placing the K-4A control switch to OFF, point to the switch being in the vertical (OFF) position. When the examinee places the K-4A control switch to OFF, call as the Control Room that C02 D 2-5, G-01 EMERGENCY DIESEL NOT IN AUTO, was received.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 3 Critical <u>Y</u>	c. <u>AFTER</u> 15 minutes have elapsed, <u>OR</u> air bank pressure reaches 180 lbs, <u>THEN</u> RECORD G-01 left bank air pressure from G-01-API-2 L.B. pressure gauge on C-64A on Attachment A.
Standard:	The examinee should determine that Left Bank air pressure is at 180 psig (\pm 1 psig). The examinee records left bank air pressure in the appropriate block on Attachment A.
Evaluator Cue:	Allow 5 minutes to pass and hand the examinee picture #2. (180 psig)
Evaluator Note:	The \pm 1 psig allowance for parallax error. This is one half graduation on the gauge scale.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 4 Critical <u>Y</u>	d. RECORD stop time on Attachment A.
Standard:	The examinee records the stop time as 5 minutes from the start time in the appropriate blank in Attachment A.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 5 Critical <u>Y</u>	e. CALCULATE <u>AND</u> RECORD Test Duration on Attachment A.
Standard:	The examinee enters the stop time and start time in the calculation, determines TD (test duration) equals 5 minutes, and records 5 in the blank for 5.1.1.e on Attachment A.
Evaluator Note:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 6 Critical <u>N</u>	f. PLACE K-4A in AUTO <u>AND</u> RESET alarms.
Standard:	The examinee rotates the K-4A control switch from OFF to AUTO on C-64A. The examinee depresses the alarm reset pushbutton.
Evaluator Cue:	If informed, as the Control Room, by the examinee, that they will be clearing the G-01 NOT IN AUTO alarm, acknowledge the report. If asked, inform the examinee that the IV for placing K-4A in AUTO is completed. After the examinee depresses the alarm reset pushbutton, call them, as the Control Room, that the G01 NOT IN AUTO alarm is clear.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 7 Critical <u>Y</u>	g. CALCULATE <u>AND</u> RECORD pressure drop on Attachment A.
Standard:	The examinee enters the initial pressure (IP) as 190 and final pressure (FP) as 180. The examinee will calculate the ΔP as 10 psig (± 2 psig) The examinee calculates the pressure drop using the calculation provided and determines pressure drop (PD) is 120 psig/hr (118 or 122 psig/hr) and enters the value in the blank for 5.1.1.g on Attachment A.
Evaluator Note:	The ± 2 psig allowance for the maximum ΔP difference between allowable initial pressure and allowable final pressure. The 118 or 122 psig/hr allowance is for errors carried forward for the allowable ΔP .
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 8 Critical <u>Y</u>	h. CHECK valve operability by comparing the recorded valve data with the Acceptance Criteria on Attachment A, CIRCLE the appropriate Sat / Unsat condition, and sign the bottom of the attachment.
Standard:	The examinee determines that the calculated pressure drop is within the Acceptance Criteria of 140 psig/hr. The examinee circles Sat and signs/ dates and times the bottom of the attachment.
Evaluator Note:	The examinee may or may not put comments in the remarks section.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 9 Critical <u>N</u>	i. <u>IF</u> substep 5.1.1 h is UNSAT, <u>THEN GENERATE</u> a Work Request to repair DA-112, G-01 EDG K-4A Start Air Comp Discharge Check valve for excessive leakby. (N/A if test is SAT) Work Request No. _____
Standard:	The examinee should N/A this step and the Work Request No. blank.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 10 Critical <u>Y</u>	5.1.2 Test of DA-100, G-01 EDG K-5A Start Air Comp Discharge Check valve. a. RECORD G-01 right bank air pressure from G-01-API-2 R.B. pressure gauge on C-64A on Attachment A
Standard:	Examinee determines right bank air pressure is 194 psig (± 1 psig) and records it on the appropriate line in Attachment A.
Evaluator Cue:	When the examinee points to the correct gauge, hand them picture #3. (194 psig)
Evaluator Note:	The ± 1 psig allowance for parallax error. This is one half graduation on the gauge scale.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 11 Critical Y	b. PLACE K-5A in OFF AND RECORD time on Attachment A.
Standard:	The examinee informs the Control Room that G-01 NOT IN AUTO alarm will be received. The examinee rotates the K-5A control switch from AUTO to OFF on C-64A. The examinee records the start time in Attachment A.
Evaluator Note:	NOTE: Placing K-5A in OFF will cause NOT IN AUTO annunciator on panel C-64A to alarm, and will generate a common control room annunciator. The examinee should inform the Control Room prior to causing the alarm.
Evaluator Cue:	If informed, by the examinee, as the Control Room, acknowledge the pending NOT IN AUTO alarm. When the examinee simulates placing the K-5A control switch to OFF, point to the switch being in the vertical (OFF) position. When the examinee places the K-5A control switch to OFF, call as the Control Room that C02 D 2-5, G-01 EMERGENCY DIESEL NOT IN AUTO, was received.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 12 Critical <u>Y</u>	c. <u>AFTER</u> 15 minutes have elapsed, <u>OR</u> air bank pressure reaches 180 lbs, <u>THEN</u> RECORD G-01 left bank air pressure from G-01-API-2 L.B. pressure gauge on C-64A on Attachment A.
Standard:	The examinee should determine that Left Bank air pressure is at 180 psig (\pm 1 psig). The examinee records left bank air pressure in the appropriate block on Attachment A.
Evaluator Cue:	Allow 5 minutes to pass and hand the examinee picture #4. (180 psig)
Evaluator Note:	The \pm 1 psig allowance for parallax error. This is one half graduation on the gauge scale.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 13 Critical <u>Y</u>	d. RECORD stop time on Attachment A.
Standard:	The examinee records the stop time as 5 minutes from the start time in the appropriate blank in Attachment A.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 14 Critical <u>Y</u>	e. CALCULATE <u>AND</u> RECORD Test Duration on Attachment A.
Standard:	The examinee enters the stop time and start time in the calculation, determines TD (test duration) equals 5 minutes, and records 5 in the blank for 5.1.1.e on Attachment A.
Evaluator Note:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 15 Critical <u>N</u>	f. PLACE K-5A in AUTO <u>AND</u> RESET alarms.
Standard:	The examinee rotates the K-5A control switch from OFF to AUTO on C-64A. The examinee depresses the alarm reset pushbutton.
Evaluator Cue:	If informed, as the Control Room, by the examinee, that they will be clearing the G-01 NOT IN AUTO alarm, acknowledge the report. If asked, inform the examinee that the IV for placing K-5A in AUTO is completed. After the examinee depresses the alarm reset pushbutton, call them, as the Control Room, that the G01 NOT IN AUTO alarm is clear.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 16 Critical <u>Y</u>	g. CALCULATE <u>AND</u> RECORD pressure drop on Attachment A.
Standard:	The examinee enters the initial pressure (IP) as 194 and final pressure (FP) as 180. The examinee will calculate the ΔP as 14 psig (± 2 psig) The examinee calculates the pressure drop using the calculation provided and determines pressure drop (PD) is 168 psig/hr (156 or 192 psig/hr) and enters the value in the blank for 5.1.1.g on Attachment A.
Evaluator Note:	The ± 2 psig allowance for the maximum ΔP difference between allowable initial pressure and allowable final pressure. The 156 or 192 psig/hr allowance is for errors carried forward for the allowable ΔP .
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 17 Critical <u>Y</u>	h. CHECK valve operability by comparing the recorded valve data with the Acceptance Criteria on Attachment A, CIRCLE the appropriate Sat / Unsat condition, and sign the bottom of the attachment.
Standard:	The examinee determines that the calculated pressure drop is <u>NOT</u> within the Acceptance Criteria of 140 psig/hr. The examinee circles Unsat and signs/ dates and times the bottom of the attachment.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 18 Critical <u>N</u>	i. <u>IF</u> substep 5.1.1 h is UNSAT, <u>THEN</u> GENERATE a Work Request to repair DA-100, G-01 EDG K-5A Start Air Comp Discharge Check valve for excessive leakby. (N/A if test is SAT) Work Request No. _____
Standard:	The examinee should state that they will write a CR/ Work Request. The examinee should state that they would notify the OS1 that the test was unsat for check valve DA-100 for K-5A.
Evaluator Cue:	Acknowledge the Report
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues: **When informed of the need to write a CR/ Work Request the JPM is complete.**

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____



PBN JPM P064.002c.AOT, PERFORM DIESEL GENERATOR TESTING, Rev. 0

JPM
Page 17 of 18

Examinee: _____

Evaluator: _____

RO SRO STA Non-Lic SRO CERT

Date: _____

LOIT RO LOIT SRO

PERFORMANCE RESULTS: **SAT:** **UNSAT:**

Remediation required: **YES** **NO**

COMMENTS/FEEDBACK: (Comments shall be made for any steps graded unsatisfactory).

EXAMINER NOTE: ENSURE ALL EXAM MATERIAL IS COLLECTED AND PROCEDURES CLEANED, AS APPROPRIATE.

EVALUATOR'S SIGNATURE: _____

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

TURNOVER SHEET

INITIAL CONDITIONS:

- IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01 is in progress.

INITIATING CUES (IF APPLICABLE):

- You are the Auxiliary Operator (performer) assigned to complete IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01.
- NOTE that time compression may be used during this JPM.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: Prepare for Entry into Locked High Radiation Area

JPM NUMBER: PBN JPM P162.008a.AOT **REV.** 3

TASK NUMBER(S) / TASK TITLE(S): P162.008.AOT
Enter/Exit various radiologically controlled areas

K/A NUMBERS: 2.3.13 **K/A VALUE:** 3.4/3.8

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 20 Minutes Time Critical: NO

Alternate Path [NRC]: No

Alternate Path [INPO]: No

Developed by:	<u>Jeffrey A Hinze</u> Instructor/Developer	<u>5-8-19</u> Date
Reviewed by:	<u>Andrew Zommers</u> Instructor (Instructional Review)	<u>5/8/19</u> Date
Validated by:	<u>Jeffrey A Hinze</u> SME (Technical Review)	<u>5-9-19</u> Date
Approved by:	<u>Andrew Feher</u> Training Supervision	<u>5-9-19</u> Date
Approved by:	<u>[Signature]</u> Training Program Owner	<u>5/14/19</u> Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



PBN JPM P162.008a.AOT, Prepare for Entry into Locked High Radiation Area, Rev. 3

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 3	Updated for the 2019 NRC ILT Audit Exam.				

SIMULATOR SET-UP:

N/A

- Required Materials:**
1. High Radiation Area Trip Ticket
 2. Locked High Radiation Area Trip Ticket
 3. PBF-4021, Filled out for Area 6-3 Unit 2 Seal Filter Cubical Operations Routine RWP
 4. 18-0003, Operations Activities RWP

General References: RP-AA-103-1002, High Radiation Area Controls
HP 3.1, Radiological Surveys and Records
RP-AA-100-1002, Radiation worker Instrumentation and Responsibilities

Task Standards: Prepare a Trip Ticket to for entry into Unit 2 RCP Seal Water Injection Filter Cubical

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Both units are at full power.
- A contractor told an RP Technician he saw water leaking from a valve and he believed it to be a packing leak.
- The contractor was able to identify the valve number only as 2CV-303D and gave no additional clarifying information.

INITIATING CUES:

- The Relief Crew Supervisor has directed you to locate valve 2CV-303D, 2F-39A RCP Seal Injection Filter Inlet Valve, and quantify the leakage so that recommendations can be made concerning repairs.
- You are to prepare a Trip Ticket for entry into Unit 2 Seal Water Injection Filter Cubicle.
- The leak quantification is expected to take approximately 3 minutes.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical <u>Y</u>	Examinee reviews given survey map and OPS RWP to determine information needed, and selects the appropriate Trip Ticket.
Standard:	Reviews survey map to determine the seal filter cubicle is a LHRA and requires the use of Task #4 on the Operations Activities RWP, and selects the Locked High Radiation Area Trip Ticket.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 2 Critical <u>N</u>	Examinee fills out Trip Ticket for the following: <i>General Information</i> Name: _____ Date: _____
Standard:	Examinee fills in their name and today’s date.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 3 Critical <u>N</u>	Examinee fills out Trip Ticket for the following: <i>General Information</i> RWP No: _____ Task No: _____
Standard:	The examinee enters 18-0003 for the RWP and 4 for the Task No
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 4 Critical <u>Y</u>	Examinee fills out Trip Ticket for the following: <i>General Information</i> Location: _____
Standard:	The examinee enters Unit 2 Seal Injection Filter Cubicle or similar wording
Evaluator Cue:	Have examinee locate 2CV-303D on the survey map
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 5 Critical <u>N</u>	Examinee fills out Trip Ticket for the following: <i>General Information</i> Job: _____
Standard:	The examinee enters quantify leakage from 2CV-303D or similar wording
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 6 Critical <u>Y</u>	Examinee fills out Trip Ticket for the following: <i>Dosimetry</i> Dosimeter: TLD EPD Telemetry Other: _____
Standard:	The examinee circles TLD AND EPD as required by Task 4 of 18-003 RWP.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 7 Critical <u>Y</u>	Examinee fills out Trip Ticket for the following: <i>Dosimetry</i> Total Dose Alarm: _____ mrem Dose Rate Alarm: _____ mrem/hr
Standard:	The examinee enters Total Dose Alarm: <u>32</u> mrem Dose Rate Alarm: <u>1,000</u> mrem/hr From task #4 of 18-0003 RWP for LHRA
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 8 Critical <u>N</u>	Examinee fills out Jump Ticket for the following: <i>Dosimetry</i> Dose goal: _____.
Standard:	Examinee calculates potential dose for the job.
Evaluator Note:	3 minutes times 55 mRem/hr = about 3 mr dose. 55 mRem comes from the survey map near the leaky valve. A higher dose rate may be used depending on where the examinee thinks they will have to work.
Evaluator Note:	The time to quantify the leak is expected to take 3 minutes (given).
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 9 Critical <u>N</u>	Examinee fills out Jump Ticket for the following: <i>Expected Radiological Condition</i> Dose Rate: _____ mrem Contamination Levels: _____ dpm/100cm ² Low Dose Waiting Area: _____
Standard:	Examinee determines range to be from background to an area they think they will enter.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 10 Critical <u>N</u>	Examinee fills out Jump Ticket for the following: <i>Radiological Safety</i> RPT Contact: _____ RP Hold Points: _____
Standard:	Examinee should request RPT Contact and Hold Point information from the evaluator.
Evaluator Cue:	Inform the examinee this information will be given during the Locked High Radiation Area briefing
Evaluator Note:	The back of the Trip Ticket does not need to be filled out.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: This Completes the JPM

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____



Examinee: _____ Evaluator: _____

RO SRO STA Non-Lic SRO CERT Date: _____

LOIT RO LOIT SRO

PERFORMANCE RESULTS: SAT: UNSAT:

Remediation required: YES NO

COMMENTS/FEEDBACK: (Comments shall be made for any steps graded unsatisfactory).

EXAMINER NOTE: ENSURE ALL EXAM MATERIAL IS COLLECTED AND PROCEDURES CLEANED, AS APPROPRIATE.

EVALUATOR'S SIGNATURE: _____

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

TURNOVER SHEET**INITIAL CONDITIONS:**

- Both units are at full power.
- A contractor told an RP Technician he saw water leaking from a valve and he believed it to be a packing leak.
- The contractor was able to identify the valve number only as 2CV-303D and gave no additional clarifying information.

INITIATING CUES:

- The Relief Crew Supervisor has directed you to locate valve 2CV-303D, 2F-39A RCP Seal Injection Filter Inlet Valve, and quantify the leakage so that recommendations can be made concerning repairs.
- You are to prepare a Trip Ticket for entry into Unit 2 Seal Water Injection Filter Cubicle.
- The leak quantification is expected to take approximately 3 minutes.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JOB PERFORMANCE MEASURE

JPM TITLE: Review a Pressurizer Heater Group Input Test Calculation

JPM NUMBER: PBN JPM P119.223f.SRO **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): P119.223.SRO/Review completed procedures

K/A NUMBERS: 2.1.7 **K/A VALUE:** 4.4 / 4.7

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____


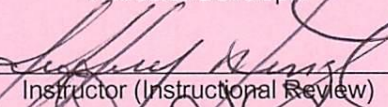
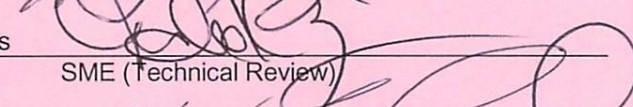
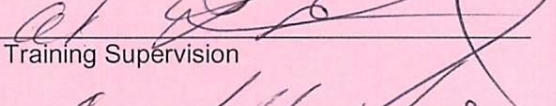
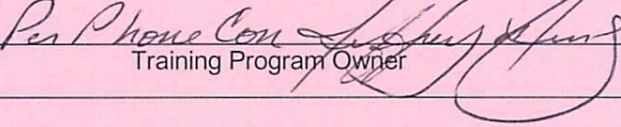
APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
 Simulator: Other:
 Lab:

Time for Completion: 15 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

Developed by: Andrew Zommers		11/11/19
	Instructor/Developer	Date
Reviewed by: Jeffrey A. Hinze		11/11/19
	Instructor (Instructional Review)	Date
Validated by: Andrew Zommers		11/11/19
	SME (Technical Review)	Date
Approved by: Andrew Fahrenkrug		11/12/19
	Training Supervision	Date
Approved by: Joe Krear	Per Phone Con 	11/12/19
	Training Program Owner	Date



JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**PBN JPM P119.223f.SRO, Review a Pressurizer Heater Group
Input Test Calculation, Rev. 0**

JPM
Page 3 of 11

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1000) made to the material after initial approval.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	Developed for 2019 ILT NRC Exam				

SIMULATOR SET-UP:

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

Required Materials: Completed TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test filled out with pre-selected errors.
Calculator

General References: TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test

Task Standards: Properly review the completed TS-43 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test identifying errors and any required actions.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are the Unit 1 OS.
- Unit 1 is currently in Mode 2 with a reactor startup in progress.
- TS 43, 1T-1D Unit 1 Pressurizer Heater Group Energy Input Test, was performed the previous shift.

INITIATING CUES:

- The Shift Manger has tasked you with reviewing the completed TS-43, 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test.
- Identify any required actions.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical Y	VERIFY the average Voltage and Average current for each breaker.
Standard:	Verify the average voltage and average current was calculated and recorded in Table PP-13 1T-1D correctly.
Evaluator Note:	Breaker 3 average current is calculated wrong, should be 24.6±.1. (Error caused by transposition of 25.7 to 27.5)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 2 Critical Y	VERIFY the Power for each Breaker per the following formula. Power= 1.732 x Average Voltage x Average Current x 1/1000.
Standard:	Verify the power for each breaker was calculated and recorded in Table PP-13 1T-1D.
Evaluator Note:	Average power is wrong for breakers 1, should be 20.7±.1 (Error cause by input of 24.5 into wrong block) Average power is wrong for breakers 3, should be 20.8±.1 (Error carried forward from transposition error in current average) Average power is wrong for breakers 5, should be 19.6±.1 (Error cause by transposition of average voltage from 468.1 to 486.1)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



**PBN JPM P119.223f.SRO, Review a Pressurizer Heater Group
Input Test Calculation, Rev. 0**

JPM
Page 7 of 11

Performance Step: 3 Critical Y	VERIFY the sum the Total power as follows:
Standard:	Verify the power of each breaker is added together to determine total power of Pressurizer Heater Group 1T-1D.
Evaluator Note:	Total power is wrong, should be 102.7±.1 (Error carried forward from Power in KW for breaker 1, 3, and 5)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 4 Critical Y	Multiply by uncertainty factor of 0.9335 as follows. Total Power in KW _____ x 0.9335 = _____ KW and record result in section 6.0 Acceptance Criteria
Standard:	The total power of the heater Group obtained in the previous step is multiplied by 0.9335 and recorded in section 6.0.
Evaluator Note:	Corrected total power is wrong, should be 95.9±.1 KW (Error carried forward from Total Power)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



**PBN JPM P119.223f.SRO, Review a Pressurizer Heater Group
Input Test Calculation, Rev. 0**

Performance Step: 5 Critical Y	VERIFY the total power of Pressurizer Heater Group 1T-1D is compared with the Technical Specification Acceptance Criteria.
Standard:	Verify the total power of Pressurizer Heater Group 1T-1D is determined to <u>NOT</u> meet Technical Specification requirements of ≥ 100 kW and corrects the TS-43 informing the Shift Manager.
Evaluator Cue:	Acknowledge and reports of the incorrect procedure performance.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 6 Critical N	Examinee determines Pressurizer Heater Group D acceptance criteria is UNSAT and declares the heater group INOPERABLE per TS-43 note.
Standard:	Examinee declares Pressurizer Heater Group D TS-43 acceptance criteria as UNSAT and the heater group as INOPERABLE.
Evaluator Cue:	If asked, 1T-1C Pressurizer Heater Group is OPERABLE.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues: The JPM is complete

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

Fill in the table in TS 43 section 5.1 as follows:

PP-13 1T-1D					
BREAKER	1	2	3	4	5
VOLTAGE					
A-B	486.5	486.5	486.5	486.4	468.4
A-C	486.2	486.4	486.3	486.3	468.2
B-C	488.8	488.8	488.7	488.7	467.8
AVERAGE	487.2	487.2	487.2	487.1	468.1
CURRENT					
A	24.2	25.1	23.8	24.2	24.1
B	24.8	25.3	25.7	24.2	24.3
C	24.4	25.2	24.2	24.1	24.2
AVERAGE (correct #)	24.5	25.2	25.2 (24.6±.1)	24.2	24.2
POWER in KW (correct #)	24.5 (20.7±.1)	21.26	21.3 (20.8±.1)	20.42	20.4 (19.6±.1)

Record these values on the paper work submitted to the candidate, they will validate these values. Errors are highlighted in BLUE, and correct values are in YELLOW.

5.1.8 Record Test Instruments used.
 ID No. MCCP-12 Cal. date Today
 ID No. MCMM-37 Cal. date Today

5.1.16 fill in total KW to be power from above table equals **107.8** **(102.7±.1)**
 5.1.17 fill in total KW to be 107.27 and adjusted KW to be **100.6** **(95.9±.1)**



**PBN JPM P119.223f.SRO, Review a Pressurizer Heater Group
Input Test Calculation, Rev. 0**

Examinee: _____

Evaluator: _____

RO SRO STA Non-Lic SRO CERT

Date: _____

LOIT RO LOIT SRO

PERFORMANCE RESULTS:

SAT:

UNSAT:

Remediation required:

YES

NO

COMMENTS/FEEDBACK: (Comments shall be made for any steps graded unsatisfactory).

**EXAMINER NOTE: ENSURE ALL EXAM MATERIAL IS COLLECTED AND PROCEDURES
CLEANED, AS APPROPRIATE.**

EVALUATOR'S SIGNATURE: _____

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If
unsatisfactory performance is demonstrated, the entire JPM should be retained.*

TURNOVER SHEET**INITIAL CONDITIONS:**

- You are the Unit 1 OS.
- Unit 1 is currently in Mode 2 with a reactor startup in progress.
- TS 43, 1T-1D Unit 1 Pressurizer Heater Group Energy Input Test, was performed the previous shift.

INITIATING CUES:

- The Shift Manger has tasked you with reviewing the completed TS-43, 1T-1D Unit 1, Pressurizer Heater Group Energy Input Test.
- Identify any required actions.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: Review Control Room Reactor Startup Checklist

JPM NUMBER: PBN JPM P119.210a.SRO **REV. 3**

TASK NUMBER(S) / TASK TITLE(S): PBN P119.210.SRO / Review Operating Logs for Trends and Out-of-Specification Conditions

K/A NUMBERS: 2.1.18 **K/A VALUE:** (3.6/3.8)

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 15 Minutes Time Critical: _____

Alternate Path [NRC]: Yes

Alternate Path [INPO]: Yes

Developed by: <u>John D. Pappas</u> Instructor/Developer	<u>2/14/2017</u> Date
Reviewed by: <u>Jeffrey A. Hinge</u> Instructor (Instructional Review)	<u>2/15/17</u> Date
Validated by: <u>John D. Pappas</u> SME (Technical Review)	<u>2/14/2017</u> Date
Approved by: <u>R. C. Anderson</u> Training Supervision	<u>2/15/17</u> Date
Approved by: <u>Thomas L. Larson (EPOS)</u> Training Program Owner	<u>2/17/17</u> Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**PBN JPM P119.210a.SRO, Review Control Room Reactor
Startup Checklist, Rev. 3**

JPM
Page 3 of 11

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	This JPM being developed by the NRC for the ILT 2011 License Examination.				
Rev. 1	JPM revised, updated to Rev 3 of PBF-2140, Control room Reactor Startup Checklist. The task importance rating is 2 but this JPM has been determined to be applicable for LOC operating exam based on inclusion of improper verification of safety related component status.				
Rev. 2	JPM revised for Rev 4 of checklist post EPU.				
Rev. 3	Updated for the 2017 NRC ILT Audit Exam.				
Chg 1	Page 6, corrected typo in ID and name for HC-431H	Typo errors	N/A		
	Page 7, corrected title of FIC-466A				

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

SIMULATOR MALFUNCTIONS:

SIMULATOR OVERRIDES:

SIMULATOR REMOTE FUNCTIONS:

Required Materials: Form PBF-2140, Control Room Reactor Startup Checklist filled out with errors.

General References: OP-1B, Reactor Startup
PBF-2140, Control Room Reactor Startup Checklist

Task Standards: Explain how to disposition the 2 documented discrepancies noticed by the Control Operator as well as discovering 3 discrepancies not properly noted by the Control Operator.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are the Unit 1 OS.
- A reactor startup is about to be commenced on Unit 1.
- CL-2E, Mode 3 to Mode 2 Checklist has been completed.
- The CO3 has just completed PBF-2140, Control Room Reactor Startup Checklist.
- 1P-2A, Charging Pump is running in AUTO.
- 1P-2B, Charging Pump is running in MANUAL.

INITIATING CUES:

- You have been assigned by the Shift Manager to review the completed PBF-2140, Control Room Reactor Startup Checklist, prior to startup.
- Inform the Shift Manager if any actions are required prior to continuing Unit 1 startup.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	HC-431H, Loop B PZR Spray Controller in MANUAL and SHUT.
Standard:	The examinee reviews the out-of-position component identified by the RO, circled and noted in the remarks section. The Spray Controller will be left in MANUAL per abnormal alignment.
Evaluator Cue:	Ask examinee what, if anything, is required to rectify the abnormal condition.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 2 Critical Y	HC-624, HX-11A RHR HX Outlet Flow Controller set to 25%
Standard:	The examinee reviews logs and identifies HC-624 not set for zero (0) and the RO failed to document the abnormal condition. The abnormal position should be documented in the remarks section and HC-624 should be changed to zero (0).
Evaluator Cue:	Ask examinee what, if anything, is required to rectify the abnormal condition.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 3 Critical Y	FIC-466A, 1HX-1A SG Primary Flow Indicating Controller is in AUTO set to valve demand = 0.
Standard:	The examinee reviews logs and identifies FIC-466A not in MANUAL and the RO failed to document the abnormal condition. The abnormal position should be documented in the remarks section and FIC-466A should be placed in MANUAL.
Evaluator Cue:	Ask examinee what, if anything, is required to rectify the abnormal condition.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 4 Critical N	P-29 AFP SGBD Isolation Defeat Switch is ON.
Standard:	The examinee reviews logs and identifies P-29 AFP SGBD Isolation Defeat Switch is ON and the RO documented the abnormal condition. AFP SGBD Isolation Switch can be placed back to OFF.
Evaluator Cue:	Ask examinee what, if anything, is required to rectify the abnormal condition.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 5 Critical Y	FIC-4074A, P-53 MDAFW Pump Controller to HX-1A SG controller is in AUTO and set to 100.
Standard:	The examinee reviews logs and identifies FIC-4074A is incorrectly set for 100 and the RO failed to document the abnormal condition. The abnormal position should be documented in the remarks section and FIC-4074A should be adjusted to 145.
Evaluator Cue:	Ask examinee what, if anything, is required to rectify the abnormal condition.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Examinee gives the Shift Manager the review results and any actions taken.

Performance Step: 6 Critical N	The examinee informs Shift Manager review of Control Room Reactor Startup Checklist is complete.
Standard:	The examinee gives the Shift Manager the review results and any actions taken.
Evaluator Cue:	Shift Manager acknowledges your report.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: The JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET**INITIAL CONDITIONS:**

- You are the Unit 1 OS.
- A reactor startup is about to be commenced on Unit 1.
- CL-2E, Mode 3 to Mode 2 Checklist has been completed.
- The CO3 has just completed PBF-2140, Control Room Reactor Startup Checklist.
- 1P-2A, Charging Pump is running in AUTO.
- 1P-2B, Charging Pump is running in MANUAL.

INITIATING CUES:

- You have been assigned by the Shift Manager to review the completed PBF-2140, Control Room Reactor Startup Checklist, prior to startup.
- Inform the Shift Manager if any actions are required prior to continuing Unit 1 startup.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JOB PERFORMANCE MEASURE

JPM
Page 1 of 20

JPM TITLE: Review IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01

JPM NUMBER: PBN JPM P119.231a.SRO REV. 0

TASK NUMBER(S) / TASK TITLE(S): PBN P119.231.SRO / Perform surveillances per the Plant Inspection Program

K/A NUMBERS: 2.2.12 **K/A VALUE:** 3.7 / 4.1

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
Simulator: Other:
Lab:

Time for Completion: 15 Minutes Time Critical: No

Alternate Path [NRC]: No

Alternate Path [INPO]: No

Developed by: <u>Alan Johnson</u>	_____	_____
	Instructor/Developer	Date
Reviewed by: _____	_____	_____
	Instructor (Instructional Review)	Date
Validated by: _____	_____	_____
	SME (Technical Review)	Date
Approved by: _____	_____	_____
	Training Supervision	Date
Approved by: _____	_____	_____
	Training Program Owner	Date



JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001} None

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

Admin Procedure Setup IT 100 G-01:

- Fill-in cover page for current revision info and Work Order number
- Step 4.1, place an X in the first blank, write in a Work Order number, and initial for performance.
- Initial steps 4.2 through 4.4.
- Sign, date, and time for Shift Management in step 4.5.
- Initial steps 5.1.1.a. through 5.1.1.h. and 5.1.2.a through 5.1.2.h.
- N/A steps 5.1.1.i and 5.1.2.i. and the work request number blanks
- Attachments A and B, initial for 5.1.1.a through 5.1.1.g/5.1.2.a through 5.1.2.g.
- Place the following data in the tables:
Attachment A: 5.1.1.a, 196; 5.1.1.b, 1420; 5.1.1.c, 180; 5.1.1.d, 1428; 5.1.1.e, 8; 5.1.1.g, 75; SP, 1428; ST, 1420; IP, 196; FP, 180; ΔP , 10; PD, 75; Circle SAT and sign attachment.
Attachment B: 5.1.2.a, 193; 5.1.2.b, 1438; 5.1.2.c, 162; 5.1.2.d, 1443; 5.1.2.e, 6; 5.1.2.g, 31; SP, 1443; ST, 1438; TD, 6; IP, 193; FP, 162; ΔP , 31; PD, 31; Circle SAT and sign attachment.

Required Materials:

1. IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01 marked up for the performance of the JPM.
2. Calculator
3. Technical Specifications
4. Technical Specification Bases

General References: IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01
Technical Specifications LCO 3.8.3

Task Standards: Given the recorded data in IT 100, Attachments A and B, determine the accuracy of the data, note where errors have occurred, make corrections, and take the proper course of actions including determination of Tech Spec 3.8.3 LCO not met and Condition 3.8.3 D entered.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Both Units are at 100% power
- You are OS1.
- IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01 has been completed by the relief AOs and they have requested you to perform the supervisory review of Attachments A and B, per Step 6.1 of the procedure.

INITIATING CUES (IF APPLICABLE):

- Complete the supervisory review for IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01.
- Identify any required actions.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	Review the cover page for accuracy and completeness:
Standard:	<p>The examinee reviews the cover page and determines it is accurate and complete:</p> <ul style="list-style-type: none"> • Verified Current Copy (Signature / Date / Time correctly filled in) • List pages used for Partial Performance (None) • Controlling Work Document Numbers (as noted)
Evaluator Note:	No errors in this section.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 2 Critical N	Review Step 4.0, Initial Conditions, for accuracy and completeness:
Standard:	<p>The examinee reviews Step 4.0, Initial Conditions and notes that it is complete and accurate.</p> <ul style="list-style-type: none"> • 4.1 This test is being done to satisfy: (Checked and includes Task Sheet No.) • 4.2 EDG Air Banks and valves and pipes are operable for G-01. (Initialed) • 4.3 Normal and Standby Emergency Power available to 1A05, 1A06, 1B03, and 1B04. (Initialed) • 4.4 Unit 2 Control Operator informed. (Initialed) • 4.5 Permission to Perform Test (Signature / Date / Time)
Evaluator Note:	No errors in this section.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 3 Critical N	Review Steps 5.1.1.a through 5.1.1.i for accuracy and completeness.
Standard:	<p>The examinee reviews Steps 5.1.1.a through 5.1.1.h and notes they are accurate and complete:</p> <ul style="list-style-type: none"> • Proper initials for 5.1.1.a. through 5.1.1.h. • N/A for 5.1.1.i and the Work Request No. blank.
Evaluator Note:	<p>No errors in this section.</p> <p>This step and the next steps (4 – 6) may be performed concurrently, since the data in Attachment A is needed to ensure that 5.1.1.i is filled out correctly.</p>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 4 Critical N	Review Attachment A, DA-112 Data Sheet data recorded in the table.
Standard:	Examinee reviews Attachment A, DA-112 Data Sheet data recorded for Steps 5.1.1.a, 5.1.1.b, 5.1.1.c, 5.1.1.d, 5.1.1.e and determines it is complete and accurate: <ul style="list-style-type: none"> • IP = 196 psig • ST = 1420 • FP = 180 psig • SP = 1428 • TD Calculation: $\frac{1428}{SP} - \frac{1420}{ST} = \frac{8}{TD}$ • 5.1.1.e entered as 8 Min.
Evaluator Note:	No errors in this section:
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 5 Critical Y	Review Attachment A, DA-112 Data Sheet data recorded in the table for Steps 5.1.1.g
Standard:	Examinee reviews Attachment A, DA-112 Data Sheet data recorded for Steps 5.1.1.g, and calculations, and determines they are in error: <ul style="list-style-type: none"> • ΔP calculation: $\frac{196}{IP} - \frac{186}{FP} = \frac{10}{\Delta P}$ 186 is transposition error. (180) (ΔP should be 16) • PD Calculation: $\frac{(60 \text{ MIN})(\Delta P)}{TD} = \frac{75}{PD}$ ΔP Error carried forward (PD should be 120) • 5.1.1.g entered as 75 psig/hr Error carried forward due to incorrect ΔP and PD calculations. PD should be 120.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 6 Critical N	Review Attachment A, DA-112 Data Sheet:
Standard:	<p>The examinee reviews final entries in Attachment A, DA-112 Data Sheet:</p> <ul style="list-style-type: none"> • The Acceptance Criteria Satisfied section of Attachment A and determines that SAT is circled and correct. • The remarks section is blank • The performer signed, dated, and timed the Data Sheet.
Evaluator Note:	Even with the errors in calculations above, the PD is still below the limit. No errors here.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 7 Critical N	Review Steps 5.1.2.a through 5.1.2.h for accuracy and completeness.
Standard:	<p>The examinee reviews Steps 5.1.2.a through 5.1.2.h and notes they are accurate and complete.</p> <ul style="list-style-type: none"> • Proper initials for 5.1.2.a. through 5.1.2.h. • Proper IV initial for 5.1.2.f
Evaluator Note:	<p>No errors in this section.</p> <p>The next steps (8 – 11) may be performed concurrently, since the data in Attachment B is needed to ensure that 5.1.2.i is filled out correctly.</p>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 8 Critical Y	Review Attachment B, DA-100 Data Sheet data recorded in the table.
Standard:	<p>Examinee reviews Attachment B, DA-100 Data Sheet data recorded for Steps 5.1.2.a, 5.1.2.b, 5.1.2.c, 5.1.2.d, 5.1.2.e, and determines that step 5.1.2.c was performed incorrectly in that K-5A was not returned to AUTO when air pressure reached 180 psig and therefore air bank pressure dropped to less than the minimum pressure for operability (165 psig):</p> <ul style="list-style-type: none"> • IP = 193 psig • ST = 1438 • FP = 162 psig • SP = 1443
Evaluator Cue:	<u>IF</u> the examinee reports the Technical Specification LCO not being met, THEN respond as the Shift Manager to finish the review of the IT-100, and then address the Tech Spec LCO.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 9 Critical N	Review Attachment B, DA-100 Data Sheet data recorded in the table for Steps 5.1.2.e
Standard:	<p>Examinee reviews Attachment B, DA-100 Data Sheet data recorded for Steps 5.1.2.e, and calculation, and determines it is in error:</p> <ul style="list-style-type: none"> • TD Calculation: $\frac{1443}{SP} - \frac{1438}{ST} = \frac{6}{TD}$ Calculation error (5 min) • 5.1.2.e entered as 6 Min. Error carried forward (5 min)
Evaluator Note:	This performance step is not critical because using the real value (5) or the error value (6), does not change the final pressure drop value from sat to unsat or unsat to sat.
Evaluator Cue:	<u>I</u>F the examinee reports the Technical Specification LCO not being met, THEN respond as the Shift Manager to finish the review of the IT-100, and then address the Tech Spec LCO.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 10 Critical Y	Review Attachment B, DA-100 Data Sheet data recorded in the table for Steps 5.1.2.g
Standard:	Examinee reviews Attachment B, DA-100 Data Sheet data recorded for Steps 5.1.2.g, and calculations, and determines they are in error: <ul style="list-style-type: none"> • ΔP calculation: $\frac{193}{IP} - \frac{162}{FP} = \frac{31}{\Delta P}$ No error here. • PD Calculation: $\frac{(60 \text{ MIN})(\Delta P)}{TD} = \frac{31}{PD}$ TD Error carried forward (PD should be 372) • 5.1.2.g entered as 31 psig/hr Error carried forward due to incorrect TD and PD calculations. PD should be 372.
Evaluator Cue:	<u>IF</u> the examinee reports the Technical Specification LCO not being met, <u>THEN</u> respond as the Shift Manager to finish the review of the IT-100, and then address the Tech Spec LCO.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 11 Critical Y*	Review Attachment B, DA-100 Data Sheet:
Standard:	<p>The examinee reviews final entries in Attachment B, DA-100 Data Sheet:</p> <ul style="list-style-type: none"> • The Acceptance Criteria Satisfied section of Attachment B and determines that SAT is incorrectly circled. UNSAT should be circled due to actual PD > 140 psig/hr limit. • The remarks section is blank and should contain a comment stating why the Acceptance Criteria is not met. • The performer signed, dated, and timed the Data Sheet. <p>The examinee should NOT sign and date for SRO review due to the errors.</p>
Evaluator Note:	*There may or may not be remarks left in this section. Only the SAT or UNSAT circled is critical for this performance step.
Evaluator Cue:	<u>IF</u> the examinee reports the Technical Specification LCO not being met, THEN respond as the Shift Manager to finish the review of the IT-100, and then address the Tech Spec LCO.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 12 Critical Y	Review Steps 5.1.2.i for accuracy and completeness.
Standard:	The examinee reviews Steps 5.1.2.i and notes they are incorrect. <ul style="list-style-type: none">• 5.1.2.i should be initialed.• Work Request No. should be filled in.
Evaluator Cue:	When this step is addressed for correction by the examinee, inform them that a CR/WR has been written # 1234567.
Evaluator Note:	The examinee should state that they will write, or direct writing, a CR and Work Request for the failed portion of the test. That satisfies this step.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 14 Critical Y	Technical Specification Implication
Standard:	The examinee addresses Tech Spec 3.8.3, noting that SR 3.8.3 was not met during the performance of the test, due to being less than 165 psig in the starting air bank. Due to TS 3.8.3 not being met due to air start pressure, TS Condition 3.8.3 D is entered with an action to declare the associated standby emergency power source inoperable immediately
Evaluator Cue:	Acknowledge the report
Evaluator Note:	Due to the second NOTE on Attachment B of IT 100 G-01, since the Pressure Drop is greater than 140 psig/hr, the air start system for G-01 is inoperable, even after pressure is restored to >165 psig.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues: The task is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Both Units are at 100% power
- You are OS1.
- IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01 has been completed by the relief AOs and they have requested you to perform the supervisory review of Attachments A and B, per Step 6.1 of the procedure.

INITIATING CUES (IF APPLICABLE):

- Complete the supervisory review for IT 100 G-01, Seat Leakage Test of Diesel Air Compressor Discharge Check Valves G-01.
- Identify any required actions.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: REVIEW RELEASE PERMIT

JPM NUMBER: PBN JPM P119.212.SRO **REV.** 2

TASK NUMBER(S) / TASK TITLE(S): P119.212.SRO/Approve Radioactive Waste Discharge Permits

K/A NUMBERS: 2.3.6 **K/A VALUE:** 2.0/3.8

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO
 SRO
 STA
 Non-Lic
 SRO CERT
 OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

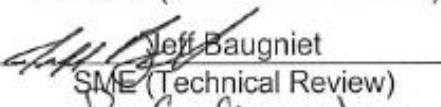
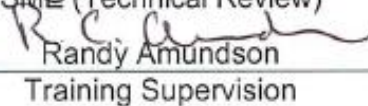

Simulator: Other:

Lab:

Time for Completion: 15 Minutes Time Critical: No

Alternate Path [NRC]: No

Alternate Path [INPO]: No

Developed by:	 Jeffrey Hinze Instructor/Developer	<u>1/30/15</u> Date
Reviewed by:	 Andrew Zimmers Instructor (Instructional Review)	<u>1/31/15</u> Date
Validated by:	 Jeff Baugniet SME (Technical Review)	<u>2/1/15</u> Date
Approved by:	 Randy Amundson Training Supervision	<u>2/2/15</u> Date
Approved by:	 Tom Larson Training Program Owner	<u>1/30/15</u> Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	See Microfilm				
Rev. 1	Revised JPM to add a 'for training only' discharge permit and updated JPM for new OP-9C procedure.				
Rev. 2	Updated JPM to reflect most recent JPM template for ILT 2014 NRC exam.				
Rev 3	Changed dates in the initial conditions to current year	Didn't want to confuse students		J. Hinze	4/6/21
				A. Moore	

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

- 1.
- 2.

SIMULATOR MALFUNCTIONS:

SIMULATOR OVERRIDES:

SIMULATOR REMOTE FUNCTIONS:

Required Materials: OP 9C, Containment Venting and Purging Unit 2 Rev 8
Calculator
Unit 2 Forced Vent Discharge permit (attached in JPM)

General References: CAMP 031, Preparation of Batch Liquid and Gaseous Effluent permits
Using RETSCODE Software, Rev 13

Task Standards: Review release permit to determine containment forced vent cannot
be continued in accordance with OP 9C.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Both Units are at rated thermal power with no equipment out of service.
- Unit 2 started a forced vent yesterday 7/22/21 at 1800.
- The forced vent was interrupted this morning 7/23/21 at 0500 due to RP testing.
- 2RE-211 and 2RE-212 have remained in operation throughout the testing evolution.

INITIATING CUES (IF APPLICABLE):

- You are OS2 today and it is 0900 with the RP testing completed.
- All other RMS monitors have been in service for the past 24 hours.
- The Shift Manager has requested that you approve a restart of the forced vent on Unit 2.
- Additionally, the following data is provided:

<u>RAD MONITOR</u>	<u>STEADY STATE READINGS</u>	<u>CHECK SOURCE READINGS</u>
2RE-211 (Cont Air Part)	1.98 E-3	3.20 E-2
2RE-212 (Cont Gas)	7.45 E-6	2.80 E-4

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical <u>N</u>	Review provided procedure and release permit
Standard:	Review provided procedures
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 2 Critical <u>N</u>	ENSURE 2RE-211 (DAM 2-2) and 2RE-212 (DAM 2-3) have been in operation for at least ten minutes.
Standard:	Ensure RE-211 and RE-212 have been in operation for ten minutes.
Evaluator Note:	Per initial conditions, RE-211 and RE-212 have been in operation the last 4 hours.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 3 Critical <u>Y</u>	OBTAIN and RECORD SS data values from the following RMS monitors: <ul style="list-style-type: none"> • RE-211 (DAM 2-2) • RE-212 (DAM 2-3)
Standard:	Record values for RE-211 and RE-212 given in initial conditions/initiating cues.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 4 Critical <u>Y</u>	OBTAIN and RECORD source check readings from the following RMS monitors: <ul style="list-style-type: none"> • RE-211 (DAM 2-2) • RE-212 (DAM 2-3)
Standard:	Record values for RE-211 and RE-212 given in initial conditions/initiating cues.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 5 Critical <u>N</u>	CHECK a positive rise over the initial data value is indicated during the source check of the following RMS monitors: <ul style="list-style-type: none"> • RE-211 (DAM 2-2) • RE-212 (DAM 2-3)
Standard:	Determine positive rise in value from information given in initial conditions/initiating cues.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 6 Critical <u>N</u>	CHECK SS data values have returned to initial values for the following RMS monitors to ENSURE source did NOT stick: <ul style="list-style-type: none"> • RE-211 (DAM 2-2) • RE-212 (DAM 2-3)
Standard:	Check values for RE-211 and RE-212 returned to normal.
Evaluator Cue:	Values for RE-211 and RE-212 have returned to the values given in initial conditions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 7 Critical <u>N</u>	Compare the RE-211 (DAM 2-2) and RE-212 (DAM 2-3) readings taken in Step 5.1.4.b with the readings for RE-211 and RE-212 in Step 5.1.1.h.
Standard:	Compare readings in steps 5.1.4.b with 5.1.1.h and determine the difference in readings.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 8 Critical <u>Y</u>	IF any reading in Step 5.1.4.b is greater than 125% of associated reading in Step 5.1.1.h, THEN TERMINATE U2 vent per section 5.1.2 AND N/A Steps 5.1.4.h through 5.1.4.l.
Standard:	Take action to terminate forced vent per Step 5.1.2 and N/A Steps 5.1.4.h through 5.1.4.l.
Evaluator Note:	<p>If examinee does not identify readings >125%, he/she will:</p> <ul style="list-style-type: none"> • Direct the AO/RP to start the air sampler pump and record sampler rate on permit • Direct the RO to open 2RM-3200N, Forced Vent Pump Suction • Direct the RO to start the forced vent blower • Direct the RO to record the vent flow rate on the forced vent permit <p>At that point the JPM can be terminated.</p>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 9 Critical <u>N</u>	Inform Shift Manager of the need to secure the forced vent on Unit 2.
Standard:	Shift Manager informed if need to secure forced vent.
Evaluator Cue:	Acknowledge report.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Terminating Cues: Evolution complete

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

JPM SETUP INFORMATION

Instructor Actions Prior to JPM Administration:

- o Fill out an OP-9C for starting the Unit 2 forced vent with the following information on initial RMS readings.
 - o 2RE-211 steady state 1.92 E-3
 - o 2RE-212 steady state 4.66 E-6 and check source 2.8 E-4
 - o 2RE-305 steady state 7.3 E-7 and check source 1.38 E-4

TURNOVER SHEET**INITIAL CONDITIONS:**

- Both Units are at rated thermal power with no equipment out of service.
- Unit 2 started a forced vent yesterday 7/22/21 at 1800.
- The forced vent was interrupted this morning 7/23/21 at 0500 due to RP testing.
- 2RE-211 and 2RE-212 have remained in operation throughout the testing evolution.

INITIATING CUES (IF APPLICABLE):

- You are OS2 today and it is 0900 with the RP testing completed.
- All other RMS monitors have been in service for the past 24 hours.
- The Shift Manager has requested that you approve a restart of the forced vent on Unit 2.
- Additionally, the following data is provided:

<u>RAD MONITOR</u>	<u>STEADY STATE READINGS</u>	<u>CHECK SOURCE READINGS</u>
2RE-211 (Cont Air Part)	1.98 E-3	3.20 E-2
2RE-212 (Cont Gas)	7.45 E-6	2.80 E-4

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JOB PERFORMANCE MEASURE

JPM
Page 1 of 19

JPM TITLE: Respond to Injured Person

JPM NUMBER: PBN JPM P028.014.EMR **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): PBN P028.014.EMR/ Direct medical assistance actions in accordance with EPIP 11.2

K/A NUMBERS: 2.4.38 **K/A VALUE:** 4.4

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
Simulator: Other:
Lab:

Time for Completion: 20 Minutes Time Critical: NO

Alternate Path [NRC]: YES

Alternate Path [INPO]: YES

Developed by: <u>Alan Johnson</u>	_____ Instructor/Developer	_____ Date
Reviewed by: _____	_____ Instructor (Instructional Review)	_____ Date
Validated by: _____	_____ SME (Technical Review)	_____ Date
Approved by: _____	_____ Training Supervision	_____ Date
Approved by: _____	_____ Training Program Owner	_____ Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001} None

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

N/A

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

SETUP Instruction:

In blue ink, fill in EPIP 11.2 as follows:

- Circle/Slash all of sections 1.0 through 4.0.
- Circle, but do not slash 5.0, 5.1, and 5.1.1
- N/A 5.2 and 5.3.
- Circle/ Slash 5.4

Required Materials: EPIP 11.2, Medical Emergency, marked up as described above.
Telephone

General References: Emergency Telephone Directory (ETD) – If requested
EPIP 11.2, Medical Emergency

Task Standards: EPIP 11.2, section 5.1 and Attachment A for Medical Emergency completed.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Unit 1 is in Mode 4.
- It is the current date and time.
- Radiography was in progress in Pipeway 2, 8-foot level.
- While the radiographer was exiting the Pipeway with the radiography camera, the camera broke open and the radiographer was injured trying to leave the area.
- The RP Technician, supporting radiography reports the following:
 - The radiographer is unconscious and bleeding from a head injury.
 - The radiographer appears to be contaminated, as well as injured.
 - The RP Tech has pulled the radiographer to a low dose area outside the entrance to Pipeway 2, and is applying pressure to the head wound.
 - Dose rate at the radiography camera is 500 Rem/hr.
- The Shift Manager has declared an ALERT Emergency, RA3.2, due to the dose rate in the area impeding normal access inside the Pipeway.
- The ERO has been notified but not yet activated.
- The Shift Manager started filling out EPIP 11.2, Medical Emergency, but stopped due to the EAL declaration.

INITIATING CUES (IF APPLICABLE):

- You are the OS1.
- The Shift Manager directs you to complete EPIP 11.2, Starting at Section 5.1 and Attachment A.
- The examiner will role-play any personnel that need to be contacted.
- Time compression may be used during this JPM.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	Step 5.1 <u>Serious Injury/Illness</u> 5.1.1 Attachment A is performed
Standard:	Examinee notes that this step is circled but not slashed and proceeds to Attachment A.
Evaluator Note:	Procedure steps 5.1.1 through 5.1.6 may be completed at any point while completing Attachment A. Attachment A starts at Performance step 7.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 2 Critical N	5.1.2 Immediate care is provided.
Standard:	Examinee circle and slash this step since the RP Tech is applying pressure to the wound.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 3 Critical N	5.1.3 An Ambulance is obtained for transport.
Standard:	Examinee circle and slash this step after the ambulance is called.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 4 Critical N	5.1.4 Radiological monitoring and control is implemented.
Standard:	Examinee circle and slash this step when implemented.
Evaluator Note:	This step may be considered complete since the RP Tech assigned to radiography is at the scene.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 5 Critical N	5.1.5 Security is informed of the event.
Standard:	Examinee circle and slash this step after Security is notified
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 6 Critical N	5.1.6 Aurora Medical Center – Manitowoc County is informed and kept apprised of the event.
Standard:	Examinee circle and slash this step after Aurora Medical Center – Manitowoc County
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 7 Critical <u>N</u>	Attachment A Initiator Name, Title, and date
Standard:	Examinee signs for initiator, enters OS1 or something similar for Title and enters today's date.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 8 Critical <u>Y</u>	Attachment A 1.0 Contact First Responders Group/ Occupational Health for assistance at the scene: 1.1 Make a Gaitronics announcement of Medical Emergency
Standard:	Examinee makes a Gaitronics announcement of a medical emergency at the 8 foot of Pipeway 2. The exact wording is not critical as long as the message gets responders to the area of the 8 foot of Pipeway 2.
Evaluator Note:	The examinee may repeat the announcement.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 9 Critical <u>Y</u>	Attachment A 1.0 Contact First Responders Group/ Occupational Health for assistance at the scene: 1.2 Make a PA system announcement in the Training/NES building
Standard:	Examinee uses a telephone to dial 7950, press 0, and read “Medical Emergency at the entrance to Pipeway 2” and then hangs up.
Evaluator Cue:	Have the examinee simulate entering the numbers on the telephone.
Evaluator Note:	Hanging up the phone is not required for critical step to be SAT.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 10 Critical <u>N</u>	Attachment A 1.0 Contact First Responders Group/ Occupational Health for assistance at the scene: 1.3 Send a page to First Responders Group
Standard:	N/A
Evaluator Cue:	<u>INFORM</u> the examinee that the EP AO will send the page.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 11 Critical <u>Y</u>	Attachment A 2.0 Call Manitowoc County Joint Dispatch Center to request an ambulance, if needed
Standard:	Examinee simulates calling 9-911 to request an ambulance.
Evaluator Cue:	Have the examinee simulate entering the numbers in the telephone.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 12 Critical <u>Y</u>	Attachment A 2.0 Call Manitowoc County Joint Dispatch Center to request an ambulance, if needed and provide the following information:
Standard:	Examinee enters the following into the blanks and informs the county dispatcher: 2.1 One (or 1) 2.2 Head Injury, Laceration (or bleeding), Unconscious 2.3 Circles "Contaminated"
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 13 Critical <u>N</u>	Attachment A 2.0 Call Manitowoc County Joint Dispatch Center to request an ambulance, if needed and provide the following information:
Standard:	2.4 Examinee refer to Table A for FAQs 2.5 Examinee monitors Fire Brigade Channel 1 communications at the base station.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 14 Critical <u>N</u>	Attachment A 3.0 Assign one person to report as scene leader
Standard:	Examinee may call for a relief or Work Control OS to report to the scene with a portable radio for command and control and to keep the Control Room advised of the event.
Evaluator Cue:	Acknowledge the order as the person contacted and inform the examinee you are on your way to the scene.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 15 Critical <u>N</u>	Attachment A 4.0 Page for Technical Rescue
Standard:	The examinee N/As this step since technical rescue is not needed (in the initial conditions).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 16 Critical <u>N</u>	Attachment A 5.0 Ensure injured person is receiving first aid by two trained individuals
Standard:	The examinee acknowledges the reports from RP and Site Medical.
Evaluator Cue:	<p><u>WHEN</u> the examinee has reaches step 5.0 of Attachment A, <u>INFORM</u> the examinee that 10 minutes has elapsed since the rescue team was dispatched and the team of four first responders, and the site nurse, have transported the radiographer to the RP Station.</p> <p><u>INFORM</u> the examinee that RP has called to say the radiographer is contaminated and will need to be transported to the hospital that way.</p> <p><u>INFORM</u> the examinee that site nurse suggests the ambulance transport the radiographer to Aurora Medical Center – Manitowoc County in order to get quicker treatment of the head wound.</p>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 17 Critical <u>N</u>	Attachment A 6.0 Notify Security
Standard:	The examinee simulates calling Security (phone, Gaitronics or radio) to inform them of the event, that the site nurse is responding and that an ambulance has been requested.
Evaluator Cue:	Acknowledge reports.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 18 Critical <u>N</u>	Attachment A 7.0 Assign Radiation Protection personnel to implement Attachment B
Standard:	The examinee will notify RP to implement Attachment B
Evaluator Cue:	Acknowledge the order. INFORM the examinee that the ambulance is on-site, outside the South Service Building doors.
Evaluator Note:	The examinee may use one of various methods to contact the RP Tech, including Gaitronics, telephone, or via the scene leader.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 19 Critical <u>N</u>	Attachment A 8.0 <u>IF</u> the injured person will be transported contaminated, <u>THEN</u> discuss with the ambulance staff to determine which hospital they will transport the patient.
Standard:	The examinee determines that Aurora Medical Center – Manitowoc County is the desired location, due to Site Medical recommendation
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 20 Critical <u>Y</u>	Attachment A 8.1 <u>IF</u> the patient will be taken to Aurora Medical Center – Manitowoc County, <u>THEN</u> contact them at 794-5000 and inform them to implement their Mass Casualty External Procedure and update the hospital on the patient’s radiological status.
Standard:	The examinee simulates calling 794-5000, informs the hospital that the radiographer is contaminated and to implement their Mass Casualty External Procedure.
Evaluator Cue:	Acknowledge the report.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 21 Critical <u>N</u>	Attachment A 8.2 <u>IF</u> the patient will be taken to Aurora BayCare Medical Center, <u>THEN</u> contact them at 920-288-4068 or 920-288-4070 and inform them to implement their Radiological Disaster Plan and update the hospital on the patient's radiological status.
Standard:	The examinee should N/A this step.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 22 Critical <u>N</u>	Attachment A 9.0 <u>IF</u> the injured person/s condition changes (medical or radiological) after the initial 911 call, <u>THEN</u> contact Aurora Medical Center – Manitowoc County at 794-5000 and provide update.
Standard:	The examinee should leave this step circled and not slashed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 23 Critical <u>Y</u>	10.0 IF the injured person is contaminated, THEN notify Manitowoc County Joint Dispatch Center and request the ambulance remain at the hospital until Radiation Protection personnel release the vehicle and its equipment.
Standard:	The examinee simulates calling or directs an individual to call the Manitowoc County Joint Dispatch Center and request the ambulance remain at the hospital until Radiation Protection personnel release the vehicle and its equipment.
Evaluator Cue:	Acknowledge the request. INFORM the examinee that the ambulance has left the site.
Evaluator Note:	The Joint Dispatch Center phone number is in ETD 02, 6.2, as Manitowoc Co. Dispatch. The examinee may also use 9-911.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues: When Performance Step 23 is completed, **INFORM** the examinee that the **JPM** is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 is in Mode 4.
- It is the current date and time.
- Radiography was in progress in Pipeway 2, 8-foot level.
- While the radiographer was exiting the Pipeway with the radiography camera, the camera broke open and the radiographer was injured trying to leave the area.
- The RP Technician, supporting radiography reports the following:
 - The radiographer is unconscious and bleeding from a head injury.
 - The radiographer appears to be contaminated, as well as injured.
 - The RP Tech has pulled the radiographer to a low dose area outside the entrance to Pipeway 2, and is applying pressure to the head wound.
 - Dose rate at the radiography camera is 500 Rem/hr.
- The Shift Manager has declared an ALERT Emergency, RA3.2, due to the dose rate in the area impeding normal access inside the Pipeway.
- The ERO has been notified but not yet activated.
- The Shift Manager started filling out EPIP 11.2, Medical Emergency, but stopped due to the EAL declaration.

INITIATING CUES (IF APPLICABLE):

- You are the OS1.
- The Shift Manager directs you to complete EPIP 11.2, Starting at Section 5.1 and Attachment A.
- The examiner will role-play any personnel that need to be contacted.
- Time compression may be used during this JPM.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: PERFORM ROD EXERCISE TEST

JPM NUMBER: PBN JPM P001.020.COT REV. 7

TASK NUMBER(S) / TASK TITLE(S): PBN P001.020.COT / Perform Control Rod Exercises

K/A NUMBERS:	001.K4.02	K/A VALUE:	3.8 / 3.8
	001.A3.05		3.5 / 3.5
	001.A4.03		4.0 / 3.7

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:



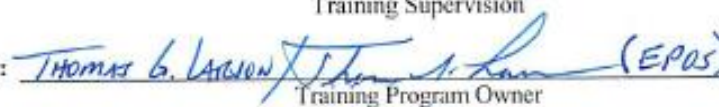
EVALUATION LOCATION:

In-Plant:	<input type="checkbox"/>	Control Room:	<input type="checkbox"/>
Simulator:	<input checked="" type="checkbox"/>	Other:	<input type="checkbox"/>
Lab:	<input type="checkbox"/>		

Time for Completion: 20 Minutes Time Critical: No

Alternate Path [NRC]: Yes

Alternate Path [INPO]: Yes

Developed by:		<u>5/25/17</u>
	Instructor/Developer	Date
Reviewed by:		<u>5/25/17</u>
	Instructor (Instructional Review)	Date
Validated by:		<u>5/25/17</u>
	SME (Technical Review)	Date
Approved by:		<u>5/25/17</u>
	Training Supervision	Date
Approved by:	 (EPOS)	<u>5/25/17</u>
	Training Program Owner	Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**PBN JPM P001.020.COT, PERFORM ROD EXERCISE TEST,
REV. 7**

JPM
Page 3 of 18

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0-4	See historical records.				
Rev. 5	Updated for the 2014 operational exam.				
Rev. 6	Updated for the 2016 operational exam.				
Rev. 7	Updated for the 2017 NRC ILT Exam.				

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

1. Initialize into IC-2.
2. Load the following codes and insert trigger 1.
3. Verify Rod Counter readings are at 228 (225)* for all banks except CB D which should be set at 220.
4. Walk down the control boards to ensure plant conditions accurately reflect the JPM's initial conditions.
5. Make any necessary adjustments or corrections.
6. Display PPCS page 2121 (Rod Positions) on 1C20 PPCS monitor.
7. Save to an IC for multiple uses (if necessary).

*Consult STPT 5.1 for current Unit 1 Cycle for ARO position.

SIMULATOR MALFUNCTIONS:

- None

SIMULATOR OVERRIDES:

- None

SIMULATOR REMOTE FUNCTIONS:

Setup:								
MALFUNCTION No.	MALFUNCTION TITLE	DELAY	RAMP	ET	DELETE IN	INITIAL VALUE	FINAL VALUE	NOTES
LOA1CRF003	1-CR-RESET BANK OVERLAP COUNTER RESET	00:00:00	00:00:00	1	00:00:00	595	594	PRELOAD

- Required Materials:**
1. TS-5, Rod Exercise Test Unit 1
 2. REI 7.0, Control Rod Position Determination

- General References:**
1. TS-5, Rod Exercise Test Unit 1
 2. REI 7.0, Control Rod Position Determination

Task Standards: Bank D rods have been exercised, bank overlap counter discrepancy corrected and bank D rods returned to their original position.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are CO3.
- Unit 1 is at 100% power, steady state Xenon.

INITIATING CUES (IF APPLICABLE):

- The SRO has directed you to perform TS-5, Rod Exercise Test Unit 1.
- The pre-job brief has been completed.
- An AO is standing by in the Unit 1 Rod Drive MG Set Room to assist in the performance of the test.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	5.1 RECORD the following indications: 5.1.1 RDC-LOGIC Cabinet (Key #21): <ul style="list-style-type: none"> • Bank Overlap Counter reading
Standard:	The examinee contacts Unit 1 Turbine Hall Operator and obtains the Bank Overlap Counter reading.
Evaluator Note:	<ul style="list-style-type: none"> • Counter reading is in the rod control cabinet in the Rod Drive MG Set Room.
Evaluator Cue:	AO reports that the Bank Overlap Counter is reading 594.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 2 Critical N	5.1.2 Status of the Group Select Lights for the following power cabinets: <ul style="list-style-type: none"> • 1AC – Group Select Light “C” • 2AC – Group Select Light “C” • 1BD – Group Select Light “B”
Standard:	The examinee contacts the U1 TH Operator and obtains the status of the lights.
Evaluator Note:	Light status is found on the power cabinets in the RD MG Set Room.
Evaluator Cue:	AO Reports “C” lights lit for 1AC and 2AC and “B” light lit for 1BD.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 3 Critical N	5.1.3 1C04, Rod Bank Group (Demand) counters: <ul style="list-style-type: none"> • Control Bank A Group 1 • Etc.
Standard:	The examinee correctly records Control and Shutdown Bank Group Demand counter readings.
Evaluator Note:	All Bank Demand counters should indicate 228 (225) steps except Bank D which should indicate 220 steps.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 4 Critical N	5.1.4 1C-120A, RPI #1, Bank Position Display <ul style="list-style-type: none"> • Bank A • Bank B • Bank C • Bank D
Standard:	The examinee correctly records bank positions on 1C-120A.
Evaluator Note:	<ul style="list-style-type: none"> • Bank Positions are indicated behind the Main Control Boards on 1C-120A.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 5 Critical N	5.2 COMPARE the Bank Overlap Counter reading to Control Bank position (Step Counters) in REI 7.0, Control Rod Position Determination.
Standard:	The examinee obtains a copy of REI 7.0 and compares the Control Bank position with the Bank Overlap Counter and determines that there is disagreement between the two.
Evaluator Note:	<ul style="list-style-type: none"> • The examinee should determine that the Control Bank position and Bank Overlap Counter do NOT agree. • With Control Bank D at 220 steps, the Bank Overlap Counter should read 595.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 6 Critical Y	5.3 IF the Control Bank Position AND Bank Overlap Counter reading do NOT agree, THEN PERFORM Attachment A.
Standard:	The examinee determines the readings do not agree and goes to Attachment A.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 7 Critical Y	ATTACHMENT A 1.0 PLACE Rod control selector to Manual.
Standard:	The examinee places Rod control selector switch to the Manual position.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 8 Critical Y	2.0 STEP Control Bank D OUT 1 step from its current position.
Standard:	The examinee steps Control Bank D out 1 step.
Evaluator Cue:	
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 9 Critical Y	3.0 BUMP STEP Control Bank D IN one step.
Standard:	The examinee bumps Control Bank D in one step.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 10 Critical N	4.0 CHECK card A105 has BOTTOM LIGHT ILLUMINATED (top row, 3 rd card from the left in the Rod Control Logic Cabinet directly above the Bank Overlap Counter).
Standard:	The examinee contacts the Auxiliary Operator in the Rod Drive Room and obtains status of card A105 bottom light.
Evaluator Note:	Based on the report from the AO, steps 5.0 and 6.0 of Attachment A will be N/A
Evaluator Cue:	The AO reports card A105 has the bottom light illuminated.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 11 Critical N	7.0 Compare the Bank D Demand Position (Step Counters) to the Bank Overlap Counter.
Standard:	The examinee contacts the AO for the Bank Overlap Counter reading and compares the Step Counter for Bank D to the obtained Bank Overlap Counter reading.
Evaluator Cue:	AO reports the Bank Overlap Counter reads 595.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 12 Critical N	8.0 <u>IF</u> the Control Bank D Position (Step Counters) and the Bank Overlap Counter do not agree, <u>THEN</u> adjust the Bank Overlap Counter at RDC Logic Cabinet by depressing the +1 or -1 button as necessary until the proper value correlating to the Control Rod Bank D Position (Step Counters).
Standard:	The examinee determines step is not required to be performed and N/A's the step.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 13 Critical N	9.0 Return the Control Rod selector switch to AUTO.
Standard:	The examinee places Control Rod selector switch to AUTO.
Evaluator Note:	When examinee asks for an Independent Verification of this step, initial the step for IV.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 14 Critical N	5.4 IF printed PPCS data is required, THEN OBTAIN a screen print of PPCS display page 2121 prior to and following movement of each rod group.
Standard:	The examinee requests whether PPCS printed data is required.
Evaluator Note:	The examinee may wish to print the data, inform him/her that it is not required.
Evaluator Cue:	Printed PPCS data is not required.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 15 Critical Y	5.5 IF Control Bank D is NOT fully inserted, THEN PERFORM the following exercise test: 5.5.1 PLACE the Control Rod Bank Selector switch to the CBD position.
Standard:	The examinee places the Control Rod Bank Selector switch to the CBD position.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 16 Critical N	5.5.2 PERFORM the following rod step sequence twice: a. STEP Control Bank D OUT 1 step from its current position.
Standard:	The examinee steps Control Bank D out 1 step.
Evaluator Note:	This step and the next will be repeated.
Evaluator Cue:	
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 17 Critical N	b. BUMP STEP Control Bank D IN one step.
Standard:	The examinee bumps Control Bank D in one step.
Evaluator Note:	This step and the previous will be repeated.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 18 Critical Y	5.5.3 INSERT OR WITHDRAW Control Bank D at least 10 steps but NO more than 20 steps while OBSERVING movement on individual Control Bank D rods.
Standard:	The examinee inserts Control Bank D at least 10 but not more than 20 steps.
Evaluator Note:	The examinee must recognize that there is not enough “room” to withdraw the rods 10 steps and must therefore insert the rods the required distance.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 19 Critical Y	5.5.4 WITHDRAW <u>OR</u> INSERT Control Bank D to the position recorded in Step 5.1.3
Standard:	The examinee withdraws Control Bank D to its original position recorded in Step 5.1.3.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 20 Critical Y	5.5.5 WITHDRAW Control Bank D one step.
Standard:	The examinee withdraws Control Bank D one step.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 21 Critical Y	5.5.6 INSERT Control Bank D one step.
Standard:	The examinee inserts Control Bank D one step.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 22 Critical N	5.5.7 Ensure Control Bank D is in the position recorded in Step 5.1.3.
Standard:	The examinee ensures the Control Bank D Group Demand Counter reading matches the number obtained in step 5.1.3.
Evaluator Note:	CB D Demand Counter should read 220.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____



Examinee: _____ Evaluator: _____

RO SRO STA Non-Lic SRO CERT Date: _____

LOIT RO LOIT SRO

PERFORMANCE RESULTS: SAT: UNSAT:

Remediation required: YES NO

COMMENTS/FEEDBACK: (Comments shall be made for any steps graded unsatisfactory).

EXAMINER NOTE: ENSURE ALL EXAM MATERIAL IS COLLECTED AND PROCEDURES CLEANED, AS APPROPRIATE.

EVALUATOR'S SIGNATURE: _____

NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.

TURNOVER SHEET**INITIAL CONDITIONS:**

- You are CO3.
- Unit 1 is at 100% power, steady state Xenon.

INITIATING CUES (IF APPLICABLE):

- The SRO has directed you to perform TS-5, Rod Exercise Test Unit 1.
- The pre-job brief has been completed.
- An AO is standing by in the Unit 1 Rod Drive MG Set Room to assist in the performance of the test.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

A




Scenario Validation Checklist

Exercise Guide or JPM Number: PBN JPM P001.020.COT		Revision No.: 6
Simulator Configuration/Load: 12/22/2016		
IC No. / Description: IC-30		
1.	The Simulator IC used is in agreement with the IC described in the simulator training material and reference plant with respect to reactor status, plant configuration and system operation.	<u> <i>X</i> </u> Sim Developer/Instructor
2.	The Simulator Training Developer and Simulator Support Staff agree that revalidation is not required. <i>(N/A if validation to be performed)</i>	<u> N/A </u> Sim Trng Developer <u> N/A </u> Sim Support Staff
3.	In the Evaluation section below, list the steps of the scenario that are to be validated. If all steps are validated then write "All steps validated."	<u> <i>X</i> </u> Sim Developer/Instructor
4.	Simulator response permitted use of the reference plant's procedures. The scenario was completed without procedural exceptions, simulator performance exceptions, or deviation from the scenario sequence.	<u> <i>X</i> </u> Sim Developer/Instructor
5.	The simulator was operated in real time.	<u> <i>X</i> </u> Sim Developer/Instructor
6.	The scenario steps/events demonstrated expected plant response and were initiated in the order given in the simulator training material.	<u> <i>X</i> </u> Sim Developer/Instructor
7.	Simulator demonstrated expected plant response to operator input and to normal, transient and accident conditions to which the simulator has been designed to respond. Complete next page to evaluate	<u> <i>X</i> </u> Sim Developer/Instructor
8.	Reference plant design limitations were not exceeded.	<u> <i>X</i> </u> Sim Developer/Instructor
9.	Each scenario malfunction demonstrated expected response to its initiating cause.	<u> N/A </u> Sim Developer/Instructor
10.	All ARs / SWRs initiated per TR-AA-221 as a result of this validation are listed in the Evaluation section below <u> <i>NONE</i> </u>	<u> <i>X</i> </u> Sim Developer/Instructor
11.	Simulator performance supported scenario objectives.	<u> <i>X</i> </u> Sim Developer/Instructor
Evaluation: <u>All steps validated.</u> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		



Scenario Validation Checklist

Exercise Guide or JPM Number: <u>PBN JPM P001.020.COT</u>		Revision No.: 6		
Parameter		Expected Response		
		Yes	No	N/A
1.	Reactor power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Generator gross MWe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Total steam flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Total feedwater flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Containment temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Containment pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Parameters for PWR only			
a.	RCS T _{avg}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	RCS T _{hot}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	RCS T _{cold}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Pressurizer pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Pressurizer level	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Pressurizer temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Steam generator pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Steam generator level	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Steam generator feedwater flows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	Steam generator steam flows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k.	RCS loop flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l.	Pressurizer relief valve flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m.	Pressurizer surge line temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n.	Subcooling margin monitor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Parameters for BWR only			
a.	Reactor narrow range pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Reactor wide range pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Total core flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Reactor water level narrow range	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Reactor water level wide range	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Individual recirculation loop flows	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Total recirculation loop flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h.	Individual calibrated jet pump flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i.	Turbine steam flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j.	Suppression pool temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
k.	Drywell temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
l.	Drywell pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
m.	Total low pressure injection flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
n.	Total high pressure injection flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o.	Total low pressure core spray flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Simulator Validation Results:		Satisfactory <input checked="" type="checkbox"/>	Unsatisfactory <input type="checkbox"/>	
Completed by:	 John Rogers Simulator Training Developer / Instructor	Date:		2/28/17

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**PBN JPM P004.018.COT, SHIFT CHARGING PUMP
SUCTION BETWEEN THE VCT / RWST, REV. 2**

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	See microfilm.				
Rev. 1	Updated to reflect current plant procedures.				
Rev. 2	Updated to add an event file in order to give examinee the correct plant indications. Made amount of boron required generic to Rod 1.3 so it can be used for any power conditions and core life.				

SIMULATOR SET-UP:

Simulator Setup Instructions:

- Load any power IC
- Start the Schedule file.
- Ensure Event file opens
- Insert 1W-3A/B, Control Rod Shroud Fans malfunctions and start the simulation.
- Perform the first 3 steps of AOP-17A Unit 1, Rapid Power Reduction.
- Walk down the control boards to ensure plant conditions accurately reflect the JPM's initial conditions.
- Save to an IC for multiple use as required.

SIMULATOR MALFUNCTIONS:

MALFUNCTION No.	MALFUNCTION TITLE	DELAY	DELETE IN	INITIAL VALUE	FINAL VALUE	NOTES
BKR1CNM017	1-B523A W-3A CTL ROD SHROUD FAN CKTBKR	00:00:00	00:00:00	N/A	TRIP	PRELOAD
BKR1CNM018	1-B526A W-3B CTL ROD SHROUD FAN CKTBKR	00:00:00	00:00:00	N/A	Fail Cntrl Fuse	PRELOAD
Build event file {RMW Switch out of Auto[X14I162A==0] trigger 1}						
OVR-CVC-008A	MU CONT STOP POS REACTOR MAKE-UP CONTROL SWITCH	00:00:00	00:00:00	False	TRUE	Trigger 1

Required Materials: AOP-17A Unit 1, Rapid Power Reduction
Reactivity Briefing Sheet for applicable IC.

General References: AOP-17A Unit 1, Rapid Power Reduction
ARB 1C04 1C 2-9, Containment Vent System Air Flow Low

Task Standards: Commence boration to target load by aligning charging pump suction to the RWST in accordance with AOP-17A Unit 1, Rapid Power Reduction, Step 4 RNO.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are the Unit 1 Control Operator.
- Unit 1 is at MOL.
- RCS boron concentration is per the reactivity briefing sheet.
- 1W-3B, Control Rod Shroud Fan is out-of-service (motor is seized).
- The running 1W-3A, Control rod Shroud Fan has just tripped and cannot be restarted.
- The crew has begun setting up to ramp the unit offline at 1%/min in accordance with ARB 1C04 1C 2-9, Containment Vent System Air Flow Low / AOP-17A Unit 1, Rapid Power Reduction.

INITIATING CUES:

- OS1 has directed you to commence boration in accordance with Step 4 of AOP-17A Unit 1, Rapid Power Reduction.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	4 Commence Boration As Necessary To Target Load a. Set boric acid flow totalizer to desired quantity • 1YIC-110
Standard:	The examinee sets the boric acid flow totalizer to desired quantity on 1YIC-110.
Evaluator Note:	For each 1% power decrease (boration AND rod movement) reference ROD 1.3 for requirements. Satisfactory step performance is based on sound reasoning for a quantity entered.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 2 Critical N	4 Commence Boration As Necessary To Target Load b. Set boric acid flow controller to desired flowrate • 1HC-110
Standard:	The examinee sets the boric acid flow controller to desired flowrate on 1HC-110.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 3 Critical N	4 Commence Boration As Necessary To Target Load c. If desired, Start second boric acid transfer pump
Standard:	The examinee may start a second boric acid transfer pump if desired.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 4 Critical N	4 Commence Boration As Necessary To Target Load d. Place Reactor Makeup Mode Selector Switch to Borate.
Standard:	The examinee places the Reactor Makeup Mode Selector Switch to Borate.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 5 Critical N	4 Commence Boration As Necessary To Target Load e. Place Reactor Makeup Control Switch to Start.
Standard:	The examinee places the Reactor Makeup Control Switch to Start, determines that the system did respond as expected and proceeds to <u>Step 4 RNO</u> .
Evaluator Note:	IF the examinee reports that the Reactor Makeup Control System failed to start borating, THEN provide the Evaluator Cue.
Evaluator Cue:	OS1 acknowledges your report and directs you to continue on by performing the RNO actions.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	ALTERNATE PATH

Performance Step: 6 Critical Y	4 RNO Align charging pump suction to RWST if required: 1. Open RWST to charging pump suction MOV. • 1CV-112B
Standard:	The examinee positions the control switch for 1CV-112B, RWST to Charging Pump Suction MOV to OPEN.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 7 Critical Y	4 RNO Align charging pump suction to RWST if required: 1. Shut VCT to outlet charging pump suction MOV. • 1CV-112C
Standard:	The examinee positions the control switch for 1CV-112C, VCT Outlet to Charging Pump Suction to CLOSE.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 8 Critical N	Report that charging pump suction is aligned to the RWST
Standard:	The examinee reports that <u>Step 4 RNO</u> of AOP-17A Unit 1, Rapid Power Reduction is complete and charging is aligned to the RWST.
Evaluator Cue:	OS1 acknowledges your report.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: The JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- You are the Unit 1 Control Operator.
- Unit 1 is at MOL.
- RCS boron concentration is per the reactivity briefing sheet.
- 1W-3B, Control Rod Shroud Fan is out-of-service (motor is seized).
- The running 1W-3A, Control rod Shroud Fan has just tripped and cannot be restarted.
- The crew has begun setting up to ramp the unit offline at 1%/min in accordance with ARB 1C04 1C 2-9, Containment Vent System Air Flow Low / AOP-17A Unit 1, Rapid Power Reduction.

INITIATING CUES:

- OS1 has directed you to commence boration in accordance with Step 4 of AOP-17A Unit 1, Rapid Power Reduction.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: Adjust Accumulator Pressure

JPM NUMBER: PBN JPM P006.004a.COT **REV. 8**

TASK NUMBER(S) / TASK TITLE(S): PBN P006.004.COT / Adjust Accumulator Pressure

K/A NUMBERS: 006 A1.13 **K/A VALUE:** (3.5 / 3.7)

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
 Simulator: Other:
 Lab:

Time for Completion: 20 Minutes **Time Critical:** NO

Alternate Path [NRC]: NO
 Alternate Path [INPO]: NO

Developed by:	<u>Andrew Zommers</u> Instructor/Developer	<u>9/5/19</u> Date
Reviewed by:	<u>Jeffrey A. Hance</u> Instructor (Instructional Review)	<u>9/5/19</u> Date
Validated by:	<u>[Signature]</u> SME (Technical Review)	<u>9/10/19</u> Date
Approved by:	<u>Andrew Fahnestock</u> Training Supervision	<u>9/11/19</u> Date
Approved by:	<u>Robert Higgins</u> Training Program Owner	<u>9/24/19</u> Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**PBN JPM P006.004a.COT, Adjust Accumulator Pressure,
Rev. 8**

JPM
Page 3 of 12

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0-4	See microfilm				
Rev. 5	Updated JPM to reflect most current JPM template and procedure revision.				
Rev. 6	Updated JPM to reflect most current JPM template and procedure revision.				
Rev. 7	Updated for the 2015 Operational Exam and to reflect most current JPM template.				
Rev. 8	Updated for 2019 Operational Exam due to procedure step changes as well as new template.				
Chg. 1	Removed evaluator cue in performance step 1	Not needed for performance of the step	N/A		

SIMULATOR SET-UP:

SIMULATOR SETUP INSTRUCTIONS:

1. Load at-power IC
2. Add nitrogen to 1T-34B to raise pressure to 780 PSIG
3. Snap IC for multiple use as needed.

SIMULATOR MALFUNCTIONS:

None

SIMULATOR OVERRIDES:

None

SIMULATOR REMOTE FUNCTIONS:

None

Required Materials: OI 100 Unit 1, Adjusting SI Accumulator Level and Pressure

General References: OI 100 Unit 1, Adjusting SI Accumulator Level and Pressure

Task Standards: Accumulator 1T-34B pressure lowered without receiving accumulator low pressure alarm.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Unit 1 is at 100% power.
- Accumulator 1T-34B pressure is 780 psig.
- No personnel are inside Unit 1 containment.

INITIATING CUES:

- The OS1 directs you to lower pressure in accumulator 1T-34B by 40 PSI by venting to containment IAW OI-100, Adjusting SI Accumulator Level and Pressure, section 5.5.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	5.5.1 PERFORM the following as applicable: b. <u>IF</u> venting 1T-34B Safety Injection Accumulator, <u>THEN</u> COMPLETE Attachment B, Step 1.0.
Standard:	The examinee completes Attachment B, Steps 1.0.
Evaluator Cue:	None
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 2 Critical N	5.5.2 <u>IF</u> Containment is occupied, <u>THEN</u> PERFORM the following:
Standard:	The examinee verifies this step marked as NA and proceeds to step 5.5.3.
Evaluator Note:	If asked, containment is not occupied as noted on the turnover.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 3 Critical N	5.5.3 <u>IF</u> venting IT-34A, Safety Injection Accumulator, <u>THEN</u> PERFORM the following:
Standard:	The examinee verifies this step marked as NA and proceeds to step 5.5.4.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 4 Critical Y	5.5.4.a <u>IF</u> venting 1T-34B, Safety Injection Accumulator, <u>THEN</u> PERFORM the following: a. SET 1HIC-957, T-34A/B SI Accumulator Nitrogen Supply Line Vent HIC, to 20-30% OPEN.
Standard:	The examinee sets 1HIC-957, T-34A/B SI Accumulator Nitrogen Supply Line Vent HIC, to 20-30% OPEN.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 5 Critical Y	5.5.4.b OPEN 1SI-834B, T-34B SI Accumulator Nitrogen Inlet. (C01R)
Standard:	The examinee repositions the controls switch for 1SI-834B, T-34B SI Accumulator Nitrogen Inlet to OPEN.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 6 Critical Y	5.5.4.c VENT accumulator to desired pressure as indicated on the following indicators: <ul style="list-style-type: none"> • 1PI-937, 1T-34B Accumulator Pressure Indicator • 1PI-936, 1T-34B Accumulator Pressure Indicator
Standard:	The examinee lowers 1T-34B, Safety Injection Accumulator pressure approximately 40 psig as indicated on 1PI-937, 1T-34B Accumulator Pressure Indicator and/or 1PI-936, 1T-34B Accumulator Pressure Indicators.
Evaluator Note:	If pressure drops below normal band, as indicated by receipt of low pressure alarm, this step is Unsat.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 7 Critical Y	5.5.4.d. WHEN desired pressure in accumulator is reached, THEN SHUT 1SI-834B.
Standard:	The examinee repositions the control switch for 1SI-834B, T-34B SI Accumulator Nitrogen Inlet to CLOSE and the valve shuts without receiving an accumulator low pressure alarm.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 8 Critical N	5.5.4.e SHUT 1HIC-957, T-34A/B SI Accum Nitrogen Supply Line Vent HIC.
Standard:	The examinee shuts 1HIC-957, T-34A/B SI Accum Nitrogen Supply Line Vent HIC.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 9 Critical N	5.5.4.f COMPLETE Step 4.0 and Step 6.0 Attachment B
Standard:	The examinee completes Attachment B, Steps 4.0 and 6.0.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 10 Critical N	5.5.4.g ENSURE accumulator level is between 10 to 45% as indicated on the following indicators: <ul style="list-style-type: none"> • 1LI-935, T-34B SI Accumulator Level Indicator • 1LI-934, T-34B SI Accumulator Level Indicator
Standard:	The examinee ensures accumulator is between 10 to 45% as indicated on 1LI-935, T-34B SI Accumulator Level Indicator and 1LI-934, T-34B SI Accumulator Level Indicator.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____



Performance Step: 11 Critical N	Inform OS that 1T-34B SI Accumulator pressure is lowered by approximately 40 psig.
Standard:	The examinee informs the OS that 1T-34B SI Accumulator pressure is lowered by approximately 40 psig.
Evaluator Cue:	The OS acknowledges your report.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: The JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 is at 100% power.
- Accumulator 1T-34B pressure is 780 psig.
- No personnel are inside Unit 1 containment.

INITIATING CUES:

- The OS1 directs you to lower pressure in accumulator 1T-34B by 40 PSI by venting to containment IAW OI-100, Adjusting SI Accumulator Level and Pressure, section 5.5.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: STROKE OPEN TEST 1SI-852A, LOW HEAD SI CORE DELUGE

JPM NUMBER: PBN JPM P005.012.COT **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): P005.012.COT / Perform RHR System IT

K/A NUMBERS: 005 A1.07 **K/A VALUE:** 2.5 / 3.1*

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____


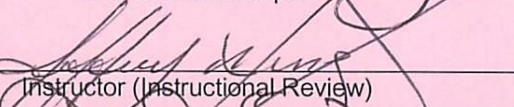

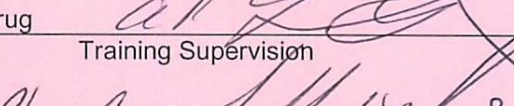
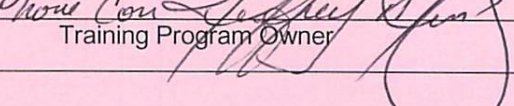
APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
 Simulator: Other:
 Lab:

Time for Completion: 15 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

Developed by: <u>Andrew Zommers</u>		<u>11/11/19</u>
	Instructor/Developer	Date
Reviewed by: <u>Jeffrey A. Hinze</u>		<u>11/11/19</u>
	Instructor (Instructional Review)	Date
Validated by: <u>Andrew Zommers</u>		<u>11/11/19</u>
	SME (Technical Review)	Date
Approved by: <u>Andrew Fahrenkrug</u>		<u>11/12/19</u>
	Training Supervision	Date
Approved by: <u>Joe Krear</u>	<u>Per Phone Conv</u> 	<u>11/12/19</u>
	Training Program Owner	Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}

SIMULATOR SET-UP:

SIMULATOR SETUP INSTRUCTIONS:

1. Snap into any IC Modes 1 thru 3
2. Place 1P-10A RHR Pump in pullout
3. Ensure 1SI-852A is in the SHUT position
4. SAVE these conditions in an IC for multiple use.

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

Required Materials: Partial IT 03, Train A Low Head Safety Injection Pumps and Valves Train A Unit 1 to stroke test 1SI-852A Low Head Injection MOV
Stop Watch

General References: IT 03, Train A Low Head Safety Injection Pumps and Valves Train A Unit 1

Task Standards: Properly time and record partial stroke test of 1SI—852A Low Head SI Core Deluge Isolation per IT 03, Train A Low Head Safety Injection Pumps and Valves Train A Unit 1.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are CO3
- Unit 1 is operating at 100% power.
- The packing was adjusted on 1SI-852A SI Low Head Core Deluge Isolation.
- Post Maintenance Testing is required to restore 1SI-852A to an operable condition.

INITIATING CUES:

- OS1 directs you to perform a partial IT 03, Train A Low Head Safety Injection Pumps and Valves Train A Unit 1, a stroke test of 1SI-852A, Low Head SI Core Deluge Isolation starting at Step 5.4.1.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical Y	5.4.1 OPEN and TIME 1SI-852A, 1P-10A RHR Pump RV Injection MOV a. RECORD data on Attachment C
Standard:	Examinee will open 1SI-852A and record data in Attachment C.
Evaluator Note:	Any of the timing steps may be re-performed per Attachment H which allows recording of multiple strokes. Stroke time is from switch operation to valve indication of being open, only the red light lit.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 2 Critical <u>Y</u>	5.4.2 STROKE and TIME 1SI-852A, Low Head SI Core Deluge Isolation to the intermediate position a. RECORD data on Attachment C
Standard:	Examinee will go to intermediate on 1SI-852A and record data in Attachment C.
Evaluator Note:	The control switch for 1SI-852A, Low Head SI Core Deluge Isolation, is place to the CLOSED position and released. The switch is not to be held in the closed position. Stroke time is from switch actuation to amber intermediate light ON .
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 3 Critical <u>Y</u>	5.4.3 OPEN 1SI-852A, Low Head SI Core Deluge Isolation <i>(information only)</i> a. RECORD data on Attachment C
Standard:	Examinee will open 1SI-852A and record stroke time in Attachment C.
Evaluator Note:	Timing is information only; critical part of this step is to open 1SI-852A.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 4 Critical <u>Y</u>	5.4.4 SHUT and TIME 1SI-852A, 1P-10A RHR Pump RV Injection MOV <i>(information only)</i> a. RECORD data on Attachment C
Standard:	Examinee will shut 1SI-852A and record stroke time in Attachment C.
Evaluator Note:	The control switch for 1SI-852A, Low Head SI Core Deluge Isolation, is held closed until the red and amber indicating lamps are off. Timing is information only; critical part of this step is to close 1SI-852A.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 5 Critical <u>N</u>	5.4.5 COMPARE test data to Acceptance Criteria on Attachment C
Standard:	Examinee will compare test data obtained to acceptance criteria on Attachment C as SAT.
Evaluator Cue:	Examinee may request an SRO signature, provide cue signature provided for administrative purposes only.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 6 Critical Y	5.6.8 PLACE 1P-10A-CS, 1P-10A, Residual Heat Removal Pump Control Switch in AUTO
Standard:	Examinee places 1P-10A RHR Pump back in AUTO an requests and IV.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues: The JPM is complete

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET**INITIAL CONDITIONS:**

- You are CO3
- Unit 1 is operating at 100% power.
- The packing was adjusted on 1SI-852A SI Low Head Core Deluge Isolation.
- Post Maintenance Testing is required to restore 1SI-852A to an operable condition.

INITIATING CUES:

- OS1 directs you to perform a partial IT 03, Train A Low Head Safety Injection Pumps and Valves Train A Unit 1, a stroke test of 1SI-852A, Low Head SI Core Deluge Isolation starting at Step 5.4.1.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: Align Containment Spray Pump for Containment Sump Recirculation with Suction Supplied by the RHR Pump

JPM NUMBER: PBN JPM P000.055a.COT REV. 4

TASK NUMBER(S) / TASK TITLE(S): PBN P000.055.COT / Transfer to Sump Recirculation

K/A NUMBERS: 026 K4.01 **K/A VALUE:** 4.2 / 4.3
026 A4.01 4.5 / 4.3

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
Simulator: Other:
Lab:

Time for Completion: 20 Minutes Time Critical: Yes

Alternate Path [NRC]: Yes

Alternate Path [INPO]: Yes

Developed by:	Andrew Zommers 	9/5/19 Date
Reviewed by:	Jeffrey A. Hoge 	9/5/19 Date
Validated by:		9/10/19 Date
Approved by:	Andrew Fabreton 	9/11/19 Date
Approved by:	Sky Bryant 	9-16-19 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



**Align Containment Spray Pump for Containment Sump
Recirculation with Suction Supplied by the RHR Pump,
Rev. 4**

JPM
Page 4 of 15

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR #	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	New JPM				
Rev. 1	Updated for the 2014 operational exam.				
Rev. 2	Corrected typos.				
Rev. 3	Updated for the 2017 NRC ILT Audit Exam.				
Rev. 4	Updated for 2019 annual operating exam, step number changed in EOP network				

SIMULATOR SET-UP:

Simulator Setup Instructions:

- Load any full power IC with Unit 1 at 100% steady state condition.
- Start the simulator and Insert a LBLOCA on Unit 1.
- Complete EOP actions up to Step 31 of EOP-1.3, Transfer to Containment Sump Recirculation - Low Head Injection. The end result should be:
 - **Train B** of ECCS **ON** Sump Recirculation, **Train A** of ECCS - **READY** for Recirculation.
 - **RWST level is <17%**.
 - Both Containment Spray Pumps in PULL OUT.
- Set up a Schedule File with a CONDITIONAL MALFUNCTION to blow the fuse on 1SI-852B, Train B Core Deluge MOV when its control switch is taken to the SHUT position.
- Save IC for multiple uses.

SIMULATOR MALFUNCTIONS:

MALFUNCTION No.	MALFUNCTION TITLE	DELAY	RAMP	ET	DELETE IN	INITIAL VALUE	FINAL VALUE	NOTES
MAL1RCS001	DBA LOCA	00:00:00	-	1	00:00:00	-	HOT LEG A	PLE
VLV1SIS028	1-SI-852B CORE DELUGE STOP VLV	00:00:00	-	3 Cond.	00:00:00	-	Ctrl Fuse	PRELOAD Cond. = x01i281c == 1 (Inserts when 1SI-852B CS is taken to the CLOSE position)

SIMULATOR OVERRIDES:

- None

SIMULATOR REMOTE FUNCTIONS:

- None

Required Materials: EOP-1.3 Unit 1, Transfer to Containment Sump Recirculation - Low Head Injection Attachment B, Containment Spray Lineup for Sump Recirculation - Two Trains of RHR

General References: EOP-1.3 Unit 1, Transfer to Containment Sump Recirculation - Low Head Injection
BG-EOP-1.3, Transfer to Containment Sump Recirculation - Low Head Injection Background Document.
OM 4.3.8, Control of Time Critical Operator Actions, Attachment B-5, Establish Containment Spray on Recirculation within 20 minutes of Termination of Spray Injection.

Task Standards: The examinee aligns the Containment Spray system with 1P-14A, Spray Pump operating with its suction supplied from 1P-10A, RHR Pump and throttles Train B of RHR recirculation flow to as high as possible but less than 1550 gpm using 1RH-625, Train B RHR Heat Exchanger Outlet Flow Control Valve.

Time Critical:

The time from securing containment spray (JPM start time) to re-starting containment spray, in the recirculation mode, must NOT exceed **20 minutes**.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are the Balance of Plant Operator.
- A large break LOCA has occurred on Unit 1.
- EOP actions up to step 32, Align Containment Spray for Recirculation, of EOP-1.3, Transfer to Containment Sump Recirculation - Low Head Injection, are complete.
- BOTH trains of RHR are AVAILABLE for sump recirculation with Train B operating on recirc.
- Containment Spray Pumps have just been placed in PULL OUT per EOP-1.3 foldout page criteria.

INITIATING CUES:

- OS1 directs you to align Train A of Containment Spray for Sump Recirculation per EOP-1.3 Attachment B, Containment Spray Lineup for Sump Recirculation - Two Trains of RHR.

NOTE: THIS JPM IS TIME CRITICAL.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____ *Evaluator! - Ensure JPM Start Time is documented.*

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

EVALUATOR NOTE: *This JPM is Time Critical.
Ensure the JPM Start Time AND the Containment Spray Pump Start Time is documented.*

Performance Step: 1 Critical N	B1 Check If Containment Spray Should Be Aligned For Recirculation: a. RWST level - LESS THAN 17% b. One RHR train - AVAILABLE FOR CONTAINMENT SPRAY RECIRCULATION <ul style="list-style-type: none"> • RHR pump - ONE RUNNING ON RECIRCULATION • RHR pump - ONE <u>NOT</u> RUNNING AND AVAILABLE
Standard:	The examinee verifies: <ul style="list-style-type: none"> • RWST level is less than 17% • 'A' RHR train is available for Containment Spray Recirculation
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

<p>Performance Step: 2 Critical Y</p>	<p>B2 Verify Containment Spray Has Been Stopped:</p> <ul style="list-style-type: none"> a. Ensure containment spray signal - RESET b. Ensure both containment spray pumps - IN PULL OUT <ul style="list-style-type: none"> • 1P-14A • 1P-14B c. Ensure both containment spray pump RWST suction MOVs - SHUT <ul style="list-style-type: none"> • 1SI-870A • 1SI-870B d. Ensure both spray additive eductor suction valves - SHUT <ul style="list-style-type: none"> • 1SI-836A • 1SI-836B
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> a. Ensures the Containment Spray signal is RESET b. Verifies BOTH Unit 1 Containment Spray Pumps are in PULL OUT c. Shuts both 1SI-870A and 1SI-870B MOVs. (1SI-870A is CRITICAL) d. Ensures both 1SI-836A and 1SI-836B, spray eductor valves are shut
<p>Evaluator Note:</p>	<p>Steps B2 a, b, and d are NOT critical.</p>
<p>Performance:</p>	<p>SATISFACTORY ____ UNSATISFACTORY ____</p>
<p>Comments:</p>	<hr/>

<p>Performance Step: 3 Critical Y</p>	<p>B3 Determine Train Of Containment Spray To Place On Recirculation:</p> <ul style="list-style-type: none"> a. Check containment spray train - SAME TRAIN AVAILABLE AS AVAILABLE RHR PUMP TRAIN b. Ensure containment spray discharge valves for selected train aligned as follows: <ul style="list-style-type: none"> o Train A <ul style="list-style-type: none"> • 1SI-860A - SHUT • 1SI-860B - OPEN o Train B <ul style="list-style-type: none"> • 1SI-860C - SHUT • 1SI-860D - OPEN
<p>Standard:</p>	<p>The examinee:</p> <ul style="list-style-type: none"> a. Verifies Train A of containment spray is AVAILABLE b. Aligns Train A spray discharge MOVs (selected Train): <ul style="list-style-type: none"> • 1SI-860A - SHUT (CRITICAL) • 1SI-860B - OPEN
<p>Evaluator Note:</p>	<p>Step B3 a. is NOT critical.</p>
<p>Performance:</p>	<p>SATISFACTORY ____ UNSATISFACTORY ____</p>
<p>Comments:</p>	<hr/>

Performance Step: 4 Critical N	B4 Ensure Following Pumps For Selected Train Are Stopped And Place In PULL OUT: a. SI Pump b. RHR Pump
Standard:	The examinee verifies 'A' Train ECCS pumps in PULL OUT. a. 1P-15A - PULL OUT b. 1P-10A - PULL OUT
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 5 Critical Y	B5 Open Containment Spray Pump RHR Suction MOV For Selected Train: a. 1SI-871A, Train A b. 1SI-871B, Train B
Standard:	The examinee OPENS 1SI-871A, Containment Spray Pump suction from RHR
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 6 Critical N	B6 Shut RHR Heat Exchanger Outlet To SI Pump Suction Valve For Selected Train: a. 1SI-857A, Train A b. 1SI-857B, Train B
Standard:	The examinee verifies 1SI-857A, RHR HX Outlet to SI Pump Suction MOV is SHUT.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

<p>Performance Step: 7 Critical Y</p>	<p>B7 Establish Containment Spray On Recirculation:</p> <ol style="list-style-type: none"> a. Momentarily place selected train RV Injection MOV to the SHUT position: (amber light ON) <ul style="list-style-type: none"> • 1SI-852A, Train A • 1SI-852B, Train B b. Start RHR pump for selected train: <ul style="list-style-type: none"> • 1P-10A, Train A • 1P-10B, Train B c. Start containment spray pump for selected train: <ul style="list-style-type: none"> • 1P-14A, Train A • 1P-14B, Train B
<p>Standard:</p>	<p>The examinee:</p> <ol style="list-style-type: none"> a. Sets 1SI-852A to its pre-throttled position (amber light ON) - CRITICAL b. Starts 1P-10A, RHR Pump - CRITICAL c. Starts 1P-14A, Containment Spray Pump - CRITICAL
<p>Evaluator Note:</p>	<p>Spray Pump Start Time: _____.</p> <p>Evaluator! - Record the time the Spray Pump is started.</p> <p>The maximum allowed time from JPM Start to the Spray Pump Start is 20 min.</p> <p>_____ - _____ = _____ <i>(must be <20 min.)</i></p> <p>(1P-14A Start Time) - (JPM Start Time) = Total Elapsed Time</p> <p align="right"><i>Reference OM 4.3.8, Attachment B-5</i></p>
<p>Performance:</p>	<p>SATISFACTORY ____ UNSATISFACTORY ____</p>
<p>Comments:</p>	<p>_____</p>

Performance Step: 8 Critical N	B8 Momentarily place opposite train RV Injection MOV to the SHUT position: (amber light ON) a. 1SI-852A, Train A b. 1SI-852B, Train B
Standard:	The examinee attempts to set 1SI-852B to its pre-determined throttle position (amber light ON) by momentarily taking the switch to CLOSE then release.
Evaluator Note:	A conditional trigger should go ACTIVE when the examinee takes the 1SI-852B Control Switch to CLOSE that causes control power to be lost to 1SI-852B. All valve position indications will be lost. The examinee should implement the RNO actions.
Evaluator Cue:	If the examinee asks for a local report on 1SI-852B breaker status, provide the cue that "Local report is: 1B52-421F, 1SI-852B supply breaker has a burnt smell, otherwise appears normal."
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 9 Critical Y	B8 RNO: Throttle opposite train RHR heat exchanger outlet flow control valve to establish maximum RHR pump flow less than 1550 gpm: o Train A • Valve - 1RH-624 • Flow - 1FI-626 + 1FI-962 o Train B • Valve - 1RH-625 • Flow - 1FI-928 + 1FI-963
Standard:	The examinee throttles 1RH-625, RHR HX Outlet Flow Control Valve to establish maximum RHR flow less than 1550 gpm.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 10 Critical N	B9 Record the time Containment Spray is placed on Recirculation. Time: _____
Standard:	The examinee records the time.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 11 Critical N	B10 Return To <u>Procedure And Step In Effect</u> .
Standard:	The examinee reports to OS1 that 'A' Train of Containment Spray is on Sump Recirculation.
Evaluator Cue:	OS1 acknowledges your report.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: JPM is complete

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- You are the Balance of Plant Operator.
- A large break LOCA has occurred on Unit 1.
- EOP actions up to step 32, Align Containment Spray for Recirculation, of EOP-1.3, Transfer to Containment Sump Recirculation - Low Head Injection, are complete.
- BOTH trains of RHR are AVAILABLE for sump recirculation with Train B operating on recirc.
- Containment Spray Pumps have just been placed in PULL OUT per EOP-1.3 foldout page criteria.

INITIATING CUES:

- OS1 directs you to align Train A of Containment Spray for Sump Recirculation per EOP-1.3 Attachment B, Containment Spray Lineup for Sump Recirculation - Two Trains of RHR.

NOTE: THIS JPM IS TIME CRITICAL.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: ISLAND EDG PER 1-SOP-4KV-001

JPM NUMBER: PBN JPM P064.010.COT **REV.** 2

TASK NUMBER(S) / TASK TITLE(S): P064.010.COT / Control an EDG feeding an isolated bus.

K/A NUMBERS: 064 A4.01 **K/A VALUE:** 4.0 / 4.3

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 25 Minutes **Time Critical:** NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

Developed by:	<u>Andrew Zommers</u>	<u>[Signature]</u>	<u>9/9/19</u>
	Instructor/Developer		Date
Reviewed by:	<u>Jeffrey A. Hinge</u>	<u>[Signature]</u>	<u>9/9/19</u>
	Instructor (Instructional Review)		Date
Validated by:	<u>[Signature]</u>	<u>COLVIN</u>	<u>9/10/19</u>
	SME (Technical Review)		Date
Approved by:	<u>Andrew Fahrreback</u>	<u>[Signature]</u>	<u>9/11/19</u>
	Training Supervision		Date
Approved by:	<u>Ben telecon w/ [Signature]</u>	<u>[Signature]</u>	<u>9/16/19</u>
	Training Program Owner		Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}

SIMULATOR SET-UP:

SIMULATOR SETUP INSTRUCTIONS:

1. Can use any simulator IC. Procedure initial conditions require Mode 6 or Defueled plus a certain battery charger alignment. These initial conditions can be signed off and simulated for the student to facilitate JPM performance in any IC.
2. Perform 1-SOP-4KV-001 up to the step where EDG G01 is ready to sync to 1A05.

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

Required Materials: 1-SOP-4KV-001, '4KV System Operation Unit 1' completed up to point where EDG is ready to sync to 1A05
Calculator
Sync Scope Switch

General References: 1-SOP-4KV-001, '4KV System Operation Unit 1'

Task Standards: Island G-01 EDG to 1A-05 Safeguards Bus

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- The crew is performing actions in 1-SOP-4KV-001, '4KV System Operation Unit 1,' to island G-01 on 1A-05.
- G-01 EDG has been started and all required checks have been performed.
- Loss of voltage protection for 1A52-60, G-01 Diesel Generator to Bus 1A-05 Breaker per step 5.1.34 has been completed.

INITIATING CUES:

OS1 has directed you to Island G-01 to 1A-05 IAW 1-SOP-4KV-001, starting with step 5.1.35.

NOTE: Initial conditions in 1-SOP-4KV-001 are not met in the simulator for battery charger line up and either Mode 5 or 6. Cue examinee all initial conditions are met.

These conditions were evaluated by the exam team and verified to not affect the way the EDG will operate in the simulator and JPM can be performed with the current conditions.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1	5.1.35 Adjust generator voltage (incoming) to equal, or slightly exceed bus 1A05 voltage (running) with G-01 Diesel Generator Voltage Regulator control switch.
Critical N	
Standard:	The examinee manipulates G-01 Diesel Generator Voltage Regulator control switch as necessary such that the G-01 Diesel Generator voltage (incoming) is equal, or slightly exceeds bus 1A05 voltage (running).
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 2	5.1.36 Place G-01 Diesel Generator to bus 1A05 Synchroscope switch to ON for breaker 1A52-60 AND check incoming voltage is comparable to running voltage.
Critical Y	
Standard:	The examinee: <ul style="list-style-type: none"> • Rotates the G-01 Diesel Generator to bus 1A05 synchroscope switch to ON for breaker 1A52-60 <u>AND</u> • Checks incoming voltage comparable to running voltage.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 3 Critical N	5.1.37 Adjust frequency to cause synchroscope to rotate slowly in fast direction (2 to 5 rpm).
Standard:	The examinee manipulates the G-01 Diesel Generator Governor to adjust frequency such that the synchroscope rotates slowly in the fast direction.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 4 Critical Y	5.1.38 WHEN the synchroscope is just before 12:00, AND within the green band, THEN CLOSE 1A52-60, G-01 Diesel Generator To Bus 1A-05 Breaker, AND pick up load immediately. (Target 100-500 KW).
Standard:	The examinee: <ul style="list-style-type: none"> Rotates the breaker control switch for 1A52-60, G-01 Diesel Generator To Bus 1A-05 Breaker to the CLOSE position and releases <u>AND</u> Ensures load is picked up
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 5 Critical N	5.1.39 Adjust KVARs in OUT direction with G-01 Diesel Generator Voltage Regulator control switch.
Standard:	The examinee manipulates the G-01 Diesel Generator Voltage Regulator control switch to adjust KVARs in the OUT direction.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 6 Critical N	5.1.40 Place G-01 Diesel Generator to Bus 1A-05 Synchroscope switch to OFF for breaker 1A52-60.
Standard:	The examinee rotates the G-01 Diesel Generator to Bus 1A-05 Synchroscope switch to OFF for breaker 1A52-60
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 7 Critical N	5.1.41 Check running service water pumps include all operable A Train pumps.
Standard:	The examinee checks running service water pumps include all operable A Train pumps.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 8 Critical N	5.1.42 Secure B Train Service Water pumps as necessary to maintain service water header pressure less than 90 psig.
Standard:	The examinee secures B Train Service Water pumps as necessary to maintain service water header pressure less than 90 psig
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 9 Critical N	5.1.43 Determine 1B03 load as follows: a. Record 1X13 amps on C02. b. Record 1A05 bus voltage on C02.
Standard:	The examinee records 1X13 amps and 1A05 bus voltage on C02.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 10 Critical N	5.1.43 Determine 1B03 load as follows: c. Determine KW load on 1B03 in accordance with the following formula (assume a 0.8 pf): $(1.386) \times (1A05 \text{ volts}) \times (1X13 \text{ amps}) = \text{load in watts}$
Standard:	The examinee calculates KW load on 1B03 at approximately 870 KW.
Evaluator Note:	1.386 x ~ 4250 x ~ 148 = ~ 871,794 watts 870,000 watts (from above) divided by 1000 = ~ <u>870</u> KW Examinee's results may vary based on variations in 1X13 current and meter readability.
Evaluator Cue:	IF asked, THEN provide INDEPENDENT VERIFICATION and cue procedure step initialed.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 11 Critical N	5.1.44 Adjust G-01 KW load to match results of calculated 1B03 load by adjusting G-01 Diesel Generator Governor control switch.
Standard:	The examinee manipulates the G-01 Diesel Generator Governor control switch to adjust G-01 KW load to match the calculated 1B03 load \pm 50 KW.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 12 Critical N	5.1.45 Adjust G-01 KVAR's to 100 KVAR's out by adjusting the G-01 Diesel Generator Voltage Regulator control switch.
Standard:	The examinee manipulates the G-01 Diesel Generator Voltage control switch to adjust G-01 KVAR's to ~ 100 KVAR's out.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 13 Critical N	5.1.46 Declare Offsite Power to 1A05 inoperable AND enter TSAC 3.8.1.D for unit 2 and TSAC 3.8.2.A for unit 1.
Standard:	The examinee informs OS1 to declare Offsite Power to 1A05 inoperable AND enter TSAC 3.8.1.D for unit 2 and TSAC 3.8.2.A for unit 1.
Evaluator Cue:	Acknowledge 1A-05 is inoperable and that the TSAC entries will be logged by another crew member.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 14 Critical N	5.1.47 Perform the following to Island G-01 on bus 1A05: a. Record current G-01 Diesel Generator output voltage on C02.
Standard:	The examinee records the current G-01 Diesel Generator output voltage on C02.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 15 Critical Y	5.1.47 Perform the following to Island G-01 on bus 1A05: b. OPEN 1A52-57, 1A-03 To 1A-05 Bus Tie Breaker.
Standard:	The examinee positions the breaker control switch for 1A52-57, 1A-03 To 1A-05 Bus Tie Breaker to the open position.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 16 Critical Y	5.1.47 Perform the following to Island G-01 on bus 1A05: c. Adjust G-01 Emergency Diesel Generator Frequency to 60 Hz using the G-01 Diesel Generator Governor control switch.
Standard:	The examinee manipulates the G-01 Diesel Generator Governor control switch to adjust G-01 Emergency Diesel Generator Frequency to 60 Hz.
Evaluator Note:	If 1A05 bus voltage cannot be maintained between 4050 and 4300 volts or frequency between 59.7 and 60.3 Hz, then declare busses 1A05, 1B03, 1B32, and 1B30 inoperable and enter TSAC 3.8.10.A for unit 1 and TSAC 3.8.9.A for Unit 2. Voltage and/or Frequency may be momentarily outside the band provided it is immediately returned to within the band.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	<hr/>

Performance Step: 17 Critical Y	5.1.47 Perform the following to Island G-01 on bus 1A05: d. Adjust G-01 output voltage to match the voltage that was recorded in step 5.1.47.a using the G-01 Diesel Generator Voltage Regulator control switch.
Standard:	The examinee manipulates the G-01 Diesel Generator Voltage Regulator control switch to adjust G-01 output voltage to match the voltage that was recorded in step 5.1.47.a.
Evaluator Note:	If 1A05 bus voltage cannot be maintained between 4050 and 4300 volts or frequency between 59.7 and 60.3 Hz, then declare busses 1A05, 1B03, 1B32, and 1B30 inoperable and enter TSAC 3.8.10.A for unit 1 and TSAC 3.8.9.A for unit 2. Voltage and/or Frequency may be momentarily outside the band provided it is immediately returned to within the band. Voltage may be adjusted to <4300 to comply with note.
Evaluator Cue:	If informed that “1A52-57, 1A-03 To 1A-05 Bus Tie Breaker may be released for maintenance at this time;” acknowledge report.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: The JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- The crew is performing actions in 1-SOP-4KV-001, '4KV System Operation Unit 1,' to island G-01 on 1A-05.
- G-01 EDG has been started and all required checks have been performed.
- Loss of voltage protection for 1A52-60, G-01 Diesel Generator to Bus 1A-05 Breaker per step 5.1.34 has been completed.

INITIATING CUES:

OS1 has directed you to Island G-01 to 1A-05 IAW 1-SOP-4KV-001, starting with step 5.1.35.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JOB PERFORMANCE MEASURE

JPM
Page 1 of 18

JPM TITLE: Perform a Flux Map

JPM NUMBER: PBN JPM P015.012.COT

REV. 0

TASK NUMBER(S) / TASK TITLE(S): PBN P015.012.COT/ Perform Flux Map using Incore instrumentation

K/A NUMBERS: 015A3.01

K/A VALUE: 3.8 / 3.8

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 25 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

Developed by: <u>Alan Johnson</u>	_____ Instructor/Developer	_____ Date
Reviewed by: _____	_____ Instructor (Instructional Review)	_____ Date
Validated by: _____	_____ SME (Technical Review)	_____ Date
Approved by: _____	_____ Training Supervision	_____ Date
Approved by: _____	_____ Training Program Owner	_____ Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001} None

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

1. Reset to IC-2
For the next steps, mark up a copy of OI 182 to be used as the master for this JPM.
2. Perform Section 5.1 of OI 182 to setup the flux mapping equipment on Unit 1.
3. Perform Section 5.2 of OI 182 to “warm-up” the detectors.
4. Placekeep and fill in data in sections 5.3.
5. Save to an IC for multiple use.
6. Plug in the Nixie Tube power supply in the back of 1C123

SIMULATOR MALFUNCTIONS:

N/A

SIMULATOR OVERRIDES:

N/A

SIMULATOR REMOTE FUNCTIONS:

N/A

Multiple Uses:

- Load the saved IC for this JPM.
- Walk down the control boards to ensure plant conditions accurately reflect the JPM’s initial conditions.
- Make any necessary adjustments or corrections.
- Update documentation if required.
- Resave if required.

Required Materials: OI 182, Flux Mapping, Rev. 3

General References: OI 182, Flux Mapping, Rev 3

Task Standards: Pass 1 of the Flux Mapping has been completed and the A detector has been sent to the bottom of the core for its calibration pass.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- Unit 1 is 100% rated thermal power.
- You are the third licensed operator.
- A regularly scheduled Flux Map of Unit 1 is required.
- Radiation Protection and Reactor Engineering personnel have been notified.
- The crew has begun completing OI 182, Flux Mapping.
 - Section 4.0, Initial Conditions, and Steps 5.1 through 5.3 have been completed.
 - Step 5.2.11, warmup start time is 35 minutes ago.
- Potential alarms from the procedure have been pre-briefed.
- The chart recorders are non-functional. Use the panel meters instead.
- All other equipment and paths are available.

INITIATING CUES (IF APPLICABLE):

- OS1 directs you to perform OI 182, Flux Mapping, beginning at Step 5.4

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	Notes for Step 5.4.1
Standard:	Examinee reads and placekeeps the notes before step 5.4.1
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 2 Critical N	5.4.1 ENSURE 30 minute warm-up time is complete.
Standard:	Examinee notes that warmup has been 35 minutes.
Evaluator Cue:	<u>IF</u> asked, inform the examinee that step 5.2.11 was logged as 35 minutes ago.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 3 Critical N	Notes for Step 5.4.2
Standard:	Examinee reads and placekeeps the notes before step 5.4.2
Evaluator Cue:	<u>IF</u> asked, the examinee will be responsible for monitoring A&B detectors in step 5.4.2. The peer-checker will monitor detectors C&D.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 4 Critical Y	5.4.2 INSERT the available detectors to the SET TOP LIMIT – NORMAL PATH by pushing SCAN <u>AND</u> ADJUST the current scale switch for each available detector so that the maximum output is achieved without the detector pen being off-scale high.
Standard:	The examinee pushes the SCAN button. The examinee adjusts the current scale switches to maintain the current reading on-scale on the recorders.
Evaluator Cue:	Remind examinee to use the panel meters, not the recorders.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 5 Critical N	5.4.3 CHECK each available detector stops within 0.0 to 0.8 inches of the SET TOP LIMIT – NORMAL PATH limit for that detector.
Standard:	The examinee makes sure that the detector stops within 0.0 to 0.8 inches of the Top Limit.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 6 Critical N	5.4.4 <u>IF</u> a detector did not stop at the proper location in Step 5.4.3, <u>THEN</u> manually position the detector per Attachment C.
Standard:	The examinee should N/A this step.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 7 Critical N	Notes for Step 5.4.5
Standard:	Examinee reads and placekeeps the notes before step 5.4.5.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 8 Critical Y	5.4.5 ACQUIRE flux data by pushing RECORD.
Standard:	Examinee pushes the RECORD button
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 9 Critical N	Note for Step 5.4.6
Standard:	Examinee reads and placekeeps the notes before step 5.4.6.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 10 Critical N	5.4.6 ENSURE all available detectors stop at the SET BOTTOM LIMIT – NORMAL PATH.
Standard:	Examinee makes sure all four detectors stop at the SET BOTTOM LIMIT.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 11 Critical N	Note for step 5.4.7
Standard:	Examinee reads and placekeeps the notes before step 5.4.7.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 12 Critical N	5.4.7 CHECK the computer has collected data by reviewing "FM0300: Data Plots" screen for output.
Standard:	None
Evaluator Cue:	Inform the examinee that CO1 has verified that the data has been collected. (This is dependent on if they have performed the previous steps correctly.)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 13 Critical N	5.4.8 IF the computer does NOT show data, THEN contact the PPCS system engineer/IT for assistance AND repeat Steps 5.4.2 to 5.4.7.
Standard:	The examinee should N/A this step.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 14 Critical N	Caution and Note before step 5.4.9
Standard:	Examinee reads and placekeeps the Note and Caution before step 5.4.7.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 15 Critical Y	5.4.9 WITHDRAW the available detectors to CABLE POSITION - WITHDRAWN by pushing WITHDRAW.
Standard:	Examinee pushes the WITHDRAW button.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 16 Critical <u>Y</u>	5.4.10 ENSURE the available detectors stop after the withdrawn limit is reached, 0000.0 to 9970.0 inches <u>AND</u> the CABLE POSITION - WITHDRAWN light is lit.
Standard:	Examinee makes sure that the detectors stop when they reach the WITHDRAWN position. If the computer does not stop the detectors in the proper range (0000.0 to 9970.0 inches), the examinee will manually stop the detector(s).
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 17 Critical <u>N</u>	Note before step 5.5.1
Standard:	Examinee reads and placekeeps the Note before step 5.5.1.
Evaluator Cue:	<u>I</u>F asked, all detectors are functioning.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 18 Critical N	5.5.1 ENSURE the PATH SELECTOR switch for Detector B is set to E-10.
Standard:	Examinee ensures the path selector switch for Detector B is in E10
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 19 Critical N	Note for Step 5.5.2
Standard:	Examinee reads and placekeeps the Note before step 5.5.2.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 20 Critical N	5.5.2 ENSURE the OPERATION SELECTOR switch for all detectors is set to OFF and the OFF light is lit.
Standard:	Examinee places all four detector operation selector switches to OFF.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 21 Critical Y	5.5.3 TURN the OPERATION SELECTOR switch for the appropriate detector to CALIBRATE AND check the CALIBRATE light is lit.
Standard:	Examinee places the Operation Selector for A detector in CALIBRATE.
Evaluator Cue:	IF asked, direct the examinee to start with the A Detector for section 5.5.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 22 Critical Y	5.5.4 INSERT the detector to the SET BOTTOM LIMIT by pushing INSERT.
Standard:	Examinee pushes the INSERT button.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 23 Critical N	Note for Step 5.5.5
Standard:	Examinee reads and placekeeps the Note before step 5.5.5.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 24 Critical N	5.5.5 ENSURE that the CABLE POSITION - INSERTED light is lit.
Standard:	Examinee makes sure the Inserted light is lit.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 25 Critical N	5.5.6 ENSURE the detector is going into core location E-10.
Standard:	Examinee checks the Path Display shows E10 light lit.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 26 Critical N	5.5.7 ENSURE that the detector stops within 0 inches to 30 inches of the SET BOTTOM LIMIT – CALIBRATE setting.
Standard:	The examinee makes sure that the detector stops within 0 to 30 inches of the Bottom Limit.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues: When the A detector within 0 to 30 inches of the SET Bottom Limit, inform the examinee that this concludes this JPM.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 is 100% rated thermal power.
- You are the third licensed operator.
- A regularly scheduled Flux Map of Unit 1 is required.
- Radiation Protection and Reactor Engineering personnel have been notified.
- The crew has begun completing OI 182, Flux Mapping.
 - Section 4.0, Initial Conditions, and Steps 5.1 through 5.3 have been completed.
 - Step 5.2.11, warmup start time is 35 minutes ago.
- Potential alarms from the procedure have been pre-briefed.
- The chart recorders are non-functional. Use the panel meters instead.
- All other equipment and paths are available.

INITIATING CUES (IF APPLICABLE):

- OS1 directs you to perform OI 182, Flux Mapping, beginning at Step 5.4

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: Shift Ventilation Lineups for Various Modes

JPM NUMBER: PBN JPM P088.001.COT **REV.** 1

TASK NUMBER(S) / TASK TITLE(S): PBN P088.001.COT, Shift Ventilation Lineups for Various Modes

K/A NUMBERS: 060 AA1.02 **K/A** 2.9 / 3.1
2.1.31 **VALUE:** 4.6/4.3

Justification (FOR K/A VALUES <3.0):

Recent resurvey efforts based on accumulated industry experience in conjunction with the proposed revision of NUREG-1122, rev. 2 indicate an increased importance of this K/A Value.

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

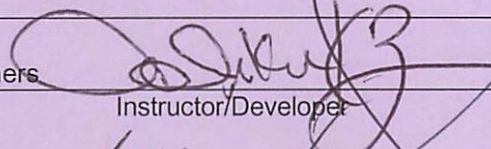
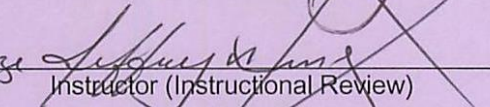
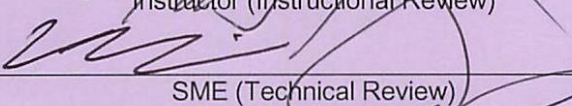
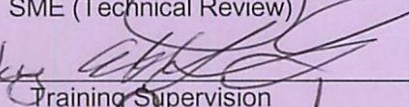
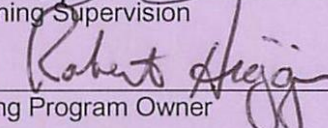
APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
Simulator: Other:
Lab:

Time for Completion: 15 Minutes Time Critical: Yes No

Alternate Path [NRC]: Yes No

Alternate Path [INPO]: Yes No

Developed by:	Andrew Zommers  Instructor/Developer	9/5/19 Date
Reviewed by:	Jeffrey A Hunge  Instructor (Instructional Review)	9/5/19 Date
Validated by:	 SME (Technical Review)	9/10/19 Date
Approved by:	Andrew Farnley  Training Supervision	9/10/19 Date
Approved by:	Robert Higgins  Training Program Owner	9/26/19 Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



PBN JPM P088.001.COT, Shift Ventilation Lineups for Various Modes, Rev. 1

JPM
Page 3 of 14

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 1	Reformatted to new template form. Revised for 2019 operational exam.				
Chg 1	Page 11, replaced "...wall of simulator" with "...wall of CR."	Wrong location	N/A		

SIMULATOR SET-UP:

Simulator Setup Instructions:

- Load a 100% IC
- Load all commands listed in table below
- Start the simulation
- Insert Trigger 1
- Verify Control Room Ventilation repositions to Mode 5
- Remove the failure so RE-235 can be reset
- Make any necessary adjustments or corrections
- Update documentation if required
- Save to an IC for multiple use

Multiple Use:

- Load the saved IC for this JPM
- Walk down the control boards to ensure plant conditions accurately reflect the JPM initial conditions
- Make any necessary adjustments or corrections
- Update documentation if required
- Resave if required

SIMULATOR MALFUNCTIONS:

MALFUNCTION No.	MALFUNCTION TITLE	DELAY	RAMP	ET	DELETE IN	INITIAL VALUE	FINAL VALUE	NOTES
XMT1RMS032A	0-RE235 CR NOBLE GAS RM FIXED OUTPUT	00 :00 :00	00 :00 :00	1	00 :00 :00	-	1.0E+006	Verify Control Room Ventilation repositions to Mode 5.

Once the ventilation has shifted modes, then delete the malfunction and reset RE-235, CR Noble Gas Monitor.

SIMULATOR OVERRIDES:

None

SIMULATOR REMOTE FUNCTIONS:

None

Required Materials: 0-SOP-VNCR-002, Control and Computer Room Ventilation System Normal Operation

General References: 0-SOP-VNCR-002, Control and Computer Room Ventilation System Normal Operation

Task Standards: The examinee restores the ventilation system to Mode 1 from Mode 5 in accordance with 0-SOP-VNCR-002, Control and Computer Room Ventilation System Normal Operation, Section 5.4.1.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- The Control Room Ventilation System is currently in MODE 5 due to the Control Room Noble Gas Monitor RE-235 failing to a high alarm.
- I&C have repaired RE-235, Control Room Noble Gas Monitor and it is returned to service.
- A Turbine Hall Auxiliary Operator is standing by to assist as needed.

INITIATING CUES:

- OS1 has directed you to restore Control Room Ventilation to Mode 1 per 0-SOP-VNCR-002, Control and Computer Room Ventilation System Normal Operation, Section 5.4, beginning with Step 5.4.1.d.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	5.4.1.d PLACE control switch for non-running W-13B fan to OFF
Standard:	The examinee repositions the control switch for W-13B1 fan to OFF.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 2 Critical N	5.4.1.e PLACE control switch for non-running W-14 fan to OFF
Standard:	The examinee repositions the control switch for W-14A, F-16 CR Charcoal Filter Fan to OFF
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 3 Critical Y	5.4.1.f PLACE control switch in OFF for running W-14, F-16 CR Charcoal Filter Fan
Standard:	The examinee repositions the control switch for W-14B F-16 CR Charcoal Filter Fan to OFF.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 4 Critical Y	5.4.1.g PLACE control switch in OFF for running W-13B, Control Room Recirc Fan.
Standard:	The examinee repositions the control switch for W-13B2, Control Room Recirc Fan to OFF.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 5 Critical Y	5.4.1.h PLACE VNCR-4852-S, Control Room Dampers Solenoid Valve Switch, to OPEN and RETURN to AUTO.
Standard:	The examinee repositions VNCR-4852-S, Control Room Dampers Solenoid Valve Switch, to OPEN and RETURN to AUTO.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 6 Critical N	5.4.1.i CHECK system response as follows:			
	Component	Description	Indication	Initials
	VNCR-4852-S	Control Room Dampers Solenoid (100% Recirc solenoid)	Purple light OUT	
	VNCOMP-4849G	Makeup Air To Offices Damper	SHUT	
	VNCR-6748	W-15 Control Room Washroom Exhaust Fan	OPEN	
	VNCR-6748A	W-15 Control Room Washroom Exhaust Fan Damper	OPEN	
Standard:	The examinee checks the system response per the table and initials for each component.			
Evaluator Note:	VNCOMP-4849G, Makeup air to offices damper is located 70/CB/ceiling.			
Evaluator Cue:	AO reports VNCOMP-4849G, Makeup air to offices damper is shut.			
Performance:	SATISFACTORY ____ UNSATISFACTORY ____			
Comments:				

Performance Step: 7 Critical Y	5.4.1.j IF AUX 1 and AUX 2 relays need reset, THEN DEPRESS W-14A/B control circuit arming relay push buttons at C-67 AND CHECK while lights illuminate for the following fans. 1. Fan W-14A Control Circuit Arming 2. Fan W-14B Control Circuit Arming
Standard:	The examinee depresses the W-14A/B control circuit arming relay push buttons at C-67.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 8 Critical Y	5.4.1.k ENSURE W-14, F-16 CR Charcoal Filter Fan controls are in AUTO for the following: 1. W-14A, F-16 CR Charcoal Filter Fan. AUTO 2. W-14B, F-16 CR Charcoal Filter Fan. AUTO
Standard:	The examinee repositions the control switches for W-14A/B, F-16 CR Charcoal Filter Fans to AUTO.
Evaluator Note:	Fans were repositioned to OFF in sub-steps e. and f.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 9 Critical N	5.4.1.l ENSURE SHUT VNCR-4581C, W-14A CR Charcoal Filter Fan Disch Ctl Damper and VNCR-4851D, W-14B CR Charcoal Filter Fan Discharge Ctl Damper
Standard:	The examinee checks VNCR-4581C, W-14A CR Charcoal Filter Fan Disch Ctl Damper and VNCR-4851D, W-14B CR Charcoal Filter Fan Discharge Ctl Damper shut.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 10 Critical Y	5.4.1.m START desired W-13B fan and PLACE control switch in AUTO.
Standard:	The examinee repositions the control switch for W-13B2 to ON and THEN to AUTO.
Evaluator Cue:	The SM would like W-13B2 running.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 11 Critical Y	5.4.1.n ENSURE control switches for BOTH W-13B1 and W-13B2 are in AUTO. <ul style="list-style-type: none"> • W-13B1, Control Room Recirc Fan – AUTO • W-13B2, Control Room Recirc Fan – AUTO
Standard:	The examinee repositions the control switch for W-13B1 to AUTO.
Evaluator Note:	W-13B2 was started and placed in AUTO in the previous step.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 12 Critical N	5.4.1.o ENSURE Control Room Pressure has returned to NORMAL
Standard:	The examinee checks control room pressure normal as read on DP-4713B, Control Room to Turbine Building Differential Pressure Indicator.
Evaluator Note:	This DP indicator is not modeled in the simulator and the examinee should show or inform you that the DPI is located on the northeast wall of the Control Room.
Evaluator Cue:	DPI-4731B is reading 0.19 inches of water to the right.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 13 Critical N	5.4.1.p ENSURE Mode 1 damper alignment per Attachment A
Standard:	The examinee ensures that the dampers are aligned properly per Attachment A.
Evaluator Cue:	AO reports VNCOMP-4849G, VNCR-4851E and VNCR-4851F are closed.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Performance Step: 14 Critical N	5.4.1.q IF no operability issues exist, THEN DECLARE CREFS OPERABLE AND EXIT TSAC / TRM 3.7.9
Standard:	The examinee reports to OS1 that control room ventilation has been shifted to Mode 1, CREFS is OPERABLE and the station can exit TSAC / TRM 3.7.9.
Evaluator Cue:	OS1 acknowledges your report.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	

Terminating Cues: This completes the JPM.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- The Control Room Ventilation System is currently in MODE 5 due to the Control Room Noble Gas Monitor RE-235 failing to a high alarm.
- I&C have repaired RE-235, Control Room Noble Gas Monitor and it is returned to service.
- A Turbine Hall Auxiliary Operator is standing by to assist as needed.

INITIATING CUES:

- OS1 has directed you to restore Control Room Ventilation to Mode 1 per 0-SOP-VNCR-002, Control and Computer Room Ventilation System Normal Operation, Section 5.4, beginning with Step 5.4.1.d.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: Determine Service Water Flow as a Function of Header Differential Pressure

JPM NUMBER: PBN JPM P076.010.AOT REV. 0

TASK NUMBER(S) / TASK TITLE(S): PBN P076.010.AOT/ Remove/ Return to Service Various Heat Exchangers in the Service Water System

K/A NUMBERS: 076A2.02 **K/A VALUE:** 2.7/3.1

Justification (FOR K/A VALUES <3.0):

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
 Simulator: Other:
 Lab:

Time for Completion: 35 Minutes Time Critical: NO

Alternate Path [NRC]: YES

Alternate Path [INPO]: YES

Developed by:	<u>Alan Johnson</u>	
	Instructor/Developer	Date
Reviewed by:	_____	
	Instructor (Instructional Review)	Date
Validated by:	_____	
	SME (Technical Review)	Date
Approved by:	_____	
	Training Supervision	Date
Approved by:	_____	
	Training Program Owner	Date



JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

None

SIMULATOR MALFUNCTIONS:

None

SIMULATOR OVERRIDES:

None

SIMULATOR REMOTE FUNCTIONS:

Required Materials: OI 70, Attachments B and E. Pages 1 through 10, 15-18, and all pages of Attachment B in one stapled package. All of Attachment E in another stapled package.

Calculator

General References: OI 70, Service Water System Operation, Rev. 82

Task Standards: Service water flow to G01 Heat Exchanger is found to be out of tolerance low. The duplex strainer is shifted. And service water throttle valve is adjusted to return flow to the target valve as compared to Header Differential Pressure.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are a relief Auxiliary Operator.
- Engineering has requested a determination of Service Water flow through the G-01, Emergency Diesel Generator Heat Exchanger.

INITIATING CUES (IF APPLICABLE):

- OS1 directs you to perform a measurement of Service Water Flow as a function of header differential pressure, per OI 70, Service Water System Operation, Attachment B, Service Water Flow as a Function of Header Differential Pressure, for G-01 Emergency Diesel Generator.

*****EVALUATOR'S NOTE: After reading the initiating cues, handout the first section of OI 70, which includes the first nine (9) pages and all seven (7) pages of Attachment B. DO NOT handout Attachment E at this time.*****

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	Note for Step 1.0 of Attachment B
Standard:	The examinee reads and placekeeps note before Attachment B Step 1.0.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 2 Critical Y	1.0 To obtain reading from PI-4483 for G-01, PERFORM the following: 1.1 SELECT and OPEN one of the following valves 1.1.1 SW-800A, PI-4483 South Sensing Line 1.1.2 SW-800B, PI-4483 North Sensing Line
Standard:	The examinee chooses one valve to open and N/A's the other valve.
Evaluator Cue:	For the valve selected, inform the examinee that the valve rotated 90 degrees and stopped.
Evaluator NOTE:	Only the choosing and opening of one of the valves is critical. Either valve is permissible if SW-731 is red-locked OPEN. SW-800A and B and PI-4483 are in the Northwest corner of the G-01 room. Normally, SW-800A would be selected for G-01. Valve is a 90 degree ball valve.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 3 Critical N	1.2 IF Step 1.1.2 selected above THEN CHECK SW-731, G01/G02/IA/SA Compressor Return Header Split is LOCKED OPEN.
Standard:	This will be N/A if 1.1.1 is used. If 1.1.2 is used, the examinee will make sure that the red lock is attached to SW-731.
Evaluator Cue:	IF asked, state that the red lock is attached to the handwheel
Evaluator NOTE:	SW-731 is in the overhead of the NW corner of G-01 room. It is red-locked.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 4 Critical Y	1.3 Record reading from PI-4483. _____ in Hg / psig (circle one)
Standard:	Examinee records the reading. Should be 12 psig. Examinee circles "psig". Range of 11 to 13 psig.
Evaluator Cue:	Using a pointer, point to 12 psig.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 5 Critical N	1.4 Shut valve selected in Step 1.1 (N/A the other)
Standard:	The examinee shuts the valve from 1.1. Valve turns 90 degrees.
Evaluator Cue:	For the valve selected, inform the examinee that the valve rotated 90 degrees and stopped.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 6 Critical N	Note before step 3.0
Standard:	The examinee reads and placekeeps note before step 3.0
Evaluator Cue:	None
Evaluator NOTE:	PI-2844 and PI-2845 are the North and South Service Water Header pressure meters on C01.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 7 Critical Y	3.0 To calculate Header Differential Pressure (psid) when PI-4483 reads "Hg": (N/A if PI-4483 is <u>NOT</u> reading "Hg".) PI-2844 or PI-2845 () + [PI-4483 () X (0.491)] = () psid
Standard:	The examinee N/A's this step
Evaluator Cue:	When asked as the Control Room, PI-2844 and PI-2845 are both reading 75 psig
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 8 Critical Y	4.0 To calculate Header Differential Pressure (psid) when PI-4483 reads "psig": (N/A if PI-4483 is NOT reading "psig"). PI-2844 or PI-2845 () - PI-4483 () = () psid
Standard:	The examinee fills in the blanks with 75 and 12 and comes up with 63 psid. (Range of 62 – 64 psig carried over from performance step 4)
Evaluator Cue:	When asked as the Control Room, PI-2844 and PI-2845 are both reading 75 psig. When asked for an IV, inform the examinee that the IV has been completed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 9 Critical Y	5.0 When checking G01/G02 cooler SW flow, ENSURE flow is between "Upper Flow Limit" and "Lower Flow Limit" values on Flow (gpm) vs. SW Header DP (psid) graph in this Attachment. SW Flow _____ gpm
Standard:	The examinee finds the G01 HX flow gage and logs the reading.
Evaluator Cue:	When the examinee locates the G01 HX flow gage, us a pointer and point to 740 gpm.
Evaluator NOTE:	The G01 Heat Exchanger flow gauge (FIS-4323) is located next to the duplex strainer on the inlet to the G01 Heat Exchangers.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 10 Critical N	Note before step 6.0
Standard:	The examinee reads and placekeeps note before step 6.0
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 11 Critical N	Step 6.0, 6.1, 6.2, 6.3 and 6.4 for if flow is greater than the Upper flow limit.
Standard:	The examinee N/A's all of these substeps.
Evaluator Cue:	None
Evaluator NOTE:	Step 7.0 and its substeps are already N/A'd
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 12 Critical Y	Attachment B, 8.0 <u>IF</u> flow is within 30 gpm of the "Lower Flow Limit" line, <u>THEN</u> PERFORM the following: 8.1 SHIFT to standby SW Supply Strainer.
Standard:	The examinee should request a copy of Attachment E for Strainer Operations
Evaluator Cue:	If asked for a copy of Attachment E, hand them the Attachment E package.
Evaluator NOTE:	If the examinee tries to shift the duplex strainer without Attachment E, use the following performance steps to verify they take the correct actions.
Evaluator NOTE:	This begins the Alternate Path portion of this JPM.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 13 Critical N	Attachment E, CAUTION before Step 1.0
Standard:	The examinee reads and placekeeps caution before step 1.0
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 14 Critical N	1.0 PERFORM the following to change F-215, HX-55A Coolant HX G-01 EDG Inlet Strainer basket operation: 1.1 ENSURE SW-879, HX-55A Coolant HX G-01 EDG F-215 Inlet Str Drain is SHUT and CAPPED.
Standard:	The examinee checks the valve in the closed/Clockwise direction and that the pipe is capped.
Evaluator Cue:	Inform the examinee that the valve does not move (when turned in the clockwise direction) and the cap is installed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 15 Critical N	1.2 To equalize pressure between strainer baskets, OPEN the following: <ul style="list-style-type: none"> • SW-792A, HX-55A Coolant HX G-01 EDG F-215 Inlet Str West Drn. • SW-792B, HX-55A Coolant HX G-01 EDG F-215 Inlet Str East Drn.
Standard:	The examinee turns both valves in the counterclockwise direction until open, and may turn ¼ turn closed off the backseat.
Evaluator Cue:	For each valve, the valve turns counterclockwise, with the stem rising, until it stops.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 16 Critical N	Note and Caution before step 1.3
Standard:	The examinee reads and placekeeps the note and caution before step 1.3
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 17 Critical N	1.3 On F-215, HX-55A Coolant HX G-01 EDG Inlet Strainer, TURN lift plug handle counterclockwise until plug assembly lifts. (Approximately 1 ½ turns)
Standard:	The examinee turns the handle approximately 1 ½ turns counterclockwise.
Evaluator Cue:	The handle is turning counterclockwise and the plug is lifting.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 18 Critical N	1.4 TURN lift plug handle clockwise to position plug assembly off the backseat. (Approximately ½ turn)
Standard:	The examinee turns the handle back ½ turn.
Evaluator Cue:	The handle moves in the clockwise direction.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 19 Critical Y	1.5 POSITION turning handle to extreme travel position over desired basket, about an inch from the yoke.
Standard:	The examinee turns the selector handle to the opposite basket.
Evaluator Cue:	<u>I</u>F asked, the handle is in the current actual position. The handle moves to the opposite basket.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 20 Critical N	1.6 and substeps 1.6.1 through 1.6.6 are N/A, for If the handle does not turn.
Standard:	The examinee N/A's steps 1.6.1 through 1.6.6.
Evaluator Cue:	None
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 21 Critical N	1.7 SEAT valve plug just until snug by turning lifting handle clockwise.
Standard:	The examinee turns the lifting handle clockwise.
Evaluator Cue:	The handle rotates clockwise then stops after approximately 1 turn.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 22 Critical N	1.7 SHUT the following: <ul style="list-style-type: none"> • SW-792A, HX-55A Coolant HX G-01 EDG F-215 Inlet Str West Drn. • SW-792B, HX-55A Coolant HX G-01 EDG F-215 Inlet Str East Drn.
Standard:	The examinee turns both valves in the clockwise direction until shut.
Evaluator Cue:	The valves turn clockwise and then stop.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 23 Critical N	Attachment E Step 2.0 IF F-215, HX-55A Coolant HX G-01 EDG Inlet Strainer West basket requires cleaning, THEN PERFORM the following to clean and inspect:
Standard:	None
Evaluator Cue:	Inform the examinee, as OS1, that another AO, along with the Lead AO, will be cleaning the strainer basket. As OS1 direct the AO to continue on with Attachment B.
Evaluator NOTE:	
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 24 Critical N	Attachment B 8.2 CLEAN SW Supply Strainer removed from service, if required, AND RETURN to service as directed by Shift Management.
Standard:	None
Evaluator Cue:	The OS1 directed another AO and the Lead AO to take care of cleaning the strainer.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 25 Critical N	8.3 IF flow is still within 30 gpm of the "Lower Flow Limit" line for G01 cooler, THEN PERFORM the following:
Standard:	The examinee should check the HX flow gauge for a new reading.
Evaluator Cue:	If asked, Heat Exchanger flow is now 745 gpm.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	



Performance Step: 26 Critical Y	8.3.1 and 8.3.2 Unlock and Throttle SW-49, HX-55A Coolant HX G-01 EDG Outlet.
Standard:	The examinee unlocks and throttles OPEN (counterclockwise) on SW-49.
Evaluator Cue:	The valve is unlocked and has been turned counterclockwise. If asked, after valve throttled OPEN, HX flow is now 820 gpm.
Evaluator NOTE:	SW-49 is located above FIS-4323.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 27 Critical N	8.3.3 LOCK SW-49, HX-55A Coolant HX G-01 EDG Outlet.
Standard:	The examinee locks the throttle valve
Evaluator Cue:	The valve is locked. If asked for an IV, inform the examinee that an IV has been performed on SW-49.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Terminating Cues: **When the Service Water Throttle valve has been locked, end the JPM.**

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- You are a relief Auxiliary Operator.
- Engineering has requested a determination of Service Water flow through the G-01, Emergency Diesel Generator Heat Exchanger.

INITIATING CUES (IF APPLICABLE):

- OS1 directs you to perform a measurement of Service Water Flow as a function of header differential pressure, per OI 70, Service Water System Operation, Attachment B, Service Water Flow as a Function of Header Differential Pressure, for G-01 Emergency Diesel Generator.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.



JOB PERFORMANCE MEASURE

JPM TITLE: Fuel Oil Transfer Between Storage Tanks

JPM NUMBER: PBN JPM P157.003.AOT **REV. 2**

TASK NUMBER(S) / TASK TITLE(S): PBN P157.003.AOT
Transfer Fuel Oil

K/A NUMBERS: 064 K1.03 **K/A VALUE:** 3.6 / 4.0

Justification (FOR K/A VALUES <3.0): N/A

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:

Simulator: Other:

Lab:

Time for Completion: 30 Minutes Time Critical: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

Developed by:	_____	_____
	Instructor/Developer	Date
Reviewed by:	_____	_____
	Instructor (Instructional Review)	Date
Validated by:	_____	_____
	SME (Technical Review)	Date
Approved by:	_____	_____
	Training Supervision	Date
Approved by:	_____	_____
	Training Program Owner	Date



JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If this is a simulator JPM, the JPM has been validated IAW TR-AA-230-1008, Simulator Based Testing and Validation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001} None



PBN JPM P157.003.AOT, FUEL OIL TRANSFER BETWEEN STORAGE TANKS, REV. 2

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1000) made to the material after initial approval.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	Developed for AOC Segment 15E Annual JPM Examination.				
Rev. 1	Developed for the 2017 NRC ILT Exam.				
Rev. 2	Placed in latest format. Updated for newest revision of procedure. Corrected completion time due to validation feedback. Added locations for valves and control switch.				

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

SIMULATOR SETUP INSTRUCTIONS:

1. None

SIMULATOR MALFUNCTIONS:

1. None

SIMULATOR OVERRIDES:

1. None

SIMULATOR REMOTE FUNCTIONS:

1. None

Procedure setup instructions:

- Fill-in the coversheet with an OS signature, Today, and 1 hour ago; list pages 1-3, 10-12, 17.
- Placekeep Steps 1.0 through 3.3
- Add OS1 initials to 4.1
- Sign for Shift Manager, 30 minute ago, Today in 4.2
- Fill in the following information in steps 5.3.1 through 5.3.3: 500; 90; 93; 33500; 34000.
- Initial for OS1 in 5.3.1 through 5.3.5.a.
- N/A 5.3.5.b.

Required Materials: OI 145, Fuel Transfer Between Storage Tanks
Tank Level Book – 58, Diesel Fuel Oil Storage Tank T-175A/B
M-219 Sheets 2 and 3, Fuel Oil System (if requested)

General References: OI 145, Fuel Transfer Between Storage Tanks
Tank Level Book – 58, Diesel Fuel Oil Storage Tank T-175A/B
M-219 Sheets 2 and 3, Fuel Oil System

Task Standards: Transfer fuel oil from T-175B to T-175A with Fuel Oil Transfer Pump P-207B in accordance with OI 145, Fuel Oil Transfer Between Storage Tanks.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are a relief crew AO.
- Both Units are operating at 100% steady-state conditions.
- G04 EDG is OOS for radiator fan work. G03 EDG is aligned to both 1A-06 and 2A-06 safeguards buses in accordance with OI-35A.
- Engineering has requested confirmation of the ability to transfer fuel oil from T-175B to T-175A Fuel Oil Storage Tanks.

INITIATING CUES (IF APPLICABLE):

- The relief crew supervisor directs you to transfer 500 gallons (approximately 2%) from T-175B to T-175A with Fuel Oil Transfer Pump P-207B in accordance with OI 145, Fuel Oil Transfer Between Storage Tanks, starting at Step 5.3.6.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical <u>Y</u>	5.3.6 POSITION the valves listed below in preparation for fuel oil transfer: a. UNLOCK AND OPEN FO-207, P-207B G-04 EDG FOTP Discharge to T-175A G-01/G-02 FOST.
Standard:	The examinee: <ul style="list-style-type: none"> Removes the red lock AND Opens FO-207, P-207B G-04 EDG FOTP Discharge to T-175A G-01/G-02 FOST by turning the valve handwheel in counter-clockwise direction until the valve stem is fully extended.
Evaluator Cue:	The red lock is removed and the valve handwheel for FO-207, P-207B G-04 EDG FOTP Discharge to T-175A G-01/G-02 FOST is turned in the counter-clockwise direction until the valve stem is fully extended .
Evaluator Note:	IF requested, provide copies of M-219 Sheets 2 and 3 FO-207 is in G-04 FOTP/Day Tank Room.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 2 Critical <u>Y</u>	5.3.6 POSITION the valves listed below in preparation for fuel oil transfer: b. UNLOCK AND OPEN FO-170, P-206A/P-207A G-01/G-02 FOTP Disch Isol. To T-175B/T-176A/B.
Standard:	The examinee: <ul style="list-style-type: none"> Removes the red lock <u>AND</u> Opens FO-170, P-206A/P-207A G-01/G-02 FOTP Disch Isol. To T-175B/T-176A/B by turning the valve handwheel in counter-clockwise direction until the valve stem is fully extended.
Evaluator Cue:	The red lock is removed and the valve handwheel for FO-170, P-206A/P-207A G-01/G-02 FOTP Disch Isol. To T-175B/T-176A/B is turned in the counter-clockwise direction until the valve stem is fully extended .
Evaluator Note:	FO-170 is in the G-01/G-02 Fuel Oil Transfer Pump Room
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 3 Critical <u>Y</u>	5.3.6 POSITION the valves listed below in preparation for fuel oil transfer: c. OPEN FO-168, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 1 st Off Isol.
Standard:	The examinee opens FO-168, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 1 st Off Isol. by turning the valve handwheel in the counter-clockwise direction until the valve stem is fully extended.
Evaluator Cue:	The valve handwheel for FO-168, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 1 st Off Isol. is turned in the counter-clockwise direction until the valve stem is fully extended .
Evaluator Note:	FO-168 is in the G-01/G-02 Fuel Oil Transfer Pump Room
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 4 Critical <u>Y</u>	5.3.6 POSITION the valves listed below in preparation for fuel oil transfer: d. OPEN FO-169, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 2nd Off Isol.
Standard:	The examinee opens FO-169, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 2nd Off Isol. by turning the valve handwheel in the counter-clockwise direction until the valve stem is fully extended.
Evaluator Cue:	The valve handwheel for FO-169, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 2nd Off Isol. is turned in the counter-clockwise direction until the valve is fully extended .
Evaluator Note:	FO-169 is in the G-01/G-02 Fuel Oil Transfer Pump Room
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 5 Critical <u>Y</u>	5.3.6 POSITION the valves listed below in preparation for fuel oil transfer: e. SHUT FO-214, P-207B G-04 EDG FOTP Disch to T-176B G-04 EDG Day Tank.
Standard:	The examinee shuts FO-214, P-207B G-04 EDG FOTP Disch to T-176B G-04 EDG Day Tank by turning the valve handwheel in the clockwise direction until the valve stem is fully inserted.
Evaluator Cue:	The valve handwheel for FO-214, P-207B G-04 EDG FOTP Disch to T-176B G-04 EDG Day Tank is turned in the clockwise direction until the valve stem is fully inserted.
Evaluator Note:	FO-207 is in G-04 FOTP/Day Tank Room.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 6 Critical <u>N</u>	5.3.7 NOTIFY Control Room transfer is about to being and to monitor Fuel Oil Tank Alarms.
Standard:	The examinee notifies the Control Room that transfer is about to being and to monitor for fuel oil tank alarms.
Evaluator Cue:	The control room acknowledges your request.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 7 Critical <u>Y</u>	5.3.8 START P-207B, G-04 EDG Fuel Oil Transfer Pump to begin transfer.
Standard:	The examinee starts P-207B, G-04 EDG Fuel Oil Transfer Pump by placing the control switch to ON.
Evaluator Cue:	The control switch for P-207B, G-04 EDG Fuel Oil Transfer Pump is placed to ON. The green light is off, the red light is on and the pump comes up to speed.
Evaluator Cue:	The control switch for P-207B is on 2B-40
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 8 Critical <u>Y</u>	5.3.9 WHEN the desired amount has been transferred from T-175B to T-175A, THEN STOP P-207B, G-04 EDG Fuel Oil Transfer Pump.
Standard:	The examinee stops P-207B, G-04 EDG Fuel Oil Transfer Pump by placing the control switch to OFF.
Evaluator Note:	Control switch placed in either AUTO or OFF is acceptable. The critical attribute of this step is that the pump is stopped.
Evaluator Cue:	Inform the examinee that 500 gallons of fuel oil has been transferred. The level of the fuel oil storage tank being monitored has changed by approximately 2%. (T-175B ↓; T-175A ↑)
Evaluator Cue:	Point to the position for the control switch for P-207B, G-04 EDG Fuel Oil Transfer Pump that the examinee indicated. The green light is on, the red light is off and the pump slows to stop.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 9 Critical Y	5.3.10 PLACE P-207B-CS in AUTO at 2B-40, Breaker 2B52-405D.
Standard:	The control switch on 2B-40 is placed in AUTO.
Evaluator Cue:	When the examinee points to the AUTO position, use a pointer to indicate the switch is in the AUTO position
Evaluator Note:	If the examinee stopped the pump in performance step 8 by placing the control switch to AUTO, then this step is satisfied.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 10 Critical Y	5.3.11 OPEN FO-214, P-207B G-04 EDG FOTP Disch to T-176B G-04 EDG Day Tank.
Standard:	The examinee opens FO-214, P-207B G-04 EDG FOTP Disch to T-176B G-04 EDG Day Tank by turning the valve handwheel in the counter-clockwise direction until the valve stem is fully extended.
Evaluator Cue:	<ul style="list-style-type: none"> The valve handwheel for FO-214, P-207B G-04 EDG FOTP Disch to T-176B G-04 EDG Day Tank is turned in the counter-clockwise direction until the valve stem is fully extended.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 11 Critical <u>Y</u>*	5.3.12 SHUT FO-169, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 2nd Off Isol.
Standard:	The examinee shuts FO-169, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 2nd Off Isol. by turning the valve handwheel in the clockwise direction until the valve stem is fully inserted.
Evaluator Cue:	<ul style="list-style-type: none"> The valve handwheel for FO-169, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 2nd Off Isol. is turned in the clockwise direction until the valve is fully inserted..
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	*See Evaluator Note in Performance Step 14.

Performance Step: 12 Critical <u>Y</u>*	5.3.13 SHUT FO-168, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 1 st Off Isol.
Standard:	The examinee shuts FO-168, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 1 st Off Isol. by turning the valve handwheel in the clockwise direction until the valve stem is fully inserted.
Evaluator Cue:	<ul style="list-style-type: none"> The valve handwheel for FO-168, P-206A/P-207A G-01/G-02 EDG FOTP Test Line 1st Off Isol. is turned in the clockwise direction until the valve stem is fully inserted.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	*See Evaluator Note in Performance Step 14.

Performance Step: 13 Critical Y*	5.3.14 SHUT AND LOCK FO-170, P-206A/P-207A G-01/G-02 FOTP Disch Isol. To T-175B/T-176A/B.
Standard:	The examinee: <ul style="list-style-type: none"> Shuts FO-170, P-206A/P-207A G-01/G-02 FOTP Disch Isol. To T-175B/T-176A/B by turning the valve handwheel in clockwise direction until the valve stem is fully inserted. <p><u>AND</u></p> <ul style="list-style-type: none"> Installs the red lock
Evaluator Cue:	<ul style="list-style-type: none"> The valve handwheel for FO-170, P-206A/P-207A G-01/G-02 FOTP Disch Isol. To T-175B/T-176A/B is turned in the clockwise direction until the valve stem is fully inserted. The red lock is installed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	*See Evaluator Note in Performance Step 14.

Performance Step: 14 Critical Y*	5.3.15 SHUT AND LOCK FO-207, P-207B G-04 EDG FOTP Discharge to T-175A G-01/G-02 FOST.
Standard:	The examinee: <ul style="list-style-type: none"> Shuts FO-207, P-207B G-04 EDG FOTP Discharge to T-175A G-01/G-02 FOST by turning the valve handwheel in clockwise direction until the valve stem is fully inserted. <p><u>AND</u></p> <ul style="list-style-type: none"> Installs the red lock
*Evaluator Note:	*It is critical that at least one of the valves from Steps 11 thru 14 is shut to isolate the flowpath from T-175A.
Evaluator Cue:	<ul style="list-style-type: none"> The valve handwheel for FO-207, P-207B G-04 EDG FOTP Discharge to T-175A G-01/G-02 FOST is turned in the clockwise direction until the valve stem is fully inserted. The red lock is installed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: 15 Critical <u>N</u>	5.3.16 PERFORM Independent Verification of system alignment in table below
Standard:	Examinee has an independent verifier verify the position of the control switch and valves listed in the table.
Evaluator Cue:	Inform the examinee that the Independent Verification is complete and all blanks in 5.3.16 are initialed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	

Performance Step: 16 Critical <u>N</u>	5.3.17 RECORD EDG Fuel Oil Storage Tank levels: T-175A _____ % (LI-3985A) T-175B _____ % (LI-3985B)
Standard:	The examinee records the EDG Fuel Oil Storage Tank levels.
Evaluator Cue:	EDG Fuel Oil Storage Tank levels: T-175A: 92 % (LI-3985A) T-175B: 91 % (LI-3985B)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Terminating Cues: When examinee records new tank levels, inform them that the JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- You are a relief crew AO.
- Both Units are operating at 100% steady-state conditions.
- G04 EDG is OOS for radiator fan work. G03 EDG is aligned to both 1A-06 and 2A-06 safeguards buses in accordance with OI-35A.
- Engineering has requested confirmation of the ability to transfer fuel oil from T-175B to T-175A Fuel Oil Storage Tanks.

INITIATING CUES (IF APPLICABLE):

- The relief crew supervisor directs you to transfer 500 gallons (approximately 2%) from T-175B to T-175A with Fuel Oil Transfer Pump P-207B in accordance with OI 145, Fuel Oil Transfer Between Storage Tanks, starting at Step 5.3.6.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM TITLE: RESPOND TO LOSS OF SPENT FUEL POOL COOLING

JPM NUMBER: PBN JPM P000.047b.AOT REV. 1

TASK NUMBER(S) / TASK TITLE(S): PBN P000.047.AOT / RESPOND TO LOSS OF SPENT FUEL POOL COOLING

K/A NUMBERS: 033 K3.03 **K/A VALUE:** 3.0 / 3.3
033 A2.02 2.7 / 3.0

Justification (FOR K/A VALUES <3.0): 033 A2.02 (2.7 / 3.0) – Increase importance as a result of industry sensitivity to Fukushima event.

TASK APPLICABILITY:

RO SRO STA Non-Lic SRO CERT OTHER: _____




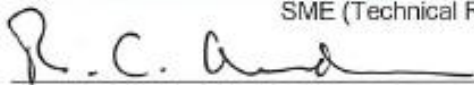

APPLICABLE METHOD OF TESTING: Simulate/Walkthrough: Perform:

EVALUATION LOCATION: In-Plant: Control Room:
Simulator: Other:
Lab:

Time for Completion: 20 Minutes Time Critical: Yes No

Alternate Path [NRC]: Yes No

Alternate Path [INPO]: Yes No

Developed by: Michael J. Vana 	<u>8-7-2017</u>
Instructor/Developer	Date
Reviewed by: 	<u>8/7/2017</u>
Instructor (Instructional Review)	Date
Validated by: 	<u>8-9-2017</u>
SME (Technical Review)	Date
Approved by: R.C. [unclear] 	<u>8/9/17</u>
Training Supervision	Date
Approved by: 	<u>8-9-17</u>
Training Program Owner	Date

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the signature page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the job level appropriate for the task being evaluated if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Is justification provided for tasks with K/A values less than 3.0?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Have the performance steps been identified and classified (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Have all special tools and equipment needed to perform the task been identified and made available to the trainee?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Are all references identified, current, accurate, and available to the trainee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are all critical steps supported by procedural guidance? (e.g., if licensing, EP or other groups were needed to determine correct actions, then the answer should be NO.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If the JPM is to be administered to an LOIT student, has the required knowledge been taught to the individual prior to administering the JPM? TPE does not have to be completed, but the JPM evaluation may not be valid if they have not been taught the required knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

All questions/statements must be answered "YES" or "N/A" or the JPM is not valid for use. If all questions/statements are answered "YES" or "N/A," then the JPM is considered valid and can be performed as written. The individual(s) performing the initial validation shall sign and date the cover sheet.

Protected Content: (CAPRs, corrective actions, licensing commitments, etc. associated with this material)

{C001}



PBN JPM P000.047b.AOT, Respond to Loss of Spent Fuel Pool Cooling, Rev. 1

UPDATE LOG: Indicate in the following table any minor changes or major revisions (as defined in TR-AA-230-1003) made to the material after initial approval. Or use separate Update Log form TR-AA-230-1003-F16.

#	DESCRIPTION OF CHANGE	REASON FOR CHANGE	AR/TWR#	PREPARER	DATE
				SUPERVISOR	DATE
Rev. 0	See microfilm.				
Chg. 1	Modified performance step 10 to be CRITICAL.	Not shutting SF-21 will divert too much flow to allow obtaining required flow through 'B' HX.	01922101	R. Amundson	11/19/13
				R. Baird	11/19/13
Chg. 2	Removed evaluator cue in performance step 1 that P-12A is running "noisier than normal"	This cue can result in the examinee stopping the pump.	NA	R. Amundson	12/18/13
				E. Salzwedel	12/18/13
Rev. 1	Updated for 2017 LOC Operating Exam, incorporating previous changes.				
Chg. 1	Performance Step 2, added indication from C-172	Plant modification	N/A		

SIMULATOR SET-UP: *(Only required for simulator JPMs)*

Simulator Setup Instructions:
None

SIMULATOR MALFUNCTIONS:
None

SIMULATOR OVERRIDES:
None

SIMULATOR REMOTE FUNCTIONS:
None

Required Materials: AOP-8F, Loss of Spent Fuel Pool Cooling
OP 8A, Spent Fuel Pool Cooling Water System Operation

General References: AOP-8F, Loss of Spent Fuel Pool Cooling
OP 8A, Spent Fuel Pool Cooling Water System Operation

Task Standards: Restore Spent Fuel Pool Cooling by shifting to “B” Train pump / heat exchanger in accordance with OP 8A, Spent Fuel Pool Cooling Water System Operation.

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.

INITIAL CONDITIONS:

- You are the PAB Operator.
 - You were in the process of completing your logs.
 - You noted a significant rise in Spent Fuel Pool temperature since the last shift and made your report to the control room.
- The control room entered AOP-8F, Loss of Spent Fuel Pool Cooling due to the unexpected rise in SFP temperature and has completed steps 1 and 2.
- P-12A, SFP Pump and HX-13A, SFP HX are currently aligned to provide SFP cooling.

INITIATING CUES (IF APPLICABLE):

- The control room has directed you to perform local actions of AOP-8F, Loss of Spent Fuel Pool Cooling beginning with step 3, "Check SFP Pump Status".

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

NOTE: Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1 Critical N	3. Check SFP Pump Status: a. Check SFP pumps – AT LEAST ONE RUNNING o P-12A o P-12B
Standard:	The examinee checks P-12A, SFP pump running by checking that the: <ul style="list-style-type: none"> • Red light is ON at the local control station. • The pump is rotating.
Evaluator Note:	P-12A, SFP Pump is running per the turnover information.
Evaluator Cue:	<ul style="list-style-type: none"> • P-12A, SFP Pump’s red light is ON at the local control station. • The pump is rotating.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 2 Critical N	<p>3. Check SFP Pump Status:</p> <p>b. Ensure SFP cooling flow – BETWEEN 1200 GPM and 1300 GPM</p> <ul style="list-style-type: none"> ○ FI-652 OR ○ C-172, HX-13A/B Spent Fuel Pool Heat Exchanger Heat Rate Panel
Standard:	The examinee determines that flow is less than 1200 GPM and proceeds to step 3.b. RNO b.
Evaluator Cue:	<p>FI-652, HX-13A/B SFP HX Outlet Flow Indicator reads 500 GPM and relatively stable.</p> <p>IF asked at C172, FIT-00652 reads 500 GPM.</p>
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 3 Critical N	<p>3.b. RNO b. Perform the following:</p> <ul style="list-style-type: none"> ○ Throttle in service heat exchanger inlet to obtain 1200 GPM - 1300 GPM as indicated on FI-652. ○ SF-11 OR ○ SF-12
Standard:	The examinee throttles SF-11, HX-13A SFP HX Inlet in an attempt to obtain 1200 GPM – 1300 GPM.
Evaluator Cue:	SF-11, HX-13A SFP HX Inlet is throttle to near fully open; FI-652 indicates 550 GPM and is fluctuating ± 50 GPM.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	ALTERNATE PATH

Performance Step: 4 Critical Y	3.b. RNO b. Perform the following: <ul style="list-style-type: none"> ○ Shift pump/heat exchanger per OP-8A, SPENT FUEL POOL COOLING WATER SYSTEM OPERATION.
Standard:	The examinee: <ul style="list-style-type: none"> • Notifies the control room that throttling SF-11, HX-13A SFP HX Inlet did not restore desired flow, and • Transitions to OP 8A, SPENT FUEL POOL COOLING WATER SYSTEM OPERATION to shift pump / heat exchanger to the “B” train.
Evaluator Cue:	<u>IF</u> the examinee asks for procedural guidance, <u>THEN</u> cue to perform OP 8A, SPENT FUEL POOL COOLING WATER SYSTEM OPERATION, beginning with section 5.4.2, Placing Train-B in Service for Train-A.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	<hr/>

Performance Step: 5 Critical N	5.4.2 CHECK the following valves are OPEN: <ul style="list-style-type: none"> • SF-2, P-12B SFP Cooling Pump Suction. • SF-10, P-12B SFP Cooling Pump Discharge. • SF-23, P-12A and P-12B SFP Cooling Pump Discharge Header Cross-Connect. • SW-2927B, HX-13B SFP HX SW Inlet.
Standard:	The examinee checks the following valves open: <ul style="list-style-type: none"> • SF-2, P-12B SFP Cooling Pump Suction. • SF-10, P-12B SFP Cooling Pump Discharge. • SF-23, P-12A and P-12B SFP Cooling Pump Discharge Header Cross-Connect. • SW-2927B, HX-13B SFP HX SW Inlet. (MOV)
Evaluator Cue:	<u>WHEN</u> the examinee locates individual valves, <u>THEN</u> cue: <ul style="list-style-type: none"> • SF-2, P-12B SFP Cooling Pump Suction valve stem is fully extended. • SF-10, P-12B SFP Cooling Pump Discharge valve stem is fully extended. • SF-23, P-12A and P-12B SFP Cooling Pump Discharge Header Cross-Connect valve stem is fully extended. • SW-2927B, HX-13B SFP HX SW Inlet valve indicates OPEN.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	<hr/>

Performance Step: 6 Critical Y	5.4.3 OPEN SW-2930B, HX-13B SFP HX SW Outlet.
Standard:	The examinee requests the control room opens SW-2930B, HX-13B SFP HX SW Outlet.
Evaluator Cue:	The control room acknowledges the request and operates the control room switch to open the SW-2930B, HX-13B SFP HX SW Outlet MOV.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 7 Critical N	5.4.4 THROTTLE OPEN SW-746, HX-13B SFP HX Return Throttle, for expected heat load.
Standard:	The examinee throttles SW-746, HX-13B SFP HX Return Throttle for the expected heat load until the valve is approximately that of the "A" train, SW-661.
Evaluator Note:	This throttle valve is normally left in its throttled position from the last use. The examinee should reference SW-661, HX-13A SFP HX Return Throttle for current expected heat load position. The required action is to ensure a flowpath exists. The valve will be adjusted as needed to control temperature at a later step.
Evaluator Cue:	The valve handwheel for SW-746, HX-13B SFP HX Return Throttle is rotated until the valve stem is at desired position.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 8 Critical Y	5.4.5 START P-12B, SFP Cooling Pump.
Standard:	The examinee starts P-12B, SFP Cooling Pump by depressing the START push-button at the local control station.
Evaluator Note:	The examinee should note the CAUTION regarding maintaining pump suction pressure ≥ 2.5 psig (not critical)
Evaluator Cue:	If checked, the suction pressure is as-read. When the START push-button for P-12B, SFP Cooling Pump is depressed, the red light is on and the pump starts and comes up to speed.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 9 Critical Y	5.4.6 OPEN SF-22, HX-13B SFP Heat Exchanger Outlet.
Standard:	The examinee opens SF-22, HX-13B SFP Heat Exchanger Outlet by turning the valve handwheel in the counter-clockwise direction until the valve stem is fully extended.
Evaluator Cue:	The valve handwheel for SF-22, HX-13B SFP Heat Exchanger Outlet is turned counter-clockwise until the valve stem is fully extended.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 10 Critical Y	5.4.7 SHUT SF-21, HX-13A SFP Heat Exchanger Outlet.
Standard:	The examinee shuts SF-21, HX-13A SFP Heat Exchanger Outlet by turning the valve handwheel in the clockwise direction until the valve stem is fully inserted.
Evaluator Cue:	The valve handwheel for SF-21, HX-13A SFP Heat Exchanger is turned in the clockwise direction until the valve stem is fully inserted.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 11 Critical N	5.4.8 STOP P-12A, SFP Cooling Pump.
Standard:	The examinee stops P-12A, SFP Cooling Pump by depressing the STOP push-button at the local control station.
Evaluator Cue:	The STOP push-button for P-12A, SFP Cooling Pump is depressed, the red light is off and the pump begins to coast down.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 12 Critical N	5.4.9 THROTTLE SF-12, HX-13B SFP Heat Exchanger Inlet, to PROVIDE 1200 to 1300 gpm flow rate.
Standard:	The examinee verifies adequate flow is established and determines that any further repositioning of SF-12, HX-13B SFP Heat Exchanger Inlet is not required.
Evaluator Note:	This step normally requires two operators. The evaluator would act as the second operator to provide flow indication for adjustments. Because the valve is currently in the correct throttled position, no adjustment is needed.
Evaluator Cue:	FI-652, HX-13A/B SFP HX Outlet Flow Indicator reads 1245 GPM and is relatively stable.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Performance Step: 13 Critical N	5.4.10 SHUT SW-2930A, HX-13A SFP HX SW Outlet.
Standard:	The examinee requests the control room SHUT SW-2930A, HX-13A SFP HX SW Outlet.
Evaluator Cue:	The control room acknowledges the request and operates the control room switch to SHUT SW-2930A, HX-13A SFP HX SW Outlet MOV.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Comments:	_____

Terminating Cues: The JPM is complete.

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.

Stop Time: _____

TURNOVER SHEET**INITIAL CONDITIONS:**

- You are the PAB Operator.
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- P-12A, SFP Pump and HX-13A, SFP HX are currently aligned to provide SFP cooling.

INITIATING CUES (IF APPLICABLE):

- The control room has directed you to perform local actions of AOP-8F, Loss of Spent Fuel Pool Cooling beginning with step 3, "Check SFP Pump Status".

NOTE: Ensure the turnover sheet that was given to the examinee is returned to the evaluator.