



A1 RO SRO Determine License Status Rev 0

JPM TITLE: Determine License Status

JPM NUMBER: A1 RO SRO **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): Determine License Status Active or Inactive

K/A NUMBERS: 2.1.4 Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc. **K/A VALUE: 3.3/ 3.8**

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

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:	K. Thibodeau Instructor/Developer	04/27/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/6/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/7/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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"/>

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: (None)

Required Materials: OP-AA-100-1001 LICENSE MAINTENANCE AND ACTIVATION
Rev 6

Calculator

General References: None

Task Standards: Correctly determine if each of the RO/SRO Licenses are ACTIVE or INACTIVE. This JPM is complete when the applicant returns the cue sheet and the marked-up Active/Inactive Status Matrix.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

A. You are to determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1, 2020.

B. The following information is provided to you:

- Two (2) Reactor Operators (ROs) and one (1) Senior Reactor Operator (SRO) have the following history:
 - All perform off-shift assignments at the plant.
 - All are current in License Operator Continuing Training.
 - Medical requirements have been met for each operator.
 - The ACTIVE/INACTIVE status and time on shift since January 1, 2020 is as follows for each of the operators.
 - All hours include participation in shift turnovers.

REACTOR OPERATOR - A

License was **ACTIVE** on January 1, 2020

Thursday	01/02/20	Worked 0630-1430 shift as PSO.
Friday	01/03/20	Worked 0630-1430 shift as PSO.
Saturday	01/04/20	Worked 0630-1830 shift as PSO.
Sunday	01/05/20	Worked 0630-1830 shift as BOP.
Sunday	02/23/20	Worked 0630-1830 shift as BOP.
Friday	02/28/20	Worked 0630-1430 shift as PSO.

REACTOR OPERATOR - B

License was **INACTIVE** on January 1, 2020

Saturday	02/15/20	Worked 0630-1230 shift as PSO (UD)*.
Monday	03/02/20	Worked 0630-1430 shift as PSO (UD)*.
Saturday	03/07/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/08/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/22/20	Worked 0630-1230 shift as BOP (UD)*.

*Under Direction

SENIOR REACTOR OPERATOR - ALicense was **ACTIVE** on January 1, 2020

Saturday	01/04/20	Worked 0630-1830 shift as US.
Sunday	01/05/20	Worked 0630-1830 shift as US.
Tuesday	01/07/20	Worked 0630-1430 shift as WCS.
Saturday	01/18/20	Worked 0630-1830 shift as US.
Friday	02/14/20	Worked 0630-1430 shift as US.
Thursday	02/20/20	Worked 0630-1430 shift as US.

C. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Candidate; **“Determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1,2020. Circle your answer in the statements provided below”.**

RO A’s License is **ACTIVE / INACTIVE.**RO B’s License is **ACTIVE / INACTIVE.**SRO A’s License is **ACTIVE / INACTIVE.**

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: Evaluator Cues are not provided to the applicant during the performance of this Administrative JPM. All information is provided to implement the task and provide the completed outcome.

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: 01 Critical - YES</p>	<p>Determine the ACTIVE / INACTIVE status of RO A's license. Step is critical to ensure an RO with an inactive license does not perform license duties.</p>
<p>Standard:</p>	<p>The Applicant determines the license is ACTIVE based on the following.</p> <p>4.1 Maintenance of Active License Status</p> <p>1. The licensee shall:</p> <p>A. Actively perform the functions of an operator or senior operator, as appropriate, in a shift crew position required by Technical Specifications (TS) or shift crew position in excess of those required by Technical Specifications. (i.e., Reactor Operator, Unit Supervisor, or Shift Manager).</p> <p>Complete a minimum of 56 hours per calendar quarter in the position described in Section 4.1, Step 1.A above.</p> <p>(1) To complete the 56-hour minimum requirement, a combination of complete 8 and 12 hour shifts (in a position required by the plant's technical specifications) is acceptable. The completed 8 or 12 hour shifts must be as part of the standard schedule (not overtime that extends a shift or a truncated shift).</p> <p>(2) The complete 8-hour or 12-hour shifts shall include participation in shift turnovers.</p> <p>(3) Watches shall not be truncated when the operator satisfies the minimum quarterly requirement (56 hours).</p> <p>(4) Hours shall be in the same / current calendar quarter.</p> <p>(5) Overtime for coverage of a complete shift may be counted.</p> <p>RO stood total of 60 hours in RO position within the calendar quarter, meeting the 56 hour time and all other requirements. ACTIVE</p>
<p>Performance:</p>	<p>SATISFACTORY ____ UNSATISFACTORY ____</p>
<p>Performance Step: 02 Critical - YES</p>	<p>Determine the ACTIVE / INACTIVE status of RO B's license Step is critical to ensure an RO with an inactive license does not perform license duties</p>

<p>Standard:</p>	<p>The Applicant determines the license is INACTIVE based on the following.</p> <p>4.2 Reactivation of an Inactive License</p> <p>1. The licensee shall:</p> <p>A. Actively perform the functions of an operator or senior operator, under the direction of an operator or senior operator, as appropriate, in a shift crew position required by Technical Specifications (TS) or shift crew position in excess of those required by Technical Specifications (i.e., Reactor Operator, Unit Supervisor, or Shift Manager).</p> <p>B. Complete a minimum of 40 hours per calendar quarter in the position to which the licensee will be assigned as described in Section 4.2, Step 1.A above.</p> <p>(1) To complete the 40-hour minimum requirement, any combination between 4 hours and 12 hours are acceptable and do not have to coincide with shift rotation schedule, except as outlined in Section 4.2, Step 1.B(2). Document watch standing hours on OP-AA-100-1001-F01 and provide description of watch standing (i.e. 100% normal operation, mode 5 operation).</p> <p>(2) At least one complete on-coming shift turnover and one complete off-going turnover must be performed while under the direction of the active license holder and documented on OP-AA-100-1001-F01 under Comments section.</p> <p>(3) Reactivation shall occur within a <u>30 day consecutive timeframe</u>.</p> <p>Although the RO was under instruction for >40 hours it was not done within a 30 day consecutive timeframe. INACTIVE</p>
<p>Performance:</p>	<p>SATISFACTORY ____ UNSATISFACTORY ____</p>

<p>Performance Step: 03 Critical - YES</p>	<p>Determine the ACTIVE / INACTIVE status of SRO A's license Step is critical to ensure an RO with an inactive license does not perform license duties</p>
<p>Standard:</p>	<p>The Applicant determines the license is INACTIVE based on the following.</p> <p>4.1 Maintenance of Active License Status 1. The licensee shall:</p> <p>A. Actively perform the functions of an operator or senior operator, as appropriate, in a shift crew position required by Technical Specifications (TS) or shift crew position in excess of those required by Technical Specifications. (i.e., Reactor Operator, Unit Supervisor, or Shift Manager).</p> <p>(1) To complete the <u>56-hour minimum</u> requirement, a combination of complete 8 and 12 hour shifts (in a position required by the plant's technical specifications) is acceptable. The completed 8 or 12 hour shifts must be as part of the standard schedule (not overtime that extends a shift or a truncated shift).</p> <p>(2) The complete 8-hour or 12-hour shifts shall include participation in shift turnovers.</p> <ul style="list-style-type: none"> • In order to maintain the supervisory portion of an SRO license active, a SRO must stand at least one complete watch (8-or12-hour shift) per calendar quarter in an SRO only supervisory position. The remainder of complete watches required in a calendar quarter may be performed in either a credited SRO or RO position. • If a licensed SRO stands all of his or her required proficiency watches in a SRO-only supervisory position, the RO portion of the license is still considered active. SRO A stood one 12-hour shift in the credited Unit Supervisor position, thus maintaining the supervisory portion of the license. <p>On 01/07 SRO A stood one 8-hour shift in the WCS position, so only receives credit for 52 hours total. INACTIVE</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>



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JPM
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Terminating Cues: The 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

Directions to the Student:

Evaluator gives Turnover sheet to the student

C. You are to determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1, 2020.

D. The following information is provided to you:

- Two (2) Reactor Operators (ROs) and one (1) Senior Reactor Operator (SRO) have the following history:
 - All perform off-shift assignments at the plant.
 - All are current in License Operator Continuing Training.
 - Medical requirements have been met for each operator.
 - The ACTIVE/INACTIVE status and time on shift since January 1, 2020 is as follows for each of the operators.
 - All hours include participation in shift turnovers.

REACTOR OPERATOR - A

License was **ACTIVE** on January 1, 2020

Thursday	01/02/20	Worked 0630-1430 shift as PSO.
Friday	01/03/20	Worked 0630-1430 shift as PSO.
Saturday	01/04/20	Worked 0630-1830 shift as PSO.
Sunday	01/05/20	Worked 0630-1830 shift as BOP.
Sunday	02/23/20	Worked 0630-1830 shift as BOP.
Friday	02/28/20	Worked 0630-1430 shift as PSO.

REACTOR OPERATOR - B

License was **INACTIVE** on January 1, 2020

Saturday	02/15/20	Worked 0630-1230 shift as PSO (UD)*.
Monday	03/02/20	Worked 0630-1430 shift as PSO (UD)*.
Saturday	03/07/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/08/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/22/20	Worked 0630-1230 shift as BOP (UD)*.

*Under Direction

SENIOR REACTOR OPERATOR - A

License was **ACTIVE** on January 1, 2020

Saturday	01/04/20	Worked 0630-1830 shift as US.
Sunday	01/05/20	Worked 0630-1830 shift as US.
Tuesday	01/07/20	Worked 0630-1430 shift as WCS.
Saturday	01/18/20	Worked 0630-1830 shift as US.
Friday	02/14/20	Worked 0630-1430 shift as US.
Thursday	02/20/20	Worked 0630-1430 shift as US.

D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Candidate; **"Determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1,2020. Circle your answer in the statements provided below"**.

RO A's License is **ACTIVE / INACTIVE**.

RO B's License is **ACTIVE / INACTIVE**.

SRO A's License is **ACTIVE / INACTIVE**.

JPM TITLE: TRANSIENT BLENDED MAKEUP CALCULATION

JPM NUMBER: A2 RO **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): Perform Transient Blended Makeup Calculation

K/A NUMBERS: 2.1.37, Knowledge of procedures, guidelines, or limitations associated with reactivity management. **K/A VALUE: 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: NO

Alternate Path [NRC]: NO

Alternate Path [INPO]: NO

Developed by:	K. Thibodeau Instructor/Developer	04/28/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/6/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/7/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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)



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
				REVIEWER	DATE
1	New JPM	LOIT Exam 2020		KT	4/28/20
				MMM	5/7/20

Required Materials:

Turnover sheet
RS1735, Reactivity Calculations Rev 10
ODI-56 (REOR), Cycle 21 BOL
Calculator

General References:

Procedures:
RS1735, Reactivity Calculations Rev 10

Task Standards:

Calculate flow rates, and CVCS makeup control target values for a given plant transient per RS1735, Reactivity Calculations.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary Operator. You are going to perform a transient blended makeup calculation.
- B. The following information is provided to you:
 - 1. Plant is at 100% power.
 - 2. The RCS is NOT/NOP for 100% power.
 - 3. A plant shutdown to 50% in the next hour will be performed due to a 45 gpm SGTL on "B" SG
 - 4. The US has directed you to perform a 45 gpm RCS makeup over 60 minutes to compensate for the plant shutdown and the RCS mass loss.
 - 5. RCS boron is 1350 ppm.
 - 6. BAT boron concentration is 7100 ppm.
- C. Perform the task using RS1735, Reactivity Calculations, Section 4.5.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **"Primary Operator (or student's name), using RS1735, Reactivity Calculations, perform a transient blended makeup calculation for the stated 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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Performance Step: 01 Critical – NO	Goes to Sect 4.5 of RS1735 and obtains Form F, Transient Blended Makeup Worksheet
Standard:	Obtains Form F, Transient Blended Makeup Worksheet from RS1735, Reactivity Calculations.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	See KEY for values that student should enter on Form F.

Performance Step: 02 Critical - YES	Item 1: ENTER the current RCS boron concentration (C_{MU}). (Provided in Turnover)
Standard:	Enters the current RCS boron concentration on Form F, Item 1.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical - YES	Item 2: ENTER the actual Boric Acid Storage Tank concentration (C_{BAST}). (Provided)
Standard:	Enters Boric Acid Storage Tank Concentration Form F, Item 2.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical - YES	Item 3: ENTER the desired makeup flow rate SETPOINT in GPM: FIQ-111 (F_{TOT}). (Provided)
Standard:	Enters the desired makeup flow rate SETPOINT on Form F, Item 3.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	When requested provide the student with ODI 56.

Performance Step: 05 Critical - YES	Item 4: ENTER the required boric acid addition required for the next hour of the transient per ODI.56.
Standard:	Locates ODI.56 boric acid addition value for SGTL Shutdown @ 50% / Hr and enters on Form F, Item 4.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical - YES	Item 5: CALCULATE the required flow rate in gpm to allow for the boric acid addition requirements of ODI.56.
Standard:	Performs flow rate calculation and enters on Form F, Item 5.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 07 Critical – YES	Item 6: CALCULATE the flow rate required from blended makeup to maintain RCS mass (FBLEND).
Standard:	Calculates the flow rate required from blended makeup to maintain RCS mass and enters on Form F, Item 6.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 08 Critical – YES	Item 7: CALCULATE the boric acid flow rate required for blended makeup portion of the addition to maintain RCS mass (FBAT)
Standard:	Calculates the boric acid flow rate required for blended makeup portion of the addition to maintain RCS mass and enters on Form F, Item 7.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 09 Critical – YES	Item 8: CALCULATE the total boric acid flow rate required for blended makeup and ODI.56 values SETPOINT: FIQ 111 (FBTOT)
Standard:	Calculates the total boric acid flow rate required for blended makeup and ODI 56 values SETPOINT and enters on Form F, Item 8.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 10 Critical – YES	Item 9: CALCULATE the makeup quantity transient TARGET: FIQ 111 (GTOT)
Standard:	Calculates the makeup quantity transient TARGET and enters on Form F, Item 9.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 11 Critical – YES	Item 10: CALCULATE the boric acid quantity transient TARGET: FIQ 111 (GBAT)
Standard:	Calculates the boric acid quantity transient TARGET and enters on Form F, Item 10.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: **The 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

Directions to the Student:

Evaluator gives Turnover sheet to the student

C. You are the Primary Operator. You are going to perform a transient blended makeup calculation.

D. The following information is provided to you:

7. Plant is at 100% power.
8. The RCS is NOT/NOP for 100% power.
9. A plant shutdown to 50% in the next hour will be performed due to a 45 gpm SGTL on "B" SG
10. The US has directed you to perform a 45 gpm RCS makeup over 60 minutes to compensate for the plant shutdown and the RCS mass loss.
11. RCS boron is 1350 ppm.
12. BAT boron concentration is 7100 ppm.

E. Perform the task using RS1735, Reactivity Calculations, Section 4.5.

F. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **"Primary Operator (or student's name), using RS1735 Reactivity Calculations, perform a transient blended makeup calculation for the stated conditions."**

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



JOB PERFORMANCE MEASURE

JPM TITLE: Evaluate SI System Surveillance Data Sheet

JPM NUMBER: A3 RO **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): Determine operability and/or availability of safety related equipment.

K/A NUMBERS: 2.2.37 Ability to determine operability and/or availability of safety related equipment. **K/A VALUE: 3.6**

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

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:	K. Thibodeau Instructor/Developer	05/01/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/6/20 Date
Validated by:	SME (Technical Review)	Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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: (None)



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
				REVIEWER	DATE
1	New JPM	LOIT 2020 Exam	NA	KT	05/01/20
				MMM	5/6/20

Required Materials: OX1405.07, Safety Injection Quarterly And 18 Month Pump Flow And Valve Test REV 19.
Completed Form A of OX1405.07 Safety Injection Quarterly And 18 Month Pump Flow And Valve Test Rev 19.
OX1456.81, Operability Testing Of IST Valves Rev 36
OX1456.86, Operability Testing Of IST Pumps Fig 3.
Seabrook Station Technical Specifications

General References: None

Task Standards: Evaluate surveillance test data to determine if acceptance criteria is met.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are to evaluate SI system quarterly surveillance data to determine if acceptance criteria are met.
- B. The following information is provided to you:
 - Plant is 100% power.
 - OX1405.07, Safety Injection Quarterly And 18 Month Pump Flow And Valve Test Train A (Sect 4.1) PM number SI-OT005 has just been completed.
 - Test results and IST Pump Criteria and Curve Data Sheets are attached.
- C. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Candidate; **“Evaluate attached Safety Injection Quarterly And 18 Month Pump Flow And Valve Test results (Form A of OX1405.07) PM number SI-OT005, and determine if acceptance criteria has been met. Inform me of the results”.**

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: Evaluator Cues are not provided to the applicant during the performance of this Administrative JPM. All information is provided to implement the task and provide the completed outcome.

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: 01 Critical - NO	Step 4.1.15.1 Evaluates Oil Filter Inlet Pressure
Standard:	Candidate compares pressure data for step 4.1.15.1 against Acceptance Criteria and determines Acceptance Criteria is met based on <i>Note 5: This is for trending only and not part of the acceptance criteria.</i>
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Performance Step: 02 Critical – NO	Step 4.1.15.2 Evaluates Oil Filter Outlet Pressure
Standard:	Candidate compares pressure data for step 4.1.15.2 against Acceptance Criteria and determines Acceptance Criteria is met based on <i>Note 1: Normal pressure is 7-9 psig.</i>
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Performance Step: 03 Critical – NO	Step 4.1.17.1 Evaluates Dynamic Suction Pressure
Standard:	Candidate compares pressure data for step 4.1.17.1 against Acceptance Criteria and determines Acceptance Criteria is NA.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____

Performance Step: 04 Critical - NO	4.1.17.2 Evaluates Discharge Pressure
Standard:	Candidate compares pressure data for step 4.1.17.2 against Acceptance Criteria and determines Acceptance Criteria is NA.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Performance Step: 05 Critical - NO	Step 4.1.17.3 Evaluates Flowrate
Standard:	Candidate compares flowrate data for step 4.1.17.3 against Acceptance Criteria and determines Acceptance Criteria is met.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Performance Step: 06 Critical - NO	Step 4.1.17.4 RWST Temperature
Standard:	Candidate compares pressure data for step 4.1.17.4 against Acceptance Criteria and determines Acceptance Criteria is NA.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____
Performance Step: 07 Critical - NO	Step 4.1.17.5 RWST Level
Standard:	Candidate compares pressure data for step 4.1.17.5 against Acceptance Criteria and determines Acceptance Criteria is NA.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____

Performance Step: 08 Critical - YES	Step 4.1.17.6 Differential Pressure
Standard:	Candidate calculates differential pressure and enters on data form, then compares to Acceptance Criteria. Determines Acceptance Criteria is NOT MET based on T/S limits located on Fig 3 of OX1456.86. Candidate informs evaluator of evaluation results.
Performance:	SATISFACTORY ____ UNSATISFACTORY ____

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

Directions to the Student:

Evaluator gives Turnover sheet to the student

C. You are to evaluate SI system quarterly surveillance data to determine if acceptance criteria are met.

D. The following information is provided to you:

- Plant is 100% power.
- OX1405.07, Safety Injection Quarterly And 18 Month Pump Flow And Valve Test Train A (Sect 4.1) PM number SI-OT005 has just been completed.
- Test results and IST Pump Criteria and Curve Data Sheets are attached.

D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Candidate; **“Evaluate attached Safety Injection Quarterly And 18 Month Pump Flow And Valve Test results (Form A) PM number SI-OT005, and determine if acceptance criteria has been met. Inform me of the results”.**

JPM TITLE: Determine Accumulated Dose in Support of Work Activities

JPM NUMBER: A4 RO **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): Determine Accumulated Dose in Support of Work Activities

K/A NUMBERS: 2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions. **K/A VALUE: 3.2**

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

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:	K. Thibodeau Instructor/Developer	05/06/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/7/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/15/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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)

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
				REVIEWER	DATE
1	New JPM	LOIT Exam 2020		KT	05/06/20
				MMM	5/7/20

- Required Materials:** Turnover sheet
RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval
Calculator
- General References:** RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval
- Task Standards:** Calculate radiation exposure levels and determine if dose limits will be exceeded.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are going to calculate radiation exposure levels and determine if dose limits will be exceeded.
- B. The following information is provided to you:
 - 1. A job in the Letdown De-gassifier Room is required.
 - 2. The general area dose rates range from 25-45 mrem/hr, however assigned task will bring the workers within 30 cm of hot spots. Dose rates are listed below.
 - 3. The following people have been assigned to perform the work.

	Dose rate at assigned location.	Time to complete assigned task	Exposure History Annual (this year) TEDE
Rad Worker A	500 mr/hr	1.2 hrs	1510 mrem
Rad Worker B	100 mr/hr	1.7 hrs	1655 mrem
Rad Worker C (Declared Pregnant)	220 mr/hr	2.5 hrs	20 mrem (total gestation)
RCA Visitor (non rad worker)	45 mr/hr	2.5 hrs	0 mrem

- C. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

- C. Evaluator to candidate, **“Calculate radiation exposure levels and determine if any dose limits will be exceeded for each worker’s assigned task”**.

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

NOTE: When student demonstrates the ability to obtain a controlled copy of the procedure, provide the student with RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval

Performance Step: 01 Critical – NO	Candidate obtains RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval, Figure 5.1
Standard:	Obtains RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval, Figure 5.1.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Calculations do not need to be in any particular order.

Performance Step: 02 Critical - NO	Calculate total exposure for Worker A.
Standard:	Calculates total exposure for Worker A to be 2110 mrem total (600 mrem task + 1510 mrem annual)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical - NO	Calculate total exposure for Worker B.
Standard:	Calculates total exposure for Worker B to be 1825 mrem total (170 mrem task + 1655 annual)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step:04 Critical - NO	Calculate total exposure for Worker C.
Standard:	Calculates total exposure for Worker C to be 570 mrem. (550 mrem + 20 gestation)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step:05 Critical - NO	Calculate total exposure for RCA visitor.
Standard:	Calculates total exposure for RCA visitor to be 112.5 mrem (112.5 task + 0 mrem annual)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical – YES	Determine if exposure limits will be exceeded.
Standard:	Compares total exposure results against Line 7 and Line 9 of Figure 1. Determines Radworker A will exceed Admin Limit and Radworker C will exceed Federal Limit.
	NOTE: It is not necessary for candidate to determine admin limit for Radworker C once it is recognized that the Federal Limit will be exceeded.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: **The JPM is complete**

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

Stop Time: _____



A4 RO, Determine Accumulated Dose in Support of Work Activities 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

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are going to calculate radiation exposure levels and determine if dose limits will be exceeded.
- B. The following information is provided to you:
 - 1. A job in the Letdown De-gassifier Room is required.
 - 2. The general area dose rates range from 25-45 mrem/hr, however assigned task will bring the workers within 30 cm of hot spots. Dose rates are listed below.
 - 3. The following people have been assigned to perform the work.

	Dose rate at assigned location.	Time to complete assigned task	Exposure History Annual (this year) TEDE
Rad Worker A	500 mr/hr	1.2 hrs	1510 mrem
Rad Worker B	100 mr/hr	1.7 hrs	1655 mrem
Rad Worker C (Declared Pregnant)	220 mr/hr	2.5 hrs	20 mrem (total gestation)
RCA Visitor (non rad worker)	45 mr/hr	2.5 hrs	0 mrem

- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

- C. Evaluator to candidate, **“Calculate radiation exposure levels and determine if any dose limits will be exceeded for each worker’s assigned task”**.

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



A1 RO SRO Determine License Status Rev 0

JPM TITLE: Determine License Status

JPM NUMBER: A1 RO SRO **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): Determine License Status Active or Inactive

K/A NUMBERS: 2.1.4 Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc. **K/A VALUE: 3.3/ 3.8**

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

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:	K. Thibodeau Instructor/Developer	04/27/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/6/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/7/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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"/>

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: (None)

Required Materials: OP-AA-100-1001 LICENSE MAINTENANCE AND ACTIVATION
Rev 6

Calculator

General References: None

Task Standards: Correctly determine if each of the RO/SRO Licenses are ACTIVE or INACTIVE. This JPM is complete when the applicant returns the cue sheet and the marked-up Active/Inactive Status Matrix.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

A. You are to determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1, 2020.

B. The following information is provided to you:

- Two (2) Reactor Operators (ROs) and one (1) Senior Reactor Operator (SRO) have the following history:
 - All perform off-shift assignments at the plant.
 - All are current in License Operator Continuing Training.
 - Medical requirements have been met for each operator.
 - The ACTIVE/INACTIVE status and time on shift since January 1, 2020 is as follows for each of the operators.
 - All hours include participation in shift turnovers.

REACTOR OPERATOR - A

License was **ACTIVE** on January 1, 2020

Thursday	01/02/20	Worked 0630-1430 shift as PSO.
Friday	01/03/20	Worked 0630-1430 shift as PSO.
Saturday	01/04/20	Worked 0630-1830 shift as PSO.
Sunday	01/05/20	Worked 0630-1830 shift as BOP.
Sunday	02/23/20	Worked 0630-1830 shift as BOP.
Friday	02/28/20	Worked 0630-1430 shift as PSO.

REACTOR OPERATOR - B

License was **INACTIVE** on January 1, 2020

Saturday	02/15/20	Worked 0630-1230 shift as PSO (UD)*.
Monday	03/02/20	Worked 0630-1430 shift as PSO (UD)*.
Saturday	03/07/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/08/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/22/20	Worked 0630-1230 shift as BOP (UD)*.

*Under Direction

SENIOR REACTOR OPERATOR - A

License was **ACTIVE** on January 1, 2020

Saturday	01/04/20	Worked 0630-1830 shift as US.
Sunday	01/05/20	Worked 0630-1830 shift as US.
Tuesday	01/07/20	Worked 0630-1430 shift as WCS.
Saturday	01/18/20	Worked 0630-1830 shift as US.
Friday	02/14/20	Worked 0630-1430 shift as US.
Thursday	02/20/20	Worked 0630-1430 shift as US.

C. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Candidate; **“Determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1,2020. Circle your answer in the statements provided below”.**

RO A’s License is **ACTIVE / INACTIVE.**

RO B’s License is **ACTIVE / INACTIVE.**

SRO A’s License is **ACTIVE / INACTIVE.**

JPM PERFORMANCE INFORMATION

Start Time: _____

NOTE: Evaluator Cues are not provided to the applicant during the performance of this Administrative JPM. All information is provided to implement the task and provide the completed outcome.

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: 01 Critical - YES</p>	<p>Determine the ACTIVE / INACTIVE status of RO A's license. Step is critical to ensure an RO with an inactive license does not perform license duties.</p>
<p>Standard:</p>	<p>The Applicant determines the license is ACTIVE based on the following.</p> <p>4.1 Maintenance of Active License Status</p> <p>1. The licensee shall:</p> <p>A. Actively perform the functions of an operator or senior operator, as appropriate, in a shift crew position required by Technical Specifications (TS) or shift crew position in excess of those required by Technical Specifications. (i.e., Reactor Operator, Unit Supervisor, or Shift Manager).</p> <p>Complete a minimum of 56 hours per calendar quarter in the position described in Section 4.1, Step 1.A above.</p> <p>(1) To complete the 56-hour minimum requirement, a combination of complete 8 and 12 hour shifts (in a position required by the plant's technical specifications) is acceptable. The completed 8 or 12 hour shifts must be as part of the standard schedule (not overtime that extends a shift or a truncated shift).</p> <p>(2) The complete 8-hour or 12-hour shifts shall include participation in shift turnovers.</p> <p>(3) Watches shall not be truncated when the operator satisfies the minimum quarterly requirement (56 hours).</p> <p>(4) Hours shall be in the same / current calendar quarter.</p> <p>(5) Overtime for coverage of a complete shift may be counted.</p> <p>RO stood total of 60 hours in RO position within the calendar quarter, meeting the 56 hour time and all other requirements. ACTIVE</p>
<p>Performance:</p>	<p>SATISFACTORY ____ UNSATISFACTORY ____</p>
<p>Performance Step: 02 Critical - YES</p>	<p>Determine the ACTIVE / INACTIVE status of RO B's license Step is critical to ensure an RO with an inactive license does not perform license duties</p>

<p>Standard:</p>	<p>The Applicant determines the license is INACTIVE based on the following.</p> <p>4.2 Reactivation of an Inactive License</p> <p>1. The licensee shall:</p> <p>A. Actively perform the functions of an operator or senior operator, under the direction of an operator or senior operator, as appropriate, in a shift crew position required by Technical Specifications (TS) or shift crew position in excess of those required by Technical Specifications (i.e., Reactor Operator, Unit Supervisor, or Shift Manager).</p> <p>B. Complete a minimum of 40 hours per calendar quarter in the position to which the licensee will be assigned as described in Section 4.2, Step 1.A above.</p> <p>(1) To complete the 40-hour minimum requirement, any combination between 4 hours and 12 hours are acceptable and do not have to coincide with shift rotation schedule, except as outlined in Section 4.2, Step 1.B(2). Document watch standing hours on OP-AA-100-1001-F01 and provide description of watch standing (i.e. 100% normal operation, mode 5 operation).</p> <p>(2) At least one complete on-coming shift turnover and one complete off-going turnover must be performed while under the direction of the active license holder and documented on OP-AA-100-1001-F01 under Comments section.</p> <p>(3) Reactivation shall occur within a <u>30 day consecutive timeframe</u>.</p> <p>Although the RO was under instruction for >40 hours it was not done within a 30 day consecutive timeframe. INACTIVE</p>
<p>Performance:</p>	<p>SATISFACTORY ____ UNSATISFACTORY ____</p>

<p>Performance Step: 03 Critical - YES</p>	<p>Determine the ACTIVE / INACTIVE status of SRO A's license Step is critical to ensure an RO with an inactive license does not perform license duties</p>
<p>Standard:</p>	<p>The Applicant determines the license is INACTIVE based on the following.</p> <p>4.1 Maintenance of Active License Status 1. The licensee shall:</p> <p>A. Actively perform the functions of an operator or senior operator, as appropriate, in a shift crew position required by Technical Specifications (TS) or shift crew position in excess of those required by Technical Specifications. (i.e., Reactor Operator, Unit Supervisor, or Shift Manager).</p> <p>(1) To complete the <u>56-hour minimum</u> requirement, a combination of complete 8 and 12 hour shifts (in a position required by the plant's technical specifications) is acceptable. The completed 8 or 12 hour shifts must be as part of the standard schedule (not overtime that extends a shift or a truncated shift).</p> <p>(2) The complete 8-hour or 12-hour shifts shall include participation in shift turnovers.</p> <ul style="list-style-type: none"> • In order to maintain the supervisory portion of an SRO license active, a SRO must stand at least one complete watch (8-or12-hour shift) per calendar quarter in an SRO only supervisory position. The remainder of complete watches required in a calendar quarter may be performed in either a credited SRO or RO position. • If a licensed SRO stands all of his or her required proficiency watches in a SRO-only supervisory position, the RO portion of the license is still considered active. SRO A stood one 12-hour shift in the credited Unit Supervisor position, thus maintaining the supervisory portion of the license. <p>On 01/07 SRO A stood one 8-hour shift in the WCS position, so only receives credit for 52 hours total. INACTIVE</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>



Terminating Cues: The JPM is complete.

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

Stop Time: _____



A1 RO SRO Determine License Status 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).

Table with 12 empty rows for comments/feedback.

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

Directions to the Student:

Evaluator gives Turnover sheet to the student

C. You are to determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1, 2020.

D. The following information is provided to you:

- Two (2) Reactor Operators (ROs) and one (1) Senior Reactor Operator (SRO) have the following history:
 - All perform off-shift assignments at the plant.
 - All are current in License Operator Continuing Training.
 - Medical requirements have been met for each operator.
 - The ACTIVE/INACTIVE status and time on shift since January 1, 2020 is as follows for each of the operators.
 - All hours include participation in shift turnovers.

REACTOR OPERATOR - A

License was **ACTIVE** on January 1, 2020

Thursday	01/02/20	Worked 0630-1430 shift as PSO.
Friday	01/03/20	Worked 0630-1430 shift as PSO.
Saturday	01/04/20	Worked 0630-1830 shift as PSO.
Sunday	01/05/20	Worked 0630-1830 shift as BOP.
Sunday	02/23/20	Worked 0630-1830 shift as BOP.
Friday	02/28/20	Worked 0630-1430 shift as PSO.

REACTOR OPERATOR - B

License was **INACTIVE** on January 1, 2020

Saturday	02/15/20	Worked 0630-1230 shift as PSO (UD)*.
Monday	03/02/20	Worked 0630-1430 shift as PSO (UD)*.
Saturday	03/07/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/08/20	Worked 0630-1830 shift as BOP (UD)*.
Sunday	03/22/20	Worked 0630-1230 shift as BOP (UD)*.

*Under Direction

SENIOR REACTOR OPERATOR - A

License was **ACTIVE** on January 1, 2020

Saturday	01/04/20	Worked 0630-1830 shift as US.
Sunday	01/05/20	Worked 0630-1830 shift as US.
Tuesday	01/07/20	Worked 0630-1430 shift as WCS.
Saturday	01/18/20	Worked 0630-1830 shift as US.
Friday	02/14/20	Worked 0630-1430 shift as US.
Thursday	02/20/20	Worked 0630-1430 shift as US.

D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Candidate; **"Determine if each of the RO/SRO Licenses have completed required watch hours to maintain/reactivate ACTIVE LICENSE status as of 0700 on April 1,2020. Circle your answer in the statements provided below"**.

RO A's License is **ACTIVE / INACTIVE**.

RO B's License is **ACTIVE / INACTIVE**.

SRO A's License is **ACTIVE / INACTIVE**.

JPM TITLE: APPROVE TRANSIENT BLENDED MAKEUP CALCULATION

JPM NUMBER: A2 SRO REV. 0

TASK NUMBER(S) / TASK TITLE(S): Approve Transient Blended Makeup Calculation

K/A NUMBERS: 2.1.37, Knowledge of procedures, guidelines, or limitations associated with reactivity management. **K/A VALUE:** 4.6

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:	K. Thibodeau Instructor/Developer	04/30/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/6/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/7/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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)

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
				REVIEWER	DATE
1	New JPM	LOIT Exam 2020		KT	4/30/20
				MMM	5/7/20

Required Materials:

Turnover sheet
RS1735, Reactivity Calculations Rev 10
Completed RS1735, Reactivity Calculations, Form F
ODI-56, (REOR) CYCLE 21 BOL
Calculator

General References:

Procedures:
RS1735, Reactivity Calculations Rev 10

Task Standards:

Verify accuracy of calculated flow rates, and CVCS makeup control target values for a given plant transient, per RS1735, Reactivity Calculations.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Unit Supervisor. You are going to perform the approval step for Form F, Transient Blended Makeup Worksheet.
- B. The following information is provided to you:
 - 1. Plant is at 100% power.
 - 2. The RCS is NOT/NOP for 100% power.
 - 3. A plant shutdown to 50% in the next hour will be performed due to a 45 gpm SGTL on "B" SG
 - 4. A 45 gpm RCS makeup over 60 minutes to compensate for the plant shutdown and the RCS mass loss will be required.
 - 5. RCS boron is 1350 ppm.
 - 6. BAT boron concentration is 7100 ppm.
- C. Perform the task using RS1735, Reactivity Calculations, Section 4.5.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Unit Supervisor, **"Unit Supervisor (or student's name), perform step 4.5.12 of RS1735 Reactivity Calculations to approve the attached transient blended makeup calculation and if any errors exist make the required corrections "**.

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

NOTE: When student demonstrates the ability to obtain a controlled copy of the procedure, provide the student with RS1735, Reactivity Calculations AND ODI.56.

Performance Step: 01 Critical – NO	Goes to Sect 4.5, step 4.5.12 of RS1735, Reactivity Calculations and obtains completed Form F, Transient Blended Makeup Worksheet
Standard:	Reads step 4.5.12: HAVE a Senior Reactor Operator APPROVE Form F, Transient Blended Makeup Worksheet. Obtains completed Form F.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	See KEY for values on Form F.

Performance Step: 02 Critical - NO	Item 1: ENTER the current RCS boron concentration (C_{MU}). (Provided in Turnover)
Standard:	Verifies current RCS boron concentration on Form F, Item 1.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical - NO	Item 2: ENTER the actual Boric Acid Storage Tank concentration (C_{BAST}). (Provided)
Standard:	Verifies Boric Acid Storage Tank Concentration Form F, Item 2.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical - NO	Item 3: ENTER the desired makeup flow rate SETPOINT in GPM: FIQ-111 (F_{TOT}). (Provided)
Standard:	Verifies desired makeup flow rate SETPOINT on Form F, Item 3.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	When requested provide the student with ODI-56.

Performance Step: 05 Critical - NO	Item 4: ENTER the required boric acid addition required for the next hour of the transient per ODI.56.
Standard:	Locates ODI-56 boric acid addition value for SGTL Shutdown @ 50% / Hr and verifies entry on Form F, Item 4.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical – YES	Item 5: CALCULATE the required flow rate in gpm to allow for the boric acid addition requirements of ODI 56.
Standard:	Verifies flow rate calculation on Form F, Item 5 and <u>corrects the calculation.</u>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 07 Critical – YES	Item 6: CALCULATE the flow rate required from blended makeup to maintain RCS mass (FBLEND).
Standard:	Verifies flow rate required from blended makeup to maintain RCS mass on Form F, Item 6 and <u>corrects the calculation.</u>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 08 Critical – YES	Item 7: CALCULATE the boric acid flow rate required for blended makeup portion of the addition to maintain RCS mass (FBAT)
Standard:	Verifies boric acid flow rate required for blended makeup portion of the addition to maintain RCS mass on Form F, Item 7 and <u>corrects the calculation.</u>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 09 Critical – NO	Item 8: CALCULATE the total boric acid flow rate required for blended makeup and ODI 56 values SETPOINT: FIQ 111 (FBTOT)
Standard:	Verifies the total boric acid flow rate required for blended makeup and ODI 56 values SETPOINT on Form F, Item 8.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 10 Critical – NO	Item 9: CALCULATE the makeup quantity transient TARGET: FIQ 111 (GTOT)
Standard:	Verifies the makeup quantity transient TARGET on Form F, Item 9.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____



**A2 SRO, APPROVE TRANSIENT BLENDED MAKEUP
CALCULATION Rev 0**

JPM
Page 9 of 11

Performance Step: 11 Critical – YES	Item 10: CALCULATE the boric acid quantity transient TARGET: FIQ 111 (GBAT)
Standard:	Verifies the boric acid quantity transient TARGET on Form F, Item 10 and <u>corrects the calculation.</u>
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: **The JPM is complete**

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

Stop Time: _____



A2 SRO, APPROVE TRANSIENT BLENDED MAKEUP
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

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Unit Supervisor. You are going to perform the approval step for Form F, Transient Blended Makeup Worksheet.
- B. The following information is provided to you:
 - 1. Plant is at 100% power.
 - 2. The RCS is NOT/NOP for 100% power.
 - 3. A plant shutdown to 50% in the next hour will be performed due to a 45 gpm SGTL on "B" SG
 - 4. A 45 gpm RCS makeup over 60 minutes to compensate for the plant shutdown and the RCS mass loss will be required.
 - 5. RCS boron is 1350 ppm.
 - 6. BAT boron concentration is 7100 ppm.
- C. Perform the task using RS1735, Reactivity Calculations, Section 4.5.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Unit Supervisor, "**Unit Supervisor (or student's name), perform step 4.5.12 of RS1735 Reactivity Calculations to approve the attached transient blended makeup calculation and if any errors exist make the required corrections**".

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

JPM TITLE: Evaluate SI Pump AOT

JPM NUMBER: A3 SRO **REV. 09**

TASK NUMBER(S) / TASK TITLE(S): SBK 1190401203 Clarify Tech Specs And Application Of Action Statement Requirements

K/A NUMBERS: 2.2.23 Ability to track Technical Specification limiting conditions for operations. **K/A VALUE: 4.6**

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

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:	K, Thibodeau Instructor/Developer	05/03/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/7/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/15/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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)

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
				REVIEWER	DATE
1	New JPM	LOIT NRC Exam 2020		KT	05/03/20
				MMM	5/7/20

Required Materials: Turnover sheet
ODI.30 Allowed Outage Time Work Rev. 6
Completed SI Pump Surveillance Data, Form A OX1405.07
Calculator

General References: Seabrook Technical Specifications:

Task Standards: Evaluate plant conditions using ODI.30 Allowed Outage Time Worksheet.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Work Control Supervisor. You are going to evaluate plant conditions using Technical Specifications.
- B. The following information is provided to you:
 - 1. The plant is 100% power.
 - 2. Safety Injection Quarterly And 18 Month Pump Flow And Valve Test, Train A has just been completed.
 - 3. Results, as listed on Form A, have been reviewed by the RO. He has determined Acceptance Criteria was NOT met. (See data results for step 4.1.17.6).
 - 4. All required control systems are in automatic and no other equipment is out of service.
- C. Perform the task using Seabrook Technical Specifications and ODI.30 Allowed Outage Time Work.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Work Control Supervisor, “ **WCS (or student’s name), As of 0700 it was determined SI-P-6A had failed the Safety Injection Quarterly And 18 Month Pump Flow And Valve Test. The current date and time is 05/01/20 0800.**

Determine the Technical Specification action statement that must be entered. Determine when the mode reduction must be started by, and at what time the plant must be in Mode 3.

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Note:	When requested, provide the student with the applicable Tech Specs, ODI.30 .

Performance Step: 01 Critical – NO	Evaluate Technical Specifications 3.5.2.
Standard:	Determines that T.S. 3.5.2 Action a. applies. “With one ECCS subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 02 Critical - NO	Refers to ODI.30 to calculate AOT - Upon entering an applicable LCO determine the appropriate AOT worksheet using Figure 6.1, AOT flowchart as a guide. <ul style="list-style-type: none"> • Is the LCO in question shown on list A. • Determine if the LCO in question is 3.03 or is prompt action to initiate a shutdown and cooldown required. • Goes to ODI.30A or ODI.30B.

Standard:	Using Figure 6.1, AOT flowchart as a guide determines the following: <ul style="list-style-type: none"> • Refers to Seabrook Technical Specifications and determines TS 3.5.2 Action a. is required and enters on Fig 6.1. • Determines that the LCO in question is not shown in List A. • Determines that prompt action to initiate a shutdown and cooldown is not required. • Goes to ODI.30A.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	See answer key for information that should be entered on Form ODI.30A.
--------------	---

Performance Step: 03 Critical - NO	Enter Technical Specification LCO #, Action #, and entered from mode - information.
Standard:	Enters LCO specific information on Form ODI.30A.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical - NO	Enter # HRS AOT provided before mode reduction to mode 3 required for item a.
Standard:	Enters # HRS AOT provided before mode reduction to mode 3 required for item a.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - YES	Enter # HRS provided to change modes to mode 3 (0 if entered from mode 3 or 4) for item b.
Standard:	Enters # HRS provided to change modes to mode 3 for item b.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical – NO	Enter # HRS additional AOT provided in mode 3 before reduction to mode 4 or 5 required (circle applicable mode) for item c.
Standard:	Enters # HRS additional AOT provided in mode 3 before reduction to mode 4 or 5 required (circle applicable mode 4) for item c.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 07 Critical – YES	Enter # HRS provided to change modes from mode 3 to mode 4 or 5 (circle applicable mode) for item d.
Standard:	Enters # HRS provided to change modes from mode 3 to mode 4 or 5 (circle applicable mode) for item d.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 08 Critical – NO	Enter time/date LCO action statement entered on line 1 for item e.
Standard:	Enters time/date LCO action statement entered on line 1 for item e.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____



Performance Step: 09 Critical – NO	Circle applicable mode - action statement entered from.
Standard:	Circles applicable mode - action statement entered from. Goes to line 2.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 10 Critical – NO	Calculate time/date mode reduction to mode 3 must be started by and enter time/date on line 2 item f.
Standard:	Calculates time/date mode reduction to mode 3 must be started by and enters time/date on line 2 item f.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 11 Critical – YES	Calculate time/date plant must be in mode 3 and enter time/date on line 3 item g.
Standard:	Calculates time/date plant must be in mode 3 and enters time/date on line 3 item g.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Additional information on lines 4 through 10 of ODI.30A is not necessary for this JPM.
Cue:	If necessary, provide the following cue, SM to WCS, “Additional information will be added to the worksheet when required.”

Terminating Cues: The JPM is complete.

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

Stop Time: _____



A3 SRO Evaluate SI Pump AOT, Rev 00

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

Directions to the Student:
Directions to the Student:

Evaluator gives Turnover sheet to the student

- C. You are the Work Control Supervisor. You are going to evaluate plant conditions using Technical Specifications.
- D. The following information is provided to you:
 - 4. The plant is 100% power.
 - 5. Safety Injection Quarterly And 18 Month Pump Flow And Valve Test, Train A has just been completed.
 - 6. Results, as listed on Form A, have been reviewed by the RO. He has determined Acceptance Criteria was NOT met. (See data results for step 4.1.17.6).
 - 5. All required control systems are in automatic and no other equipment is out of service.
- E. Perform the task using Seabrook Technical Specifications and ODI.30 Allowed Outage Time Work.
- F. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Work Control Supervisor, “ **WCS (or student’s name), As of 0700 it was determined SI-P-6A had failed the Safety Injection Quarterly And 18 Month Pump Flow And Valve Test. The current date and time is 05/01/20 0800.**

Determine the Technical Specification action statement that must be entered. Determine when the mode reduction must be started by, and at what time the plant must be in Mode 3.

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



JOB PERFORMANCE MEASURE

JPM TITLE: Increased Radiation Exposure Approval

JPM NUMBER: A4 SRO **REV. 0**

TASK NUMBER(S) / TASK TITLE(S): Increased Radiation Exposure Approval

K/A NUMBERS: 2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions. **K/A VALUE: 3.7**

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

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:	K. Thibodeau Instructor/Developer	05/06/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/7/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/15/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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)



A4 SRO, Increased Radiation Exposure Approval Rev 0

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
				REVIEWER	DATE
1	New JPM	LOIT Exam 2020		KT	05/06/20
				MMM	5/7/20

- Required Materials:** Turnover sheet
RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval
Calculator
- General References:** RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval
- Task Standards:** Calculate radiation exposure levels and determine if dose limits will be exceeded.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are going to calculate radiation exposure levels and determine if dose limits will be exceeded.
- B. The following information is provided to you:
 - 1. A job in the Letdown De-gassifier Room is required.
 - 2. The general area dose rates range from 25-45 mrem/hr, however assigned task will bring the workers within 30 cm of hot spots. Dose rates are listed below.
 - 3. The following people have been assigned to perform the work.

	Dose rate at assigned location.	Time to complete assigned task	Exposure History Annual (this year) TEDE
Rad Worker A	500 mr/hr	3.2 hrs	1510 mrem
Rad Worker B	100 mr/hr	1.7 hrs	1655 mrem
RCA Visitor (non rad worker)	45 mr/hr	2.5 hrs	0 mrem

- C. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

- C. Evaluator to candidate, **“Calculate radiation exposure levels and determine if any dose limits will be exceeded for each worker’s assigned task. If dose extensions are needed, determine who must authorize the extensions.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

NOTE: When candidate demonstrates the ability to obtain a controlled copy of the procedure, provide the student with RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval.

Performance Step: 01 Critical – NO	Candidate obtains RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval, Figure 5.1
Standard:	Obtains RP-5.1, Annual Occupational Exposure Control and Increased Radiation Exposure Approval, Figure 5.1.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Calculations do not need to be in any particular order.

Performance Step: 02 Critical - NO	Calculate total exposure for Worker A.
Standard:	Calculates total exposure for Worker A to be 3110 mrem total (1600 mrem task + 1510 mrem annual)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical - NO	Calculate total exposure for Worker B.
Standard:	Calculates total exposure for Worker B to be 1825 mrem total (170 mrem task + 1655 annual)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step:04 Critical - NO	Calculate total exposure for RCA visitor.
Standard:	Calculates total exposure for RCA visitor to be 112.5 mrem (112.5 task + 0 mrem annual)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical – YES	Determine if exposure limits will be exceeded.
Standard:	Compares total exposure results against Line 7 Figure 1. Determines Radworker A will exceed Admin Limit .
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical – YES	Determine who must authorize dose extensions.
Standard:	Refers to Fig 5.3 and determines RP Supervisor and Radiation Protection Department Manager are required to authorize 3000-4000 mrem dose.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The 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

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are going to calculate radiation exposure levels and determine if dose limits will be exceeded.
- B. The following information is provided to you:
 1. A job in the Letdown De-gassifier Room is required.
 2. The general area dose rates range from 25-45 mrem/hr, however assigned task will bring the workers within 30 cm of hot spots. Dose rates are listed below.
 3. The following people have been assigned to perform the work.

	Dose rate at assigned location.	Time to complete assigned task	Exposure History Annual (this year) TEDE
Rad Worker A	500 mr/hr	3.2 hrs	1510 mrem
Rad Worker B	100 mr/hr	1.7 hrs	1655 mrem
RCA Visitor (non rad worker)	45 mr/hr	2.5 hrs	0 mrem

- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

- C. Evaluator to candidate, **“Calculate radiation exposure levels and determine if any dose limits will be exceeded for each worker’s assigned task. If dose extensions are needed, determine who must authorize the extensions.”**

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



JOB PERFORMANCE MEASURE

JPM TITLE: E-PLAN CLASSIFICATION

JPM NUMBER: A5 SRO **REV. 00**

TASK NUMBER(S) / TASK TITLE(S): SBK 3450504203 Classify/Reclassify An Emergency Condition

K/A NUMBERS: 2.4.41, Knowledge of the emergency action level thresholds and classifications **K/A VALUE: 4.6**

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:	K. Thibodeau Instructor/Developer	04/30/20 Date
Reviewed by:	Mark Martellotta Instructor (Instructional Review)	5/7/20 Date
Validated by:	Jim Kennish SME (Technical Review)	5/15/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 Date
Approved by:	Sean Doody Training Program Owner	5/18/20 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)



A5 SRO E-Plan Classification, Rev. 00

JPM
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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
				REVIEWER	DATE
1	Minor modifications to JPM #95.	To be used for LOIT NRC Exam 2020.		KT	04/30/20
				MMM	5/7/20
2					
3					
4					
5					

Set Up

Ensure hard copies of CSF status trees/worksheet and ER1.1C Fission Product Barrier Degradation Matrix are available prior to starting the JPM.

Required Materials:

- Turnover sheet
- F-0.0, CSF Status Tee Worksheet Rev. 23
- F-0.1, Subcriticality Rev. 20
- F-0.2, Core Cooling Rev.20
- F-0.3, Heat Sink Rev.21
- F-0.4, Integrity Rev.22
- F-0.5, Containment Rev. 20
- F-0.6, Inventory Rev.20
- F-0.7, Emergency Recirculation Rev.20
- F-0.8, RDMS Rev. 20
- ER1.1, Classification Of Emergencies, Rev. 59.
- PID-1-MAH-B20504 Rev 28

General References:

- F-0.0, CSF Status Tee Worksheet
- F-0.1, Subcriticality
- F-0.2, Core Cooling
- F-0.3, Heat Sink
- F-0.4, Integrity
- F-0.5, Containment
- F-0.6, Inventory
- F-0.7, Emergency Recirculation
- F-0.8, RDMS
- ER1.1, Classification Of Emergencies.

Task Standards: Determine the emergency action level and event classification.

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.

Directions to the Student:

A. You are the Work Control Supervisor.

B. The following information is provided to you:

TIME = 0 Min

- The motor driven EFW pump is INOPERABLE and tagged out for maintenance.
- RCS Tave on program.
- The reactor tripped from 100%
- The US has entered E-0, Reactor Trip or Safety injection.
- Safety Injection has automatically actuated due to a large break LOCA.
- CBS-P-9A & 9B failed to start.
- Containment Pressure is 20# and rising.
- The turbine driven EFW pump tripped on overspeed and MS-V-129 cannot be reset.
- The SUFP tripped after a starting attempt.

TIME = 15 Min

- E-0 Attachment A is complete with the following exceptions:
 - CBS Pumps failed to start
 - COP-V-3, 4, and 8 remain open and cannot be closed
- E-1 Loss of Reactor or Secondary Coolant has been entered
- Reactor power is 3.3×10^{-7} amps on Gamma Metrics with a -1/3 DPM SUR
- All RCPs are secured (Subcooling 0F & Phase B Actuation)
- Containment pressure 33# and lowering
- CETCs indicate 310F and rising
- PZR level indicates 0%
- RVLIS Full Range indicates 30% and lowering
- All S/G levels are 60% WR (0%) NR and steady
- RWST level - 356,000gal and lowering
- Containment Sump level is 0.92 feet and rising
- All loops T_c are reading 290F and lowering
- Containment Hydrogen Analyzers are not in service
- Post LOCA radiation monitors RM-6576A-1 and RM-6576B-1 read 2R/hr and rising

- C. Perform the task using ER1.1, Classification of Emergencies.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to WCS, **“Work Control Supervisor (or student’s name) determine the most severe emergency classification using ER1.1. Perform an evaluation of ONLY ER1.1C Fission Product Barrier Degradation Matrix. Circle all conditions. Document any classification on Turnover sheet”**

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

EAL & CLASSIFICATION (if any) _____

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Note:	Do NOT allow the student to use any laminated sheets when checking the CSF status trees or ER1.1C Fission Product Barrier Degradation Matrix. Provide student with the required worksheets and CSF status trees when requested.

Performance Step: 01 Critical - No	Evaluate CSF Status Trees: Subcriticality F-0.1 <ul style="list-style-type: none"> • Neutron flux < 5%. • Intermediate Range <1.0E-3%. • Intermediate Range SUR zero or negative.
Standard:	Subcriticality F-0.1 <ul style="list-style-type: none"> • Neutron flux < 5% (YES). • Intermediate Range <1.0E-3% (YES). • Intermediate Range SUR zero or negative (YES). • Marks Subcriticality CSF SAT (GREEN).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical - No	Evaluate CSF Status Trees: Core Cooling F-0.2 <ul style="list-style-type: none"> • Core Exit TCs <1100°F. • RCS Subcooling >40°F. • At least one RCP running. • Core Exit TCs <725°F. • RVLIS Full Range >40%.
Standard:	Core Cooling F-0.2 <ul style="list-style-type: none"> • Core Exit TCs <1100°F (YES). • RCS Subcooling >40°F (NO). • At least one RCP running (NO). • Core Exit TCs <725°F (YES). • RVLIS Full Range >40% (NO). • Marks Core Cooling Go TO FR-C.2 (ORANGE).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	If the student reports Core Cooling ORANGE to US, “I copy, you have validated the Core Cooling ORANGE path.”

Performance Step: 03 Critical - No	Evaluate CSF Status Trees: Heat Sink F-0.3 <ul style="list-style-type: none"> • SG levels: >15% NR in 1 SG with containment >4 psig. • Total feedwater flow to SGs greater than 500 gpm.
Standard:	Heat Sink F-0.3 <ul style="list-style-type: none"> • SG levels: >15% NR in 1 SG with containment >4 psig (NO). • Total feedwater flow to SGs greater than 500 gpm (NO). • Marks Heat Sink Go To FR-H.1 (RED).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	If the student reports Heat Sink RED to US, “I copy, you have validated the Heat Sink Red path.”

Cue:	Since temperature trends are not displayed, provide this cue when the student begins evaluation of the “P” status tree, “Prior to the trip, RCS cold leg temperatures indicated 559°F.”
Performance Step: 04 Critical - No	Evaluate CSF Status Trees: Integrity F-0.4: <ul style="list-style-type: none"> • Temperature decrease <100°F TCs in last 60 minutes. • RCS – all cold leg temps to the right of limit A. • RCS - all cold leg temps >250°F. • RCS - all cold leg temps >280°F
Standard:	Integrity F-0.4: <ul style="list-style-type: none"> • Temperature decrease <100°F TCs in last 60 minutes (NO). • RCS – all cold leg temps to the right of limit A (YES). • RCS - all cold leg temps >250°F (YES). • RCS - all cold leg temps >280°F (YES). • Marks Integrity CSF SAT (GREEN).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - No	Evaluate CSF Status Trees: Containment F-0.5: <ul style="list-style-type: none"> • Containment <52 psig. • Containment <18 psig. • All Containment penetrations Phase A & B isolated.
Standard:	Containment F-0.5: <ul style="list-style-type: none"> • Containment <52 psig (YES). • Containment <18 psig (NO). • All Containment penetrations Phase A & B isolated (NO). <ul style="list-style-type: none"> ○ Student may use PID-1-MAH-B20504 to determine that containment penetrations are not intact. • Marks Containment Go To FR-Z.1 (RED).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	If the student reports Containment RED path to US, “I copy, you have validated the Containment Red path.”

Performance Step: 06 Critical - No	Evaluate CSF Status Trees: Inventory F-0.6: <ul style="list-style-type: none"> • PZR level <92%. • PZR level >50% with Containment > 4 psig.
Standard:	Inventory F-0.6: <ul style="list-style-type: none"> • PZR level <92% (YES) • PZR level >50% with Containment > 4 psig (NO) • Marks Inventory Go To FR-I.2 (YELLOW)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	If the student reports Inventory YELLOW path to US, “I copy, you have validated the Inventory YELLOW path.”
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Performance Step: 07 Critical - No	Evaluate CSF Status Trees: Recirculation F-0.7: <ul style="list-style-type: none"> • SI signal actuated. • RWST and containment levels in expected region. • Containment recirculation swap over signal actuated.
Standard:	Recirculation F-0.7: <ul style="list-style-type: none"> • SI signal actuated (YES). • RWST and containment levels in expected region (YES). • Containment recirculation swap over signal actuated (NO). • Mark Emergency Recirculation CSF SAT (GREEN)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

<p>Performance Step: 08 Critical - No</p>	<p>Evaluate CSF Status Trees: RDMS F-0.8: Any radiation monitors in alarm and reliable:</p> <ul style="list-style-type: none"> • SG Blowdown • Main Steam line • Condenser Air Evacuation • Containment • Plant Vent.
<p>Standard:</p>	<p>RDMS F-0.8: Any radiation monitors in alarm and reliable:</p> <ul style="list-style-type: none"> • SG Blowdown (NO). • Main Steam line (NO). • Condenser Air Evacuation (NO). • Containment (YES). • Plant Vent (NO). • Marks RDMS Go TO Hi Rad Abnormal procedure (YELLOW)
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>
<p>Cue:</p>	<p>If the student reports RDMS YELLOW path to US, “I copy, you have validated the RDMS YELLOW path.”</p>

Performance Step: 09 Critical – No	Completes CSF Status Tree Work sheet F-0.0.
Standard:	On CSF Status Tree Work sheet F-0.0, identifies the following: <ul style="list-style-type: none"> • (S) Subcriticality CSF SAT. • (C) Core Cooling ORANGE FR-C.2. • (H) Heat Sink RED FR-H.1. • (P) Integrity CSF SAT. • (Z) Containment RED FR-Z.1. • (I) Inventory YELLOW FR-I.2. • (F) Emergency Recirculation CSF SAT. • (R) RDMS YELLOW.
Note:	The student should, at a minimum, verify CSF status trees that apply to Fission Product Barrier Degradation Matrix so that a complete evaluation of ER1.1C can be made. A complete evaluation of the CSF status trees is not required for satisfactory performance of this JPM.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Evaluation of ER1.1A is not required for this JPM. ER1.1B is not applicable due to existing plant mode. When evaluating ER1.1C, bottom section of the matrix should identify the correct EAL declaration if properly used. Instructor may reference completed ER1.1C provided with the JPM.
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Performance Step: 10 Critical - YES	Evaluate ER1.1C: Evaluate fuel clad barrier.
Standard:	Evaluates fuel clad barrier: Determines that a potential loss of the fuel clad barrier exists due to: Core Cooling ORANGE. OR Heat Sink RED.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 11 Critical - YES	Evaluate ER1.1C: Evaluate RCS barrier.
Standard:	Evaluates RCS barrier: Determines that a loss of RCS barrier exists due to an automatic SI actuation from unisolable RCS leakage.
Note:	Student may also circle a potential loss of RCS barrier due to Heat Sink RED
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	If required, provide the following cue, " Hydrogen concentration is not yet available. "

Performance Step: 12 Critical - YES	Evaluate ER1.1C: Evaluate Containment barrier.
Standard:	Evaluates Containment barrier: Determines that a loss of the Containment barrier exists due to containment isolation valves not closed and direct pathway to the environment exists after containment isolation signal. COP-V-3, COP-V-4 and COP-V-8 are failed open.
Note:	Student may also circle a potential loss of Containment barrier due to Containment (Z) RED and/or Containment pressure >18 psig and NO CBS pumps running per design for ≥15 min.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 13 Critical - YES	Evaluate fission product barrier degradation matrix.
Standard:	Evaluate fission product barrier degradation matrix: Determines that a General Emergency FG1 is the highest declaration due to a loss of any two barriers and a loss/potential loss of the third barrier. (Potential Loss of Fuel Clad, Loss of RCS, & Loss of Containment)
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 14 Critical – YES	Document on Turnover Sheet that FG1 General Emergency is the required emergency classification.
Standard:	Documents on Turnover Sheet that FG1 General Emergency is the required emergency classification.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The 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 (1 of 2)

Directions to the Student:

- A. You are the Work Control Supervisor.

- B. The following information is provided to you:

TIME = 0 Min

- The motor driven EFW pump is INOPERABLE and tagged out for maintenance.
- RCS Tave on program.
- The reactor tripped from 100%
- The US has entered E-0, Reactor Trip or Safety injection.
- Safety Injection has automatically actuated due to a large break LOCA.
- CBS-P-9A & 9B failed to start.
- Containment Pressure is 20# and rising.
- The turbine driven EFW pump tripped on overspeed and MS-V-129 cannot be reset.
- The SUIFP tripped after a starting attempt.

TIME = 15 Min

- E-0 Attachment A is complete with the following exceptions:
 - CBS Pumps failed to start
 - COP-V-3, 4, and 8 remain open and cannot be closed
- E-1 Loss of Reactor or Secondary Coolant has been entered
- Reactor power is 3.3×10^{-7} amps on Gamma Metrics with a -1/3 DPM SUR
- All RCPs are secured (Subcooling 0F & Phase B Actuation)
- Containment pressure 33# and lowering
- CETCs indicate 310F and rising
- PZR level indicates 0%
- RVLIS Full Range indicates 30% and lowering
- All S/G levels are 60% WR (0%) NR and steady
- RWST level - 356,000gal and lowering
- Containment Sump level is 0.92 feet and rising
- All loops T_c are reading 290F and lowering
- Containment Hydrogen Analyzers are not in service
- Post LOCA radiation monitors RM-6576A-1 and RM-6576B-1 read 2R/hr and rising

- C. Perform the task using ER1.1, Classification of Emergencies.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

TURNOVER SHEET (2 of 2)

INITIATING CUE:

Evaluator to WCS, “**Work Control Supervisor (or student’s name) determine the most severe emergency classification using ER1.1. Perform an evaluation of ONLY ER1.1C Fission Product Barrier Degradation Matrix. Circle all conditions. Document any classification on Turnover sheet”**”

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

EAL & CLASSIFICATION (if any) _____

JPM TITLE: RECOVER A DROPPED ROD

JPM NUMBER: L0002J

TASK NUMBER(S) / TASK TITLE(S): SBK 0010400301 Operate Single Full Length Control Rod (Misalignment)

K/A NUMBERS: APE 003 AA1.02 **K/A VALUE:** 3.6/3.4

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

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:	Mark Martellotta Instructor/Developer	1/20/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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: None

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
				REVIEWER	DATE
1	Update format, revise per AR and validation prep as necessary. Added new K/A number.	Change for revised fleet format, AR actions, and annual exam JPM validation. K/A for ability to recover dropped rod.	1938235	DWE	09/03/14
				ERP	09/27/14
2	Prepared and validated for 2015 annual exam. IC 316 snapped. No changes made.			MMM	8/4/15
				CJA	9/5/15
3	Prepared for 2020 NRC Exam. No Content changes made.	Use in NRC Exam		MMM	1/20/20
				JH	5/12/20

SIMULATOR SET-UP:

Reset the simulator to IC 280 and activate trigger “NRC_LOIT\JPMs\L0002J PA Manual”.

Alternatively, reset the simulator to any 100% IC which contains the following:

1. Insert the following malfunction:
 - A. Rod Control And Position mfCP018 RCCA H8 Rod Drop (Blown Fuse – CBD).
2. Activate the following event trigger:
 - A. L0002J PA Manual. When lift disconnect for D-12 is disconnected a scenario will run to automatically place the P/A converter in manual and maintain it in manual until D-12 lift disconnect is connected again.
3. Place the simulator in RUN and stabilize the plant per OS1210.05:
 - A. Place rods in manual.
 - B. Adjust Tave/Tref to approximately -2F by reducing turbine load.
 - C. Acknowledge alarms.
4. Verify bank demand counters reflect expected plant conditions.
5. Delete Rod Control And Position malfunction mfCP018 RCCA H8 Rod Drop (Blown Fuse – CBD).

Place the simulator in RUN as long as needed to ensure all alarms are acknowledged prior to start of the JPM.

Required Materials: Turnover Sheet
OS1210.05, Dropped Rod Rev 16

General References: Procedures:
OS1210.05, Dropped Rod

Technical Specifications:
3.1.1.1 SDM Tavg greater than 200°F
3.1.3.1 Moveable Control Assemblies Group Height
3.1.3.2 Moveable Control Assemblies Position Indication Systems
3.1.3.5 Shutdown Rod Insertion Limit
3.1.3.6 Control Rod Insertion Limit
3.2.1 Axial Flux Difference
3.2.4 Quadrant Power Tilt Ratio

Drawings:
1-NHY-509049 Rod Control

Task Standards: Align the dropped rod with its bank per OS1210.05, Dropped Rod.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary Operator. You are going to recover a dropped rod.
- B. The following information is provided to you:
 - 1. The plant is at approximately 96% power following a dropped rod in control bank D (CBD) group 2, identified as H-8.
 - 2. The plant has been stabilized using turbine load control, with rod control in manual.
 - 3. I&C has completed replacing a blown fuse on the stationary gripper.
- C. Perform the task using OS1210.05, Dropped Rod.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **“Primary Operator (or student’s name), starting at step 4 of OS1210.05 Dropped Rod, continue with the procedure and recover the dropped rod.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Note:	Note prior to step 4 should be reviewed.
Cue:	If required, provide the following cue, “Reactor engineering cannot be notified. Continue with the dropped rod recovery.”

Performance Step: 01 Critical - No	Check rod control urgent failure alarm reset. <ul style="list-style-type: none"> • D7746 • Local power cabinet • Local logic cabinet
Standard:	Checks rod control urgent failure alarm. <ul style="list-style-type: none"> • D7746 reset • Local power cabinet reset • Local logic cabinet reset
Cue:	When the student requests the NSO to locally verify logic and power cabinet alarms, respond, “There are currently no alarms on the logic and power cabinets.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical – Yes	Place the rod bank selector switch to the affected bank position
Standard:	Places the rod bank selector switch to the affected bank position CBD.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical – Yes	Except for the dropped rod, place the lift coil disconnect switches for the affected bank to ROD DISCONNECTED.
Standard:	Places all the lift coil disconnect switches for the affected bank to ROD DISCONNECTED except for rod H-8.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical – Yes	Record the affected group step counter position.
Standard:	Records the affected group step counter position – CBD group 2 step counter position.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical – No	Reset the affected group step counter to zero.
Standard:	Resets the CBD group 2 step counter to zero.
Cue:	Due to differences between the simulator and the plant, if the student asks for direction how to reset the group step counter position, respond, “ Depress step counter reset pushbutton, RS button, under the cover. ”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical –Yes	Hold and maintain the pulse to analog converter auto/man switch in man until rod withdrawal is complete.
Standard:	Directs NSO to hold and maintain the pulse to analog converter auto/man switch in man until rod withdrawal is complete.
Evaluator Cue:	When directed NSO to control room, “I copy, hold the P/A converter auto/man switch to man until rod withdrawal is complete.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Comments:	P/A converter auto/man switch being held in man should occur automatically after D-12 lift disconnect is disconnected. It can be verified as follows: Select Local Panels. Select Rod Drive System. Select Pulse To Analog Converter Verify switch is in the manual position.
Cue	NSO to control room, “The P/A converter auto/man switch is being held in man.”

Performance Step: 07 Critical - Yes	Withdraw the dropped rod until the step counter reaches the previously recorded position.
Standard:	Withdraws the dropped rod until the step counter reaches the previously recorded position.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	If the student questions the method and strategy of Tavg\Tref control, inform them that, “adjustments will be made to turbine loading before restoring rods to automatic by the BOP. Proceed with the rod recovery.”
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Performance Step: 08 Critical - No	While withdrawing the dropped rod until the step counter reaches the previously recorded position, verify that the dropped rod is the only rod moving by DRPI.
Standard:	Verifies that the dropped rod is the only rod moving by DRPI.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 09 Critical - No	Return the P/A Converter auto/man switch to automatic
Standard:	Directs NSO to return the P/A converter auto/man switch to auto.
Comments:	Return of P/A converter auto/man switch to auto will occur automatically after D-12 lift disconnect is connected. If required, P/A converter auto/man switch in auto can be verified as follows: Select Local Panels. Select Rod Drive System. Select Pulse To Analog Converter Verify switch is in the auto position.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Automatic return of the P/A converter switch to auto should occur when lift disconnect switch for rod D-12 is placed in the connect position. The following cue may be provided before the event trigger actuates. Ensure P/A converter switch is returns to auto after lift disconnect switches are placed back in the connect position.
Cue:	After being directed to return the P/A converter auto/man switch to auto, “ I copy, return the P/A converter auto/man switch to auto. ”
Cue:	After a short amount of time provide the following cue for returning the P/A converter auto/man switch to auto, “ The P/A converter auto/man switch is in auto. ”

Performance Step: 10 Critical - Yes	Reset the rod control urgent failure alarm by depressing the rod control alarm reset pushbutton.
Standard:	Resets the rod control urgent failure alarm by depressing the rod control alarm reset pushbutton.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 11 Critical - Yes	Place all lift coil disconnect switches to Rod Connect.
Standard:	Places all lift coil disconnect switches to Rod Connect for control bank D.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 12 Critical - Yes	Return the rod bank selector switch to manual.
Standard:	Returns the rod bank selector switch to manual.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 13 Critical - Yes	If necessary, resets the power range rate trip.
Standard:	If necessary, rotates the rate mode reset switch to reset for affected NIs.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 14 Critical - No	Check the dropped rod aligned with the affected bank.
Standard:	Checks that rod H-8 is realigned to CBD group 2 rod height within allowable tolerances (+/- 12 steps).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The JPM is complete.

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

Stop Time: _____



L0002J, Recover A Dropped Rod

JPM
Page 12 of
13

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

Directions to the Student:

- A. You are the Primary Operator. You are going to recover a dropped rod.
- B. The following information is provided to you:
 - 1. The plant is at approximately 96% power following a dropped rod in control bank D (CBD) group 2, identified as H-8.
 - 2. The plant has been stabilized using turbine load control, with rod control in manual.
 - 3. I&C has completed replacing a blown fuse on the stationary gripper.
- C. Perform the task using OS1210.05, Dropped Rod.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **"Primary Operator (or student's name), starting at step 4 of OS1210.05 Dropped Rod, continue with the procedure and recover the dropped rod."**

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



JOB PERFORMANCE MEASURE

JPM TITLE: PERFORM SI TERMINATION

JPM NUMBER: L0078J

TASK NUMBER(S) / TASK TITLE(S): SBK 0060500101 Perform SI Termination / Reduction

K/A NUMBERS: 006 A2.12 **K/A VALUE:** 4.5/4.8

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

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: 10 Minutes Time Critical: NO

Alternate Path [NRC]: YES

Alternate Path [INPO]: YES

Developed by:	Mark Martellotta Instructor/Developer	1/20/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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"/>

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: None

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
				REVIEWER	DATE
1	Update format, revise per AR and validation prep as necessary.	Change for revised fleet format, AR actions, and annual exam JPM validation.	1938235	DWE	09/15/14
				ERP	10/17/14
2	Prepared and validated for 2015 annual exam. IC 328 snapped. Added statement to performance step 7 that Student may manually actuate SI to achieve the required system lineup. Added non-critical step to close CS-V-196 and 197			MMM	8/14/15
				CJA	10/10/15
3	Prepared for 2020 NRC Exam. No content changes made.	Use in NRC exam.		MMM	1/20/20
				JH	5/12/20

SIMULATOR SET-UP:

Reset the simulator to **IC282** and activate Trigger “**NRC_LOIT\JPMs\L0083J Stop both SIPs**”.

Alternatively reset to or any 100% IC which contains the following:

1. Trip Pzr pressure bistables from Panel Overview:
 - Select Trip CP-1 Trip bistable PB-455D.
 - Select Trip CP-2 Trip bistable PB-456D.
2. Place the simulator in RUN and allow the reactor to trip and SI to actuate.
3. Complete E-0 through step 16.
4. Open EFW mini-flow valves and throttle EFW flow.
5. Activate Event Trigger L0083J Stop both SIPs after SI has actuated. Event trigger L0083J Stop both SIPs will increase the RCS leak when the second SI pump is stopped.
6. Place the simulator in FREEZE.

Place the simulator in RUN as long as needed to ensure all alarms are acknowledged prior to start of the JPM.

E-0 Reactor Trip or Safety Injection should be made available to the student for review of step 13. The note prior to step 7 of ES-1.1 references continuous action step 13 of E-0 as being applicable.

Required Materials: Turnover sheet
ES-1.1, SI Termination Rev 39

General References: **Procedures:**
E-0, Reactor Trip Or Safety Injection.
ES-1.1, SI Termination.

Task Standards: Terminate SI by stopping SI and RHR pumps and reestablishing SI flow when required.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary Operator. You are going to evaluate plant conditions for stopping SI pumps using ES-1.1.
- B. The following information is provided to you:
 - 1. The plant sustained an automatic reactor trip and safety injection from 100% power.
 - 2. All required actions of E-0, Reactor Trip Or Safety Injection, are complete.
 - 3. The crew has transitioned to ES-1.1, step 7
- C. Perform the task using E-S-1.1, SI Termination Criteria.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **“Primary Operator (or student’s name), we have transitioned to ES-1.1, SI Termination, step 7. Determine if conditions are satisfied for stopping SI pumps.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Performance Step: 01 Critical – NO	Check if SI pumps should be stopped: Check RCS pressure greater than 1700 psig AND Check RCS pressure stable or increasing by pressure recorders
Standard:	Checks RCS pressure and reports RCS pressure is greater than 1700 psig AND Checks RCS pressure stable and reports RCS pressure stable by pressure recorders
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical - YES	Check if SI pumps should be stopped.
Standard:	Stops SI pump A and places in standby. AND Stops SI pump B and places in standby.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Ensure the following malfunction is automatically inserted immediately after both SI pumps are stopped. Reactor Coolant Malfunctions mf RC049A RCS Cold Leg 1 leak 0-17500 Final Value = 2.2.

Performance Step: 03 Critical - NO	Check if RHR pumps should be stopped: Any running with suction aligned to the RWST.
Standard:	Checks both RHR pumps running with suction aligned to the RWST.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical - YES	Stop RHR pumps and place in standby
Standard:	Stops RHR pump A and places in standby. AND Stops RHR pump B and places in standby.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - NO	Verify ECCS flow not required: RCS subcooling greater than 40°F.
Standard:	Verifies and reports RCS subcooling is >40°F. It is expected that RCS subcooling will be >40°F and decreasing at the time the step is implemented.
Note:	For ES-1.1 step 9a check of RCS subcooling, student may elect to take time to evaluate RCS subcooling due to a decreasing trend and determine that RCS subcooling will be < 40°F shortly if it is not already < 40°F. It is acceptable to perform step 9a RNO actions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical - NO	Verify ECCS flow not required: PZR level greater than 7% [28% ADVERSE].
Standard:	Verifies and reports Pzr level value and trend. Recognizes that PZR level trend is decreasing rapidly.
Note:	For ES-1.1 step 9b check of Pzr level greater than 7% [28% ADVERSE]. Student may attempt to control charging flow to maintain PZR level in accordance with ES-1.1 step 9b RNO.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Student may elect to continue in ES-1.1. ECCS Reinitiation Criteria on OAS page (after ES-1.1 step 8 has been completed) needs to be processed if this occurs. OAS page actions should be performed when student determines that PZR level cannot be maintained greater than 7% [28% ADVERSE] or when PZR level is less than 7% [28% ADVERSE].
--------------	--

	Begin alternate path
Performance Step: 07 Critical – YES	Manually align valves and start ECCS pumps as required.
Standard:	Performs the following to manually align valves and start ECCS pumps as required (Student may elect to manually actuate SI to achieve required system alignment): <ul style="list-style-type: none"> • Opens SI-V-138 and SI-V-139. • Closes CS-V-142 and CS-V-143. • Starts second CCP. • Starts SI-P-6A and SI-P-6B.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 08 Critical – NO	Manually align valves and start ECCS pumps as required.
Standard:	Closes CS-V-196 and 197.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 09 Critical – NO	Go to E-1 Loss Of Reactor Or Secondary Coolant step 1.
Standard:	Transitions to E-1 Loss Of Reactor Or Secondary Coolant step 1.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The JPM is complete.

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

Stop Time: _____



L0078J, Perform SI Termination

JPM
Page 10 of 11

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

Directions to the Student:

- A. You are the Primary Operator. You are going to evaluate plant conditions for stopping SI pumps using ES-1.1.
- B. The following information is provided to you:
 - 1. The plant sustained an automatic reactor trip and safety injection from 100% power.
 - 2. All required actions of E-0, Reactor Trip Or Safety Injection, are complete.
 - 3. The crew has transitioned to ES-1.1, step 7
- C. Perform the task using E-S-1.1, SI Termination Criteria.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **“Primary Operator (or student’s name), we have transitioned to ES-1.1, SI Termination, step 7. Determine if conditions are satisfied for stopping SI pumps.”**

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



JOB PERFORMANCE MEASURE

JPM TITLE: Power Range NI Failure

JPM NUMBER: L0054J

TASK NUMBER(S) / TASK TITLE(S): SBK 0150400101 Identify Malfunctioning of a Nuclear Instrumentation System Channel

K/A NUMBERS: 015 A2.01 **K/A VALUE:** 3.5/3.9

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

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: _____	Mark Martellotta Instructor/Developer	1/21/20 Date
Reviewed by: _____	Jeff Hinze Instructor	5/12/20 Date
Approved by: _____	Andy Corrette Training Supervision	5/18/20 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: None

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
				REVIEWER	DATE
1	Prepared for 2020 NRC Exam. No content changes made.	Use in NRC Exam		MMM	1/21/20
				JH	5/12/20

SIMULATOR SET-UP:

Reset the simulator to any 100% power IC.

Required Materials: Turnover Sheet
OS1211.04, Power Range NI Instrument Failure Rev. 16.

General References: Procedures:
OS1211.04, Power Range NI Instrument Failure Rev. 16.
OP9.2, Transient Response Procedure User's Guide.

Technical Specifications:
3.3.1 Reactor Trip System Instrumentation.
3.2.4 QPTR.

Task Standards: Identify a failed Power Range NI channel and remove NI channel from service per OS1211.04, Power Range NI Instrument Failure.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary Systems Operator.
- B. The following information is provided to you:
 - 1. The plant is at 100% power.
 - 2. An event will occur. Respond to plant conditions. The BOP will NOT assist you.
 - 3. Due to the nature of the JPM, you will NOT be permitted to review any procedures before the JPM begins.
- C. Perform the task in accordance with the appropriate procedure.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **“PSO (or student’s name), when an event occurs, identify the event. Perform the actions for the required procedure. If required, perform any immediate actions from memory for the applicable procedure and inform the evaluator when the immediate actions are complete.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Cue	<p>Once JPM has begun insert the following to fail NI-42 high:</p> <ul style="list-style-type: none"> • MF List • Nuclear Instrumentation • mfNI002 Power Range Channel N42 fails to specified • Final: 120 • Insert

Note:	It is acceptable for the student to place rods in manual after the student acknowledges that load is not decreasing or after the failed Power Range channel is identified. This is in accordance with OP9.2, Transient Response Procedure User’s Guide using skill of the operator.

Note:	When student identifies the failed Power Range instrument N-42, give the student OS1211.04, Power Range NI Instrument Failure.
Performance Step: 01 Critical – NO	Diagnose the event, Power Range channel NI-42 failed high.
Standard:	Recognizes and reports Power Range channel NI-42 failed high.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical – NO	Stabilize plant conditions: Check Power Range channel failed high.

Standard:	Checks and reports Power Range channel NI-42 failed high.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical - NO	Stabilize plant conditions: Place rod control in manual.
Standard:	Places rod control in manual if not already performed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical - YES	Stabilize plant conditions: Select Rod Stop Bypass switch –to failed channel.
Standard:	Selects N42 on the rod stop bypass switch.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - NO	Stabilize plant conditions: Check Tavg within 1°F of Tref. Step 1d RNO action: If Tavg >Tref by more than 1°F, manually control rod motion or turbine load to restore temperature.
Standard:	Checks Tavg within 1°F of Tref. An instructor acting as the BOP operator should adjust turbine load to control temperature if required.
Cue:	If required, provide the following cue, “The BOP operator will manually adjust turbine load, continue on with the procedure”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical - YES	Bypass the failed Power Range channel: Select the following NI cabinet switches to the failed channel: <ul style="list-style-type: none"> • Upper Section Detector Current Comparator switch. • Lower Section Detector Current Comparator switch. • Power Mismatch Bypass switch. • If not previously selected, Rod Stop Bypass switch. • Comparator Channel Defeat switch.
Standard:	Select the following NI cabinet switches to the failed channel: <ul style="list-style-type: none"> • Upper Section Detector Current Comparator switch. Selects N42. • Lower Section Detector Current Comparator switch. Selects N42. • Power Mismatch Bypass switch. Selects N42. • If not previously selected, Rod Stop Bypass switch. Selects N42. • Comparator Channel Defeat switch. Selects N42.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 07 Critical - NO	Trip the affected channel bistables: Verify redundant bistables not tripped: UL-6: <ul style="list-style-type: none"> • RCS LOOP OTΔT. • PR HIGH TRIP. • PR HIGH RATE TRIP. • If power is less than P-10 PR LOW TRIP.
Standard:	Verifies and reports that redundant bistables are not tripped: UL-6: <ul style="list-style-type: none"> • RCS LOOP OTΔT. • PR HIGH TRIP. • PR HIGH RATE TRIP. • If power is less than P-10 PR LOW TRIP. N/A - Power is >P-10.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 08 Critical - YES	Trip the affected channel bistables: Remove control power fuses to trip the bistables for the affected power range channel.



L0054J, Power Range NI Failure

JPM
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Standard:	Removes N42 control power fuses to trip the bistables for the affected power range channel.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The JPM is complete

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

Stop Time: _____



L0054J, Power Range NI Failure

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

Directions to the Student:

- A. You are the Primary Systems Operator.
- A. The following information is provided to you:
 - 1. The plant is at 100% power.
 - 2. An event will occur. Respond to plant conditions. The BOP will NOT assist you.
 - 3. Due to the nature of the JPM, you will NOT be permitted to review any procedures before the JPM begins.
- C. Perform the task in accordance with the appropriate procedure.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **"PSO (or student's name), when an event occurs, identify the event. Perform the actions for the required procedure. If required, perform any immediate actions from memory for the applicable procedure and inform the evaluator when the immediate actions are complete."**

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

JPM TITLE: RAISE SI ACCUMULATOR PRESSURE

JPM NUMBER: L0014J

TASK NUMBER(S) / TASK TITLE(S): SBK 0060100201 Monitor The Safety Injection System

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

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

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:	Mark Martellotta Instructor/Developer	1/20/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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: None

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
				REVIEWER	DATE
1	Update format, revise per AR and validation prep as necessary. Added note to step 4 of JPM	Change for revised fleet format, AR actions, and annual exam JPM validation. Provide clarification of what is the critical aspect of step 4 because the student only provides direction to an NSO.	1938235	DWE	09/05/14
				ERP	09/30/14
2	Prepared and validated for 2015 annual exam. IC 304 snapped. No changes made.			MMM	8/4/15
				CJA	9/9/15
3	Prepared for 2020 NRC Exam. No content changes made. Updated MPCS commands.	Use in NRC exam.		MMM	1/20/20
				JH	5/12/20

SIMULATOR SET-UP:

Reset the simulator to IC 309 or any 100% IC which contains the following:

- A. Initialize to an IC at 100% power.
- B. Vent the "A" Accumulator (using the vent valves), to approximately 590 psig, until UA50 hardwire alarm Accum Press Hi/Lo and VAS alarm D4505 are in alarm.
- C. Use "2RHR3" on MPCS to view Accumulator level and pressure "A" point, A0414.
- D. Freeze the simulator.

Place the simulator in RUN as long as needed to ensure all alarms are acknowledged prior to start of the JPM.

Required Materials: Turnover Sheet
OS1005.05, Safety Injection System Operation, pages 28-30 Rev 31

General References: Procedures:
OS1005.05, Safety Injection System Operation.

Technical Specifications:
3.5.1.1 ECS, Accumulators – Hot Standby, Startup, and Power Operation

Task Standards: Pressurize the "A" Accumulator to above the low pressure alarm, and within OS1005.05 limitations.
(610 psig +10 psig/- 0 psig)

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary Operator and you are going to pressurize the “A” Accumulator to within limits of Tech. Specs. (610 psig +10 psig/- 0 psig). You may use MPCS Group Display “2RHR3” to view Accumulator level and pressure “A” points or A0414 for “A” Accumulator pressure.
- B. The following information is provided to you:
 - 1. The “A” Accumulator pressure has decreased due to normal system leakage.
 - 2. All applicable prerequisites of OS1005.05 Safety Injection System Operation are complete.
- C. Perform the task using OS1005.05, Safety Injection System Operation.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, “**Primary Operator (or student’s name), Pressurize the “A” Accumulator to 610 psig +10 psig/ - 0 psig.**”

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Performance Step: 01 Critical - NO	Verify a N ₂ source is available from the N ₂ truck or the N ₂ bottle banks per ON1024.01 Startup and Shutdown of Nitrogen Gas System
Standard:	Determines if a nitrogen source is available.
Cue:	When the student attempts to determine if a nitrogen source is available, inform the student, “ Nitrogen is being supplied via a tube truck. ”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical – YES	Open NG-V-13, nitrogen to SI accumulator ORC isolation.
Standard:	Opens NG-V-13, nitrogen to SI accumulator ORC isolation.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical - YES	Open NG-V-14, nitrogen to SI accumulator IRC isolation.
Standard:	Opens NG-V-14, nitrogen to SI accumulator IRC isolation.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Student should review note prior to step 4.4.4.
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Performance Step: 04 Critical – YES	Open the nitrogen header isolation valve for the desired accumulator. NG-V-17 Accumulator “A” nitrogen isolation.
Standard:	Opens NG-V-17 Accumulator “A” nitrogen isolation.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	The student directing the opening of NG-V-30 to establish nitrogen flow to the accumulator is the critical part of this step. The wording used for the direction is not a critical part of this step
Performance Step: 05 Critical – YES	Directs cracking open NG-V-30, nitrogen inlet isolation to the accumulators and throttle open two turns.
Standard:	Directs opening NG-V-30, nitrogen inlet isolation to the accumulators.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	<p>Simulator Operator when NSO is directed to open NG-V-30 then:</p> <p>SELECT: RF List SELECT: Nitrogen Gas SELECT: rFNG003 NG-V30 N2 to SI accumulators manual isol SELECT: Final Value: OPEN SELECT: INSERT</p> <p>Then report, “NG-V-30 is open.”</p>
-------------	---

Note:	Student should review note prior to step 4.4.5.
--------------	---

Performance Step: 06 Critical –YES	When pressure reaches desired value, close NG-V-30, nitrogen inlet isolation to the accumulators.
---	---

Standard:	When pressure reaches desired value, directs NSO to close NG-V-30, nitrogen inlet isolation to the accumulators.
------------------	--

Cue:	<p>Simulator operator monitor Accumulator pressure. Student may direct closing NG-V-30 prior to being in the band due to time required for field operator to close the valve. If this occurs, when NSO is directed to close NG-V-30 ensure Accumulator pressure is greater than 610 psig then:</p> <p>SELECT: RF List SELECT: Nitrogen Gas SELECT: rFNG003 NG-V30 N2 to SI accumulators manual isol SELECT: Final Value: CLOSE SELECT: INSERT</p> <p>Then report, “NG-V-30 is closed.”</p>
-------------	--

Performance:	SATISFACTORY _____ UNSATISFACTORY _____
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Performance Step: 07 Critical - NO	Check closed/close NG-V-17 Accumulator “A” nitrogen isolation.
---	--

Standard:	Closes NG-V-17 Accumulator “A” nitrogen isolation.
------------------	--

Performance:	SATISFACTORY _____ UNSATISFACTORY _____
---------------------	--

Performance Step: 08 Critical - NO	Check closed/close the following valves: <ul style="list-style-type: none"> • NG-V-19 Accumulator “B” nitrogen isolation. • NG-V-21 Accumulator “C” nitrogen isolation. • NG-V-23 Accumulator “D” nitrogen isolation.
Standard:	Checks closed the following valves: <ul style="list-style-type: none"> • NG-V-19 Accumulator “B” nitrogen isolation. • NG-V-21 Accumulator “C” nitrogen isolation. • NG-V-23 Accumulator “D” nitrogen isolation.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

	“A” Accumulator final pressure _____ psig (610 psig +10 psig/ - 0 psig)

Performance Step: 09 Critical - NO	Close NG-V-13, nitrogen to SI accumulator ORC isolation. Return control switch to auto.
Standard:	Closes NG-V-13, nitrogen to SI accumulator ORC isolation. Returns control switch to auto.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 10 Critical - NO	Close NG-V-14, nitrogen to SI accumulator IRC isolation. Return control switch to auto.
Standard:	Close NG-V-14, nitrogen to SI accumulator IRC isolation. Returns control switch to auto.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The JPM is complete.

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

Stop Time: _____



L0014J, Raise SI Accumulator Pressure, Rev. 08

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

Directions to the Student:

- A. You are the Primary Operator and you are going to pressurize the “A” Accumulator to within limits of Tech. Specs. (610 psig +10 psig/- 0 psig). You may use MPC5 Group Display “2RHR3” to view Accumulator level and pressure “A” points or A0414 for “A” Accumulator pressure.
- A. The following information is provided to you:
 - 1. The “A” Accumulator pressure has decreased due to normal system leakage.
 - 2. All applicable prerequisites of OS1005.05 Safety Injection System Operation are complete.
- C. Perform the task using OS1005.05, Safety Injection System Operation.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, “**Primary Operator (or student’s name), Pressurize the “A” Accumulator to 610 psig +10 psig/ - 0 psig.**”

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

JPM TITLE: TRANSFER TO COLD LEG RECIRCULATION (CBS-V-14 FAILS)

JPM NUMBER: L0026J

TASK NUMBER(S) / TASK TITLE(S): SBK 0050500601 Align RH for SI Recirculation, Cold Leg
SBK 0060500301 Transfer SI To Cold Leg Recirculation

K/A NUMBERS: 002 A2.01 **K/A VALUE:** 4.3/4.4

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

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: 10 Minutes Time Critical: NO

Alternate Path [NRC]: YES

Alternate Path [INPO]: YES

Developed by:	Mark Martellotta Instructor/Developer	1/20/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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: None

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
				REVIEWER	DATE
1	Update format, revise per AR and validation prep as necessary. Changed JPM to not time critical.	Change for revised fleet format, AR actions, and annual exam JPM validation. SM7.20 applies for a failure of CBS-V-2 or CBS-V-5 only.	1938235	DWE	09/05/14
				ERP	09/27/14
2	Prepared and validated for 2015 annual exam. IC 324 snapped. No Changes made.			MMM	8/6/15
				CJA	9/9/15
3	Prepared for 2020 NRC Exam. No content changes made.	Use in NRC exam.		MMM	1/20/20
				JH	5/12/20

SIMULATOR SET-UP:

Reset the simulator to **IC 324** and run scenario file “**JPMs\ L0026J CBS-V-14 overrides**”.

Alternatively, reset or any 100% IC which contains the following:

- A. Initialize to an IC at 100% power.
- B. Insert the following overrides to simulate inability to open CBS-V-14:
 - 1. ON (CBS-V-14 S signal reset lamp for RWST LO-LO PBF11)
 - 2. RESET (CBS-V-14 S signal reset switch PBF11)
 - 3. CLOSE (CBS-V-14 control switch PBF 12)
- C. Insert malfunction mfRC024A RCS Cold Leg 1 LOCA (double ended shear).
- D. Allow automatic reactor trip and SI.
- E. Complete all required actions for E-0 and all actions for E-1 through step 12.
- F. Ensure the following actions have been performed:
 - 1. Trip RCPs
 - 2. Reset SI
 - 3. Open EFW mini-flow valves and throttle EFW to approximately 150 gpm per SG.
 - 4. Shutdown both EDGs. Shut SW-V-16 and SW-V-18. Reset both EDGs.
- G. Place the simulator in FREEZE when the RWST is approximately 135,000 gallons to ensure the automatic swap over signal has not actuated

Place the simulator in RUN (only as long as needed) to ensure all alarms are acknowledged prior to the start of the JPM. Excessive simulator run time prior to the start of the JPM may cause RWST LEVEL LO-LO to annunciate.

Required Materials: Turnover Sheet
ES-1.3, Transfer to Cold Leg Recirculation Rev 30

General References: Procedures:
ES-1.3, Transfer to Cold Leg Recirculation

Task Standards: Align ECCS equipment to the Cold Leg Recirculation Mode.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary Operator. You are going to transfer ECCS to the Cold Leg Recirculation Mode when we receive the RWST LEVEL LO-LO alarm.
- B. The following information is provided to you:
 - 1. A reactor trip with SI occurred from 100% power.
 - 2. The US has completed E-0 and transitioned to E-1.
 - 3. The crew is ready to transition to ES-1.3.
 - 4. The RWST level has decreased to approximately 125,000 gallons.
 - 5. Any required Function Restoration Procedures have been completed.
- C. Perform the task using EOPs.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **“Primary Operator (or student’s name), inform me when the RWST LEVEL LO-LO alarm annunciates. You will transfer the Emergency Core Cooling System to Cold Leg Recirculation Mode in accordance with ES-1.3.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Comment:	The JPM is NOT time critical. SM7.20 ECCS Cold Leg Switchover Actuation - Design Basis Event With Single Active Failure timing criteria is based on a failure of CBS-V-2 or CBS-V-5.

Note:	Student should read the caution prior to step 1 of ES-1.3.
Performance Step: 01 Critical – NO	Reset SI.
Standard:	Verifies SI reset/Resets SI.
Comment:	SI was previously reset in E-1. If student notes that SI has been reset, then, student does not need to reset SI for satisfactory completion of this step.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical - NO	Verify containment sump recirculation valves full open: <ul style="list-style-type: none"> • Train A CBS-V-8 • Train B CBS-V-14
Standard:	Verifies containment sump recirculation valves: <ul style="list-style-type: none"> • Train A CBS-V-8 full open • Train B CBS-V-14 not full open
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

	Begin alternate path
Performance Step: 03 Critical - NO	Manually open Train B CBS-V-14.
Standard:	Attempts to manually open Train B CBS-V-14.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical - YES	Place corresponding RHR and CBS pumps in pull to lock.
Standard:	Places RH-P-8B and CBS-P-9B in pull to lock.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - YES	Simultaneously close RWST suction valves: <ul style="list-style-type: none"> • Train A CBS-V-2. • Train B CBS-V-5.
Standard:	Simultaneously closes RWST suction valves: <ul style="list-style-type: none"> • Train A CBS-V-2. • Train B CBS-V-5.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Student should read the cautions prior to step 1 of ES-1.3.

Performance Step: 06 Critical – NO	Verify RHR pumps – at least one running.
Standard:	Verifies RH-P-8A is running.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 07 Critical – NO	Place running RHR pump switches in NA START.
Standard:	Places RH-P-8A control switches in NA START.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 08 Critical - YES	Close SI pump mini-flow valves: <ul style="list-style-type: none"> • SI-V-89 • SI-V-90 • SI-V-93
Standard:	Closes SI pump mini-flow valves: <ul style="list-style-type: none"> • SI-V-89 • SI-V-90 • SI-V-93
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 09 Critical - YES	Energize MCC-522 and MCC-622.
Standard:	Energizes MCC-522 and MCC-622.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 10 Critical - YES	Close RH-V-14 RHR discharge to Cold Legs 1 and 2.
Standard:	Closes RH-V-14 RHR discharge to Cold Legs 1 and 2.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 11 Critical - YES	Open SI and CCP suction cross-connect CS-V-460
Standard:	Opens SI and CCP suction cross-connect CS-V-460
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 12 Critical - YES	Open SI and CCP suction cross-connect CS-V-461
Standard:	Opens SI and CCP suction cross-connect CS-V-461
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 13 Critical - NO	Open SI and CCP suction cross-connect CS-V-475.
Standard:	Verifies open SI and CCP suction cross-connect CS-V-475.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 14 Critical - YES	Open RHR supplies to SI and CCP suction: <ul style="list-style-type: none"> • RH-V-35 • RH-V-36
Standard:	Opens RH-V35 RHR supply to SI and CCP suction. RH-V36 is interlocked with CBS-V-14 and will not open.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 15 Critical - NO	Start any pump that was stopped due to RWST EMPTY alarm
Standard:	No action required. RWST EMPTY alarm is not expected to annunciate.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Student should read caution prior to step 5 of ES-1.3.

Performance Step: 16 Critical - YES	Close SI pump suction valves: <ul style="list-style-type: none"> • CBS-V-47 • CBS-V-51
Standard:	Closes SI pump suction valves: <ul style="list-style-type: none"> • CBS-V-47 • CBS-V-51
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 21 Critical - YES	Place the following interlock switches to block: <ul style="list-style-type: none"> • CS-SS-112D-1 RWST – VCT ITLK Block/ normal selector • CS-SS-112E-1 RWST – VCT ITLK Block/ normal selector
Standard:	Places the following interlock switches to block: <ul style="list-style-type: none"> • CS-SS-112D-1 RWST – VCT ITLK Block/ normal selector • CS-SS-112E-1 RWST – VCT ITLK Block/ normal selector
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 22 Critical - YES	Close CCP suction valves: <ul style="list-style-type: none"> • CS-LCV-112D • CS-LCV-112E
Standard:	Closes CCP suction valves: <ul style="list-style-type: none"> • CS-LCV-112D • CS-LCV-112E
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

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

Directions to the Student:

- A. You are the Primary Operator. You are going to transfer ECCS to the Cold Leg Recirculation Mode when we receive the RWST LEVEL LO-LO alarm.
- B. The following information is provided to you:
 - 1. A reactor trip with SI occurred from 100% power.
 - 2. The US has completed E-0 and transitioned to E-1.
 - 3. The crew is ready to transition to ES-1.3.
 - 4. The RWST level has decreased to approximately 125,000 gallons.
 - 5. Any required Function Restoration Procedures have been completed.
- C. Perform the task using EOPs.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **“Primary Operator (or student’s name), inform me when the RWST LEVEL LO-LO alarm annunciates. You will transfer the Emergency Core Cooling System to Cold Leg Recirculation Mode in accordance with ES-1.3.”**

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



JOB PERFORMANCE MEASURE

JPM

JPM TITLE: Faulted DG Surveillance

JPM NUMBER: L0185J

TASK NUMBER(S) / TASK TITLE(S): SBK 0640200104 PERFORM DIESEL GENERATOR OPERABILITY TEST

K/A NUMBERS: 064 A4.06 **K/A VALUE:** 3.9/3.9

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: Yes No

Alternate Path [NRC]: **YES**
Alternate Path [INPO]: **YES**

Developed by:	Mark Martellotta Instructor/Developer	2/24/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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:

None

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
				REVIEWER	DATE
1	Creation of New JPM	-	N/A	MMM	2/26/13
2	Prepared and reviewed for 2015 annual exam.			MMM	9/17/15
				CJA	10/20/15
3	Prepared for 2020 NRC Exam. No content changes made.	Use in NRC exam.		MMM	2/24/20
				JH	5/12/20

JPM SET-UP:

Reset the Simulator to **IC 272**.

Alternatively reset the simulator to any 100% IC which contains the following:

1. Reset to IC #15 or other 100% power scenario.
2. Beginning sections of OX1426.01 are complete.
3. Perform a normal start of the A DG. Allow the engine to come up to full speed.
4. Navigate to Panel Overview, section HF
5. Click on I/O, Click on both A DG Emergency Stop Pushbuttons, select final value RELEASE, select Insert.
6. Click on I/O, Click on the normal start stop switch for the A DG, select final value, NORMAL, select Insert.
7. Freeze the simulator when the engine is running at full speed unloaded.
8. At the desired time the Booth operator will insert D6558 "DG A LO Pressure Low" and call from the field as the locally stationed NSO that there is a large lube oil leak on the A DG.

Required Materials: Turnover Sheet.
OX1426.01, DG-1A Monthly Operability Surveillance Rev. 50

General References: OX1426.01, DG-1A Monthly Operability Surveillance
VPRO D6558 DG A lube oil pressure low

Task Standards: Direct the NSO to locally secure the A DG in response to low lube oil pressure alarms. The emergency stop push buttons on the MCB will not work.

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.

Directions To The Student(s):

Evaluator gives Turnover sheet to the student.

- A. You are the BOP Operator. You are going to perform OX1426.01, DG-1A Monthly Operability Surveillance.
- B. The following information is provided to you:
 - 1. The plant is 100% power. No equipment is out of service
 - 2. The A DG has been started normally IAW OX1426.01 and is currently running at 514 rpm.
 - 3. Begin the task at step 4.1.39 of OX1426.01 and bring the A DG to full load.
 - 4. All prerequisites and precautions are complete.
- C. Perform the task using OX1426.01
- D. We will begin after the Initiating Cue is read Do you have any questions?.

Initiating Cue:

US to RO: **“Proceed loading the A DG by beginning at step 4.1.39 of OX1426.01. An NSO is stationed locally in the A DG room.”**

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.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Comments:	Student should review the notes before step 4.1.39 and 4.1.40. Both steps 4.1.39 and 4.1.40 must be performed simultaneously.
Performance Step: 01 Critical - YES	Student proceeds to raise both DG A load and VARs
Standard:	Go to raise on DG A speed adjust to pick up between 5600KW and 6100 KW. Go to raise on DG A auto volt adjust to increase KVARs to 3700 to 4100 KVARs.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

<p>Cue:</p>	<p>After VARS and load are raised, insert D6558 “A DG LO Pressure Low”.</p> <p>When directed by the evaluator insert D6558 DG A LUBE OIL PRESSURE LOW VAS alarm as follows: D POINTS Diesel Generator A svo6558DGA Final Value = ALARM Insert</p> <p>Shortly thereafter call as the local NSO and report “there is a major lube oil leak coming from the lower end of the engine. The leak is not isolable.”</p> <p>Simulator Booth operator will make all field communications.</p>
<p>Performance Step: 03 Critical – NO</p>	<p>Student responds to indications and communications.</p>
<p>Standard:</p>	<p>Student acknowledges VAS alarms and field communications and determines that the A DG should have automatically shutdown but did not. (IAW D6558 VPRO)</p>
<p>Performance:</p>	<p>SATISFACTORY _____ UNSATISFACTORY _____</p>

Performance Step: 04 Critical - NO	MCB Normal Shutdown. (Will not be successful) MCB Emergency Shutdown. (Will not be successful)
Standard:	Student attempts to Emergency Shutdown the A DG by depressing both Emergency Stop Pushbuttons.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - YES	Direction to perform local shutdown of the A DG.
Standard:	Student should communicate to the field NSO and direct a local shutdown of the A DG.
Comments:	To locally shutdown the A DG: Navigate to Local Panels DG SYSTEM DG A PLACE LOCAL, REMOTE, MAINTENANCE SWITCH TO LOCAL DEPRESS THE EMERGENCY STOP PUSHBUTTON (Hold Button until response is obtained.)
Cue:	Report as the NSO "I have performed and emergency shutdown of the A DG."
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The 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

Directions To The Student(s):

- A. You are the BOP Operator. You are going to perform OX1426.01, DG-1A Monthly Operability Surveillance.
- B. The following information is provided to you:
 - 1. The plant is 100% power. No equipment is out of service
 - 2. The A DG has been started normally IAW OX1426.01 and is currently running at 514 rpm.
 - 3. Begin the task at step 4.1.39 of OX1426.01 and bring the A DG to full load.
 - 4. All prerequisites and precautions are complete.
- C. Perform the task using OX1426.01
- D. We will begin after the Initiating Cue is read. Do you have any questions?

Initiating Cue:

US to RO: **“Proceed loading the A DG by beginning at step 4.1.39 of OX1426.01. An NSO is stationed locally in the A DG room.”**

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

JPM TITLE: STEAM GENERATOR PRESSURE INSTRUMENT FAILURE

JPM NUMBER: NEW

TASK NUMBER(S) / TASK TITLE(S): SBK 0590403001 Identify a SG Feed Flow or Steam Flow Instrument Failure

K/A NUMBERS: 059 A2.11 **K/A VALUE:** 3.0/3.3

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

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: 10 Minutes Time Critical: NO

Alternate Path [NRC]: YES

Alternate Path [INPO]: YES

Developed by:	Mark Martellotta Instructor/Developer	1/21/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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: None



SG Pressure Instrument Failure

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
				REVIEWER	DATE
1	New JPM developed for 2020 LOI NRC exam.	New JPM		MMM	1/21/20
				JH	5/12/20

SIMULATOR SET-UP:

Reset the simulator to any 100% power IC and perform the following.

1. Place the simulator in RUN.
2. Acknowledge any alarms and setup trends.
3. Ensure that SG 'C' is selected to channel 2 for steam flow, feed flow and level control.
4. Place Simulator in FREEZE.
5. Run scenario file "NRC_LOIT\JPMs\JPM c" in scenarios folder.
6. Ensure that the following malfunctions insert:
 - A. IOR IOOZMDIFWFK530R f:0
 - B. IOR IOOZMDIFWFK530L f:0
 - C. ICM trFWPT535.CMF t:2 d:10
7. Pressure channel 535 will fail low 10 seconds after simulator is placed in RUN
8. The increase and decrease pushbuttons of FW-LK-530 will fail to the 'release' position.

Required Materials: Turnover Sheet
OS1235.04, SG Feed Flow-Steam Flow or Steam Pressure Instrument Failure Rev 14

General References: Procedures:
OS1235.04, SG Feed Flow-Steam Flow or Steam Pressure Instrument Failure

Technical Specifications:
3.3.2 ESFAS Instrumentation
3.3.3.6 Accident Monitoring Instrumentation

Task Standards: Identify a failed SG pressure instrument and control feed water flow per OS1235.04, SG Feed Flow-Steam Flow or Steam Pressure Instrument Failure.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Balance of Plant Operator.
- B. The following information is provided to you:
 - 1. The plant is at 100% power.
 - 2. An event will occur. Respond to plant conditions. The PSO will NOT assist you.
 - 3. Due to the nature of the JPM, you will NOT be permitted to review any procedures before the JPM begins.
- C. Perform the task in accordance with the appropriate procedure.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **“BOP (or student’s name), when an event occurs, identify the event. Perform the actions for the required procedure. If required, perform any immediate actions from memory for the applicable procedure and inform the evaluator when the immediate actions are complete.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Note:	When student identifies the failed SG pressure instrument or corresponding steam flow instrument, give the student OS1235.04, “SG Feed Flow-Steam Flow or Steam Pressure Instrument Failure”.
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Note:	<p>Student may use skill of the operator to attempt control SG level by taking manual control of the ‘C’ FRV with FW-FK-530. The raise and lower pushbuttons are failed in the ‘release’ position and will not function.</p> <p>Student may also at this time take manual control of the Main Feed Pump Master Speed Controller to control SG level.</p>
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Performance Step: 01 Critical - Yes	Identify failed instrument – controlling channel failed.
Standard:	Identifies failed controlling pressure instrument or corresponding steam flow instrument.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical – No	Place affected steam generator feed control valve in manual.
Standard:	Student places FRV controller in manual if not previously performed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

	Begin alternate path
Performance Step: 03 Critical – No	Control feed flow to maintain narrow range level - 45% TO 55%.
Standard:	Student attempts to use raise lower pushbuttons. Controller is failed.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical – Yes	Student controls feedwater flow using MFP Master Speed Controller or individual slave speed controllers.
Standard:	Student controls feedwater flow.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical – No	Refer to OS 1090.01 and locally control affected steam generator feed control valve.
Standard:	Student contacts NSO to locally control FCV-530.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Cue:	If student contacts NSO to locally control FCV-530, 'C' main feed regulating valve, repeat the information. No action will be taken.

Terminating Cues: **The 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

Directions to the Student:

- A. You are the Balance of Plant Operator.
- A. The following information is provided to you:
 - 1. The plant is at 100% power.
 - 2. An event will occur. Respond to plant conditions. The PSO will NOT assist you.
 - 3. Due to the nature of the JPM, you will NOT be permitted to review any procedures before the JPM begins.
- C. Perform the task in accordance with the appropriate procedure.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary Operator, **"BOP (or student's name), when an event occurs, identify the event. Perform the actions for the required procedure. If required, perform any immediate actions from memory for the applicable procedure and inform the evaluator when the immediate actions are complete."**

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

JPM TITLE: **PLACING THE CONTAINMENT ON-LINE PURGE (COP) SYSTEM IN SERVICE**

JPM NUMBER: **2020 NRC Sim JPM h**

TASK NUMBER(S) / TASK TITLE(S): **SBK 0290100201 Startup the COP System**

K/A NUMBERS: **029 G2.1.31 K/A VALUE: 4.6/4.3**

Justification (FOR K/A VALUES <3.0): **NA**

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: **10** Minutes Time Critical: **NO**

Alternate Path [NRC]: **NO**

Alternate Path [INPO]: **NO**

Developed by:	Mark Martellotta Instructor/Developer	1/20/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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: None



**PLACING THE CONTAINMENT ON-LINE PURGE (COP) SYSTEM
IN SERVICE**

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
				REVIEWER	DATE
1	Prepared for 2020 NRC Exam. No Content changes made. Format changed from 2015 NRC exam.	Use in NRC Exam		MMM	1/20/20
				JH	5/12/20

SIMULATOR SET-UP:

Simulator: **Reset the simulator to a 100% power IC and run scenario file “NRC_LOIT\JPMs\JPM h”** or perform the following:

- A. Initialize the simulator to a 100% power IC.
- B. Rack In the breakers for COP-V1 and V4 and COP-V2 and V3.
 - SELECT: RF
 - SELECT: CONTAINMENT ONLINE PURGE
 - SELECT: Breakers
 - SELECT: RFCOP01 and RFCOP02
 - SELECT: FINAL: IN
 - SELECT: Insert
- C. Containment pressure set to 15.32 psia on COP-PI-1787.
 - SELECT: Sim Diagrams
 - SELECT: CAH 1
 - SELECT: COP-PI-1787
 - SELECT: FAIL TO SPECIFIED VALUE
 - SELECT: Value = 15.32
 - SELECT: Ramp Time = 10
 - SELECT: Insert

Required Materials: Turnover Sheet
OS1023.69, Containment On-Line Purge System Operation Rev 13

General References: Procedures:
OS1023.69, Containment On-Line Purge System Operation.
Technical Specifications:

Task Standards: Place the COP System in service per OS1023.69, Containment On-Line Purge System Operation, Section 4.2, starting at step 4.2.8.

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.

Directions to the Student:

Evaluator gives Tear Off sheet to the student.

Evaluator reads the following to student:

- A. You are the Primary Operator. You are going to place the COP System in service per OS1023.69, Containment On-Line Purge System Operation.
- B. The following information is provided to you:
 - 1. The plant is at 100% power and all systems are normal.
 - 2. Maintenance is preparing for a long duration job in containment and has requested the COP system be placed in service to improve air quality.
 - 3. All procedure prerequisites of OS1023.69 are complete and section 4.2 has been completed through step 4.2.7.
- C. We will begin after the Initiating Cue is read.

I will provide cues and communications for this JPM. Do you have any questions?

INITIATING CUE:

US to Primary Operator, **“Continue placing COP in service per OS1023.69, Containment On-Line Purge System Operation, at step 4.2.8.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Note:	Student reviews CAUTION prior to step 4.2.8 which states the following: If alarm point D7251, CONTAINMENT PURGE PRESS HIGH (setpoint at 15.35 psia) activates while placing COP system in service, COP-FN-73, containment on-line purge supply fan, should be manually stopped and containment pressure bled down as necessary through COP-V-3 and COP-V-4, COP system exhaust isolation valves.
--------------	--

Performance Step: 01 Critical - Yes	START COP-FN-73, containment on line purge supply fan.
Standard:	Student starts COP-FN-73, containment on line purge supply fan and observes status lights change state.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	Student reviews NOTE prior to step 4.2.9 which states the following: Steps 4.2.9.1 through 4.2.9.4 must be performed in order specified.
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Performance Step: 02 Critical – Yes	At MCB CR, OPEN the following valves: <ul style="list-style-type: none"> • COP-V-1, on line purge supply ORC isolation • COP-V-4, on line purge exhaust ORC isolation • COP-V-2, on line purge supply IRC isolation • COP-V-3, on line purge exhaust IRC isolation
Standard:	Student opens valves and observes proper response.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical – Yes	Throttle OPEN COP-V-8, COP exhaust throttle valve (coarse control), to obtain a containment pressure between 15.2 and 15.3 psia, or as directed by the US, as read on COP-PI-1787, containment pressure.
Standard:	Student throttles open COP-V-8 to a containment pressure between 15.2 and 15.3 psia.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	If desired, perform the following to modify COP-PI-1787 to 15.2 psia: <ul style="list-style-type: none"> • SELECT: Sim Diagrams • SELECT: CAH 1 • SELECT: COP-PI-1787 • SELECT: FAIL TO SPECIFIED VALUE • SELECT: Value = 15.2 • SELECT: Ramp Time = 10 • SELECT: Modify
Cue:	When the student checks containment pressure via COP-PI-1787 or VAS point A3250 respond, “Containment pressure is 15.2 psia and stable, no adjustment of COP-V-7 is required.”

Note:	Student reviews NOTE prior to step 4.2.12 which states the following: If the WRGM is out of service, the COP system will need to be monitored at the RDMS console and promptly shutdown should any of the following radiation monitors reach their alert setpoint: RM-6527A-1, RM-6527A-2, RM-6527B-1, RM-6527B-2.
Cue:	When the student reviews the WRGM status respond, “The WRGM is in service.”

Performance Step: 04 Critical – No	If the WRGM is out of service, the US has reviewed the preceding NOTE with an assigned operator.
Standard:	Student checks if the WRGM is out of service.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	When the student simulates contacting chemistry, repeat the communication. No action is needed.
Performance Step: 05 Critical – No	NOTIFY Chemistry that the COP system is in operation.
Standard:	Student notifies Chemistry that the COP system is in operation.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

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

Directions to the Student:

Directions to the Student:

Evaluator gives Tear Off sheet to the student.

Evaluator reads the following to student:

- A. You are the Primary Operator. You are going to place the COP System in service per OS1023.69, Containment On-Line Purge System Operation.
- B. The following information is provided to you:
 - 1. The plant is at 100% power and all systems are normal.
 - 2. Maintenance is preparing for a long duration job in containment and has requested the COP system be placed in service to improve air quality.
 - 3. All procedure prerequisites of OS1023.69 are complete and section 4.2 has been completed through step 4.2.7.
- C. We will begin after the Initiating Cue is read.

I will provide cues and communications for this JPM. Do you have any questions?

INITIATING CUE:

US to Primary Operator, “**Continue placing COP in service per OS1023.69, Containment On-Line Purge System Operation, at step 4.2.8.**”

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



JOB PERFORMANCE MEASURE

JPM TITLE: LOCAL MANUAL RAPID BORATION

JPM NUMBER: L0001J

TASK NUMBER(S) / TASK TITLE(S): SBK 0040405504 Perform Manual Rapid Boration Of The RCS

K/A NUMBERS: APE 024 AA1.20 **K/A VALUE:** 3.2/3.3

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

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:	Mark Martellotta Instructor/Developer	1/21/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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"/>

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: None

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
				REVIEWER	DATE
1	Update format, revise per AR and validation prep as necessary.	Change for revised fleet format, AR actions, and annual exam JPM validation.	1938235	DWE	06/02/14
				ERP	10/15/14
2	Reviewed and validated for 2015 annual exam. No major changes made. Added statement to begin first cue after Student notifies the Control Room that they are standing by.			MMM	4/22/15
				CJA	7/20/15
3	Reviewed and validated for 2016 Annual Exam. No changes made.			DWE	3/30/16
				CJA	8/30/16
4	Reviewed and validated for 2017 Annual Exam. No changes made.			KT	9/20/17
				CJA	9/27/17
5	Reviewed and validated for 2018 Annual Exam. No changes made.			KT	9/20/18
				CJA	9/28/18
6	Modified to perform evolution IAW surveillance procedure rather than getting direction from the CR. Changed to Rev 11.	Recommendation from the 71111.11 L1 Assessment of 2018 LOCT AOE	TWR# - 02295235	KT	03/07/19
				RD	03/27/19
7	Reviewed and validated for 2019 Annual Exam. No changes made.			KT	10/4/19
				AC	11/20/19
8	Prepared for 2020 LOI NRC exam. No content changes made.	Use in NRC exam.		MMM	1/21/20
				JH	5/12/0

Required Materials: Turnover Sheet
OX1408.02 Boron Injection Flow Path Monthly Alignment Check Rev 13
Form B

General References: Procedures:
OS1202.04 Rapid Boration
OX1408.02 Boron Injection Flow Path Monthly Alignment Check. Form B:
PM Number 1-CS-OT002-000 Boron Injection Flow Path Verification Rev13

Task Standards: Manually align gravity drain boration flow path in accordance with
OX1408.02, Boron Injection Flow Path Monthly Valve Alignment Check

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary NSO. You are going to simulate locally aligning a boration suction flow path.
- B. The following information is provided to you:
 1. The Shutdown Monitor alarm came in 5 minutes ago.
 2. The US is at step 4 of OS1202.04, Rapid Boration.
 3. Plant is in Mode 4.
 4. Boric Acid pumps, CS-P-3A and CS-P-3B are not operable.
 5. The boration flow path is;
 - gravity drain flow path from Boric Acid Tank CS-TK-4A, to charging pump CS-P-2A (both are Operable) to the RCS.
 6. Bus E5 and Diesel Generator A are operable.
 7. CS V207, CS-P-2A Suction has been verified open.
 8. CS-LCV-112B and CS-LCV-112C are operable and closed.
- C. Perform the task using. OX1408.02, Boron Injection Flow Path Monthly Valve Alignment Check, Section 4.2, Verification Of A Boron Injection Flow Path In MODEs 4, 5 And 6. Complete Form B: PM Number CS OT002 Boron Injection Flow Path Verification (Sheet 1 of 24).
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary NSO, **“Primary NSO (or student’s name), align gravity drain boration flow path in accordance with OX1408.02, Boron Injection Flow Path Monthly Valve Alignment Check, Section 4.2.**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

NOTE: CS-V-410 normal position is open with Boric Acid tank "A" operable. All other valves would need to be repositioned (except as noted in turnover) to perform this line up. Also, Operable checks and valve alignment can be done in any order.

Performance Step: 01 Critical - NO	Verify CS-TK-4 operable.
Standard:	Verifies CS-TK-4 operable (provided in Turnover).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 02 Critical - NO	Open/verify open CS-V-410 Boric Acid Tank "A" outlet.
Standard:	Simulates verifying open CS-V-410 Boric Acid Tank "A" outlet.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 03 Critical - YES	Open/verify open CS-V-437 Batching Tank make up to CS-P-3A.

Standard:	Simulates opening CS-V-437 Batching Tank make up to CS-P-3A.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 04 Critical - NO	Verify Bus E5/Diesel Generator A Operable.
Standard:	Verifies Bus E5/Diesel Generator A Operable (provided in Turnover).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 05 Critical - YES	Open/verify open CS-V-439 Boric Acid Tank Gravity Feed to CCPs.
Standard:	Simulates opening CS-V-439 Boric Acid Tank Gravity Feed to CCPs.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 06 Critical – YES	Open/verify open CS-V-442 Boric Acid Tank Gravity Feed to CCPs.
Standard:	Simulates opening CS-V-442 Boric Acid Tank Gravity Feed to CCPs.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 07 Critical - NO	Verify CS-V-207, CS-P-2A Suction open
Standard:	Verifies CS-V-207, CS-P-2A Suction is open (provided in Turnover).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 09 Critical - NO	Verify CS LCV-112B <u>OR</u> CS-LCV-112C Charging Pump Suction from VCT operable/closed.
Standard:	Verifies CS LCV-112B <u>OR</u> CS-LCV-112C Charging Pump Suction from VCT operable/closed (provided in Turnover).
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Performance Step: 10 Critical - NO	Inform US that aligning gravity drain boration flow path, in accordance with OX1408.02, Boron Injection Flow Path Monthly Valve Alignment Check, is complete.
Standard:	Informs US that aligning gravity drain boration flow path, in accordance with OX1408.02, Boron Injection Flow Path Monthly Valve Alignment Check, is complete.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The 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

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Primary NSO. You are going to simulate locally aligning a boration flow path.
- B. The following information is provided to you:
 1. The Shutdown Monitor alarm came in 5 minutes ago.
 2. The US is at step 4 of OS1202.04, Rapid Boration.
 3. Plant is in Mode 4.
 4. Boric Acid pumps, CS-P-3A and CS-P-3B are not operable.
 5. The boration flow path is;
 - gravity drain flow path from Boric Acid Tank CS-TK-4A, to charging pump CS-P-2A (both are Operable) to the RCS.
 6. Bus E5 and Diesel Generator A are operable.
 7. CS V207, CS-P-2A Suction has been verified open.
 8. CS-LCV-112B and CS-LCV-112C are operable and closed.
- C. Perform the task using. OX1408.02, Boron Injection Flow Path Monthly Valve Alignment Check, Section 4.2, Verification of A Boron Injection Flow Path In MODEs 4, 5 And 6. Complete Form B: PM Number CS OT002 Boron Injection Flow Path Verification (Sheet 1 of 24).
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Primary NSO, **“Primary NSO (or student’s name), align gravity drain boration flow path in accordance with OX1408.02, Boron Injection Flow Path Monthly Valve Alignment Check, Section 4.2.**

JOB PERFORMANCE MEASURE

JPM TITLE: **LOCALLY OPERATE THE EFW FLOW CONTROL VALVES**

JPM NUMBER: **L0050J**

TASK NUMBER(S) / TASK TITLE(S): **SBK 0610500404 Feed The SGs Locally With EFW**
 SBK 0610401304 Locally Operate Emergency Feedwater (EFW)
 Valves
 SBK 1180400601 Determine Condensate Storage Tank Level
 during RSS

K/A NUMBERS: **061 A1.04** **K/A VALUE: 3.9/3.9**

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: **30** Minutes Time Critical: **NO**

Alternate Path [NRC]: **NO**

Alternate Path [INPO]: **NO**

Developed by: _____ Mark Martellotta Instructor/Developer	_____ 1/21/20 Date
Reviewed by: _____ Jeff Hinze Instructor	_____ 5/12/20 Date
Approved by: _____ Andy Corrette Training Supervision	_____ 5/18/20 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"/>

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: None

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
				REVIEWER	DATE
1	Update format, revise per AR and validation prep as necessary.	Change for revised fleet format, AR actions, and annual exam JPM validation.	1938235	DWE	08/12/14
				ERP	10/15/14
2	Reviewed and validated for 2015 annual exam. Changed Evaluator cues to provide earned information for valve manipulations. Changed EFW recirc valves to the open position for greater operational validity.			MMM	5/6/15
				CJA	9/10/15
3	Modified for use in 2020 NRC LOI exam.	Use in NRC exam.		MMM	1/21/20
				JH	5/12/20

- Required Materials:** Turnover Sheet
OS1200.02, Safe Shutdown And Cooldown From RSS Facilities Rev 23
Attachment C pages 43-45.
OS1090.01 Manual Operation Of Remote Operated Valves Rev 21 Section 4.6
- General References:** Procedures:
OS1200.02, Safe Shutdown And Cooldown From RSS Facilities
OS1090.01 Manual Operation Of Remote Operated Valves
- Technical Specifications:
3.7.1.2 Auxiliary Feedwater System
- Task Standards:** Simulate manual valve operations to establish EFW flow to the B SG and verify CST level per OS1200.02 Attachment C \pm 10,000 gallons.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the RSS operator. You are going to simulate RSS operator actions required to locally establish EFW flow to the B SG. After EFW flow has been established you are going to verify CST level using local indications.
- B. The following information is provided to you:
 - 1. A fire in the control room has caused entry into OS1200.02 Safe Shutdown And Cooldown From RSS Facilities. The RSS panel is manned.
 - 2. The motor driven EFW pump is tagged out due to bearing failure. The turbine driven EFW pump is running with its recirc valve FW-V-346 open.
 - 3. The B SG EFW line automatically isolated on high flow due to the turbine driven EFW pump depressurizing the SG. The B SG is not faulted.
 - 4. The Roving NSO has walked down the B EFW line and reported that it is intact.
 - 5. The RSSP operators are unable to open the B SG EFW throttle valves from RSS. The Roving NSO deenergized FW-FV-4224A at MC-515 node B3W and FW-FV-4224B at MCC-615 node B4A.
 - 6. Local CST level indication and RSS CST level indication are inoperable.
- C. Perform the task using OS1090.01, Manual Operation Of Remote Operated Valves for operation of the EFW throttle valves and OS1200.02, Safe Shutdown And Cooldown From RSS Facilities, Attachment C, to verify CST level locally and verbal direction from the US.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to RSS Operator, **“RSS Operator (or student’s name), Refer to OS1090.01, Manual Operation of Remote Operated Valves to simulate manually establishing EFW flow. Simulate, fully opening FW-FV-4224A and then opening FW-FV-4224B to 50% open. When EFW flow has been established locally calculate CST level IAW OS1200.02, Safe Shutdown and Cooldown from RSS Facilities, Attachment C.”**

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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Cue:	If the student attempts to determine type of MOV, evaluator to NSO, “ EFW flow control valves are ROTORK MOVs. ”

Performance Step: 01 Critical - NO	Verify deenergized/deenergize MOVs for FW-FV-4224A and FW-FV-4224B.
Standard:	Simulates verification that MOVs for FW-FV-4224A and FW-FV-4224B are deenergized.
Note:	Verification of MOV deenergization has previously been performed as stated in the initial conditions.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical - YES	To manually open FW-FV-4224A: Presses the declutch lever to engage the manual handwheel and disengage the motor operator.
Standard:	Simulates pressing the declutch lever for FW-FV-4224A.
Cue:	When student simulates pressing the declutch lever, evaluator to NSO, " The declutch lever moves. "
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 03 Critical - YES	To manually open FW-FV-4224A: Operate the valve manually by use of the manual handwheel.
Standard:	Simulates fully opening FW-FV-4224A by rotating the manual handwheel counter clockwise.
Cue:	When student simulates fully opening by rotating the hand wheel counter clockwise, evaluator to NSO, " The hand wheel moves in the counter clockwise direction. The valve indicator has moved from its lowest position to the highest. "
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 04 Critical - YES	To manually open FW-FV-4224B: Presses the declutch lever to engage the manual handwheel and disengage the motor operator.
Standard:	Simulates pressing the declutch lever for FW-FV-4224B.
Cue:	When student simulates pressing the declutch lever, evaluator to NSO, " The declutch lever moves. "
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - YES	To manually open FW-FV-4224B: Operate the valve manually by use of the manual handwheel.
Standard:	Simulates opening FW-FV-4224B to 50% by rotating the manual handwheel counter clockwise.
Cue:	When student simulates throttling open the valve by rotating the handwheel counter clockwise, evaluator to NSO, “The hand wheel moves in the counter clockwise direction. The valve indicator has moved from its lowest position to approximately halfway up its full range.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 06 Critical - NO	Report to control room that FW-FV-4224A is full open and FW-FV-4224B is 50% open.
Standard:	Simulates reporting to control room that FW-FV-4224A is full open and FW-FV-4224B is 50% open.
Cue:	US to RSS operator, “I copy, FW-FV-4224A is full open and FW-FV-4224B is 50% open.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	US to RSS operator, “Determine CST level per OS1200.02 Attachment C. The turbine driven EFW pump is running and the motor driven EFW pump is tagged out. FW-V-346 is open and FW-V-347 is tagged closed.”
Note:	Provide student with a copy of OS1200.02 Attachment C CST Level VS EFW Pump Suction Pressure. With only one EFW pump running, the student should use step 2 of Attachment C to calculate CST level.

Performance Step: 07 Critical - NO	Obtain EFW flow for each SG.
Standard:	Obtains EFW flow for each SG and records on Attachment C step 2.a.
Cue:	Student must obtain EFW flows from the RSS panel, evaluator to student, “We have 150 gpm flow to each SG.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 08 Critical - NO	Obtain EFW recirc flow locally from FW-FI-4279.
Standard:	Obtains EFW recirc flow locally from FW-FI-4279 and records on Attachment C step 2.a.
Note:	FW-FI-4279 is on the north wall of the EFW pump house between the EFW pumps.
Cue:	When student reads EFW recirc flow from FW-FI-4279, evaluator to student, “FW-FI-4279 indicates 200 gpm.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 09 Critical - NO	Calculate total EFW flow value of 800 gpm.
Standard:	Calculates total EFW flow value of 800 gpm
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 10 Critical - NO	Determine EFW suction pressure for the turbine driven EFW pump using FW-PI-4208.
Standard:	Determine EFW suction pressure for the turbine driven EFW pump using FW-PI-4208.
Cue:	When student locates FW-PI-4208, evaluator to student, " FW-PI-4208 indicates 4 psig. "
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 11 Critical - YES	Determine CST volume within $\pm 10,000$ gallons
Standard:	Determines CST volume to be 210,000 gallons for 4 psig suction pressure at 800 gpm flow (1 pump operating). 200,000 – 220,000 gallons is acceptable.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Terminating Cues: The 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

Directions to the Student:

- A. You are the RSS operator. You are going to simulate RSS operator actions required to locally establish EFW flow to the B SG. After EFW flow has been established you are going to verify CST level using local indications.
- B. The following information is provided to you:
 - 1. A fire in the control room has caused entry into OS1200.02 Safe Shutdown And Cooldown From RSS Facilities. The RSS panel is manned.
 - 2. The motor driven EFW pump is tagged out due to bearing failure. The turbine driven EFW pump is running with its recirc valve FW-V-346 open.
 - 3. The B SG EFW line automatically isolated on high flow due to the turbine driven EFW pump depressurizing the SG. The B SG is not faulted.
 - 4. The Roving NSO has walked down the EFW line and reported that it is intact.
 - 5. The RSSP operators are unable to open the B SG EFW throttle valves from RSS. The Roving NSO deenergized FW-FV-4224A at MC-515 node B3W and FW-FV-4224B at MCC-615 node B4A.
 - 6. Local CST level indication and RSS CST level indication are inoperable.
- C. Perform the task using OS1090.01, Manual Operation Of Remote Operated Valves for operation of the EFW throttle valves and OS1200.02, Safe Shutdown And Cooldown From RSS Facilities, Attachment C, to verify CST level locally and verbal direction from the US.
- D. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to RSS Operator, **“RSS Operator (or student’s name), Refer to OS1090.01, Manual Operation of Remote Operated Valves to simulate manually establishing EFW flow. Simulate, fully opening FW-FV-4224A and then opening FW-FV-4224B to 50% open. When EFW flow has been established locally calculate CST level IAW OS1200.02, Safe Shutdown And Cooldown From RSS Facilities, Attachment C.”**

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



JOB PERFORMANCE MEASURE

JPM TITLE: RESET PCCW HIGH TEMPERATURE TRIP

JPM NUMBER: L0115J

TASK NUMBER(S) / TASK TITLE(S): SBK 0080102304 Perform Local Operations To Switch A Component Cooling Pump.

K/A NUMBERS: 008 A2.01
APE026 AK3.03 **K/A VALUE:** 3.3/3.6
4.0/4.2

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]: YES

Alternate Path [INPO]: YES

Developed by:	Mark Martellotta Instructor/Developer	1/21/20 Date
Reviewed by:	Jeff Hinze Instructor	5/12/20 Date
Approved by:	Andy Corrette Training Supervision	5/18/20 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"/>

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: None

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
				REVIEWER	DATE
1	Update format, revise per AR and validation prep as necessary. Changed JPM to Alt Path because of local remote switch being jammed causing operator to perform the alternate method to start CC-P-11B.	Change for revised fleet format, AR actions, and annual exam JPM validation.	1938235	DWE	08/18/14
				ERP	09/30/14
2	Reviewed and validated for 2015 annual exam. Revised JPM so that student uses ECA-0.2 Attachment D for procedural guidance while performing the task. Made rev.05 due to changes.			DWE	10/7/15
				CJA	10/10/15
3	Prepared for 2020 NRC exam. No content changes made.	Use in NRC exam.		MMM	1/21/20
				JH	5/12/20

- Required Materials:** Turnover Sheet
ECA-0.2 Loss Of All AC Power Recovery With SI Required Rev 33
Attachment C
- General References:** Procedures:
ECA-0.2 Loss Of All AC Power Recovery With SI Required Attachment C
- Technical Specifications:
3.7.3 Primary Component Cooling Water System.
- Task Standards:** Simulate the actions necessary to bypass the PCCW pump high temperature trip in accordance with verbal direction from the control room.

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.

Directions to the Student:

Evaluator gives Turnover sheet to the student

- A. You are the Secondary NSO. You are going to simulate locally restoring PCCW flow in both loops by inhibiting the PCCW system high temperature trip.
- B. The following information is provided to you:
 - 1. The plant is recovering from an extended site blackout.
 - 2. Both emergency buses are being supplied from the DGs.
 - 3. The US is attempting to restore PCCW flow at step 4 of ECA-0.2.
 - 4. The PCCW pumps cannot be started from the control room because of high loop temperatures.
- C. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Secondary NSO, **“Secondary NSO (or student’s name), you are needed to restart PCCW pumps on both trains per ECA-0.2 Attachment C. Contact the control room when you are at bus E-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 “YES” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: If the student requests a Peer Check at any time during the JPM respond, “No one is available to Peer Check your actions. Please continue with the task.”

Cue:	When NSO contacts the control room, US to NSO,” At Bus E-5, locally start CC-P-11A in accordance with ECA-0.2 Attachment C. ”
Note:	The required key is on the Secondary NSO key ring.

Performance Step: 01 Critical - YES	Insert GE-75 key into the Local/Remote switch at CC-P-11A breaker cubicle on bus 5.
Standard:	Simulates inserting GE-75 key into the Local/Remote switch at CC-P-11A breaker cubicle on bus 5.
Cue:	When student simulates inserting the key, evaluator to student, “ The key is inserted in the Local/Remote switch. ”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 02 Critical - YES	Place the Local/Remote selector switch for CC-P-11A to Local.
Standard:	Simulates rotating key and placing the Local/Remote selector switch for CC-P-11A to Local.
Cue:	When student simulates rotating key and turning selector switch, evaluator to student, “The Local/Remote switch is in Local.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Note:	If student contacts control room about starting CC-P11A, then direct student to start CC-P11A.
Performance Step: 03 Critical - YES	Close “A” PCCW pump breaker at bus E-5.
Standard:	Simulates closing “A” PCCW pump breaker at bus E-5.
Cue:	When student simulates closing the breaker, evaluator to student, “You hear the breaker operate. The green light is off and the red light is on. Amps peg high and then fall to running current of~80 amps.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	US to NSO, “We have flow indicated in the A loop of PCCW. Go to bus E-6 and locally start CC-P-11B in accordance with ECA-0.2 Attachment C.”

Performance Step: 04 Critical - NO	Insert GE-75 key into the Local/Remote switch at CC-P-11B breaker cubicle on bus 6.
Standard:	Simulates inserting GE-75 key into the Local/Remote switch at CC-P-11B breaker cubicle on bus 6.
Cue:	When student simulates inserting the key, evaluator to student, “The key is inserted in the Local/Remote switch.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 05 Critical - NO	Place the Local/Remote selector switch for CC-P-11B to Local.
Standard:	Simulates rotating key and turning the Local/Remote selector switch for CC-P-11B to Local.
Cue:	When student simulates rotating key and turning selector switch, evaluator to student, “The Local/Remote switch is jammed in the Remote position and will not move.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Cue:	If the student informs the control room about the Local/Remote switch, provide the following cue: US to NSO, “I copy, the selector switch is stuck in the Remote position for the “B” PCCW pump. Continue with ECA-0.2 Attachment D.”
Note:	Opening circuit #12 at MCC-621 will deenergize the circuitry that inhibits the start of the CC pumps on high temperature; therefore remote start of the PCCW pump is possible (see 310895 sheet E50/12a)

Performance Step: 06 Critical - YES	Open circuit #12 at MCC-621 to deenergize the “B” PCCW pump high temperature trip circuitry.
Standard:	Simulates opening circuit #12 at MCC-621 to deenergize the “B” PCCW pump high temperature trip circuitry.
Cue:	When student simulates opening circuit #12, evaluator to student, “Circuit #12 is open.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: 07 Critical - NO	Inform US that circuit #12 at MCC-621 is open.
Standard:	Simulates informing US that circuit #12 at MCC-621 is open.
Cue:	When control room is informed that circuit #12 is open, US to student, “I copy, MCC-621 circuit #12 is open. CC-P-11B will be started from the control room.”
Performance:	SATISFACTORY _____ UNSATISFACTORY _____

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

Directions to the Student:

- A. You are the Secondary NSO. You are going to simulate locally restoring PCCW flow in both loops by inhibiting the PCCW system high temperature trip.
- B. The following information is provided to you:
 - 1. The plant is recovering from an extended site blackout.
 - 2. Both emergency buses are being supplied from the DGs.
 - 3. The US is attempting to restore PCCW flow at step 4 of ECA-0.2.
 - 4. The PCCW pumps cannot be started from the control room because of high loop temperatures.
- C. We will begin after the "Initiating Cue" is read. Do you have any questions?

INITIATING CUE:

Evaluator to Secondary NSO, **“Secondary NSO (or student’s name), you are needed to restart PCCW pumps on both trains per ECA-0.2 Attachment C. Contact the control room when you are at bus E-5.”**

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



SIMULATOR EXERCISE GUIDE

SITE: Seabrook Station **Revision #:** 0

LMS ID: NA **LMS Rev. Date:** NA

SEG TITLE: 2020 NRC Sim Exam 1

SEG TYPE: Training Evaluation

PROGRAM: LOCT LOIT Other:

DURATION: 120 minutes

Developed by: Mark Martellotta 1/28/20
Instructor/Developer Date

Reviewed by: K. Thibodeau 04/07/20
Instructor (Instructional Review) Date

Validated by: K. Thibodeau 04/07/20
SME (Technical Review) Date

Approved by: Andy Corrette 5/12/20
Training Supervision Date

Approved by: Sean Doody 5/14/20
Training Program Owner (Line) Date

SIMULATOR EXERCISE GUIDE REQUIREMENTS

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
				REVIEWER	DATE
1	New exam developed for 2020 NRC Exam.	Use in NRC exam.	-	MMM	1/28/20
				KT	4/7/20

OVERVIEW / SEQUENCE OF EVENTS

The crew will take the watch at 10^{-8} amps (intermediate range) following a plant startup. They will be directed via the turnover sheet to increase power to between 1 and 3% with control rod motion.

During the power increase, the controlling pressurizer pressure channel will fail low. The crew will respond by taking manual control of pressurizer pressure and will implement OS1201.06, "PZR Pressure Instrument / Component Failure" AOP.

Once the controlling channel for pressurizer pressure is swapped and automatic control is restored, the 'B' SG controlling level channel will fail high. The crew will respond with OS1235.04, "SG Level Instrument Failure". As there is no alternate controlling channel to the feed reg bypass valves, the valve will remain in manual control.

An RCS leak will develop requiring entry into OS1201.02, "RCS Leak". The leak will initially be small allowing the crew to stabilize pressurizer level but will eventually develop into a large break LOCA. The crew will be required to trip the reactor and actuate SI.

After the reactor trip, the 'A' SW pump will trip and the standby 'C' SW pump will fail to automatically start. The crew must manually start the standby pump via Attachment 'A' of E-0.

The 'A' EDG will fail to automatically start on the SI and the BOP must manually start after immediate actions are complete.

Both trains of CBS will fail to actuate and the crew must manually start the CBS pumps via Attachment 'A' of E-0.

The procedure flow path is OS1201.06, OS1235.03, OS1201.02, E-0, FR-P.1, FR-Z.1, E-1, ES-1.3

Event #	Description
1.	Power increase to 3%
2.	Pressurizer pressure controlling channel RC-PT-455 fails low.
3.	SG 'B' controlling channel (Feed Reg Bypass Valve) FW-LT-529 fails high.
4.	RCS leak leads to large break LOCA in 'B' cold leg.
5.	'A' EDG fails to auto start. BOP must manually start.
6.	Running 'A' train SW pump trips, standby fails to automatically start. PSO must manually start.
7.	CBS pumps fail to automatically start. PSO must manually start.

Critical Task	Description
1.	Manually actuate SI before transitioning out of E-0.
2.	Transfer to Cold Leg Recirculation before receiving the RWST empty alarm.

SIMULATOR SET UP INSTRUCTIONS

Reset the simulator to IC 270,

Place 'Rods in Manual' magnet up.

Run simulator long enough for alarms to come in and plant to stabilize.

Run scenario file "NRC_LOIT\Demo exams\Exam 1" containing the following:

;Exam 1 setup

;A EDG fails to auto start

IMF mfED031 f:1

;Auto reactor trip blocked

IMF mFRPS001 f:1

IMF mFRPS002 f:1

;Auto SI blocked

IMF mFRPS007 f:1

IMF mFRPS008 f:1

;Both CBS pumps fail to auto start

IMF mfCBS004 f:1

IMF mfCBS005 f:1

;Standby SW pump fails to start

IMF mfSW014 f:1

;A SSW pump trips on reactor trip trigger

aet SWA SW Pump trip

;Exam run

pause

;PT-455 fails low

ICM trRCPT455.CMF t:1

pause

;B SG FRBV controlling channel 529 fails low

ICM trFWLT529.CMF t:2

pause

;45 gpm RCS leak

IMF mfRC048B r:10 f:0.03

pause

;leak leads to large break LOCA

IMF mfRC024B f:1

TURNOVER INFORMATION

Provide the crew with the turnover sheet and OS1000.02, "Plant Startup from Hot Standby to Minimum Load" marked up as complete up to step 4.6.



SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 1 Power increase to 3%</p>		<p>PSO R, BOP N, US N</p> <p>Crew will begin at step 4.7 of OS1000.02, "Plant Startup from Hot Standby to Minimum Load".</p> <p>Step 4.7 is not applicable as the MSIVs are open. Step 4.8 Crew should maintain Tavg in program band. Step 4.9 Crew should increase power to between 1 and 3% via control rod motion.</p> <p>PSO will use OS1000.10 Figure 11 to withdraw control rods.</p> <p>During rod motion, alarm B7457, "Rod Motion Detected" will occur.</p>
<p>Event 2 Pressurizer pressure controlling channel RC-PT-455 fails low.</p>	<p>Once the crew has commenced the power increase and at the discretion of the lead examiner, advance the scenario to the next malfunction by clicking "Execute".</p> <p>Ensure ICM trRCPT455.CMF t:1 activates</p>	<p>PSO I, US I, TS</p> <p>Initial alarms: F7435, "PZR Pressure Low Channel Trip (SI)" F7434, "PZR Pressure Low Channel Trip (RX)" D4327, "PZR Low and BU heaters on" D-2 UA 52, "MASTER PRESS CTRLR OUTPUT LO"</p> <p>Pressurizer spray valves will close and control group heaters will fully energize, causing pressurizer pressure to increase.</p> <p>VPRO for F7453 and F7434 will direct the crew to abnormal procedure OS1201.06, "PZR Pressurizer Instrument/Component Failure."</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Note: PSO may utilize skill of the operator to take manually control of pressurizer pressure using RC-PK-455A Master Pressure controller before entering AOP.</p> <p>US may direct power to be stabilized by inserting control rods to establish a zero DPM start up rate. The point of adding heat will add negative reactivity if this is not done.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Crew should enter OS1201.06, "PZR Pressurizer Instrument/Component Failure."</p> <p>Step 1 Check PORVs – CLOSED Crew should verify that PORVs are closed</p> <p>Step 2 Check Normal PZR Spray Valves – CLOSED Crew should verify that spray valves are either closed or open as expected, sprays are not failed open. Sprays are functioning properly.</p> <p>Step 3 Check Pressurizer Pressure Channels Crew should verify that controlling pressure channel has failed low.</p> <p>Step 4 Realign Pressurizer Pressure Instruments Crew should control pressurizer pressure at program, select an alternate channel for control, backup and recorder. Crew should select an alternate channel for DT, OT, OP channel recorder.</p> <p>Step 5 Align Pressurizer Pressure Control Crew will verify pressurizer pressure is trending to 2235 psig, verify proper controller setpoint and place the master pressure controller back to auto. Crew will verify heaters are still energized.</p> <p>Step 6 Verify Redundant Channel Bistables - NOT TRIPPED PSO will verify redundant channels are not tripped at, UL 1 PZR/MS SI AVAILABLE (P 11) PZR PRESS LO SI UL 6 RCS LOOP OTDT PRESSURIZER PRESS LO PRESSURIZER PRESS HI</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Tech Specs</p>	<p>Cue: if crew contacts WCS or WWM to report instrument failure, repeat the information.</p> <p>Cue: If crew contacts SM for permission/direction on the power increase, direct them to recommence the power increase.</p>	<p>Step 7 Verify Technical Specification Compliance</p> <p>US will refer to technical specifications:</p> <p>TS 3.3.1 Reactor Trip System Instrumentation Table 3.3.1, Items 7,9 and 10</p> <p>Action 6 applies. Power operation may continue, the inoperable channel must be place in the tripped condition within 6 hours. Per the ODI-75 the crew should start a 5 hour timer.</p> <p>T.S. 3.3.2, ESFAS Instrumentation; Table 3.3 3, Items 1.d. and 10.a.</p> <p>Action 18 applies. Power operation may continue, the inoperable channel must be place in the tripped condition within 6 hours. Per the ODI-75 the crew should start a 5 hour timer.</p> <p>Crew should contact I&C for support in tripping bistables. The action to trip will not take place during the exam.</p>
<p>Event 3 SG 'B' controlling channel (FRBV) FW-LT- 529 fails high.</p>	<p>At the discretion of the lead examiner, advance the scenario to the next malfunction by clicking "Execute".</p> <p>Ensure ICM trFWLT529.CMF t:2 activates</p>	<p>BOP I, US I, TS</p> <p>Initial alarms: D4771, "SG B LVL Ref Deviation" D4777, "SG B Level Hi-Hi CHAN TRIP" B-3 UA 53, "SG B Level Hi/Lo"</p> <p>The 'B' Feed Reg Bypass Valve (FRBV) will go closed isolating feedwater flow to the 'B' SG. This will cause level to lower.</p> <p>VPRO for D4771 and D4777 will direct the crew to abnormal procedure OS1235.03, "SG Level Instrument Failure".</p>
		<p>Note: BOP May utilize skill of the operator to take manually control of the 'B' FRBV and restore NR level to 50%.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Tech Specs</p>	<p>Cue: if crew contacts WCS or WWM to report instrument failure, repeat the information.</p>	<p>Crew should enter OS1235.03, "SG Level Instrument Failure".</p> <p>Step 1 Check Steam Generator Water Level Control BOP should identify the failed channel (FW-LI-529), place the FRBV in manual, and control level 45-55% NR.</p> <p>Step 2 Realign Steam Generator Level Instruments There is no alternate instrument available for the FRBV. The crew is not required to swap channels. The FRBV will remain in manual.</p> <p>Step 3 Align Steam Generator Water Level Control The crew will not be able to realign to automatic control. The 'B' FRBV will remain in manual.</p> <p>Step 4 Verify Redundant Channels Bistables - <u>NOT</u> TRIPPED PSO on UL 1 will verify SG LVL HI HI FW ISO TURB TRIP and UL 6 SG LVL LO LO redundant bistables are not tripped. BOP on UL 12 will verify SG LVL HI HI FW ISO TURB TRIP redundant bistables are not tripped.</p> <p>Step 5 Verify Technical Specification Compliance US will refer to technical specifications: T.S. 3.3.1, Reactor Trip System Instrumentation; Table 3.3-1, Item 13 Action 6 applies. Power operation may continue, the inoperable channel must be place in the tripped condition within 6 hours. Per the ODI-75 the crew should start a 5 hour timer. T.S. 3.3.2, Engineered Safety Features Actuation System Instrumentation; Table 3.3-3, Items 5.b, 6.a, 7.c, 10.c Action 18 applies. Power operation may continue, the inoperable channel must be place in the tripped condition within 6 hours. Per the ODI-75 the crew should start a 5 hour timer.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>T.S. 3.3.3.6, Accident Monitoring Instrumentation; Table 3.3-10, Item 7</p> <p>Action a. applies. The inoperable channel must be restored within 30 days or a report submitted to the commission.</p> <p>Step 6 Verify ATWS Mitigation Input Status. The BOP will verify that the failed channel is not an input to AMSAC.</p>
<p>Event 4 RCS leak leads to large break LOCA in 'B' hot leg.</p>	<p>At the discretion of the lead examiner, advance the scenario to the next malfunction by clicking "Execute".</p> <p>Ensure IMF mfRC048B r:10 f:0.03 activates.</p> <p>Trend RCS hot leg leakage to ensure that leak stabilizes at 45 gpm.</p>	<p>Initial alarms: D7251, "Containment purge pressure high" D4435, "Pressurizer level deviation low" UA-52 C-7, "PZR LEVEL DEVIATION LO"</p> <p>PSO should note lowering pressurizer level. If not, alarms will alert the crew to the RCS leak.</p> <p>VPRO for D4435 will direct the crew to OS1201.02, "RCS Leak".</p>
		<p>Note: The PSO may utilize skill of the operator to place CS-FK-121 in manual and lower letdown flow to stabilize pressurizer level.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>E Plan MU4 for RCS unidentified leakage greater than 10 gpm for 15 minutes</p>		<p>Crew should enter OS1201.02, "RCS Leak".</p> <p>Step 1 Check If Pressurizer Level Can Be Maintained. PSO should place CS-FK-121 in manual and lower letdown flow to stabilize pressurizer level.</p> <p>Step 2 Refer to ER 1.1, CLASSIFICATION OF EMERGENCIES Crew should determine leak rate for E-Plan purposes. PSO should determine flow balance based on charging and letdown mismatch. BOP should perform a mass balance to determine RCS leak rate. Leak rate is 45 gpm unidentified RCS leakage. Per ER-1.1 this meets the criteria after 15 minutes for MU4 "RCS leakage for 15 minutes or greater" and is an Unusual Event.</p> <p>Step 3 Determine Appropriate Procedure Step Transition Crew should determine that leakage is from the RCS and go to step 4.</p> <p>Step 4 Isolate Potential RCS Leakage Sources Check for pressurizer safety or PORV leakage: Safety valve or PORV tailpipe temperature – NORMAL Acoustic monitor indications - NORMAL Check reactor head vent ISOLATED: RC FV 2881 – CLOSED RC V323 - CLOSED Check excess letdown line ISOLATED: CS V175 – CLOSED CS V176 - CLOSED Check RCS sample lines – CLOSED BY PHASE A STATUS PANELS: Train A Train B</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Check reactor vessel flange leakoff temperature: RC-TI-401 RX VESSEL FLANGE LEAKOFF TEMP NORMAL</p> <p>Check valve stem leakoff header temperature: D7804 OUTSIDE BARRIER STEM LEAKOFF TEMP HI – RESET D7805 INSIDE BARRIER STEM LEAKOFF TEMP HI RESET</p> <p>Check steam generator tubes INTACT: Main steamline radiation – NORMAL Steam generator blowdown radiation – NORMAL Condenser air evacuation radiation – NORMAL Steam generator sample NORMAL</p> <p>Check SI discharge header pressure LESS THAN 800 PSIG Evaluate RCS Leakage The leakage is not isolated. The crew should proceed to step 6.</p>
	<p>Once the crew has completed initial diagnosis, at the discretion of the lead examiner, advance the scenario to the next malfunction by clicking “Execute”.</p> <p>Ensure IMF mfRC024B f:1 activates</p>	<p>PSO M, BOP M, US M</p> <p>Leak will quickly progress into LOCA. Pressurizer level will drop off scale low. The automatic reactor trip and the automatic SI are blocked.</p> <p>The crew should note the demand for reactor trip based upon containment pressure hi “first out” on UA52.</p> <p>Crew should trip the reactor and enter E-0, “Reactor Trip or Safety Injection”.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
	<p>Note: MS-V-129 may trip on over speed with low SG pressures. This is not a planned malfunction.</p> <p>Cue: If the crew contacts NSOs to reset MS-V-129, repeat the direction. No action will be taken.</p>	<p>Crew should enter E-0 and perform immediate actions. During immediate actions PSO should actuate SI.</p> <p>Critical Task 1: Manually actuate SI before transitioning out of E-0.</p> <p>Step 1 Verify Reactor Trip PSO verifies the reactor is tripped</p> <p>Step 2 Verify Turbine Trip BOP verifies that the turbine is tripped</p> <p>Step 3 Verify Power To AC Emergency Busses BOP verifies bus 5 and 6 energized</p> <p>Step 4 Check if SI is actuated PSO notes that SI is not actuated PSO determines that SI is required based upon RCS pressure, Pressurizer level, Containment pressure and RCS subcooling</p> <p>Step 5 Perform ESF Actuation Verification per Attachment 'A' PSO will perform attachment 'A'.</p>
<p>Event 5 'A' EDG fails to auto start. BOP must manually start.</p>		<p>During the step 4 pause, the BOP should note that the 'A' EDG should have started on the SI but failed to do so and manually start by depressing both emergency start pushbuttons.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 6 Running 'A' train SW pump trips, standby fails to automatically start. PSO must manually start.</p>		<p>PSO C, US C</p> <p>Attachment 'A' Step 7 will have the PSO verify one SW pump is running in each train. The 'A' SW pump has tripped and the 'C' has failed to start automatically. The PSO should start the 'C' SW pump.</p> <p>The BOP may address the SW pump at the step 4 pause and start via skill of the operator.</p>
<p>Event 7 CBS pumps fail to automatically start. PSO must manually start.</p>		<p>PSO C, US C</p> <p>Attachment 'A' step 10 will have the PSO check that containment pressure has remained less than 18 psig by the pressure recorder. PSO should determine that pressure has exceeded this value and actuate both CBS/P/CVI switches in each train. The CBS pumps will not start from this action and the PSO will be required to manually start each CBS pump. The RCPs should also be stopped per step 10e.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Continuing on with the main steps of E-0,</p> <p>Step 6 Monitor RCS Temperature STABLE AT OR TRENDING TO 557°F Crew should determine that RCS temperature is off scale low and process the RNO to verify that there is no excessive steam demand and that the MSIVs are closed. There is no action required here.</p> <p>Step 7 Check if RCS is Isolated. Crew should verify that either CS-V-145, RC-LCV-459 or 460 are closed. Crew should validate that PORVs and pressurizer sprays are closed.</p> <p>Step 8 Check if RCPs Should be Stopped Crew should determine that RCPs have already been stopped per OAS page, if not the pumps should be stopped here.</p> <p>Step 9 Check if SG Pressure Boundary is Faulted Crew should determine that no SGs are faulted.</p> <p>Step 10 Check if SG U Tubes are Intact Crew should determine that no SGs are ruptured.</p> <p>Step 11 Check if RCS is Intact Crew should evaluate containment pressure, radiation and building level and determine that the RCS is not intact. Crew should transition to E-1, "Loss of Reactor or Secondary Coolant"</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
	<p>If the crew contacts WCS for assistance in placing a H2 analyzer in service, repeat the communication. No action is required, this step will be left open.</p>	<p>Note: When exiting E-0 the crew may encounter a red P condition for the Integrity critical safety function. If this is the case, the crew should validate the red P and transition to FR-P.1. The following describes the actions in FR-P-1.</p> <p>Step 1 Check RCS Pressure GREATER THAN 300 PSIG Crew should determine that RCS pressure is less than 300 psig and evaluate the RNO to check RHR pump flow. Because of the large LOCA RHR pump flow is approximately 3500 gpm per train. The crew should transition out of FR-P.1 to E-1.</p> <p>Depending on containment pressure, the crew may encounter an orange Z condition. if this occurs the crew should transition to FR-Z.1. The following describes the actions taken in FR-Z.1.</p> <p>Step 1 Verify Containment isolation Phase A actuation ALL STATUS PANEL LIGHTS LIT. Crew should identify that all Phase A lights are lit.</p> <p>Step 2 Check if Containment Spray is Required Crew should note that containment pressure has exceeded 18 psig, verify that all Phase B lights are lit, CBS pump suction is aligned, and stop the RCPs if not done previously.</p> <p>Step 3 Verify one containment enclosure fan is running</p> <p>Step 4 Verify MSIVs, bypass valves and upstream drains are closed</p> <p>Step 5 Check if feed flow should be isolated to any SG No SGs are faulted</p> <p>Step 6 Check H2 concentration Crew should note that containment analyzers are not in service and contact WCS for assistance in placing the H2 analyzer in service.</p> <p>Crew should return to E-0.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Crew should transition to E-1, "Loss of Reactor or Secondary Coolant".</p> <p>Step 1 Check If RCPs Should Be Stopped RCPs will have been previously stopped</p> <p>Step 2 Check if SG Pressure Boundary is Faulted Crew should determine that no SGs are faulted.</p> <p>Step 3 Check Intact SG Levels Crew will check SG levels and control EFW flow</p> <p>Step 4 Check Secondary Radiation Crew should determine that no SGs are ruptured.</p> <p>Step 5 Check PZR PORV And Block Valves Crew should verify pressurizer PORVs are closed, block valves are powered and open.</p> <p>Step 6 Check If ECCS Flow Should Be Reduced Continued...</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Step 6 Check If ECCS Flow Should Be Reduced Crew will evaluate RCS subcooling which due to low core temperatures will be greater than 40 F Crew will evaluate secondary heat sink. 500 gpm EFW flow is available. Crew will check RCS pressure stable or increasing RCS pressure will be decreasing to match containment pressure. Crew will evaluate pressurizer level Level will be off scale low and crew should not proceed to ES-1.1</p> <p>Step 7 Check If Containment Spray Should Be Stopped Crew checks containment pressure and if less than 4 psig will reset the P and CBS signals and stop the CBS pumps.</p> <p>Step 8 Check If RHR Pumps Should Be Stopped Crew will check RCS pressure because it is less than 300 psig will leave the pumps running.</p> <p>Step 9 Crew will evaluate SG and RCS pressures. SG pressure will be stable and RCS pressure will be decreasing. Crew should precede to step 10</p> <p>Step 10 Check If Diesel Generators Should Be Stopped Crew should reset the SI signal, verify AC busses are energized and stop both diesels. Once the engines have stopped, they should be rest.</p> <p>Step 11 Initiate Evaluation Of Plant Status Crew will verify cold leg recirculation capability</p> <p>Step 12 Check If RCS Cooldown And Depressurization Is Required Crew verify that RCS pressure is <300 psig and not transition to ES-1.2</p>



SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		Step 13 Check If Transfer To Cold Leg Recirculation Is Required If ECCS switchover to containment sump has occurred or if RWST level has decreased to <115,000 gallons, the crew should transition to ES-1.3. If swap over conditions have not yet met these criteria, the crew should return to step 11.



SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
	<p>Note: It will take approximately 20 minutes from the reactor trip for RWST level to lower to the swap over setpoint.</p>	<p>Critical Task 2: Transfer to Cold Leg Recirculation before receiving the RWST empty alarm.</p> <p>Initial alarms: UA-50 A-3, RWST Level LO-LO D4391 ECCS & CBS RECIRC INITIATED D7193 RWST LEVEL LO-LO</p> <p>Step 1 Reset SI The SI may have already been reset at this point</p> <p>Step 2 Verify Containment Sump Recirculation Valves FULL OPEN The crew will verify CBS-V-8 and 14 are open</p> <p>Step 3 Simultaneously Close RWST Suction Valves The crew will close CBS-V-2 and 5</p> <p>Step 4 Align ECCS For Cold Leg Recirculation</p> <p>4a, b The crew will verify the RHR pumps are running and place the switches in NAS,</p> <p>4c Close SI-V-89, 90, 93</p> <p>4d Energize MCC 522 and 622</p> <p>4e Close RH-V-14</p> <p>4f Open CS-V-460, 461 and 475</p> <p>4g Open RH-V35 and 36</p> <p>4h The crew will start any pumps that were stopped due to RWST empty alarm</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
	<p>When the crew contacts the NSO to open breakers for CS-LCV-112D and E, repeat back the direction. After 5 minutes, open breakers using component remote function.</p>	<p>Step 5 Isolate RWST Feed To CCPs And SI Pumps</p> <ul style="list-style-type: none"> 5a Close CBS-V-47 and 51 5b Place CS-SS-112D and 112E in BLOCK 5c Close CS-LCV-112D and E 5d Deenergize CS-LCV-112D and E <p>Crew will contact NSO to open breakers.</p> <p>Step 6 Deenergize MCC E522 And MCC E622</p> <p>Step 7 Verify PCCW Flow To CBS Heat Exchangers Required Crew will verify CBS pumps are running and PCCW flow to CBS heat exchangers.</p> <p>Step 8 Verify PCCW Flow To RHR Heat Exchangers Crew will verify RHR pumps are running and PCCW flow to RHR heat exchangers.</p> <p>Step 9 Determine If Transfer To Hot Leg Recirculation Will Be Required ES-1.3 was entered from E-1</p> <p>Step 10 Initiate ESF Pump Monitoring per ATTACHMENT A</p> <p>Step 11 Initiate In Vessel Blockage Monitoring And Evaluation per ATTACHMENT B</p> <p>Step 12 Check For ECCS Leakage Crew will verify radiations conditions outside of containment are normal on CP-295</p> <p>Step 13 Return To Procedure And Step In Effect</p>
	<p>Terminate the exam when the crew completes ES-1.3 or at the discretion of the lead examiner.</p>	



SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
	E Plan determination: MU4 for RCS unidentified leakage greater than 10 gpm for >15 minutes FA1 for Loss of RCS Barrier due to manual SI required for un-isolable RCS leakage (ER-1.1C)	

***** END OF SCENARIO *****



Quantitative Attributes:

Malfunctions

Before EOP Entry

1. Pressurizer pressure controlling channel RC-PT-455 fails low.
2. SG 'B' controlling channel (Feed Reg Bypass Valve) FW-LT-529 fails high.

After EOP Entry

1. Running 'A' train SW pump trips, standby fails to automatically start. PSO must manually start.
2. CBS pumps fail to automatically start. PSO must manually start.
3. 'A' EDG fails to auto start. BOP must manually start.

Abnormal Events

1. Pressurizer pressure controlling channel RC-PT-455 fails low.
2. SG 'B' controlling channel (Feed Reg Bypass Valve) FW-LT-529 fails high.

Major Transient

1. RCS leak leads to large break LOCA in 'B' cold leg.
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SIMULATOR EXERCISE GUIDE

SEG
Page 1 of 20

SITE: Seabrook Station **Revision #:** 0

LMS ID: NA **LMS Rev. Date:** NA

SEG TITLE: 2020 NRC Sim Exam 2

SEG TYPE: Training Evaluation

PROGRAM: LOCT LOIT Other:

DURATION: 120 minutes

Developed by: Mark Martellotta 1/28/20
Instructor/Developer Date

Reviewed by: K. Thibodeau 04/07/20
Instructor (Instructional Review) Date

Validated by: K. Thibodeau 04/07/20
SME (Technical Review) Date

Approved by: Andy Corrette 5/12/20
Training Supervision Date

Approved by: Sean Doody 5/14/20
Training Program Owner (Line) Date

SIMULATOR EXERCISE GUIDE REQUIREMENTS

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
				REVIEWER	DATE
1	New exam developed for 2020 NRC Exam.	Use in NRC exam.	-	MMM	1/28/20
				KT	4/7/20

OVERVIEW / SEQUENCE OF EVENTS

The crew will take the watch at 75% power with the 'C' SW pump in service. The crew will be directed via the turnover sheet to swap 'A' train SW pumps from 'C' to 'A'.

The running PCCW pump will trip and the standby pump will fail to automatically start. The PSO must manually start the pump and the crew will respond with OS1212.01, "PCCW System Malfunction".

Following this, the running SW pump will trip and the standby pump will fail to auto start and trip when it is manually started. The crew must manually actuate TA and implement OS1216.01, "Degraded Ultimate Heat Sink".

A 30 gpm tube leak will develop in the 'B' SG requiring the crew to reduce power to <50% within one hour. During the down power, the tube leak will develop into a SG tube rupture requiring the crew to start the second charging pump, trip the reactor and actuate SI.

On the reactor trip and SI, the 'B' train T signal will fail to actuate. The crew must manually actuate the T signal.

The 'B' MSIV cannot be closed, requiring the remaining three MSIVs to be closed and the subsequent cool down to be performed on the ASDVs.

The procedure flow path is OS1016.03, OS1212.01, OS1216.01, OS1227.02, OS1231.04, E-0, E-3.

Event #	Description
1.	Swap 'A' train SW pumps.
2.	CC-P-11A trips and the standby fails to automatically start. PSO must manually start.
3.	SW-P-41A trips. Standby fails to auto start, trips when manually started. Manual TA is necessary.
4.	30 gpm 'B' SG tube leak
5.	Down power to <50% within 1 hour.
6.	During down power, 'B' SG degrades into a 500 gpm tube rupture requiring start of second charging pump, tripping the reactor and actuating SI.
7.	Automatic 'T' signal on Train 'B' fails to actuate. PSO must manually actuate train 'B' 'T' signal.
8.	'B' MSIV cannot be closed. Other MSIVs must be closed and c/d shifted to ASDVs.

Critical Task	Description
1.	Isolate feedwater flow into and steam flow from the ruptured SG before a transition to ECA-3.1 occurs.
2.	Establish/maintain an RCS temperature so that transition from E-3 does not occur because the RCS temperature is in either of the following conditions: Too high to maintain 60F of subcooling or, Too low causing Red or Orange path on the sub criticality and/or the integrity CSF.

SIMULATOR SET UP INSTRUCTIONS

- Reset the simulator to IC 10
- Swap protected trains to 'B'
- Place rods in auto
- Swap 'A' train SW pump from 41A to 41C
- Run scenario file "NRC_LOIT\Demo exams\Exam 2" containing the following:

;Exam 2 setup

;Prevent A and C main Steam Lines from reading high radiation
ICM trm6482.CMF2 t:3 f:1E-1
ICM trm6481.CMF2 t:3 f:1E-1

;Auto SI blocked
IMF mfRPS007 f:1
IMF mfRPS008 f:1

;Auto reactor trip blocked
IMF mfRPS001 f:1
IMF mfRPS001 f:1

;CC-P-11C fails to auto start
IMF mfCC014 f:1

;SW-P-41C fails to auto start
IMF mfSW014 f:1

;Automatic T signal on train B fails to auto actuate
IMF mfRPS012 f:1

;B MSIV is failed open
ICM svMSV88.CMF t:1

;Exam run

pause
;CC-P-11A trips
IMF mfCC008 f:1

pause
;SW-P-41A and C trip
IMF mfSW001 f:1
IMF mfSW003 f:1

pause
;30 gpm SGTL B SG
IMF mfSG001B r:30 f:30

pause
;B SGTL develops into SGTR
MMF mfSG001B r:30 f:500

TURNOVER INFORMATION

Provide the crew with the turnover sheet

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 1 Swap 'A' train SW pumps</p>	<p>If BOP contacts NSOs regarding pump pre starts, inform them "all local pump pre starts are complete SAT."</p> <p>If crew asks the status of SW-P-41A after starting, reply "'A' SW pump is running SAT"</p>	<p>US N, BOP N</p> <p>Using OS1016.03, "Service Water Train A Operation" the BOP will swap SW pumps.</p> <p>BOP should begin with OS1016.03 at step 4.2.1. BOP completes control room pre starts per ODI-5.</p> <ul style="list-style-type: none"> • Verifies forebay level >5 feet. • SW-V-2, 34 and 54 closed • SW-V-20 open • SWA-FN-38A or B in auto • Color graphics displayed • No pump pre starts in last hour • Announcement made <p>BOP starts SW-P-41A and verify SW-V-2 opens. BOP stops SW-P-41C and verifies SW-V-22 closes. BOP places control switch for SW-P-41C to normal after stop.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 2 CC-P-11A trips and the standby fails to automatically start. PSO must manually start.</p>	<p>At the discretion of the lead examiner, advance the scenario to the next malfunction by clicking “Execute”.</p> <p>Ensure IMF mfCC008 f:1 activates</p>	<p>PSO C, US C, TS</p> <p>Initial Alarms: UA-50 E-2 PCCW Train A Flow LO UA-50 F-3 PCCW RCP Coolers Flow LO</p> <p>VA1</p> <p style="padding-left: 40px;">F4554 SI Train A INOP F4996 CBS Train A INOP F4970 RHR Train A INOP</p> <p>VA2</p> <p style="padding-left: 40px;">F5294 CONTM CLG FAN E TRIP F5292 CONTM CLG FAN C TRIP D4258 CONTM ENCL CLR A PCCW FLOW LOW F6958 CVCS TRAIN A INOP D4265 CNTRFGL CHG PMP A PCCW FLOW LOW D7848 CONTM CLNG UNIT C PCCW FLOW LOW D7814 CONTM CLNG UNIT F PCCW FLOW LOW D7813 CONTM CLNG UNIT E PCCW FLOW LOW F7137 RCP COOLERS LOOP A PCCW FLOW LOW D4291 PCCW TRN A SUPPLY FLOW LOW D4295 SPENT FUEL HX A PCCW FLOW LOW D4250 PCCW TRN A SUPPLY HDR PRESS LOW D4272 PCCW PUMP A BKR TRIP & L/O</p> <p>Note: standby PCCW, CC-P-11C should auto start 30 seconds after the breaker for 11A opens. This feature is blocked. The crew should verify the standby pump fails to auto start and may use skill of the operator to start the standby pump.</p> <p>VPRO for D4272 will direct the crew to start the standby pump and to refer to OS1212.01, “PCCW System Malfunction”.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
Tech Specs		<p>Crew should enter OS1212.01, "PCCW System Malfunction".</p> <p>Step 1 Determine Appropriate Procedure Response The crew should determine that the PCCW system flow was degraded and transition to step 2.</p> <p>Step 2 Check PCCW Flow Crew verifies that one pump is running per loop, checks for adequate flow, no RCP motor flow alarms, RCP motor temperatures are normal, and one thermal barrier pump is running.</p> <p>Step 3 Check for Loss Of Shutdown Cooling Condition Crew verifies that RHR is aligned for injection mode.</p> <p>Step 4 Verify Proper Valve Alignment Crew verifies that PCCW valves are aligned correctly. Step 4 then directs crew to step 8.</p> <p>Step 8 Check PCCW System Status Crew verifies PCCW system parameters are normal. Crew check containment structure cooling fans running as required. Two CAH fans have tripped on low PCCW flow. Crew should restart C and E containment structure cooling fans by taking the control switch to start.</p> <p>US should verify TS compliance.</p> <p>T.S. 3.5.2, ECCS Subsystems – Tavg Greater than 350 °F</p> <p>T.S. 3.5.3.1, ECCS Subsystems – Tavg Less Than 350 °F</p> <p>T.S. 3.6.5.1, Containment Enclosure Emergency Air Cleanup System</p> <p>T.S. 3.7.3, Primary Component Cooling Water System</p> <p>No TS actions are required once the stand by pump is running.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 3 SW-P-41A trips. Standby fails to auto start, trips when manually started. Manual TA is necessary.</p>	<p>At the discretion of the lead examiner, advance the scenario to the next malfunction by clicking “Execute”.</p> <p>Ensure IMF mfSW001 and mfSW003 f:1 activate</p>	<p>BOP C, US C, TS Initial alarms: D5523 SW PUMP A BKR TRIP L/O UA-54 A1 SW TRAIN A PRES LO</p> <p>The ‘C’ SW pump fails to auto start and the crew should attempt to start the ‘C’ SW pump via skill of the operator. The ‘C’ SW pump will trip as soon as it is started.</p> <p>VPRO for D5523 will direct the crew to perform a tower actuation and refer to OS1216.01, “Degraded Ultimate Heat Sink”. Crew may elect to perform this action in the AOP or with the VPRO.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Tech Specs</p>	<p>When NSO is dispatched, after 10-minute time delay initiate a cooling tower fill from PW.</p> <ul style="list-style-type: none"> • Sim Diagrams • SW 2 • Click on rfSW001PW • Set fill rate to 30 gpm <p>When Chemistry and Security are notified that the cooling tower is in service, repeat the communication. No action is required.</p>	<p>Crew should enter OS1216.01, "Degraded Ultimate Heat Sink".</p> <p>Step 1 Determine Appropriate Response Crew determines that effected train is aligned to the ocean and proceeds to step 2.</p> <p>Note: Crew may go directly to step 4 if TA was already initiated.</p> <p>Step 2 Check For Ocean System Failure Crew should implement RNO as no ocean SW pumps are running Standby ocean pump is failed and a TA is required. Crew actuates TA and transitions to step 4.</p> <p>Step 4 Verify Tower Actuation Sequence Crew verifies proper TA alignment by status panel. Crew should verify cooling tower boundary is intact.</p> <p>Step 5 Determine Step Transition Crew should go to step 7</p> <p>Step 7 Align Equipment with ONE Cooling Tower Pump In Service Crew should place 'A' train ocean SW pumps in PTL, place the running cooling tower pump in NAS, reset TA, and operate sprays and fans per attachment 'A'. Crew will dispatch NSO to makeup to the cooling tower. Crew should call chemistry and security to notify that the cooling tower is in service.</p> <p>Step 9 Determine SW System Status Crew will check SW system heat loads. US should verify technical specification compliance. T.S. 3.7.4, Service Water System TS 3.7.4 action (a) applies as there are no ocean service water pumps operable rendering the 'A' train ocean loop inoperable. The loop must be returned to service within 72 hours or be in at least HSB within 6 hours and CSD within the following 30 hours.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 4 30 gpm 'B' SG tube leak</p>	<p>At the discretion of the lead examiner, advance the scenario to the next malfunction by clicking "Execute".</p> <p>Ensure IMF mfSG001B r:30 f:50 activates</p>	<p>PSO C, US C, TS</p> <p>Initial alarms: B8443 PRI TO SEC LEAK RATE OF CHANGE HIHI B8442 PRI TO SEC LEAK RATE OF CHANGE HI RDMS</p> <p style="padding-left: 40px;">Main Steam Line Loop 2 PRI > SEC Leak Rate Trend – Rate of Change CONDSR AIR EVACUATION</p> <p>PSO should note lowering pressurizer level. If not, alarms will alert the crew to the SG leak.</p> <p>VPRO for B8443 will direct the crew to OS1227.02, "Steam Generator Tube Leak".</p>
		<p>Note: The PSO may utilize skill of the operator to place CS-FK-121 in manual and lower letdown flow to stabilize pressurizer level.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>E Plan MU4 for RCS identified leakage greater than 25 gpm for 15 minutes.</p>	<p>When crew notifies Chemistry to implement CS0905.08, repeat this information. No action is required.</p>	<p>Crew should enter OS1227.02, "Steam Generator Tube Leak".</p> <p>Step 1 Check RCP Status Crew should note that RCPs are running and proceed to step 2.</p> <p>Step 2 Check If Pressurizer Level Can Be Maintained Crew should control charging and letdown to stabilize level. Crew should determine leak rate for E-Plan purposes. PSO should determine flow balance based on charging and letdown mismatch. BOP should perform a mass balance to determine RCS leak rate. Leak rate is 30 gpm primary to secondary leakage.</p> <p>Step 3 Try To Identify Affected SG Crew will notify Chemistry to implement Response to Primary to Secondary Leakrate procedure. Crew will utilize indication to determine B SGTL.</p> <p>Step 4 Check If VCT Level Can Be Maintained Crew determines VCT level can be maintained</p> <p>Step 5 Determine Steam Generator Tube Leakage Crew should determine that leak is in excess of 1 gpm (30 gpm)</p> <p>Step 5 RNO directs the crew to perform power decrease to 50% within one hour and to refer to ER-1.1.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 5 Down power to <50% within 1 hour</p>	<p>When crew contact SM to make ODI 56 notifications, repeat this information. No action is required.</p> <p>When NSO is directed to swap heater drains to flow control mode, wait approximately 5 minutes and perform the following:</p> <p style="padding-left: 40px;">Local Panels Fischer Porter Heater Drains Take HD-LY-4508-A and B from auto to manual and back to auto.</p> <p>Once this is done report back that “heater drains are now in flow control mode.”</p>	<p>Crew should utilize OS1234.01, “Rapid Down Power” as down power rate is in excess of 10%/hr.</p> <p>Crew may use ODI 56 to determine reactivity plan. From 75%, 519 gallons of boric acid Control rods inserted at 1 step/% power Turbine down power rate of 25%/hr The boric acid flow rate should be approximately 8.65 gpm</p> <p>Step 1 Perform Notifications Per ODI.61, Redeclaration/Joint Owner Notification Guidelines Crew will call SM to make ODI.61 notifications.</p> <p>Step 2 Perform Down Power Briefing Per ATTACHMENT A, as time permits</p> <p>Step 3 Align Rod Control System</p> <p>Step 4 Determine Boration Value For Desired Power Level PSO should use ODI56 to obtain above boration levels.</p> <p>Step 5 Perform Boration Crew will use attachment to perform boration.</p> <p>Step 6 Reduce Turbine Load to the Desired Power Limit Once the effects of the boration are observed, the US will direct the turbine load to be reduced. BOP will set load set point to 50% and a rate of 25%/hr. Crew will direct the NSO to transfer heater drains to the flow control mode.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 6 During down power, 'B' SG degrades into a 500 gpm tube rupture requiring start of second charging pump, tripping the reactor and actuating SI.</p>	<p>Once the crew has begun to unload the main turbine, at the discretion of the lead examiner, advance the scenario to the next malfunction by clicking "Execute".</p> <p>Ensure MMF mfSG001B r:30 f:500 activates.</p>	<p>PSO M, BOP M, US M</p> <p>SGTL will rapidly develop into a tube rupture. Crew should note the decreasing pressurizer level.</p> <ul style="list-style-type: none"> • Crew should note decreasing pressurizer level and pressure and attempt to reduce letdown flow and increase charging flow. • Crew should start the second charging pump per OS1227.02. • Crew should determine that pressurizer level cannot be maintained with two charging pumps and per the OAS page of OS1227.02, trip the reactor and actuate SI. <p>Once the reactor is tripped, crew should enter E-0, "Reactor Trip or Safety Injection" and perform immediate actions.</p> <p>Step 1 Verify Reactor Trip PSO verifies the reactor is tripped</p> <p>Step 2 Verify Turbine Trip BOP verifies that the turbine is tripped</p> <p>Step 3 Verify Power to AC Emergency Busses BOP verifies both E busses are energized</p> <p>Step 4 Check if SI is actuated PSO determines SI is actuated on both trains</p> <p>Step 5 Perform ESF Actuation Verification per Attachment A PSO will perform attachment A.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 7 Automatic 'T' signal on Train 'B' fails to actuate. PSO must manually actuate train 'B' 'T' signal.</p>		<p>PSO C, US C</p> <p>During performance of E-0 Attachment 'A' the following steps will be taken,</p> <p>Step 1 Verify Containment Isolation Phase A Actuation ALL STATUS PANEL LIGHTS LIT PSO should note that Train B 'T' signal failed to actuate. PSO should manually actuate 'T' signal for both trains. PSO will continue with Attachment 'A' of E-0</p>
		<p>Continuing with E-0</p> <p>Step 6 Monitor RCS Temperature STABLE AT OR TRENDING TO 557°F Crew should determine that RCS temperature is off scale low and process the RNO to verify that there is no excessive steam demand and that the MSIVs are closed. There is no action required here.</p> <p>Step 7 Check if RCS is Isolated. Crew should verify that either CS-V-145, RC-LCV-459 or 460 are closed. Crew should validate that PORVs and pressurizer sprays are closed.</p> <p>Step 8 Check if RCPs Should be Stopped Depending on subcooling, crew may stop RCPs. It is not expected that the RPSs will need to be tripped.</p> <p>Step 9 Check if SG Pressure Boundary is Faulted Crew should determine that no SGs are faulted.</p> <p>Step 10 Check If SG U Tubes Are Intact Crew should determine that 'B' SG is ruptured. Crew should transition to E-3, "Steam generator tube rupture".</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 8 'B' MSIV cannot be closed. Other MSIVs must be closed and c/d shifted to ASDVs.</p>	<p>When crew contacts NSO to perform Attachment 'A', repeat the direction. No action is required</p>	<p>E-3 Step 1 Check If RCPs Should Be Stopped Step 2 Identify Ruptured SGs Crew should use indications to determine the 'B' SG is ruptured. Step 3 Isolate Flow From Ruptured SG(s) Crew will verify 'B' ASDV setpoint is 1125 psig, The 'B' ASDV is closed. Crew should close MS-V-394, verify SB-V-10 is closed and verify MSD-V-45 is closed. Critical Task 1: Isolate feedwater flow into and steam flow from the ruptured SG before a transition to ECA-3.1 occurs. Crew should close the 'B' MSIV and bypass valve 'B' MSIV cannot be closed. Crew should transition to the RNO. Crew should close the remaining MSIVs and bypass valves. Crew should verify stop valves and MSR steam supply valves are closed. Crew should close MS-V-185 Crew should dispatch NSO to implement Attachment 'A' Crew will transfer RCS temp control to ASDVs Crew will place both SD interlock control switches to off Note: the above actions of step 3 RNO result in the 'B' SG being isolated from the remaining intact SGs, the crew should not transition to ECA-3.1 Step 4 Check ruptured SG level Crew should check 'B' SG narrow range level and if >6% open EFW pump mini flow valves and isolate flow.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Step 5 Check Ruptured SG(s) Isolated From Intact SG Crew should verify that the 'B' SG is isolated from intact SGs. Note if crew had not previously isolated the 'B' SG, pressure will lower, requiring transition to ECA-3.1.</p> <p>Step 6 Check Ruptured SG(s) Pressure GREATER THAN 350 PSIG</p> <p>Critical Task 2: Establish/maintain an RCS temperature so that transition from E-3 does not occur because the RCS temperature is in either of the following conditions: Too high to maintain 60F of subcooling OR Too low causing Red or Orange path on the sub criticality and/or the integrity CSF.</p> <p>Step 7 Initiate RCS cooldown Crew will determine required core exit temperature and use the intact ASDVs to commence the cool down. Crew will depressurize the RCS per Attachment B</p> <p>Note: it is expected that the cooldown will continue and the crew will proceed with step 8.</p> <p>Step 8 Check Intact SG Levels Crew should continue to maintain intact SG levels</p> <p>Step 9 Check PZR PORVs And Block Valves Crew should verify pressurizer PORVs are closed, block valves are powered and open.</p> <p>Step 10 Reset SI</p> <p>Step 11 Reset Containment Isolation Phase A and Phase B Crew will reset T and P signals</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
	<p>Once target temperature is reached and the crew stops the cooldown or at the discretion of the lead Examiner, terminate the exam.</p>	<p>Note: Cool down will continue until the target temperature is reached.</p>
	<p>E Plan determination: MU4 for SG identified leakage greater than 25 gpm for >15 minutes FA1 for Loss of RCS Barrier due to manual SI required for SGTR (ER-1.1C)</p>	

***** END OF SCENARIO *****

Quantitative Attributes:

Malfunctions

Before EOP Entry

1. CC-P-11A trips and the standby fails to automatically start. PSO must manually start.
2. SW-P-41A trips. Standby is out of service. Manual TA is necessary.
3. 30 gpm 'B' SG tube leak

After EOP Entry

1. Automatic 'T' signal on Train 'B' fails to actuate. PSO must manually actuate train 'B' 'T' signal.
2. 'B' MSIV cannot be closed. Other MSIVs must be closed and c/d shifted to ASDVs.

Abnormal Events

1. CC-P-11A trips and the standby fails to automatically start. PSO must manually start.
2. SW-P-41A trips. SW-P-41C will trip when started. Manual TA is necessary.
3. 30 gpm 'B' SG tube leak

Major Transient

1. During down power, 'B' SG degrades into a 500 gpm tube rupture requiring start of second charging pump, tripping the reactor and actuating SI.
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SIMULATOR EXERCISE GUIDE

SITE: Seabrook Station **Revision #:** 0

LMS ID: NA **LMS Rev. Date:** NA

SEG TITLE: 2020 NRC Sim Exam 3

SEG TYPE: Training Evaluation

PROGRAM: LOCT LOIT Other:

DURATION: 120 minutes

Developed by: Mark Martellotta 1/28/20
Instructor/Developer Date

Reviewed by: K. Thibodeau 04/09/20
Instructor (Instructional Review) Date

Validated by: K. Thibodeau 04/09/20
SME (Technical Review) Date

Approved by: Andy Corrette 5/12/20
Training Supervision Date

Approved by: Sean Doody 5/14/20
Training Program Owner (Line) Date



SIMULATOR EXERCISE GUIDE REQUIREMENTS

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
				REVIEWER	DATE
1	New exam developed for 2020 NRC Exam.	Use in NRC exam.	-	MMM	1/28/20
				KT	4/9/20

OVERVIEW / SEQUENCE OF EVENTS

The crew will take the watch at 100% power. Once the crew assumes the watch, the 'C' SG controlling level channel will fail low. The crew will respond with OS1235.03, "SG Level Instrument Failure" to swap controlling channels and restore the system to automatic.

Following this, the Pressurizer Master Pressure controller, RC-PK-455A set point will fail high. The crew will utilize OS1201.06, "Pzr Pressure Instrument/Component Failure".

ISO NE will contact the crew and request that electrical output be lowered to 800 MW within 30 minutes. This will require entry into OS1231.04, "Rapid Down Power". During the down power, NSO reports a loss of oil from the 'B' CBS pump. The pump is inoperable, the crew will place the pump in 'Pull to Lock" and the US must review TS 3.6.2.1.

After the down power is complete, there will be a loss of offsite power resulting in a reactor trip. The 'A' emergency diesel generator will fail to start automatically or manually and the 'B' diesel will trip on low lube oil pressure. Power will be restored via SEPS to bus 6.

Once power is restored, no 'B' train PCCW pump will start and RMO must be reset allowing for a manual start of the PCCW pump. The turbine driven EFW pump will trip, the motor driven EFW will fail to start automatically and must be manually started once bus 6 is reenergized.

The procedure flow path is OS1235.03, OS1201.06, OS1231.04, E-0, ECA-0.0, E-0, ES-0.1.

Event #	Description
1.	'C' SG Level controlling channel FW-LT-553 fails low.
2.	Pressurizer Master Pressure Controller set point fails high.
3.	ISO down power to 800 MWel net in 30 minutes.
4.	During ISO down power, NSO reports a loss of oil from the 'B' CBS pump.
5.	Loss of Offsite Power, 'A' EDG failure to start (auto or manual), 'B' EDG starts then trips on low lube oil pressure.
6.	Once Bus 6 power is restored from SEPS, no PCCW pump will start automatically and must be manually started.
7.	Turbine driven EFW pump trips. The motor driven EFW pump fails to start automatically and must be manually started once Bus 6 is energized.

Critical Task	Description
1.	Restore power to Bus 6 via SEPS before placing equipment in pull-to-lock in step 6 of ECA-0.0.
2.	Start the motor driven EFW pump before transitioning to FR-H.1

SIMULATOR SET UP INSTRUCTIONS

Reset to IC 15 and run scenario file "NRC_LOIT\Demo exams\Exam 3" containing the following malfunctions:

;Exam 3 setup

**;A EDG fails to auto start
IMF mfED031 f:1**

**;A EDG stop pushbutton pushed
IOR IOOZMDIDGCS95181 f:0**

**;A EDG E Start pushbuttons unpushed
IOR IOOZMDIDGCS95121 f:1
IOR IOOZMDIDGCS95122 f:1**

**;B EDG trips on low lube oil pressure
IMF mfED034 f:1**

**;B PCCW pump fails to restart
IMF mfCC013 f:1**

**;Turbine driven EFW pump trips
aet FWMS-V-129 trips 30 sec after 395**

**;Motor driven EFW pump fails to start
IMF mfFW052 f:1**

;Exam run

**pause
;C SG level channel fails low
ICM trFWLT553.CMF t:1**

**pause
;MPC setpoint fails high
ICM ctRCPK455A.CMF t:3 d:15 f:100**

**pause
;Loss of offsite power
IMF mfED038 f:1**

TURNOVER INFORMATION

Provide the crew with the turnover sheet

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 1 C' SG Level controlling channel FW-LT-553 fails low.</p>	<p>At the discretion of the lead examiner, advance the scenario to the next malfunction by clicking "Execute".</p> <p>Ensure ICM trFWLT553.CMF t:1 activates</p>	<p>BOP I, US I, TS</p> <p>Initial alarms: F4841, "SG C Level LO-LO" F4878, "SG Level Low" F4772, "SG C LVL REF DEVIATION" UA-53 C-3, "SG C Level Hi/Lo"</p> <p>SG 'C' FRV will fail to the full open position and level will increase.</p> <p>VPRO for each of the VAS alarms will direct the crew to OS1235.03, "SG Level Instrument Failure".</p>
		<p>Note: BOP may utilize skill of the operator to take manually control of the 'C' FRV and restore NR level to 50%.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Tech Specs</p>		<p>Crew should enter OS1235.03, "SG Level Instrument Failure".</p> <p>Step 1 Check Steam Generator Water Level Control BOP should identify the failed channel (FW-LI-553), place the FRV in manual, and control level 45-55% NR.</p> <p>Step 2 Realign Steam Generator Level Instruments BOP should select channel 1 SG-LI-539.</p> <p>Step 3 Align Steam Generator Water Level Control The BOP should restore the 'C' FRV to automatic.</p> <p>Step 4 Verify Redundant Channels Bistables - <u>NOT</u> TRIPPED PSO on UL 1 will verify SG LVL HI HI FW ISO TURB TRIP and UL 6 SG LVL LO LO redundant bistables are not tripped. BOP on UL 12 will verify SG LVL HI HI FW ISO TURB TRIP redundant bistables are not tripped.</p> <p>Step 5 Verify Technical Specification Compliance US will refer to technical specifications: T.S. 3.3.1, Reactor Trip System Instrumentation; Table 3.3-1, Item 13 Action 6 applies. Power operation may continue, the inoperable channel must be place in the tripped condition within 6 hours. Per the ODI-75 the crew should start a 5 hour timer. T.S. 3.3.2, Engineered Safety Features Actuation System Instrumentation; Table 3.3-3, Items 5.b, 6.a, 7.c, 10.c Action 18 applies. Power operation may continue, the inoperable channel must be place in the tripped condition within 6 hours. Per the ODI-75 the crew should start a 5 hour timer.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>T.S. 3.3.3.6, Accident Monitoring Instrumentation; Table 3.3-10, Item 7</p> <p>No actions apply as the channel is not a PAM channel.</p> <p>Step 6 Verify ATWS Mitigation Input Status.</p> <p>The BOP will verify that the channel does not input into AMSAC.</p>
<p>Event 2 Pressurizer Master Pressure Controller set point fails high.</p>	<p>At the discretion of the lead examiner, advance the scenario to the next malfunction by clicking “Execute”.</p> <p>Ensure ICM ctRCPK455A.CMF t:3 d:15 f:100 activates</p>	<p>PSO C, US C</p> <p>Initial alarms: UA-52 D-8, “MASTER PRESS CTLR OUTPUT LO” D4327, “PZR PRESSURE LOW & BU HTRS ON”</p> <p>The MPC set point failing high will cause the controller output to lower, fully energizing the control group heaters and turning the backup heaters on. This will cause pressurizer pressure to increase.</p>
		<p>Note: PSO may utilize skill of the operator to take manual control of the MPC and restore pressurizer pressure. Manual control will be required throughout the rest of the scenario.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
Tech Specs		<p>Crew should enter OS1201.06, "PZR Pressure Instrument / Component Failure".</p> <p>Step 1 Check PORVs – CLOSED Crew should verify the PORVs are closed</p> <p>Step 2 Check Normal PZR Spray Valves CLOSED Crew should verify both pressurizer sprays are closed</p> <p>Step 3 Check Pressurizer Pressure Channels Crew should determine that no pressure channels are failed and apply the RNO, which will identify that the master pressure controller is failed.</p> <p>Step 4 Realign Pressurizer Pressure Instruments Crew will control pressurizer manually. Alternate channels for control and recorders are not available or needed.</p> <p>Step 5 Align Pressurizer Pressure Control No action is needed here. The controller will remain in manual.</p> <p>Step 6 Verify Redundant Channel Bistables NOT TRIPPED PSO will verify redundant channels are not tripped at, UL 1 PZR/MS SI AVAILABLE (P 11) PZR PRESS LO SI UL 6 RCS LOOP OTDT PRESSURIZER PRESS LO PRESSURIZER PRESS HI</p> <p>Step 7 Verify Technical Specification Compliance US should determine that there are no TS implications of this malfunction.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 3 ISO down power to 800 MWel net in 30 minutes.</p>	<p>At the discretion of the lead examiner, call the Seabrook Control Room as ISO (ISO-NE phone button) and report the following: “This is ISO-NE. Due to a grid emergency we need Seabrook Station to reduce electrical output to less than 800 MWel net within the next 30 minutes.”</p> <p>When NSO is directed to swap heater drains to flow control mode, wait approximately 5 minutes and perform the following: Local Panels Fischer Porter Heater Drains Take HD-LY-4508-A and B from auto to manual and back to auto.</p> <p>Once this is done report back that “heater drains are now in flow control mode.”</p>	<p>PSO R, BOP N, US N</p> <p>Required down power rate meets entry criteria for OS1231.04, “Rapid Downpower”, the crew should enter this procedure.</p> <p>Crew should utilize OS1231.04, “Rapid Down Power” as down power rate is in excess of 10%/hr.</p> <p>Crew should use turnover sheet or ODI 56 to determine reactivity plan. 564 gallon of boric acid.</p> <p>Step 1 Perform Notifications Per ODI.61, Redeclaration/Joint Owner Notification Guidelines Crew will call SM to make ODI.61 notifications.</p> <p>Step 2 Perform Down Power Briefing Per ATTACHMENT A, as time permits</p> <p>Step 3 Align Rod Control System Verify rods are in auto</p> <p>Step 4 Determine Boration Value For Desired Power Level PSO should use ODI56 to obtain above boration levels.</p> <p>Step 5 Perform Boration Crew will utilize attachment to perform boration.</p> <p>Step 6 Reduce Turbine Load to the Desired Power Limit Once the effects of the boration are observed, the US will direct the turbine load to be reduced. BOP sets load setpoint and rate as necessary to maintain load reduction schedule. Crew will direct the NSO to transfer heater drains to the flow control mode.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
		<p>Step 7 Initiate PZR Forced Spray Crew should energize backup heaters and open pressurizer sprays by increasing the output of the MPC (in manual from Event 2).</p> <p>Step 8 Monitor Rod Position Crew should check for rod insertion limit LO LO alarm RESET</p> <p>Step 9 Check Steam Dump Operation Crew should verify that the steam dumps are closed during the down power.</p>
<p>Event 4 During ISO down power, NSO reports a loss of oil from the 'B' CBS pump.</p> <p>Tech Specs</p>	<p>Call the control room as the Primary NSO and report that “Control this is the Primary NSO. I am at the ‘B’ CBS Pump and there is oil all over the pump insulation and no oil visible in the motor oil sight glasses.”</p>	<p>US TS The crew should evaluate the operability of the ‘B’ CBS pump, place the pump in “pull to lock” for equipment protection and enter TS 3.6.2.1. TS 3.6.2.1 action applies. With one CBS system inoperable, restore within 72 hours or be in at least HSB within 6 hours and CSD within the following 30 hours.</p> <p>Alarm F4997, “CBS Train B INOP”.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 5 Loss of Offsite Power, 'A' EDG failure to start (auto or manual), 'B' EDG starts then trips on low lube oil pressure.</p>	<p>The entire down power need not be complete, at the discretion of the lead examiner, advance the scenario to the next malfunction by clicking "Execute".</p> <p>Ensure IMF mfED038 f:1 activates</p> <p>Cue: When Crew directs NSO to reset MS-V-129, repeat the communication. No action will be taken.</p>	<p>PSO M, BOP M, US M</p> <p>Offsite power will be lost. This will result in a reactor trip. The 'A' EDG will not automatically start and cannot be started from the control room. The 'B' EDG will trip on low lube oil pressure.</p> <p>Once the reactor is tripped, crew should enter E-0, "Reactor Trip or Safety Injection" and perform immediate actions.</p> <p>Step 1 Verify Reactor Trip PSO verifies the reactor is tripped</p> <p>Step 2 Verify Turbine Trip BOP verifies that the turbine is tripped</p> <p>Step 3 Verify Power to AC Emergency Busses Crew will determine that both E busses are deenergized and transition to ECA-0.0, "Loss of all AC Power" and perform immediate actions.</p> <p>ECA-0.0, "Loss of All AC Power".</p> <p>Step 1 Verify Reactor Trip PSO verifies the reactor is tripped</p> <p>Step 2 Verify Turbine Trip BOP verifies that the turbine is tripped</p> <p>Step 3 Check If RCS Is Isolated PSO verifies CS-V-145 is closed, PORVs are closed CS-V-175 and 176 are closed, and RCS Sample valves are closed.</p> <p>Step 4 Verify EFW Flow GREATER THAN 500 GPM TOTAL FLOW Crew should determine that MS-V-129 is closed. Crew should dispatch NSO to locally reset the turbine driven EFW pump per OS1036.03. No action will be taken; the valve will remain closed.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 6 Once Bus 6 power is restored from SEPS, no PCCW pump will start automatically and must be manually started.</p>	<p>When the crew mimics attempting to start the 'A' EDG via the slave relay test switches, indicate to them, "the system response is as you see".</p>	<p>Step 5 Try to Restore Power To Any AC Emergency Bus The crew will place the UAT and RAT supply breakers for the emergency busses in "pull to lock". The crew will attempt to start the 'A' EDG via the emergency pushbutton, slave relays S909 and S910 and the normal control switch. The engine will not start. The 'B' EDG has a loss of lube oil indicated by alarm D6608. If the crew attempts to start the 'B' EDG it will start and then trip. Crew should determine that no diesel generators are running and transition to the RNO.</p> <p>Step 5 RNO SEPS is aligned to bus 6 as indicated by the breaker open light being lit on bus 6.</p> <p>Critical Task 1. Restore power to Bus 6 via SEPS before placing equipment in pull-to-lock in step 6 of ECA-0.0. Crew should place DG-1B output breaker, CBS-P-9B (previously done), SI-P-6B, and CAH fans 1A, 1B and 1D breakers in "pull to lock". Crew should manually close the SEPS bus 6 breaker. The bus will energize. Crew is directed to step 5e.</p> <p>Step 5e Crew should verify EPS is actuated and is sequencing. Crew should check equipment is loaded Charging pump, Thermal barrier cooling pump, and SW ocean pumps are running</p> <p>PSO C, US C Crew should note the no 'B' PCCW pump is running and manually start a 'B' train PCCW pump after resetting RMO.</p>

SIMULATOR EXERCISE GUIDE SCENARIO INSTRUCTIONS

TIME/NOTES	INSTRUCTOR ACTIVITY	EXPECTED STUDENT RESPONSE
<p>Event 7 Turbine driven EFW pump trips. The motor driven EFW pump fails to start automatically and must be manually started once Bus 6 is energized.</p>	<p>If the crew asks the status of the emergency diesel generators, reply with the following: “the ‘B’ EDG has a large lube oil leak and will take several days to repair. The ‘A’ EDG starting problem has been identified and will be repaired in 2 hours.”</p> <p>If the crew contacts dispatch to inquire how long offsite power will be unavailable, tell them offsite power will be restored within 2 hours.</p>	<p>BOP C, US C Step 5e Crew should verify EPS is actuated and is sequencing. Crew should check equipment is loaded EFW pump Critical Task 2. Start the motor driven EFW pump before transitioning to FR-H.1</p> <p>Crew should note that the ‘B’ EFW pump failed to start and manually start the pump. Crew should verify one ocean SW pump is running Crew should verify one AC E bus is energized Crew will check if one E bus is energized by diesel generator Crew should determine that E bus is energized from SEPS and apply the RNO</p> <p>Step 5h RNO Crew should use Attachment A to maintain SEPS load limit. Crew will evaluate if AC E bus can be repowered from emergency diesel generator within 4 hours. The crew should not declare ELAP. The crew should proceed to step 5i and return to E-0.</p>
	<p>When the crew returns to E-0, or at the discretion of the lead examiner, terminate the exam.</p>	

*** END OF SCENARIO ***

Quantitative Attributes:

Malfunctions

Before EOP Entry

1. 'C' SG Level controlling channel FW-LT-553 fails low.
2. Pressurizer Master Pressure Controller set point fails high.
3. During ISO down power, NSO reports a loss of oil from the 'B' CBS pump.

After EOP Entry

1. Once Bus 6 power is restored from SEPS, no PCCW pump will start automatically and must be manually started.
2. Turbine driven EFW pump trips. The motor driven EFW pump fails to start automatically and must be manually started once Bus 6 is energized.

Abnormal Events

1. 'C' SG Level controlling channel FW-LT-553 fails low.
2. Pressurizer Master Pressure Controller set point fails high.
3. ISO down power to 800 MWel net in 30 minutes.

Major Transient

1. Loss of Offsite Power, 'A' EDG failure to start (auto or manual), 'B' EDG starts then trips on low lube oil pressure.
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