

| Facility: PVNGS                    |            | Date of Examination: 09/26/18           |  |
|------------------------------------|------------|---|--|
| Examination Level SRO              |            | Operating Test Number: 2018 NRC Re-Exam |  |
| Administrative Topic<br>(see Note) | Type Code* | Describe Activity to be Performed       |  |
| A1                                 | D, R       | JPM:                                    | Evaluate crew staffing in each unit and determine if the unit is in compliance with Conduct of Operations and Technical Specifications |
|                                    |            | KA:                                     | G 2.1.5  |
|                                    |            | IR:                                     | 3.9  |
| A2                                 | M, R       | JPM:                                    | Manually calculate RCS leakage and evaluate Technical Specifications   |
|                                    |            | KA:                                     | G 2.1.20   |
|                                    |            | IR:                                     | 4.6  |
| A3                                 | D, R       | JPM:                                    | Determine impacts of failed Startup Channel NI to refueling operations and Technical Specifications                                    |
|                                    |            | KA:                                     | G 2.2.40   |
|                                    |            | IR:                                     | 4.7  |
| A4                                 | N, R       | JPM:                                    | Evaluate the Release Flowchart and PAR flowchart following a SGTR/LOOP resulting in an Alert classification                            |
|                                    |            | KA:                                     | G 2.3.14   |
|                                    |            | IR:                                     | 3.8  |
| A5                                 | N, R       | JPM:                                    | Classify a loss of power event concurrent with an EDG with a loss of support system  |
|                                    |            | KA:                                     | G 2.4.40   |
|                                    |            | IR:                                     | 4.5  |

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Administrative Topics Outline  
Task Summary

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NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.

\*Type Codes & Criteria:      (C)ontrol room, (S)imulator, or Class(R)oom  
   (D)irect from bank ( $\leq 3$  for ROs;  $\leq 4$  for SROs & RO retakes) **(2)**  
   (N)ew or (M)odified from bank ( $\geq 1$ ) **(3)**  
   (P)revious 2 exams ( $\leq 1$ ; randomly selected) **(0)**

- A1 The applicant will determine whether or not each of the 3 site units shift manning meets with the requirements of Technical Specifications, and 40DP-9OP02, Conduct of Operations. This is a bank JPM.
- A2 The applicant will perform a manual RCS leakrate calculation and evaluate Technical Specifications. LCO 3.4.14 for RCS Operational Leakage, will be impacted and the applicant will have to determine the classification of leakage and required actions. This is a modified bank JPM.
- A3 The applicant will determine the Technical Specification impact of a failed Startup Channel NI and the subsequent potential impact on an upcoming refueling evolution. Following the Technical Specification evaluation, the applicant will refer to an outage evolution table and determine whether or not the evolution can proceed with one failed Startup Channel NI. This is a bank JPM.
- A4 The applicant will determine the status of a radiological release and Protective Action Recommendation during a SGTR event concurrent with a loss of offsite power. This is a new JPM.
- A5 The applicant will classify an emergency event using EP-0901, Classifications, and the EAL classification charts. The event will be a loss of offsite power concurrent with a loss of support equipment (on one EDG) required in order to use the EDG for power restoration. This is a new JPM.

2018 PVNGS NRC Initial Re-Exam JPM A1

**JPM INFORMATION**

|                       |   |                         |            |     |      |     |
|-----------------------|---|-------------------------|------------|-----|------|-----|
| <b>TASK:</b>          | 1290020301 – Conduct Shift Operations   |                         |            |     |      |     |
| <b>TASK STANDARD:</b> | Determined that Units 1 and 3 are NOT in compliance and that Unit 2 IS in compliance with the minimum crew manning of 40DP-9OP02, Conduct of Operations, and determined that all three units are in compliance with Technical Specification minimum manning requirements. |                         |            |     |      |     |
| <b>K/A:</b>           | G 2.1.5   | <b>RATING:</b>          | RO:        | 2.9 | SRO: | 3.9 |
| <b>POSITION(S):</b>   | SRO   | <b>VALIDATION TIME:</b> | 20 minutes |     |      |     |
| <b>REFERENCES:</b>    | 40OP-9DP02, Conduct of Operations, Technical Specifications, 10CFR50.54   |                         |            |     |      |     |
| <b>LOCATION:</b>      | SIMULATOR   | PLANT                   | CLASSROOM  | X   |      |     |

**TIME CRITICAL:** NO    **ALTERNATE PATH:** NO    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/3/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a CR to be written, remediation, and re-evaluation. CR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

## 2018 PVNGS NRC Initial Re-Exam JPM A1

### **PROCEDURES/MATERIALS:**

- 40DP-9OP02, Conduct of Operations, Section 4.8, Shift Manning
- Technical Specifications, Section 5.2, Organization
- 10CFR50.54

### **INFORMATION PRESENTED TO EXAMINEE:**

#### **ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

## 2018 PVNGS NRC Initial Re-Exam JPM A1

### INITIAL CONDITIONS:

- Current time is 1900
- All unit crews turned over 30 minutes ago
- The status of each units are as follows (assume personnel cannot be moved between units):
- **Unit 1 is operating at 100% power. Current manning:**
  - Shift Manager
  - The Control Room Supervisor is leaving now to respond to an emergency at home
  - A Senior Reactor Operator has been called out but will not arrive until 2045
  - 3 Reactor Operators (one is designated as Site Fire Team Advisor)
  - 1 Shift Technical Advisor (not licensed)
  - 3 AOs covering Turbine Building, Control Building, and Aux Building (two of these operators are proficient radwaste equipment operators)
  - 1 additional AO is the dedicated Work Control Operator
  - Demin Operator is performing resin regeneration
- **Unit 2 is in a refueling outage. The core is offloaded. Current manning:**
  - Shift Manager
  - Control Room Supervisor
  - 1 Reactor Operator in the Control Room
  - 1 Reactor Operator attending a brief in the Unit 2 Ops Support Building
  - 1 Shift Technical Advisor (not licensed)
  - Primary Log Taking AO
  - Secondary Log Taking AO
  - 5 additional AOs for outage support
  - 1 Radwaste Operator (Evaporator is running)
  - Demin Operator is off-loading resin from Service Vessel F to a poly container
  - 3 Reactor Operators are being utilized as Outage Coordinators
- **Unit 3 is in a short-notice outage due to a Main Turbine Lube Oil problem. The unit is in MODE 5 awaiting parts. Current manning:**
  - Shift Manager
  - Control Room Supervisor
  - 2 Reactor Operators
  - 1 Shift Technical Advisor (not licensed)
  - Primary Log Taking AO
  - Secondary Log Taking AO

### INITIATING CUE:

- Your task is to evaluate staffing for each unit and determine if each unit meets the requirements of:
  - Technical Specifications
  - 40DP-9OP02, Conduct of Operations
- If any unit fails to meet the minimum manning requirements of either Technical Specifications or 40DP-9OP02, Conduct of Operations, annotate the reason(s) why on the following page

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM
- Any step marked **UNSAT** requires comments
- If this is the first JPM of the set, then ensure the examinee has been briefed
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met

**JPM START TIME:**

|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 1 *                  | Determine if Unit 1 meets Tech Spec minimum manning requirements    |              |
| Standard:                      | Determined Unit 1 IS meeting Tech Spec minimum manning requirements |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 2 *                  | Determine if Unit 2 meets Tech Spec minimum manning requirements    |              |
| Standard:                      | Determined Unit 2 IS meeting Tech Spec minimum manning requirements |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 3 *                  | Determine if Unit 3 meets Tech Spec minimum manning requirements    |              |
| Standard:                      | Determined Unit 3 IS meeting Tech Spec minimum manning requirements |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM A1

|                                |  |
|--------------------------------|--|
| JPM Step: 4 *                  | Determine if Unit 1 meets minimum manning requirements of 40DP-9OP02   |
| Standard:                      | Determined Unit 1 IS NOT meeting minimum manning requirements of 40DP-9OP02.<br><br>Although the CRS will be replaced within 2 hours, which meets the minimum manning requirements, there is no Outside Area Operator, which is required in Unit 1, by 40DP-9OP02. |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 5 *                  | Determine if Unit 2 meets minimum manning requirements of 40DP-9OP02   |
| Standard:                      | Determined Unit 2 IS meeting minimum manning requirements of 40DP-9OP02.<br><br>Although there is only one RO in the Control Room, this is allowable per 40DP-9OP02. |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |   |
|--------------------------------|---|
| JPM Step: 6 *                  | Determine if Unit 3 meets minimum manning requirements of 40DP-9OP02  |
| Standard:                      | Determined Unit 3 IS NOT meeting minimum manning requirements of 40DP-9OP02.<br><br>Even in MODE 5, 3 AOs are required to be “within the unit”, therefore Unit 3 is not meeting the minimum manning per 40DP-9OP02. |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

**JPM STOP TIME:**



2018 PVNGS NRC Initial Re-Exam JPM A1

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS                |
|------------|---------------|--------|-------------------------|
| 1          | 7/25/17       | 3      | Procedure Revision      |
| 2          | 7/3/18        | 6      | Minor editorial changes |
|            |               |        |                         |
|            |               |        |                         |
|            |               |        |                         |
|            |               |        |                         |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

## EXAMINEE

### INITIAL CONDITIONS:

- Current time is 1900
- All unit crews turned over 30 minutes ago
- The status of each units are as follows (assume personnel cannot be moved between units):
- **Unit 1 is operating at 100% power. Current manning:**
  - Shift Manager
  - The Control Room Supervisor is leaving now to respond to an emergency at home
  - A Senior Reactor Operator has been called out but will not arrive until 2045
  - 3 Reactor Operators (one is designated as Site Fire Team Advisor)
  - 1 Shift Technical Advisor (not licensed)
  - 3 AOs covering Turbine Building, Control Building, and Aux Building (two of these operators are proficient radwaste equipment operators)
  - 1 additional AO is the dedicated Work Control Operator
  - Demin Operator is performing resin regeneration
- **Unit 2 is in a refueling outage. The core is offloaded. Current manning:**
  - Shift Manager
  - Control Room Supervisor
  - 1 Reactor Operator in the Control Room
  - 1 Reactor Operator attending a brief in the Unit 2 Ops Support Building
  - 1 Shift Technical Advisor (not licensed)
  - Primary Log Taking AO
  - Secondary Log Taking AO
  - 5 additional AOs for outage support
  - 1 Radwaste Operator (Evaporator is running)
  - Demin Operator is off-loading resin from Service Vessel F to a poly container
  - 3 Reactor Operators are being utilized as Outage Coordinators
- **Unit 3 is in a short-notice outage due to a Main Turbine Lube Oil problem. The unit is in MODE 5 awaiting parts. Current manning:**
  - Shift Manager
  - Control Room Supervisor
  - 2 Reactor Operators
  - 1 Shift Technical Advisor (not licensed)
  - Primary Log Taking AO
  - Secondary Log Taking AO

### INITIATING CUE:

- Your task is to evaluate staffing for each unit and determine if each unit meets the requirements of:
  - Technical Specifications
  - 40DP-9OP02, Conduct of Operations
- If any unit fails to meet the minimum manning requirements of either Technical Specifications or 40DP-9OP02, Conduct of Operations, annotate the reason(s) why on the following page

EXAMINEE

**EXAMINEE**

**Answer Sheet (circle the correct answer):**

**Unit 1 DOES / DOES NOT meet Tech Spec manning requirements**

**Unit 2 DOES / DOES NOT meet Tech Spec manning requirements**

**Unit 3 DOES / DOES NOT meet Tech Spec manning requirements**

**Unit 1 DOES / DOES NOT meet 40DP-9OP02 manning requirements**

**Unit 2 DOES / DOES NOT meet 40DP-9OP02 manning requirements**

**Unit 3 DOES / DOES NOT meet 40DP-9OP02 manning requirements**

**If any of the manning requirements are NOT met, explain why below:**

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**EXAMINEE**

2018 PVNGS NRC Initial Re-Exam JPM A2

**JPM INFORMATION**

|                       |   |                         |            |     |           |     |
|-----------------------|---|-------------------------|------------|-----|-----------|-----|
| <b>TASK:</b>          | 1250140201 – Respond to excessive RCS leakage   |                         |            |     |           |     |
| <b>TASK STANDARD:</b> | Calculated a leakrate of 7.6 – 7.9 gpm and determined that LCOs 3.4.14 Condition A is NOT met, requiring the unit to reduce LEAKAGE to within limits within 4 hours |                         |            |     |           |     |
| <b>K/A:</b>           | G 2.1.20  | <b>RATING:</b>          | RO:        | 4.6 | SRO:      | 4.6 |
| <b>POSITION(S):</b>   | SRO   | <b>VALIDATION TIME:</b> | 15 minutes |     |           |     |
| <b>REFERENCES:</b>    | 40AO-9ZZ02, Excessive RCS Leakrate, Appendix A, 15 Minute Leakrate Calculation, Attachment A-1, Leakrate Data Sheet, Technical Specifications                       |                         |            |     |           |     |
| <b>LOCATION:</b>      | SIMULATOR   |                         | PLANT      |     | CLASSROOM | X   |

**TIME CRITICAL:** NO    **ALTERNATE PATH:** NO    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/10/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a CR to be written, remediation, and re-evaluation. CR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

2018 PVNGS NRC Initial Re-Exam JPM A2

**PROCEDURES/MATERIALS:**

- 40AO-9ZZ02, Excessive RCS Leakrate, Appendix A, 15 Minute Leak Rate Calculation, Attachment A-1, Leak Rate Data Sheet
- Technical Specifications
- Technical Specifications Bases

**INFORMATION PRESENTED TO EXAMINEE:**

**ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

**INITIAL CONDITIONS:**

- Unit 1 is operating at 100% power
- Containment Sump levels are slowly rising
- Containment humidity is slowly rising
- Containment pressure is slowly rising
- 40AO-9ZZ02, Excessive RCS Leakrate, has been entered

**INITIATING CUE:**

- Using the provided data sheet, determine the leak rate using 40AO-9ZZ02, Excessive RCS Leakrate, Appendix A, 15 Minute Leak Rate Calculation, Attachment A-1, Leak Rate Data Sheet
- Determine any LCO(s) which is/are not met, if any, and if any LCO(s) is/are not met, determine the required actions

| <b>Data Sheet Info</b>               |                  |                  |              |
|--------------------------------------|------------------|------------------|--------------|
|                                      | <b>Pzr Level</b> | <b>VCT Level</b> | <b>T-avg</b> |
| <b>Initial Data (at time = 0900)</b> | <b>52.4%</b>     | <b>48%</b>       | <b>581.3</b> |
| <b>Final Data (at time = 0915)</b>   | <b>52.1%</b>     | <b>45%</b>       | <b>581.1</b> |

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM
- Any step marked **UNSAT** requires comments
- If this is the first JPM of the set, then ensure the examinee has been briefed
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met

**JPM START TIME:**

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 1                    | Record the following data on Attachment A-1: <ul style="list-style-type: none"> <li>• Start Time</li> <li>• Initial Data</li> <li>• Stop Time</li> <li>• Final Data</li> </ul> |                       |
| Standard:                      | Recorded the data on Attachment A-1  |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 2 *                  | Calculate the change in Pressurizer Level  |                       |
| Standard:                      | Calculated a change in Pressurizer Level of 0.3%<br><br><b>Answer Explanation:</b><br><br>Initial Data – Final Data<br>$52.4\% - 52.1\% = 0.3\%$ |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM A2

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 3 *                  | Calculate the change in VCT Level  |                       |
| Standard:                      | Calculated a change in VCT Level of 3%<br><br><b>Answer Explanation:</b><br><br>Initial Data – Final Data<br>$48\% - 45\% = 3\%$ |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 4 *                  | Calculate the change in T-avg   |                       |
| Standard:                      | Calculated a change in T-avg of 0.2°F<br><br><b>Answer Explanation:</b><br><br>Initial Data – Final Data<br>$581.3^{\circ}\text{F} - 581.1^{\circ}\text{F} = 0.2^{\circ}\text{F}$ |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |



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|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 5 *                  | Calculate the leakrate due to the change in Pressurizer Level  |                       |
| Standard:                      | Calculated a leakrate due to the change in Pressurizer Level of 19.947 gallons (acceptable range of 19-20 gallons)<br><br><b>Answer Explanation:</b><br><br>$\Delta Pzr \text{ Level} \times 66.49 \text{ gal/\%}$<br>$0.3\% \times 66.49 \text{ gal/\%} = 19.947 \text{ gal}$ |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 6 *                  | Calculate the leakrate due to the change in VCT Level  |                       |
| Standard:                      | Calculated a leakrate due to the change in VCT Level of 121.02 gallons (acceptable range of 121-122 gallons)<br><br><b>Answer Explanation:</b><br><br>$\Delta VCT \text{ Level} \times 40.34 \text{ gal/\%}$<br>$3\% \times 40.34 \text{ gal/\%} = 121.02 \text{ gal}$ |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM A2

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 7 *                  | Calculate the leakrate due to the change in T-avg   |                       |
| Standard:                      | Calculated a leakrate due to the change in T-avg of 24.6 gallons (acceptable range of 24-25 gallons)<br><br><b>Answer Explanation:</b><br><br>$\Delta T\text{-avg} \times 123 \text{ gal/}^\circ\text{F}$<br>$0.2^\circ\text{F} \times 123 \text{ gal/}^\circ\text{F} = 24.6 \text{ gal}$ |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 8 *                  | Determine the RCS leakrate   |                       |
| Standard:                      | Calculated the RCS leakrate to be 7.76 gpm (acceptable range of 7.6 – 7.9 gpm)<br><br><b>Answer Explanation:</b><br><br>$(\text{gal Pzr} + \text{gal VCT} - \text{gal Tavg}) / \text{min}$<br>$(19.947 \text{ gal} + 121.02 \text{ gal} - 24.6 \text{ gal}) / 15 \text{ min} = 7.76 \text{ gpm}$ |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM A2

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 9 *                  | Evaluate Technical Specifications and determine required actions   |                       |
| Standard:                      | Determined the following LCO is NOT met and determined the following required action: <ul style="list-style-type: none"> <li>• LCO 3.4.14, RCS Operational Leakage, Condition A                         <ul style="list-style-type: none"> <li>○ Reduce LEAKAGE to within limits within 4 hours</li> </ul> </li> </ul> |                       |
| Examiner Note:                 | <b>The examinee may also note that MODE 3 in 6 hours and MODE 5 in 36 hours would be required if leakage cannot be reduced to within limits, however since that situation has not yet manifested itself, that information is not part of the task standard for this JPM.</b>   |                       |
| Examiner Cue:                  | When the examinee has completed the leakrate calculation and TS evaluation:<br><br><b>“This JPM is complete”</b>   |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

**JPM STOP TIME:**

2018 PVNGS NRC Initial Re-Exam JPM A2

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS                                |
|------------|---------------|--------|---|
| 0          | 7/10/18       | 6      | New JPM created (modified from A-G1-10) |
|            |               |        |   |
|            |               |        |   |
|            |               |        |   |
|            |               |        |   |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

**EXAMINEE**

**INITIAL CONDITIONS:**

- Unit 1 is operating at 100% power
- Containment Sump levels are slowly rising
- Containment humidity is slowly rising
- Containment pressure is slowly rising
- 40AO-9ZZ02, Excessive RCS Leakrate, has been entered

**INITIATING CUE:**

- Using the provided data sheet, determine the leak rate using 40AO-9ZZ02, Excessive RCS Leakrate, Appendix A, 15 Minute Leak Rate Calculation, Attachment A-1, Leak Rate Data Sheet
- Determine any LCO(s) which is/are not met, if any, and if any LCO(s) is/are not met, determine the required actions

| <b>Data Sheet Info</b>               |                  |                  |              |
|--------------------------------------|------------------|------------------|--------------|
|                                      | <b>Pzr Level</b> | <b>VCT Level</b> | <b>T-avg</b> |
| <b>Initial Data (at time = 0900)</b> | <b>52.4%</b>     | <b>48%</b>       | <b>581.3</b> |
| <b>Final Data (at time = 0915)</b>   | <b>52.1%</b>     | <b>45%</b>       | <b>581.1</b> |

**Leakrate:** \_\_\_\_\_ **gpm**

**LCOs Not Met and Required Actions (if any):**

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**EXAMINEE**

2018 PVNGS NRC Initial Re-Exam JPM A3

**JPM INFORMATION**

|                       |   |                         |            |     |           |     |
|-----------------------|---|-------------------------|------------|-----|-----------|-----|
| <b>TASK:</b>          | 1370110502 Direct Required Actions During MODE 6 Refueling Operations   |                         |            |     |           |     |
| <b>TASK STANDARD:</b> | Determined that LCO 3.3.12 and LCO 3.9.2 are NOT met, core alterations and positive reactivity additions must be stopped immediately, and boron concentration must be determined immediately. Determined that raising the UGS can NOT be done at this time. |                         |            |     |           |     |
| <b>K/A:</b>           | G 2.2.40  | <b>RATING:</b>          | RO:        | 3.4 | SRO:      | 4.7 |
| <b>POSITION(S):</b>   | SRO   | <b>VALIDATION TIME:</b> | 15 minutes |     |           |     |
| <b>REFERENCES:</b>    | Technical Specifications, Technical Specification Bases, 40OP-9ZZ23, Outage GOP   |                         |            |     |           |     |
| <b>LOCATION:</b>      | SIMULATOR   |                         | PLANT      |     | CLASSROOM | X   |

**TIME CRITICAL:** NO    **ALTERNATE PATH:** NO    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/11/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a CR to be written, remediation, and re-evaluation. CR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

## 2018 PVNGS NRC Initial Re-Exam JPM A3

### **PROCEDURES/MATERIALS:**

- Technical Specifications
- Technical Specification Bases
- 40OP-9ZZ23, Outage GOP, Appendix Q, Refueling Activities and Evolutions

### **INFORMATION PRESENTED TO EXAMINEE:**

#### **ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### **INITIAL CONDITIONS:**

- Unit 1 is in MODE 6
- The Refueling team is prepared to raise the Upper Guide Structure Lift Rig CEA Support Plate with CEAs latched
- The RO has just reported that one of the Startup Channel NIs has failed off-scale low

#### **INITIATING CUE:**

- The SM directs you to determine if there are any Technical Specification impacts due to the failed Startup Channel NI and determine if the Refueling Team can start raising the Upper Guide Structure Lift Rig CEA Support Plate with CEAs latched
- If any Technical Specification(s) is/are not met, list below with any applicable required actions

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM
- Any step marked **UNSAT** requires comments
- If this is the first JPM of the set, then ensure the examinee has been briefed
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met



**JPM START TIME:**

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 1 *                  | Determine if there are any Technical Specification impacts due to the failure of one Startup Channel NI and associated required actions  |                       |
| Standard:                      | Determined that the following LCOs are NOT met: <ul style="list-style-type: none"> <li>• LCO 3.9.2, Nuclear Instrumentation, Condition A                         <ul style="list-style-type: none"> <li>○ Suspend CORE ALTERATIONS immediately and suspend positive reactivity additions immediately</li> </ul> </li> <li>• LCO 3.3.12, Boron Dilution Alarm System, Condition A                         <ul style="list-style-type: none"> <li>○ Determine the RCS boron concentration immediately and at the monitoring frequency specified in the COLR</li> </ul> </li> </ul> |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 2 *                  | Determine if the Refueling Team can start raising the Upper Guide Structure Lift Rig CEA Support Plate with CEAs latched   |                       |
| Standard:                      | Determined that raising the Upper Guide Structure Lift Rig CEA Support Plate with CEAs latched CANNOT be started due to the evolution being a CORE ALTERATION per 40OP-9ZZ23, Outage GOP, Appendix Q |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

**JPM STOP TIME:**

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS                           |
|------------|---------------|--------|------------------------------------|
| 0          | 3/7/16        | 6      | New JPM                            |
| 1          | 7/11/18       | 6      | Modified wording and task standard |
|            |               |        |                                    |
|            |               |        |                                    |
|            |               |        |                                    |
|            |               |        |                                    |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

**EXAMINEE**

**INITIAL CONDITIONS:**

- Unit 1 is in MODE 6
- The Refueling team is prepared to raise the Upper Guide Structure Lift Rig CEA Support Plate with CEAs latched
- The RO has just reported that one of the Startup Channel NIs has failed off-scale low

**INITIATING CUE:**

- The SM directs you to determine if there are any Technical Specification impacts due to the failed Startup Channel NI and determine if the Refueling Team can start raising the Upper Guide Structure Lift Rig CEA Support Plate with CEAs latched
- If any Technical Specification(s) is/are not met, list below with any applicable required actions

**List ALL Technical Specifications impacted and required actions (if any):**

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**Can the Refueling Team raise the Upper Guide Structure Lift Rig CEA Support Plate with CEAs latched? (circle one)**

Yes / No

**EXAMINEE**

2018 PVNGS NRC Initial Re-Exam JPM A4

**JPM INFORMATION**

|                       |   |                         |            |     |           |     |
|-----------------------|---|-------------------------|------------|-----|-----------|-----|
| <b>TASK:</b>          | 1240100302 – Direct an emergency response as the emergency coordinator  |                         |            |     |           |     |
| <b>TASK STANDARD:</b> | Completed the provided EP-0541 within 15 minutes of the start of the JPM, with the following information: Wind speed: 6.9 mph, Wind direction: 157 degrees, Authenticator code: DELTA BRAVO, A release IS occurring that is NOT exceeding federal limits, No protective actions are recommended |                         |            |     |           |     |
| <b>K/A:</b>           | G 2.3.14  | <b>RATING:</b>          | RO:        | 3.4 | SRO:      | 3.8 |
| <b>POSITION(S):</b>   | SRO   | <b>VALIDATION TIME:</b> | 10 minutes |     |           |     |
| <b>REFERENCES:</b>    | EP-0900, ERO Position Checklists, Appendix L, Emergency Coordinator – STSC, EP-0901, Classifications, ODP-31, Operations Emergency Plan Implementation, EP-0902, Notifications, EP-0905, Protective Actions, EP-0541, Palo Verde NAN Emergency Message Form                                     |                         |            |     |           |     |
| <b>LOCATION:</b>      | SIMULATOR   |                         | PLANT      |     | CLASSROOM | X   |

**TIME CRITICAL:** YES    **ALTERNATE PATH:** NO    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/18/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a CR to be written, remediation, and re-evaluation. CR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

## 2018 PVNGS NRC Initial Re-Exam JPM A4

### **PROCEDURES/MATERIALS:**

- EP-0900, ERO Position Checklists, Appendix L, Emergency Coordinator – STSC
- EP-0901, Classifications
- ODP-31, Operations Emergency Plan Implementation
- EP-0902, Notifications
- EP-0905, Protective Actions
- EP-0541, Palo Verde NAN Emergency Message Form

### **INFORMATION PRESENTED TO EXAMINEE:**

#### **ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### **INITIAL CONDITIONS:**

- Unit 1 was tripped from 100% power due to a Steam Generator Tube Rupture on SG #1
- On the trip, a loss of offsite power occurred
- SIAS and CIAS both automatically actuated due to low pressurizer pressure
- The SM has just declared an Alert, FA1.1
- RMS trends for Containment HI Range and Effluent monitors are attached
- Dose projections at site boundary are projected to be available in ~ 60 minutes
- The RFAT team reports that air sample and rad survey results should be available in ~ 45 minutes
- The Effluent Tech estimates grab sample results will be available in ~ 30 minutes
- The Met Data page is attached
- The authenticator code is DELTA BRAVO

#### **INITIATING CUE:**

- Complete the Palo Verde NAN Emergency Message Form, EP-0541, steps 3 through 5
- **THIS IS A TIME CRITICAL JPM**

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM
- Any step marked **UNSAT** requires comments
- If this is the first JPM of the set, then ensure the examinee has been briefed
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met

**JPM START TIME:**

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 1 *                  | Determined the correct wind speed and direction (35 ft level, 15 minutes average) from the Met Tower Data Sheet and documented on EP-0541 |                       |
| Standard:                      | Filled in a wind speed of 6.9 mph and a wind direction of 157 degrees on the EP-0541  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 2 *                  | Document the Authenticator Code on EP-0541  |                       |
| Standard:                      | Determined the authenticator code is DELTA BRAVO from the initial conditions and filled in DELTA BRAVO on the EP-0541 |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 3 *                  | Determine the status of radioactive release  |                       |
| Standard:                      | <p>Determined that a release IS occurring which does NOT exceed federally approved limits due to this event and checked the “A radioactive release is occurring which does NOT exceed federal approved limits due to this event” box on the EP-0541</p> <p><b>Answer Explanation: The loss of offsite power will require the use of either SBCS valves 1007 or 1008 (which release to atmosphere) or ADVs (which also release to atmosphere). ODP-31, Operations Emergency Plan Implementation, provides clarification for this, “IF there is a steam release from operation of an ADV, SBCV, or Terry Turbine from a SG experiencing a SGTR, then this would be considered a release in progress”</b></p> |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

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|                                |  |  |
|--------------------------------|--|--|
| JPM Step: 4 *                  | Determine the recommended action(s)  |  |
| Standard:                      | <p>Determined that there is no PAR required due to this event and checked the “There are NO PROTECTIVE ACTIONS required” box on the EP-0541</p> <p><b>JPM Start Time:</b> _____</p> <p><b>Time EP-0541 Completed:</b> _____</p> <p><b>Time Elapsed:</b> _____ (must be <math>\leq 15</math> minutes)</p> <p><b>Answer Explanation: On the PAR flowchart, only an event resulting in a GENERAL EMERGENCY requires recommended actions, therefore there are no actions to recommend due to this event.</b></p> |  |
| Comments (required for UNSAT): | <p><b>SAT      UNSAT</b></p>   |  |

**JPM STOP TIME:**



**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS    |
|------------|---------------|--------|-------------|
| 0          | 7/18/18       | 6      | JPM Created |
|            |               |        |             |
|            |               |        |             |
|            |               |        |             |
|            |               |        |             |
|            |               |        |             |

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

**EXAMINEE**

**INITIAL CONDITIONS:**

- Unit 1 was tripped from 100% power due to a Steam Generator Tube Rupture on SG #1
- On the trip, a loss of offsite power occurred
- SIAS and CIAS both automatically actuated due to low pressurizer pressure
- The SM has just declared an Alert, FA1.1
- RMS trends for Containment HI Range and Effluent monitors are attached
- Dose projections at site boundary are projected to be available in ~ 60 minutes
- The RFAT team reports that air sample and rad survey results should be available in ~ 45 minutes
- The Effluent Tech estimates grab sample results will be available in ~ 30 minutes
- The Met Data page is attached
- The authenticator code is DELTA BRAVO

**INITIATING CUE:**

- Complete the Palo Verde NAN Emergency Message Form, EP-0541, steps 3 through 5
- **THIS IS A TIME CRITICAL JPM**

**EXAMINEE**

2018 PVNGS NRC Initial Re-Exam JPM A5

**JPM INFORMATION**

|                       |  |                         |            |     |           |     |
|-----------------------|--|-------------------------|------------|-----|-----------|-----|
| <b>TASK:</b>          | 1290240302 – Classify an E-Plan event per EP-0901  |                         |            |     |           |     |
| <b>TASK STANDARD:</b> | Classified the event as SA1.1 within 14 minutes  |                         |            |     |           |     |
| <b>K/A:</b>           | G 2.4.40   | <b>RATING:</b>          | RO:        | 2.7 | SRO:      | 4.5 |
| <b>POSITION(S):</b>   | SRO  | <b>VALIDATION TIME:</b> | 10 minutes |     |           |     |
| <b>REFERENCES:</b>    | EP-0900, ERO Position Checklists, Appendix L, Emergency Coordinator – STSC, EP-0901, Classifications, ODP-31, Operations Emergency Plan Implementation, EP-0801, EAL Hot Chart, EP-0802, EAL Cold Chart, EP-0930, All Conditions Chart |                         |            |     |           |     |
| <b>LOCATION:</b>      | SIMULATOR  |                         | PLANT      |     | CLASSROOM | X   |

**TIME CRITICAL:** NO    **ALTERNATE PATH:** NO    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/10/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a CR to be written, remediation, and re-evaluation. CR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

## 2018 PVNGS NRC Initial Re-Exam JPM A5

### **PROCEDURES/MATERIALS:**

- EP-0900, ERO Position Checklists, Appendix L, Emergency Coordinator – STSC
- EP-0901, Classifications
- ODP-31, Operations Emergency Plan Implementation
- EP-0801, EAL Hot Chart
- EP-0802, EAL Cold Chart
- EP-0930, All Conditions Chart

### **INFORMATION PRESENTED TO EXAMINEE:**

#### **ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### **INITIAL CONDITIONS:**

- Unit 1 is operating at 100% power
- The ‘B’ Spray Pond Pump is OOS for emergent maintenance due to an oil leak

#### **Subsequently:**

- An earthquake occurred that was confirmed to be greater than OBE
- One minute later, the unit tripped due to a loss of offsite power

#### **INITIATING CUE:**

- Your task is to determine the **HIGHEST** applicable EAL Classification level per EP-0901, Classifications
- Inform the examiner of your classification when you have completed the classification and document in the space provided below
- **THIS IS A TIME CRITICAL JPM**

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM
- Any step marked **UNSAT** requires comments
- If this is the first JPM of the set, then ensure the examinee has been briefed
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met

**JPM START TIME:**

|                                |   |     |       |
|--------------------------------|---|-----|-------|
| JPM Step: 1 *                  | Classify the event using the appropriate E-Plan procedures and charts   |     |       |
| <b>Examiner Note:</b>          | <b>Although the allowable time to classify an event is 15 minutes, one minute has elapsed in the cue. An EAL declaration must be made within 14 minutes of the start of the JPM, and the highest EAL is SA1.1</b> |     |       |
| Standard:                      | Examinee classified the event as SA1.1 within 14 minutes  |     |       |
| <b>Examiner Note:</b>          | <p><b>Document the time to classify below (must be ≤ 14 minutes):</b></p> <p><b>JPM Start Time:</b> _____</p> <p><b>Classification Time:</b> _____</p> <p><b>Time to Classify:</b> _____ <b>minutes</b></p>       |     |       |
| Comments (required for UNSAT): | <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 0 20px;">SAT</td> <td>UNSAT</td> </tr> </table>   | SAT | UNSAT |
| SAT                            | UNSAT   |     |       |

**Examiner Note: The following EALs may be potentially evaluated for classification:**

- **HU2.1** – A seismic event did occur (> OBE) which meets HU2.1, and HU2.1 is the first classifiable event given the listed conditions, however HU2.1 is NOT the highest EAL which is met.
- **SU1.1** – The loss of offsite power meets the conditions for SU1.1 since the SBOGs are not aligned to the class buses, and both EDGs will start on the loss of power and align to their respective class buses, however since the ‘B’ Spray Pond Pump is out of service due to the oil leak, it must be shutdown within 2.6 minutes (procedurally driven) to prevent damaging the EDG.
- **SA1.1** – Due to the loss of offsite power and the loss of one offsite source (‘B’ EDG is unusable due to no Spray Pond Pump available on Train ‘B’), AC power capability will be reduced to a single power source for greater than 15 minutes making SA1.1 the correct EAL to declare.

The fact that the SBOGs are available and can be aligned to the Unit 1 class buses could lead an examinee to determine that the threshold for SA1.1 has not been reached. However, the SBOGs are only considered to be an available offsite source when they are physically aligned to the class buses. Additionally, the Functional Recovery procedure has direction to align another unit’s EDG(s) to Unit 1, however for the purpose of EAL classifications, only the affected unit’s EDGs are considered available onsite AC power sources, making SA1.1 the correct EAL classification.

**JPM STOP TIME:**

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS |
|------------|---------------|--------|----------|
| 0          | 7/10/18       | 6      | New JPM  |
|            |               |        |          |
|            |               |        |          |
|            |               |        |          |
|            |               |        |          |
|            |               |        |          |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)



**EXAMINEE**

**INITIAL CONDITIONS:**

- Unit 1 is operating at 100% power
- The 'B' Spray Pond Pump is OOS for emergent maintenance due to an oil leak

**Subsequently:**

- An earthquake occurred that was confirmed to be greater than OBE
- One minute later, the unit tripped due to a loss of offsite power

**INITIATING CUE:**

- Your task is to determine the **HIGHEST** applicable EAL Classification level per EP-0901, Classifications
- Inform the examiner of your classification when you have completed the classification and document in the space provided below
- **THIS IS A TIME CRITICAL JPM**

**Highest Event Classification:** \_\_\_\_\_

**EXAMINEE**

| Facility:  | PVNGS  | Date of Examination: | 09/26/18        |
|--|--|----------------------|-----------------|
| Exam Level:  | SRO-U  | Operating Test No.:  | 2018 NRC        |
| System / JPM Title                                       |  | Type Code*           | Safety Function |
| Control Room Systems (2 or 3 for SRO-U, including 1 ESF) |  |                      |                 |
| S1<br>001<br>A2.11                                       | 001 - Restore CEA overlap following a RPCB and trip the reactor following two dropped CEAs | A, M, S              | 1               |
| S2<br>103<br>A3.01                                       | 103 - Verify CIAS actuation  | A, E, EN, M, S       | 5               |
| S3<br>015<br>A4.02                                       | 015 – Place Boron Dilution Alarm System (BDAS) in service                                  | D, E, L, S           | 7               |
| In-Plant Systems (3 or 2 for SRO-U)                      |  |                      |                 |
| P1<br>061<br>A2.04                                       | 061 - Local Operation of Turbine Driven AFW Pump AFA-P01                                   | A, D, E, L           | 4S              |
| P2<br>033<br>A2.02                                       | 033 - Align Train B EW to SFP Cooling  | D, E, L, R           | 8               |

| <p>@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p> |                                      |
|---|--------------------------------------|
| * Type Codes  | Criteria for SRO-U                   |
| (A)lternate path  | 2-3 <b>(3)</b>                       |
| (C)ontrol room  |                                      |
| (D)irect from bank  | ≤ 4 <b>(3)</b>                       |
| (E)mergency or abnormal in-plant  | ≥ 1 <b>(2)</b>                       |
| (EN)gineered safety feature   | ≥ 1 <b>(1)</b> (control room system) |
| (L)ow Power / Shutdown  | ≥ 1 <b>(3)</b>                       |
| (N)ew or (M)odified from bank including 1(A)  | ≥ 1 <b>(2 – 2A)</b>                  |
| (P)revious 2 exams  | ≤ 2 <b>(0)</b> (randomly selected)   |
| (R)CA   | ≥ 1 <b>(1)</b>                       |
| (S)imulator   |                                      |

**NRC JPM Examination  
Summary Description**

- S1 The applicant will commence re-establishing proper CEA overlap following a Reactor Power Cutback (RPCB) following a trip of a Main Feedwater Pump per 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump). During the CEA restoration, two CEAs will slip into the core resulting in a RPS trip signal (LO DNBR and HI LPD). The reactor will fail to auto trip, requiring the applicant to recognize the need to trip and de-energize the CEDM MG Sets by opening feeder breakers L03 and L10. This is a modified bank JPM covered by Safety Function 1.
- S2 The applicant will place Hydrogen Analyzers in service, check containment pressure, and determine that a Containment Isolation Actuation Signal (CIAS) signal should have actuated and manually actuate a CIAS. After actuating CIAS, the applicant will ensure at least one containment isolation valve is closed in each penetration by checking the Safety Equipment System Status (SESS) panel and taking manual action to close at least one valve in penetrations which had valves fail to automatically close on the CIAS signal. This is a modified bank JPM covered by Safety Function 5.
- S3 The applicant will energize Startup Channel Nuclear Instruments and place the Boron Dilution Alarm System (BDAS) in service per Appendix 8, Boron Dilution Alarm Check. This is a bank JPM covered by Safety Function 7.
- P1 The applicant will be directed to perform Appendix 40, Local Operation of AFA-P01 Using Main Steam, and determine that the trip and throttle valve is not in the reset position, requiring local action to reset the overspeed trip mechanism. This is a bank JPM covered by Safety Function 4S.

- P2 The applicant will simulate aligning Train B Essential Cooling Water to provide Spent Fuel Pool cooling per Appendix 64, Align Train B EW to SFP Cooling. This is a bank JPM covered by Safety Function 8.

2018 PVNGS NRC Initial Re-Exam JPM S1

**JPM INFORMATION**

|                       |  |                         |       |            |           |      |     |
|-----------------------|--|-------------------------|-------|------------|-----------|------|-----|
| <b>TASK:</b>          | 1250430501 – Perform actions to restore plant following reactor power cutback  |                         |       |            |           |      |     |
| <b>TASK STANDARD:</b> | Commenced withdrawing Group 4 CEAs and manually tripped the reactor by de-energizing L03 and L10 within 2:30 from time 2 CEAs dropping into the core |                         |       |            |           |      |     |
| <b>K/A:</b>           | 001 A2.11  | <b>RATING:</b>          |       | RO:        | 4.4       | SRO: | 4.7 |
| <b>POSITION(S):</b>   | RO/SRO   | <b>VALIDATION TIME:</b> |       | 10 minutes |           |      |     |
| <b>REFERENCES:</b>    | 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump), 40EP-9EO01, Standard Post Trip Actions   |                         |       |            |           |      |     |
| <b>LOCATION:</b>      | SIMULATOR  | X                       | PLANT |            | CLASSROOM |      |     |

**TIME CRITICAL:** YES    **ALTERNATE PATH:** YES    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 8/9/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a PVAR to be written, remediation, and re-evaluation. PVAR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

## 2018 PVNGS NRC Initial Re-Exam JPM S1

### **SIMULATOR SETUP:**

- Reset to IC-20 and perform the INSTRUCTIONS FOR SETUP below.
- SIMULATOR SCENARIO FILES, MALFUNCTIONS, REMOTE FUNCTIONS, ETC. FOR SETUP:

| COMMAND           | DESCRIPTION   |
|-------------------|---|
| ATWS Scenario     | Failure of the reactor to auto trip or manually trip from B05 |
| mfRD02E k:1 f:100 | CEA 86 drop   |
| mfRD02F k:1 f:100 | CEA 89 drop   |
|                   |   |

### **INSTRUCTIONS FOR SETUP:**

- GO TO RUN
- Trip the 'A' MFP
- Perform steps 1-29 of 40AO-9ZZ09, Reactor Power Cutback
  - Ensure speed bias on the operating MFP is zero or more
  - Ensure SG levels are being maintained 45-60% NR
  - Ensure RPCB is taken out of service
  - Reduce turbine load until the potentiometer has control of main turbine control valves
  - Ensure CEDMCS is in Manual Sequential
  - Place pressurizer in boron equalization
  - Adjust turbine load as necessary to establish Tave/Tref mismatch of < 3°F
- Acknowledge alarms
- Insert the malfunctions listed above
- GO TO FREEZE

### **PROCEDURES/MATERIALS:**

- This JPM was written using Revision 29 of 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump). This JPM may be used with later revisions if it is verified that the later revision does not affect the Steps/Standards of the JPM.

## 2018 PVNGS NRC Initial Re-Exam JPM S1

### **INFORMATION PRESENTED TO EXAMINEE:**

#### **ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### **INITIAL CONDITIONS:**

- Unit 1 was operating at 100% power (at 250 EFPD) when the 'A' MFP tripped
- The CRS has entered 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump)

#### **INITIATING CUE:**

- The CRS directs you to restore CEA overlap by performing steps 30 and 31 of 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump)

---

**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation.
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM.
- Any step marked **UNSAT** requires comments.
- If this is the first JPM of the set, then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met.



**JPM START TIME:**

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 1                    | Determine the normal overlap position for RG-4  |                       |
| Standard:                      | Determined that the normal overlap for RG-4 is ~ 25 inches withdrawn<br><br>(RG-3 position – 95 = normal RG-4 position) |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 2                    | IF CEA Reg Group 3 is higher than 95 inches withdrawn, THEN perform the following to restore normal group overlap: <ul style="list-style-type: none"> <li>• PERFORM Appendix E, Reactivity Impact While Restoring CEA Overlap</li> </ul> |                       |
| Standard:                      | Determined from the Initial Conditions that the CRS has already reviewed the reactivity impacts  |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 3                    | IF CEA Reg Group 3 is higher than 95 inches withdrawn, THEN perform the following to restore normal group overlap: <ul style="list-style-type: none"> <li>• Monitor CEA alignment using the CEAC CRT when moving CEAs</li> </ul> |                       |
| Standard:                      | Ensured the CEAC CRT is displaying CEAs  |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM S1

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 4                    | IF CEA Reg Group 3 is higher than 95 inches withdrawn, THEN perform the following to restore normal group overlap: <ul style="list-style-type: none"> <li>• Maintain the Tave/Tref mismatch within <math>\pm 3^{\circ}\text{F}</math></li> </ul> |                       |
| Standard:                      | Ensured Tave/Tref mismatch is within $3^{\circ}\text{F}$   |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 5                    | IF CEA Reg Group 3 is higher than 95 inches withdrawn, THEN perform the following to restore normal group overlap: <ul style="list-style-type: none"> <li>• Wait a minimum of 1 minute between CEA pulls</li> </ul> |                       |
| Standard:                      | Ensured that at least one minute has elapsed between CEA pulls  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| <b>Examiner Note:</b>          | <b>The examinee may use Appendix K from Power Operations to withdraw CEAs.</b>  |                       |
| JPM Step: 6 *                  | IF CEA Reg Group 3 is higher than 95 inches withdrawn, THEN perform the following to restore normal group overlap: <ul style="list-style-type: none"> <li>• Withdraw Reg Group 4 in Manual Group “MG” in 10 inch increments to 95 inches below the position of Reg Group 3 while closely monitoring the reactor response</li> </ul> |                       |
| Standard:                      | Placed the MODE SELECT switch to MG, placed the GROUP SELECT switch to 4, and took the WITHDRAW / INSERT switch to the WITHDRAW until Group 4 CEAs withdrew ~ 10”   |                       |
| <b>Driver Action:</b>          | When the SECOND 10” pull is started AND Group 4 CEAs are > 10” withdrawn:<br><br><b>INITIATE KEY 1 – 2 CEAs drop into the core / ATWS</b>   |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM S1

|                                       |  |  |
|---------------------------------------|--|--|
| <p><b>Examiner Note:</b></p>          | <p><b>The following steps represent the alternate path portion of the JPM (applicant may take prompt and prudent action to trip the reactor prior to addressing any procedure). If a procedure is referenced, it will likely be SPTAs which will be referenced by use of an SPTA Hard Card (located at each board panel) since the entry conditions are met for SPTAs due to RPS trip setpoint(s) being exceeded.</b></p> <p><b>Tripping the reactor must be accomplished within 2:30 of the two CEAs dropping into the core. This is based on validation with Operations Management (Facility Reviewer) during which it was timed to take ~1:15 to identify the dropped CEAs, validate the trip signals, communicate the condition to the “CRS”, refer to the SPTA Hard Card, attempt to trip at B05, walk to B01, identify the correct breakers to open, and open the correct breakers. Based on the “2 x validation time” criteria, 2:30 was made as the pass/fail criteria to trip the reactor.</b></p> <p><b>The following steps are from 40EP-9EO01, Standard Post Trip Actions:</b></p> |  |
| <p>JPM Step: 7</p>                    | <p>Check that reactor power is dropping</p>  |  |
| <p>Standard:</p>                      | <p>Determined that reactor power is NOT dropping and proceeded to the Contingency Actions</p>  |  |
| <p>Comments (required for UNSAT):</p> |  | <p style="text-align: center;"><b>SAT      UNSAT</b></p> |

|                                       |  |  |
|---------------------------------------|--|--|
| <p>JPM Step: 8</p>                    | <p>Manually trip the Reactor</p>   |  |
| <p>Standard:</p>                      | <p>Attempted to trip the Reactor using the Reactor Trip Pushbuttons at B05 and determined the Reactor did NOT trip</p> |  |
| <p>Comments (required for UNSAT):</p> |  | <p style="text-align: center;"><b>SAT      UNSAT</b></p> |

2018 PVNGS NRC Initial Re-Exam JPM S1

|                                |  |              |
|--------------------------------|--|--------------|
| JPM Step: 9 *                  | IF the Reactor is NOT tripped, THEN open BOTH of the following supply breakers: <ul style="list-style-type: none"> <li>• NGN-L03B2</li> <li>• NGN-L10B2</li> </ul> |              |
| Standard:                      | Opened NGN-L03B2 and NGN-L10B2 at B01 within 2:30 of the dropped CEAs  |              |
| <b>Examiner Cue:</b>           | When the examinee has opened the feeder breakers for L03 and L10 and identified that the Reactor has tripped:<br><br><b>“This JPM is complete”</b>                 |              |
| Comments (required for UNSAT): | <b>SAT</b>   | <b>UNSAT</b> |

**JPM STOP TIME:**

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS                                       |
|------------|---------------|--------|--|
| 1          | 8/9/18        |        | Modified JPM to add 2 dropped CEAs and an ATWS |
|            |               |        |  |
|            |               |        |  |
|            |               |        |  |
|            |               |        |  |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

## **EXAMINEE**

### **INITIAL CONDITIONS:**

- Unit 1 was operating at 100% power (at 250 EFPD) when the 'A' MFP tripped
- The CRS has entered 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump)

### **INITIATING CUE:**

- The CRS directs you to restore CEA overlap by performing steps 30 and 31 of 40AO-9ZZ09, Reactor Power Cutback (Loss of Feedpump)

**EXAMINEE**

2018 PVNGS NRC Initial Re-Exam JPM S2

**JPM INFORMATION**

|                       |   |                         |       |            |           |          |
|-----------------------|---|-------------------------|-------|------------|-----------|----------|
| <b>TASK:</b>          | 1240040201 Implement LOCA instructions and contingencies  |                         |       |            |           |          |
| <b>TASK STANDARD:</b> | Placed the Hydrogen Analyzers in service within 15 minutes of the start of the JPM, manually actuated CIAS and ensured at least one valve in each penetration is closed |                         |       |            |           |          |
| <b>K/A:</b>           | 103 A3.01   | <b>RATING:</b>          |       | RO:        | 3.9       | SRO: 4.2 |
| <b>POSITION(S):</b>   | SRO/RO  | <b>VALIDATION TIME:</b> |       | 10 minutes |           |          |
| <b>REFERENCES:</b>    | 40EP-9EO03, Loss of Coolant Accident, Appendix 117, Placing Hydrogen Analyzers in Service   |                         |       |            |           |          |
| <b>LOCATION:</b>      | SIMULATOR   | X                       | PLANT |            | CLASSROOM |          |

**TIME CRITICAL:** YES    **ALTERNATE PATH:** YES    **PRA/SRA RELATED:** YES

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/18/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a PVAR to be written, remediation, and re-evaluation. CR#

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

**SIMULATOR SETUP:**

- Reset to IC-20
- Insert the following commands:

| COMMAND                   | DESCRIPTION                     |
|---------------------------|---------------------------------|
| IMF cmAVCV01CHAUV516_4    | CHA-UV-516 Valve Seizure        |
| IMF cmSRRP01ARAK208_2     | CIAS A K-208 Relay Failure      |
| IMF cmSRRP01ARAK209_2     | CIAS A K-209 Relay Failure      |
| IMF cmSRRP01ARBK204_2     | CIAS B K-204 Relay Failure      |
| IMF cmSRRP01ARBK208_2     | CIAS B K-208 Relay Failure      |
| IMF cmSRRP01ARBK209_2     | CIAS B K-209 Relay Failure      |
| IMF cmBSRP01BSCNTPRHAT_1  | Channel A Cont Press Hi Failure |
| IMF cmBSRP01BSCNTPRHIBT_1 | Channel B Cont Press Hi Failure |
| IMF cmBSRP01BSCNTPRHICT_1 | Channel C Cont Press Hi Failure |
| IMF cmBSRP01BSCNTPRHIDT_1 | Channel D Cont Press Hi Failure |
| IMF cmBSRP01BSPZRPRLOAT_1 | Channel A Pzr Press Lo Failure  |
| IMF cmBSRP01BSPZRPRLOBT_1 | Channel B Pzr Press Lo Failure  |
| IMF cmBSRP01BSPZRPRLOCT_1 | Channel C Pzr Press Lo Failure  |
| IMF cmBSRP01BSPZRPRLODT_1 | Channel D Pzr Press Lo Failure  |

**INSTRUCTIONS FOR SETUP:**

- GO TO RUN
- Insert malfunctions listed above
- Trip the reactor
- Perform SPTAs
- Wait until LOG Power is  $< 2 \times 10^{-6}\%$
- Insert malfunction mfTH01A f:2
- Perform 40EP-9EO03, LOCA Procedure, up through Step 11
- Manually insert SIAS and MSIS.
- Ensure containment pressure is  $> 3$ psig
- GO TO FREEZE
- Provide INITIATING CUE
- GO TO RUN

**PROCEDURES/MATERIALS:**

- This JPM was developed using 40EP-9EO03, Loss of Coolant Accident, Revision 43 and Appendix 117, Revision 0. This JPM may be used with later revisions if it is verified that the later revision does not affect this JPM.



## 2018 PVNGS NRC Initial Re-Exam JPM S2

### **INFORMATION PRESENTED TO EXAMINEE:**

#### **ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### **INITIAL CONDITIONS:**

- The reactor was tripped due to a Loss of Coolant Accident
- The LOCA occurred 15 minutes ago
- 40EP-9EO03, Loss of Coolant Accident, has been entered and Steps 1-11 have been or are in the process of being completed

#### **INITIATING CUE:**

- The CRS directs you to perform Steps 12-14 of 40EP-9EO03, Loss of Coolant Accident
- **THIS IS A TIME CRITICAL JPM**

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation.
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM.
- Any step marked **UNSAT** requires comments.
- If this is the first JPM of the set, then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met.

**JPM START TIME:**

|                                |   |                       |
|--------------------------------|---|-----------------------|
| <b>Examiner Note:</b>          | <b>The hydrogen analyzers are required to be placed in service within 30 minutes of the LOCA, therefore they must be placed in service within 15 minutes from the start of the JPM.</b> |                       |
| JPM Step: 1 *                  | Perform the following to place Hydrogen Analyzer Train A in service: <ul style="list-style-type: none"> <li>• Open HPA-UV-1, Containment Isolation Valve</li> </ul>                     |                       |
| Standard:                      | Opened HPA-UV-1, Containment Isolation Valve  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 2 *                  | Perform the following to place Hydrogen Analyzer Train A in service: <ul style="list-style-type: none"> <li>• Open HPA-HV-7A/7B, Containment Isolation Valves</li> </ul> |                       |
| Standard:                      | Opened HPA-HV-7A/7B, Containment Isolation Valves  |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 3 *                  | Perform the following to place Hydrogen Analyzer Train A in service: <ul style="list-style-type: none"> <li>• Place handswitch HPA-HS-9A, Power/Control, in the ANALYZE position</li> </ul> |                       |
| Standard:                      | Placed handswitch HPA-HS-9A, Power/Control, in the ANALYZE position   |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 4 *                  | Perform the following to place Hydrogen Analyzer Train B in service: <ul style="list-style-type: none"> <li>• Open HPA-UV-2, Containment Isolation Valve</li> </ul> |                       |
| Standard:                      | Opened HPA-UV-2, Containment Isolation Valve  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM S2

|                                |  |
|--------------------------------|--|
| JPM Step: 5 *                  | Perform the following to place Hydrogen Analyzer Train B in service: <ul style="list-style-type: none"> <li>• Open HPA-HV-8A/8B, Containment Isolation Valves</li> </ul> |
| Standard:                      | Opened HPA-HV-8A/8B, Containment Isolation Valves  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 6 *                  | Perform the following to place Hydrogen Analyzer Train B in service: <ul style="list-style-type: none"> <li>• Place handswitch HPA-HS-10A, Power/Control, in the ANALYZE position</li> </ul> |
| Standard:                      | Placed handswitch HPA-HS-10A, Power/Control, in the ANALYZE position within 15 minutes from the start of the JPM   |
| <b>Examiner Note:</b>          | <b>JPM Start Time:</b> _____<br><b>H2Analyzers in Service:</b> _____<br><b>Time to Place in Service:</b> _____ (must be < 15 minutes)  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 7                    | If containment pressure is 3 psig or more, THEN check CIAS is actuated.  |
| Standard:                      | Verified containment pressure on B04 instrumentation and determines containment pressure is > 3 psig but CIAS is not actuated. |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

2018 PVNGS NRC Initial Re-Exam JPM S2

|                                |  |                       |
|--------------------------------|--|-----------------------|
| <b>Examiner Note:</b>          | <b>The following step constitutes the first Alternate Path portion of the JPM</b>  |                       |
| JPM Step: 8 *                  | Manually actuate CIAS.   |                       |
| Standard:                      | Manually initiated CIAS by turning at least two of the following handswitches on B04: <ul style="list-style-type: none"> <li>• CIAS ACTUATION SIA-HS-5</li> <li>• CIAS ACTUATION SIB-HS-6</li> <li>• CIAS ACTUATION SIC-HS-7</li> <li>• CIAS ACTUATION SID-HS-8</li> </ul> |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 9                    | IF CIAS has actuated, THEN perform the following: <ul style="list-style-type: none"> <li>• Check that an isolation valve is closed for each containment penetration required to be closed.</li> </ul> |                       |
| Standard:                      | Determined from the Safety Equipment Status System (SESS) displays on B02 that multiple penetrations did NOT have at least one penetration closed.  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

2018 PVNGS NRC Initial Re-Exam JPM S2

|                                |  |              |
|--------------------------------|--|--------------|
| <b>Examiner Note:</b>          | <b>The following steps constitute the second Alternate Path portion of the JPM.</b>  |              |
| JPM Step: 10 *                 | Ensure that an isolation valve is closed for each containment penetration required to be closed.   |              |
| Standard:                      | Ensured at least one valve in the following pairs of valves is closed in each penetration: <ul style="list-style-type: none"> <li>• HCB-UV-44 or HCA-UV-45</li> <li>• HCA-UV-46 or HCB-UV-47</li> <li>• GRA-UV-1 or GRB-UV-2</li> <li>• RDA-UV-23 or RDB-UV-24</li> <li>• CHA-UV-516 (seized – can't close) or CHB-UV-523</li> </ul> |              |
| <b>Examiner Note:</b>          | <b>Only one of the two valves in each pair must be closed to meet the critical task</b>  |              |
| <b>Examiner Cue:</b>           | After the examinee has closed at least one valve in each of the five open penetrations (or has determined he has completed the JPM):<br><br><b>“This JPM is complete.”</b>   |              |
| Comments (required for UNSAT): | <b>SAT</b>   | <b>UNSAT</b> |

**JPM STOP TIME:**

2018 PVNGS NRC Initial Re-Exam JPM S2

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS   |
|------------|---------------|--------|--|
| 1          | 5/31/2016     | 6      | JPM Format Change  |
| 2          | 7/18/18       | 6      | Modified JPM to change failed valves and failure mechanisms, and added performance of step 12 (place H2 analyzers in service), verified with LOCA rev 43, updated to reflect that the JPM is now time critical |
|            |               |        |  |
|            |               |        |  |
|            |               |        |  |
|            |               |        |  |

REASON REVISED Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

## **EXAMINEE**

### **INITIAL CONDITIONS:**

- The reactor was tripped due to a Loss of Coolant Accident
- The LOCA occurred 15 minutes ago
- 40EP-9EO03, Loss of Coolant Accident, has been entered and Steps 1-11 have been or are in the process of being completed

### **INITIATING CUE:**

- The CRS directs you to perform Steps 12-14 of 40EP-9EO03, Loss of Coolant Accident
- **THIS IS A TIME CRITICAL JPM**

**EXAMINEE**



2018 PVNGS NRC Initial Re-Exam JPM S3

**JPM INFORMATION**

|                       |   |                         |       |            |           |      |     |
|-----------------------|---|-------------------------|-------|------------|-----------|------|-----|
| <b>TASK:</b>          | 0150030801 Perform a BDAS Alarm check (Appendix 8)  |                         |       |            |           |      |     |
| <b>TASK STANDARD:</b> | BDAS placed in service and Startup Channels determined to be operable within 1 hour of entering the Startup Range |                         |       |            |           |      |     |
| <b>K/A:</b>           | 015 A4.02   | <b>RATING:</b>          |       | RO:        | 3.9       | SRO: | 3.9 |
| <b>POSITION(S):</b>   | RO/SRO  | <b>VALIDATION TIME:</b> |       | 15 minutes |           |      |     |
| <b>REFERENCES:</b>    | 40EP-9EO10-008, Appendix 8, Boron Dilution Alarm Check  |                         |       |            |           |      |     |
| <b>LOCATION:</b>      | SIMULATOR   | X                       | PLANT |            | CLASSROOM |      |     |

**TIME CRITICAL:** NO    **ALTERNATE PATH:** NO    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/17/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/9/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a CR to be written, remediation, and re-evaluation. CR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

**PROCEDURES/MATERIALS:**

- 40EP-9EO10-008, Appendix 8, Boron Dilution Alarm Check

**SIMULATOR SETUP:**

- Reset to IC-20
- Trip the reactor
- Perform SPTAs
- Ensure power is  $< 2 \times 10^{-6} \%$
- Acknowledge alarms
- GO TO FREEZE
- After the cue has been read, GO TO RUN

## 2018 PVNGS NRC Initial Re-Exam JPM S3

### **INFORMATION PRESENTED TO EXAMINEE:**

#### **ALL JPMS:**

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### **INITIAL CONDITIONS:**

- Unit 1 was tripped in preparation for a refueling outage
- Reactor power has just lowered below  $2 \times 10^{-6}\%$

#### **INITIATING CUE:**

- The CRS directs you to place the Boron Dilution Alarm System in service per Appendix 8, Boron Dilution Alarm Check

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM
- Any step marked **UNSAT** requires comments
- If this is the first JPM of the set, then ensure the examinee has been briefed
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met

**JPM START TIME:**

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 1 *                  | Place the Control / Startup Channel 1 switch to the “S-U CHAN 1” position  |                       |
| Standard:                      | Placed the Control / Startup Channel 1 switch to the “S-U CHAN 1” position |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 2 *                  | Place the Control / Startup Channel 2 switch to the “S-U CHAN 2” position  |                       |
| Standard:                      | Placed the Control / Startup Channel 2 switch to the “S-U CHAN 2” position |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| JPM Step: 3 *                  | Adjust SEN-JR-005 to shift the display to “SU CHAN” using the right or left arrow on the circular selector   |                       |
| Standard:                      | Adjusted SEN-JR-005 to shift the display to “SU CHAN” using the right or left arrow on the circular selector |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

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|                                |   |
|--------------------------------|---|
| JPM Step: 4 *                  | Press the “METER SELECT” pushbutton for Startup Channel 1 and check BOTH of the following: <ul style="list-style-type: none"> <li>• The green CONTROL light is extinguished</li> <li>• The red START UP light is lit</li> </ul> |
| Standard:                      | Pressed the “METER SELECT” pushbutton for Startup Channel 1 and checked the green CONTROL light is out and the red START UP light is lit  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |  |
|--------------------------------|--|
| JPM Step: 5 *                  | Press the HV PERMIT/HV ON pushbutton for Startup Channel 1 and check that the amber light is lit     |
| Standard:                      | Pressed the HV PERMIT/HV ON pushbutton for Startup Channel 1 and checked that the amber light is lit |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |   |
|--------------------------------|---|
| JPM Step: 6                    | IF Startup Channel 1 is the only available channel, THEN perform a qualitative assessment of Channel 1 behavior |
| Standard:                      | Marked step N/A due to both channels being available  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |  |
|--------------------------------|--|
| JPM Step: 7                    | Check that the START UP HV LOW alarm for Startup Channel 1 is NOT lit  |
| Standard:                      | Observed that the “START UP HV LOW” alarm for Startup Channel 1 IS lit and proceeded to the Contingency Action |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

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|                                |  |              |
|--------------------------------|--|--------------|
| JPM Step: 8 *                  | Press the “START UP HV LOW” pushbutton for Startup Channel 1   |              |
| Standard:                      | Pressed the “START UP HV LOW” pushbutton for Startup Channel 1 |              |
| Comments (required for UNSAT): | <b>SAT</b>   | <b>UNSAT</b> |

|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 9                    | Check that the TROUBLE alarm for Startup Channel 1 is NOT lit   |              |
| Standard:                      | Checked that the TROUBLE alarm for Startup Channel 1 is NOT lit |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

|                                |  |              |
|--------------------------------|--|--------------|
| JPM Step: 10                   | Check that the HIGH CPS alarm for Startup Channel 1 is NOT lit   |              |
| Standard:                      | Checked that the HIGH CPS alarm for Startup Channel 1 is NOT lit |              |
| Comments (required for UNSAT): | <b>SAT</b>   | <b>UNSAT</b> |

|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 11 *                 | Press the “METER SELECT” pushbutton for Startup Channel 2 and check BOTH of the following: <ul style="list-style-type: none"> <li>• The green CONTROL light is extinguished</li> <li>• The red START UP light is lit</li> </ul> |              |
| Standard:                      | Pressed the “METER SELECT” pushbutton for Startup Channel 2 and checked the green CONTROL light is out and the red START UP light is lit  |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

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|                                |  |
|--------------------------------|--|
| JPM Step: 12 *                 | Press the HV PERMIT/HV ON pushbutton for Startup Channel 2 and check that the amber light is lit     |
| Standard:                      | Pressed the HV PERMIT/HV ON pushbutton for Startup Channel 2 and checked that the amber light is lit |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |   |
|--------------------------------|---|
| JPM Step: 13                   | IF Startup Channel 2 is the only available channel, THEN perform a qualitative assessment of Channel 2 behavior |
| Standard:                      | Marked step N/A due to both channels being available  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |  |
|--------------------------------|--|
| JPM Step: 14                   | Check that the START UP HV LOW alarm for Startup Channel 2 is NOT lit  |
| Standard:                      | Observed that the “START UP HV LOW” alarm for Startup Channel 2 IS lit and proceeded to the Contingency Action |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 15 *                 | Press the “START UP HV LOW” pushbutton for Startup Channel 2   |
| Standard:                      | Pressed the “START UP HV LOW” pushbutton for Startup Channel 2 |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |



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|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 16                   | Check that the TROUBLE alarm for Startup Channel 2 is NOT lit   |              |
| Standard:                      | Checked that the TROUBLE alarm for Startup Channel 2 is NOT lit |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

|                                |  |              |
|--------------------------------|--|--------------|
| JPM Step: 17                   | Check that the HIGH CPS alarm for Startup Channel 2 is NOT lit   |              |
| Standard:                      | Checked that the HIGH CPS alarm for Startup Channel 2 is NOT lit |              |
| Comments (required for UNSAT): | <b>SAT</b>   | <b>UNSAT</b> |

|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 18 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-005: <ul style="list-style-type: none"> <li>• Press the RESET pushbutton</li> </ul> |              |
| Standard:                      | Pressed the RESET pushbutton on SEN-NI-005  |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

|                                |   |              |
|--------------------------------|---|--------------|
| JPM Step: 19                   | Perform the following for Boron Dilution Alarm Channel SEN-NI-005: <ul style="list-style-type: none"> <li>• Ensure the FLUX/SETPOINT pushbutton is selected to the FLUX position</li> </ul> |              |
| Standard:                      | Ensured the FLUX / SETPOINT pushbutton is selected to the FLUX position   |              |
| Comments (required for UNSAT): | <b>SAT</b>  | <b>UNSAT</b> |

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|                                |   |
|--------------------------------|---|
| JPM Step: 20 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-005: <ul style="list-style-type: none"> <li>• Check that the digital display is NOT flashing</li> </ul> |
| Standard:                      | Determined that the digital display is NOT flashing and circled YES for the acceptance criteria   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |   |
|--------------------------------|---|
| JPM Step: 21 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-005: <ul style="list-style-type: none"> <li>• Check that the decimal indicator is flashing at approximately one flash per second</li> </ul> |
| Standard:                      | Determined that the decimal indicator is flashing at approximately one flash per second and circled YES for the acceptance criteria   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |  |
|--------------------------------|--|
| JPM Step: 22 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-005: <ul style="list-style-type: none"> <li>• Record flux reading</li> </ul> |
| Standard:                      | Recorded the flux reading  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 23                   | Perform the following for Boron Dilution Alarm Channel SEN-NI-005: <ul style="list-style-type: none"> <li>• IF Boron Dilution Alarm Channel SEN-NI-005 is the only available channel, THEN perform a qualitative assessment of Boron Dilution Alarm Channel SEN-NI-005 behavior</li> </ul> |
| Standard:                      | Marked step N/A due to both channels being available   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

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|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 24 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-006: <ul style="list-style-type: none"> <li>• Press the RESET pushbutton</li> </ul> |                       |
| Standard:                      | Pressed the RESET pushbutton on SEN-NI-006  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 25                   | Perform the following for Boron Dilution Alarm Channel SEN-NI-006: <ul style="list-style-type: none"> <li>• Ensure the FLUX/SETPOINT pushbutton is selected to the FLUX position</li> </ul> |                       |
| Standard:                      | Ensured the FLUX / SETPOINT pushbutton is selected to the FLUX position   |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 26 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-006: <ul style="list-style-type: none"> <li>• Check that the digital display is NOT flashing</li> </ul> |                       |
| Standard:                      | Determined that the digital display is NOT flashing and circled YES for the acceptance criteria   |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| JPM Step: 27 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-006: <ul style="list-style-type: none"> <li>• Check that the decimal indicator is flashing at approximately one flash per second</li> </ul> |                       |
| Standard:                      | Determined that the decimal indicator is flashing at approximately one flash per second and circled YES for the acceptance criteria   |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

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|                                |  |
|--------------------------------|--|
| JPM Step: 28 *                 | Perform the following for Boron Dilution Alarm Channel SEN-NI-006: <ul style="list-style-type: none"> <li>Record flux reading</li> </ul> |
| Standard:                      | Recorded the flux reading  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 29                   | Perform the following for Boron Dilution Alarm Channel SEN-NI-006: <ul style="list-style-type: none"> <li>IF Boron Dilution Alarm Channel SEN-NI-006 is the only available channel, THEN perform a qualitative assessment of Boron Dilution Alarm Channel SEN-NI-006 behavior</li> </ul> |
| Standard:                      | Marked step N/A due to both channels being available   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 30 *                 | Perform the following to determine Boron Dilution Alarm Channel acceptance criteria: <ul style="list-style-type: none"> <li>Calculate the difference between the Boron Dilution Alarm Channels:</li> </ul> <p>Highest VDC – Lowest VDC = <math>\Delta</math> VDC</p> |
| Standard:                      | Calculated the $\Delta$ VDC  |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

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|                                |   |
|--------------------------------|---|
| JPM Step: 31 *                 | Perform the following to determine Boron Dilution Alarm Channel acceptance criteria: <ul style="list-style-type: none"> <li>• Check that <math>\Delta</math> VDC is less than or equal to 0.8 VDC between channels</li> </ul> |
| Standard:                      | Determined that the $\Delta$ VDC is less than or equal to 0.8 VDC and circled YES for the acceptance criteria   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |  |
|--------------------------------|--|
| JPM Step: 32                   | Perform the following to determine Startup Channel acceptance criteria: <ul style="list-style-type: none"> <li>• Record Startup Channel 1 (CPS)</li> </ul> |
| Standard:                      | Recorded Startup Channel 1 CPS   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |  |
|--------------------------------|--|
| JPM Step: 33                   | Perform the following to determine Startup Channel acceptance criteria: <ul style="list-style-type: none"> <li>• Record Startup Channel 2 (CPS)</li> </ul> |
| Standard:                      | Recorded Startup Channel 2 CPS   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |   |
|--------------------------------|---|
| JPM Step: 34 *                 | Perform the following to determine Startup Channel acceptance criteria: <ul style="list-style-type: none"> <li>• Calculate Highest Channel Max CPS:</li> </ul> <p>Lowest Channel CPS x 2.5 = calculated Highest Channel Max CPS</p> |
| Standard:                      | Calculated Highest Channel Max CPS by multiplying the lowest channel CPS by 2.5   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

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|                                |   |
|--------------------------------|---|
| JPM Step: 35 *                 | Perform the following to determine Startup Channel acceptance criteria: <ul style="list-style-type: none"> <li>• Check that Startup Channel acceptance criteria has been met</li> </ul> |
| Standard:                      | Determined that the calculated Highest Channel Max CPS is more than actual Highest Channel CPS and circled YES for the acceptance criteria  |
| <b>Examiner Cue:</b>           | When the applicant has determined the status of Startup Channel acceptance criteria:<br><br><b>“This JPM is complete”</b>   |
| Comments (required for UNSAT): | SAT      UNSAT  |

**JPM STOP TIME:**

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS                      |
|------------|---------------|--------|-------------------------------|
| 1          | 7/17/18       | 6      | Appendix 8 procedure revision |
|            |               |        |                               |
|            |               |        |                               |
|            |               |        |                               |
|            |               |        |                               |
|            |               |        |                               |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

**EXAMINEE**

**INITIAL CONDITIONS:**

- Unit 1 was tripped in preparation for a refueling outage
- Reactor power has just lowered below  $2 \times 10^{-6}\%$

**INITIATING CUE:**

- The CRS directs you to place the Boron Dilution Alarm System in service per Appendix 8, Boron Dilution Alarm Check

**EXAMINEE**



2018 PVNGS NRC Initial Re-Exam JPM P1

**JPM INFORMATION**

|                       |   |                         |            |     |           |     |
|-----------------------|---|-------------------------|------------|-----|-----------|-----|
| <b>TASK:</b>          | 1240023801 - Perform Local Operation of AFA-P01   |                         |            |     |           |     |
| <b>TASK STANDARD:</b> | Determined that AFA-P01 Trip/Throttle Valve is NOT in the reset position and simulated manually re-aligning the Latch Lever and Trip Hook, simulated aligning a feed path to both SGs, and simulated starting AFA-P01 |                         |            |     |           |     |
| <b>K/A:</b>           | 061 A2.04   | <b>RATING:</b>          | RO:        | 3.4 | SRO:      | 3.8 |
| <b>POSITION(S):</b>   | RO/SRO  | <b>VALIDATION TIME:</b> | 10 minutes |     |           |     |
| <b>REFERENCES:</b>    | Appendix 40, Attachments 40-A, B, C, D, and E   |                         |            |     |           |     |
| <b>LOCATION:</b>      | SIMULATOR   |                         | PLANT      | X   | CLASSROOM |     |

**TIME CRITICAL:** NO    **ALTERNATE PATH:** YES    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 8/13/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/13/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A

**TRAINING APPROVAL:** N/A

Only required for E-Plan JPMs

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_    **DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_    **GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_    **TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a PVAR to be written, remediation, and re-evaluation. PVAR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

## 2018 PVNGS NRC Initial Re-Exam JPM P1

### PROCEDURES/MATERIALS:

- 40EP-9EO10-040, Appendix 40, Local Operation of AFA-P01 Using Main Steam. This JPM was revised using Revision 0 of Appendix 40. This JPM may be used with future revisions of this procedure if the section(s) of the procedure have not changed in a manner to impact the performance of the JPM.

### INFORMATION PRESENTED TO EXAMINEE:

#### ALL JPMS:

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### IN-PLANT JPMS ONLY:

- Operation of in-plant equipment is to be **SIMULATED ONLY**. **DO NOT** operate any equipment.
- Notify the **Shift Manager** when in-plant JPMS are being performed.
- Inform the Control Room staff of any discovered deficiencies
- Comply with the REP. If it is not possible to enter an area it may be permissible to discuss the equipment and operation with evaluator. **DO NOT** enter Contaminated Areas or High Radiation Areas.

#### INITIAL CONDITIONS:

- The reactor was tripped due to a loss of feedwater
- SPTAs have been completed and the CRS has entered 40EP-9EO06, Loss of Feedwater

#### INITIATING CUE:

- The CRS directs you to:
  - Locally start AFA-P01 per Appendix 40, Local Operation of AFA-P01 Using Main Steam
  - Steam AFA-P01 using BOTH Steam Generators
  - Align feed to BOTH Steam Generators
- An AO is standing by at PKA-M41 for breaker manipulation
- An AO is standing by on the 120' MSSS to open the AFA-P01 Steam Supply Valves

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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation.
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM.
- Any step marked **UNSAT** requires comments.
- If this is the first JPM of the set, then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met.

**JPM START TIME:**

|                                |  |                              |
|--------------------------------|--|------------------------------|
| JPM Step: 1                    | Ensure AFA-HV-54, AUX FEEDPUMP AFA-P01 TRIP & THROTTLE VALVE, is closed  |                              |
| Standard:                      | Checked the status of AFA-HV-54 and determined the valve is closed   |                              |
| Examiner Cue:                  | <p>If the examinee checks the condition of the indicating lights on the AFA panel (located to the east of the pump):</p> <p><b>“The red light is out and the green light is lit for both the Trip and Throttle Valve Operator and the Trip and Throttle Valve”</b></p> <p>If examinee simulates contacting the control room to determine if the overspeed trip light is lit:</p> <p><b>“The overspeed trip light IS lit in the control room”</b></p> |                              |
| Comments (required for UNSAT): |  | <p><b>SAT      UNSAT</b></p> |

|                                |  |                              |
|--------------------------------|--|------------------------------|
| Step: 2                        | Open breaker PKA-D2118, AUX FDWTR TURBINE GOV CONTROL PNL J-AFA-E01 (DC Equip Rm A on PKA-M4122) |                              |
| Standard:                      | Contacted the AO stationed at PKA-M41 and directed them to open PKA-D2118                        |                              |
| Examiner Cue:                  | <p>When the AO has been simulated contacted:</p> <p><b>“PKA-D2118 is open”</b></p>               |                              |
| Comments (required for UNSAT): |  | <p><b>SAT      UNSAT</b></p> |

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|                                |  |
|--------------------------------|--|
| Step: 3                        | Open BOTH of the following valves: <ul style="list-style-type: none"> <li>• AFA-V084, AFN-PI-020 ROOT VALVE (AFA-P01 Rm South of Pump)</li> <li>• The instrument isolation for AFN-PI-20 (AFA-P01 Rm SW corner)</li> </ul> |
| Standard:                      | Simulated opening AFA-V084 and the instrument isolation for AFN-PI-20  |
| Examiner Cue:                  | When the examinee has simulated opening AFA-V084:<br><br><b>“AFA-V084 handwheel has been rotated in the fully counter-clockwise direction and has stopped moving as expected”</b>  |
| Comments (required for UNSAT): | SAT      UNSAT   |

|                                |   |
|--------------------------------|---|
| Step: 4                        | Open BOTH of the following valves: <ul style="list-style-type: none"> <li>• AFA-V084, AFN-PI-020 ROOT VALVE (AFA-P01 Rm South of Pump)</li> <li>• The instrument isolation for AFN-PI-20 (AFA-P01 Rm SW corner)</li> </ul>      |
| Standard:                      | Simulated opening the instrument isolation for AFN-PI-20  |
| Examiner Cue:                  | When the examinee has simulated opening instrument isolation for AFN-PI-20:<br><br><b>“The instrument isolation for AFN-PI-20 has been rotated in the fully counter-clockwise direction and has stopped moving as expected”</b> |
| Comments (required for UNSAT): | SAT      UNSAT  |

2018 PVNGS NRC Initial Re-Exam JPM P1

|                                |   |                       |
|--------------------------------|---|-----------------------|
| Step: 5                        | Check that AFA-HV-54, AUX FEEDPUMP AFA-P01 TRIP & THROTTLE VALVE, is in the reset position. REFER TO Attachment 40-B, Trip/Throttle Valve in the Reset Position |                       |
| Standard:                      | Checked AFA-HV-54 to determine if it is in the reset position, determined it is NOT in the reset position and proceeded to the contingency actions              |                       |
| Examiner Cue:                  | When AFA-HV-54 is checked:<br><br><b>“AFA-HV-54 is as seen on Attachment 40-C”</b>  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

|                                |  |                       |
|--------------------------------|--|-----------------------|
| <b>Examiner Note:</b>          | <b>The following steps represent the alternate path portion of the JPM</b>   |                       |
| Step: 6                        | Perform the following to reset AFA-HV-54: <ul style="list-style-type: none"> <li>Manually close the actuator for AFA-HV-54 to align the Latch Lever and the Trip Hook. REFER TO Attachment 40-C, Trip/Throttle Valve in the Tripped Position</li> </ul>  |                       |
| Standard:                      | Checked the status of the actuator and determined that the actuator is in the closed position  |                       |
| Examiner Cue:                  | If the examinee checks the position of the latch lever and trip hook:<br><br><b>“AFA-HV-54 is as seen on Attachment 40-C”</b><br><br>If the examinee checks the condition of the indicating lights on the AFA panel (located to the east of the pump):<br><br><b>“The red light is out and the green light is lit for both the Trip and Throttle Valve Operator and the Trip and Throttle Valve”</b> |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

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|                                |  |
|--------------------------------|--|
| Step: 7 *                      | <p>Perform the following to reset AFA-HV-54:</p> <ul style="list-style-type: none"> <li>• Pull the Reset Lever toward the Trip/Throttle Valve to completely engage the Latch Lever and the Trip Hook. REFER TO ALL of the following attachments: <ul style="list-style-type: none"> <li>○ Attachment 40-B, Trip/Throttle Valve in the Reset Position</li> <li>○ Attachment 40-D, Resetting AFA-P01 Overspeed Trip Linkage</li> <li>○ Attachment 40-E, Alignment of Trip Tappet Assembly</li> </ul> </li> </ul> |
| Standard:                      | Simulated pulling the reset lever towards the Trip/Throttle Valve (towards themselves)   |
| Examiner Note:                 | <b>The examinee should NOT pull the reset lever using the “shark fin” on the reset lever</b>   |
| Examiner Cue:                  | <p>When the examinee simulates pulling the reset lever towards the Trip/Throttle Valve:</p> <p><b>“The latch lever and trip hook are as seen on Attachment 40-B”</b></p>   |
| Comments (required for UNSAT): | <p><b>SAT      UNSAT</b></p>   |

|                                |  |
|--------------------------------|--|
| Step: 8                        | <p>Perform the following to reset AFA-HV-54:</p> <ul style="list-style-type: none"> <li>• Ensure the Trip Tappet Assembly is correctly aligned. REFER TO Attachment 40-E, Alignment of Trip Tappet Assembly</li> </ul> |
| Standard:                      | Checked the position of the Trip Tappet Assembly   |
| Examiner Cue:                  | <p>When the examinee checks the alignment of the Trip Tappet Assembly:</p> <p><b>“The trip tappet assembly is aligned as seen in Attachment 40-E”</b></p>  |
| Comments (required for UNSAT): | <p><b>SAT      UNSAT</b></p>   |

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|                                |   |                       |
|--------------------------------|---|-----------------------|
| Step: 9                        | Perform the following to reset AFA-HV-54: <ul style="list-style-type: none"> <li>Ensure the Trip Tappet Assembly is pushed down to hold the Reset Lever in position. REFER TO Attachment 40-B, Trip/Throttle Valve in the Reset Position</li> </ul> |                       |
| Standard:                      | Checked that the trip tappet assembly is pushed down and the reset lever is in the horizontal position  |                       |
| Examiner Cue:                  | When the examinee checks the status of the trip tappet assembly and the reset lever:<br><br><b>“The trip tappet assembly and reset lever are as seen in Attachment 40-B”</b>  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

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|--------------------------------|--|-----------------------|
| Step: 10                       | Perform the following to reset AFA-HV-54: <ul style="list-style-type: none"> <li>Ensure the Latch Lever and Trip Hook are completely engaged with no visible gaps between the faces of the jaws</li> </ul> |                       |
| Standard:                      | Checked that the latch lever and trip hook are engaged with no visible gap between the faces of the jaws   |                       |
| Examiner Cue:                  | When the examinee checks the latch lever and trip hook engagement:<br><br><b>“The latch lever and trip hook are aligned as seen in Attachment 40-B”</b>  |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

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|--------------------------------|--|-----------------------|
| Step: 11                       | Perform the following to reset AFA-HV-54: <ul style="list-style-type: none"> <li>Ensure the Manual Trip Lever is in the reset position. REFER TO Attachment 40-B, Trip/Throttle Valve in the Reset Position</li> </ul> |                       |
| Standard:                      | Checked that the Manual Trip Lever is in the reset position (horizontal)   |                       |
| Examiner Cue:                  | When the examinee checks the Manual Trip Lever:<br><br><b>“The manual trip lever is as seen in Attachment 40-B”</b>  |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |



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|--------------------------------|--|-----------------------|
| Step: 12                       | Inform the responsible operator that AFA-P01 is ready for local operation  |                       |
| Standard:                      | Simulated contacting the control room and informing them that AFA-P01 is ready for local operation   |                       |
| Examiner Cue:                  | When the examinee simulates notifying the control room that AFA-P01 is ready for local operation:<br><br><b>“The control room acknowledges and directs you to continue with Attachment 40-A”</b> |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| Step: 13                       | When directed by the responsible operator, THEN open ANY of the Aux Feed Pump A Steam Supply Valves: <ul style="list-style-type: none"> <li>• SGA-UV-134, SG #1 Steam Supply to Aux Feedpump AFA-P01</li> <li>• SGA-UV-138, SG #2 Steam Supply to Aux Feedpump AFA-P01</li> </ul> |                       |
| Standard:                      | Simulated directing the AO stationed on the 120' MSSS to open the AFA-P01 Steam Supply Valves   |                       |
| Examiner Cue:                  | When the examinee simulates directing the AO to open the Steam Supply Valves:<br><br><b>“The steam supply valves are open for AFA-P01”</b>  |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

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|--------------------------------|---|----------------|
| Step: 14                       | When directed by the responsible operator, THEN manually open the appropriate valves: <ul style="list-style-type: none"> <li>AFC-UV-36, Aux Feedpump AFA-P01 Feed Isolation Valve to SG #1</li> </ul> |                |
| Standard:                      | Simulated engaging the clutch and opening AFC-UV-36   |                |
| Examiner Cue:                  | When the examinee has simulated opening AFC-UV-36:<br><br><b>“AFC-UV-36 handwheel has rotated to the fully counter-clockwise position and stopped moving as expected”</b>                             |                |
| Comments (required for UNSAT): |   | SAT      UNSAT |

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|--------------------------------|---|----------------|
| Step: 15                       | When directed by the responsible operator, THEN manually open the appropriate valves: <ul style="list-style-type: none"> <li>AFA-HV-32, Aux Feedpump AFA-P01 Flow Control Valve to SG #1</li> </ul> |                |
| Standard:                      | Simulated opening AFA-HV-32   |                |
| Examiner Cue:                  | When the examinee has simulated opening AFA-UV-32:<br><br><b>“AFA-UV-32 handwheel has rotated to the fully counter-clockwise position and stopped moving as expected”</b>                           |                |
| Comments (required for UNSAT): |   | SAT      UNSAT |

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|--------------------------------|---|----------------|
| Step: 15                       | When directed by the responsible operator, THEN manually open the appropriate valves: <ul style="list-style-type: none"> <li>AFA-UV-37, Aux Feedpump AFA-P01 Feed Isolation Valve to SG #2</li> </ul> |                |
| Standard:                      | Simulated engaging the clutch and opening AFA-UV-37   |                |
| Examiner Cue:                  | When the examinee has simulated opening AFA-UV-37:<br><br><b>“AFA-UV-37 handwheel has rotated to the fully counter-clockwise position and stopped moving as expected”</b>                             |                |
| Comments (required for UNSAT): |   | SAT      UNSAT |

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| Step: 16                       | When directed by the responsible operator, THEN manually open the appropriate valves: <ul style="list-style-type: none"> <li>AFC-HV-33, Aux Feedpump AFA-P01 Flow Control Valve to SG #2</li> </ul> |                |
| Standard:                      | Simulated opening AFC-HV-33   |                |
| Examiner Cue:                  | When the examinee has simulated opening AFC-UV-33:<br><br><b>“AFC-UV-33 handwheel has rotated to the fully counter-clockwise position and stopped moving as expected”</b>                           |                |
| Comments (required for UNSAT): |   | SAT      UNSAT |

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|--------------------------------|--|----------------|
| Procedure Note:                | <p><b>Use of the local hand held tachometer may be required to check turbine speed.</b></p> <p><b>The intent of this step is to adjust AFA-HV-54 in small increments while monitoring turbine noise and pump discharge pressure on AFN-PI-20 as well as checking turbine speed using the hand held tachometer after each adjustment. Pump parameters should be allowed to stabilize prior to further adjustment.</b></p> <p><b>When pump discharge pressure reaches the pressure of the Steam Generator being fed, the needle on AFN-PI-020 will begin vibrating and discharge check valve chatter may be heard.</b></p> <p><b>Operation of the AFA-P01 at speed less than 1000 rpm may result in damage to pump bearings and internals.</b></p> |                |
| Step: 17                       | WHEN directed by the responsible operator, THEN manually throttle open AFA-HV-54, Aux Feedpump AFA-P01 Trip & Throttle Valve, until the responsible operator indicates that feed flow rate(s) are adequate   |                |
| Standard:                      | Throttle open AFA-HV-54 to commence feeding with AFA-P01   |                |
| Examiner Cue:                  | When the examinee begins throttling AFA-HV-54, indicate rising discharge pressure on AFN-PI-20 and inform examinee:<br><br><b>“This JPM is complete”</b>   |                |
| Comments (required for UNSAT): |  | SAT      UNSAT |

**JPM STOP TIME:**

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS                |
|------------|---------------|--------|-------------------------|
| 1          | 8/13/18       | 6      | Minor editorial changes |
|            |               |        |                         |
|            |               |        |                         |
|            |               |        |                         |
|            |               |        |                         |
|            |               |        |                         |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

## EXAMINEE

### INITIAL CONDITIONS:

- The reactor was tripped due to a loss of feedwater
- SPTAs have been completed and the CRS has entered 40EP-9EO06, Loss of Feedwater

### INITIATING CUE:

- The CRS directs you to:
  - Locally start AFA-P01 per Appendix 40, Local Operation of AFA-P01 Using Main Steam
  - Steam AFA-P01 using BOTH Steam Generators
  - Align feed to BOTH Steam Generators
- An AO is standing by at PKA-M41 for breaker manipulation
- An AO is standing by on the 120' MSSS to open the AFA-P01 Steam Supply Valves

EXAMINEE

2018 PVNGS NRC Initial Re-Exam JPM P2

**JPM INFORMATION**

|                       |   |                         |            |           |      |     |
|-----------------------|---|-------------------------|------------|-----------|------|-----|
| <b>TASK:</b>          | 1240070004 Perform Auxiliary Operator Actions Per 40EP-9EO07, Loss Of Offsite Power   |                         |            |           |      |     |
| <b>TASK STANDARD:</b> | Train B EW cooling has been established to Spent Fuel Pool Cooling and established total EW system flow of 15,400 to 15,600 gpm |                         |            |           |      |     |
| <b>K/A:</b>           | 033 A2.02   | <b>RATING:</b>          | RO:        | 2.7       | SRO: | 3.0 |
| <b>POSITION(S):</b>   | SRO/RO  | <b>VALIDATION TIME:</b> | 15 minutes |           |      |     |
| <b>REFERENCES:</b>    | 40EP-9EO10-064, Appendix 64, Align EW to SFP  |                         |            |           |      |     |
| <b>LOCATION:</b>      | SIMULATOR   | PLANT                   | X          | CLASSROOM |      |     |

**TIME CRITICAL:** NO    **ALTERNATE PATH:** NO    **PRA/SRA RELATED:** NO

**APPROVALS**

**DEVELOPED/REVISED BY:** John Rodgers    **DATE:** 7/21/18

**VALIDATED BY:** John Rodgers    **DATE:** 8/13/18

**TECH REVIEW:** N/A

**OPERATIONS APPROVAL:** N/A

**E-PLAN REVIEW:** N/A  
Only required for E-Plan JPMs

**TRAINING APPROVAL:** N/A

**EVALUATION**

**EXAMINEE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**EVALUATOR:** \_\_\_\_\_

**GRADE (circle):**    SAT / UNSAT\*

**START:** \_\_\_\_\_    **STOP:** \_\_\_\_\_

**TOTAL TIME:** \_\_\_\_\_ minutes

\*A grade of UNSAT for E-Plan JPMs requires a PVAR to be written, remediation, and re-evaluation. PVAR #

Issues identified on E-Plan JPMs during performance will be documented with a formal post-critique using Form EP-0800 and forwarded to the Emergency Preparedness organization for resolution.

## 2018 PVNGS NRC Initial Re-Exam JPM P2

### PROCEDURES/MATERIALS:

- 40EP-9EO10-064, Appendix 64, Align EW to SFP
- This JPM may be used with later revisions if it is verified that the later revision does not affect the Steps/Standards of the JPM.

### INFORMATION PRESENTED TO EXAMINEE:

#### ALL JPMS:

- You may use any source of information normally available (procedures, prints, OAPs, etc.).
- Classroom instruction materials (Lesson Plans, System Training Manuals, PowerPoint presentations, classroom notes, etc.) are not permitted to be used.
- If there is a question regarding reference material desired to be used, ask evaluator prior to seeking reference.

#### IN-PLANT JPMS ONLY:

- Operation of in-plant equipment is to be **SIMULATED ONLY**. **DO NOT** operate any equipment.
- Notify the **Shift Manager** when in-plant JPMS are being performed.
- Inform the Control Room staff of any discovered deficiencies
- Comply with the REP. If it is not possible to enter an area it may be permissible to discuss the equipment and operation with evaluator. **DO NOT** enter Contaminated Areas or High Radiation Areas.

#### INITIAL CONDITIONS:

- The unit tripped due to a loss of offsite power
- The CRS has entered 40EP-9EO07, Loss of Offsite Power / Loss of Forced Circulation
- It has been determined that Train B Essential Cooling Water (EW) will be aligned to Spent Fuel Pool Cooling
- Other operators have been briefed and stationed in the “B” EW Heat Exchanger Room & at the “B” Essential Chiller to perform required actions

#### INITIATING CUE:

- The CRS has directed you to perform Attachment 64-B, Align Train B of EW to SFP Cooling of Standard Appendix 64
- The SM has granted permission to break 40AC-0ZZ06, Locked Valve, Breaker and Component Control locks as required



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**INFORMATION FOR EVALUATOR USE:**

- An **asterisk (\*)** denotes a Critical Step. Failure of a Critical Step will result in an **UNSAT** evaluation.
- At the discretion of the Evaluator, this JPM may be terminated when the **Task Standard** is met or adequate time has been allowed to complete the JPM.
- Any step marked **UNSAT** requires comments.
- If this is the first JPM of the set, then ensure the examinee has been briefed.
- Step sequence is not critical unless noted or will prevent the **Task Standard** from being met.

**JPM START TIME:**

|                                |  |                |
|--------------------------------|--|----------------|
| JPM Step: 1                    | Ensure Spray Pond Pump B is operating  |                |
| Standard:                      | Verified Spray Pond Pump B is operating by simulating calling the Control Room                     |                |
| Examiner Cue:                  | When the examinee simulates calling the Control Room:<br><br><b>“Spray Pond Pump B is running”</b> |                |
| Comments (required for UNSAT): |  | SAT      UNSAT |

|                                |   |                |
|--------------------------------|---|----------------|
| Step: 2                        | Ensure Essential Cooling Water Pump B is operating  |                |
| Standard:                      | Verified Essential Cooling Water Pump B is operating by simulating calling the Control Room                     |                |
| Examiner Cue:                  | When the examinee simulates calling the Control Room:<br><br><b>“Essential Cooling Water Pump B is running”</b> |                |
| Comments (required for UNSAT): |   | SAT      UNSAT |

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|                                |  |                |
|--------------------------------|--|----------------|
| Step: 3 *                      | Close NCB-HCV-265, NC WATER OUTLET OF FP HX B (Fuel Bldg 100' at PC Heat Exchanger B)  |                |
| Standard:                      | Simulated closing NCB-HCV-265  |                |
| Examiner Cue:                  | <p>When the examinee has simulated rotating NCB-HCV-265 handwheel in the clockwise direction:</p> <p><b>“NCB-HCV-265 valve handwheel has rotated to the fully clockwise direction and stopped moving as expected”</b></p> <p>If the examinee checks the VPI:</p> <p><b>Use a pointing device to indicate CLOSED on the side of the valve</b></p> |                |
| Examiner Note:                 | <b>A hand and foot frisk should be performed upon leaving the Fuel Building, however this is not considered a critical step</b>  |                |
| Comments (required for UNSAT): |  | SAT      UNSAT |

|                                |   |                |
|--------------------------------|---|----------------|
| Step: 4                        | Perform the following: (EW Heat Exchanger B Room) <ul style="list-style-type: none"> <li>• Close NCB-HCV-245, NC ISOLATION TO SFP HEAT EXCHANGER</li> </ul>             |                |
| Standard:                      | Simulated loosening the stem lock by rotating it counter-clockwise, then simulated rotating the valve handwheel fully clockwise to close the valve                      |                |
| Examiner Cue:                  | <p>When the valve has been simulated closed:</p> <p><b>“The valve handwheel has been rotated in the clockwise direction, and the VPI is in the CLOSED position”</b></p> |                |
| Comments (required for UNSAT): |   | SAT      UNSAT |

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|--------------------------------|--|
| Step: 5                        | Perform the following: (EW Heat Exchanger B Room) <ul style="list-style-type: none"> <li>Close NCB-HCV-259, NC ISOLATION FROM SFP HEAT EXCHANGER</li> </ul>      |
| Standard:                      | Simulated loosening the stem lock by rotating it counter-clockwise, then simulated rotating the valve handwheel fully clockwise to close the valve               |
| <b>Examiner Cue:</b>           | When the valve has been simulated closed:<br><br><b>“The valve handwheel has been rotated in the clockwise direction, and the VPI is in the CLOSED position”</b> |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |   |
|--------------------------------|---|
| Step: 6 *                      | Perform the following: (EW Heat Exchanger B Room) <ul style="list-style-type: none"> <li>Unlock and open EWB-HCV-68, EW ISOLATION FROM SFP HEAT EXCHANGER</li> </ul>  |
| Standard:                      | Simulated breaking the lock on the valve handwheel and simulated rotating the valve handwheel in the counter-clockwise direction to open the valve  |
| <b>Examiner Cue:</b>           | When the examinee has simulated unlocking the valve:<br><br><b>“The valve lock has been removed”</b><br><br>When the examinee has simulated opening the valve:<br><br><b>“The valve handwheel has been rotated in the counter-clockwise direction, and the VPI is in the OPEN position”</b> |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

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|                                |   |
|--------------------------------|---|
| Step: 7 *                      | Perform the following: (EW Heat Exchanger B Room) <ul style="list-style-type: none"> <li>• Unlock and open EWB-HCV-134, EW ISOLATION TO SFP HEAT EXCHANGER</li> </ul>   |
| Standard:                      | Simulated breaking the lock on the valve handwheel and simulated rotating the valve handwheel in the counter-clockwise direction to open the valve  |
| Examiner Cue:                  | When the examinee has simulated unlocking the valve:<br><br><b>“The valve lock has been removed”</b><br><br>When the examinee has simulated opening the valve:<br><br><b>“The valve handwheel has been rotated in the counter-clockwise direction, and the VPI is in the OPEN position”</b> |
| Comments (required for UNSAT): | SAT      UNSAT  |

|                                |  |
|--------------------------------|--|
| Step: 8 *                      | Direct an operator to perform the following to override and open EWB-PCV-174, REFRIGERANT HEAD PRESSURE CONTROL VALVE (B EC Chiller Rm, 74' Cont Bldg): <ul style="list-style-type: none"> <li>• Turn the Pilot Bypass Stem in the fully counter clockwise position</li> </ul> |
| Standard:                      | Simulated directing the AO standing by in the 'B' EC Chiller Room to open EWB-PCV-174  |
| Examiner Cue:                  | When the AO is directed to open EWB-PCV-174:<br><br><b>“EWB-PCV-174 is open”</b>   |
| Comments (required for UNSAT): | SAT      UNSAT   |

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|                                |   |
|--------------------------------|---|
| Step: 9 *                      | Place NCN-FI-257, FUEL POOL HEAT EXCH B NCWS OUTLET FLOW, into service by performing the following (FPHX B 100' Fuel Bldg): <ul style="list-style-type: none"> <li>• Ensure the local equalizing valve is open</li> </ul> |
| Standard:                      | Simulated opening the equalizing valve for NCN-FI-257   |
| <b>Examiner Cue:</b>           | When the examinee has rotated the equalizing valve for NCN-FI-257 counter-clockwise:<br><br><b>“The equalizing valve for NCN-FI-257 has been rotated in the counter-clockwise direction”</b>                              |
| Comments (required for UNSAT): | SAT      UNSAT  |

|                                |   |
|--------------------------------|---|
| Step: 10 *                     | Place NCN-FI-257, FUEL POOL HEAT EXCH B NCWS OUTLET FLOW, into service by performing the following (FPHX B 100' Fuel Bldg): <ul style="list-style-type: none"> <li>• Open NCB-V113, Root Valve to FI-257</li> </ul> |
| Standard:                      | Simulated opening NCB-V113  |
| <b>Examiner Cue:</b>           | When the examinee has simulated opening NCB-V113:<br><br><b>“The valve operator for NCB-V113 has been rotated in the counter-clockwise direction”</b>   |
| Comments (required for UNSAT): | SAT      UNSAT  |

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|                                |   |
|--------------------------------|---|
| Step: 11 *                     | Place NCN-FI-257, FUEL POOL HEAT EXCH B NCWS OUTLET FLOW, into service by performing the following (FPHX B 100' Fuel Bldg): <ul style="list-style-type: none"> <li>• Open NCB-V114, Root Valve to FI-257</li> </ul> |
| Standard:                      | Simulated opening NCB-V114  |
| <b>Examiner Cue:</b>           | When the examinee has simulated opening NCB-V114:<br><br><b>“The valve operator for NCB-V114 has been rotated in the counter-clockwise direction”</b>   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |   |
|--------------------------------|---|
| Step: 12 *                     | Place NCN-FI-257, FUEL POOL HEAT EXCH B NCWS OUTLET FLOW, into service by performing the following (FPHX B 100' Fuel Bldg): <ul style="list-style-type: none"> <li>• Open the local low side isolation valve</li> </ul> |
| Standard:                      | Simulated opening the local low side isolation valve  |
| <b>Examiner Cue:</b>           | When the examinee has simulated opening the local low side isolation valve:<br><br><b>“The local low side isolation valve operator has been rotated in the counter-clockwise direction”</b>                             |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

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|--------------------------------|--|
| Step: 13 *                     | Place NCN-FI-257, FUEL POOL HEAT EXCH B NCWS OUTLET FLOW, into service by performing the following (FPHX B 100' Fuel Bldg): <ul style="list-style-type: none"> <li>Close the equalizing valve</li> </ul> |
| Standard:                      | Simulated closing the equalizing valve for NCN-FI-257  |
| Examiner Cue:                  | When the examinee has simulated closing the equalizing valve for FI-257:<br><br><b>“The valve operator for the equalizing valve for FI-257 has been rotated in the clockwise direction”</b>              |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |

|                                |   |
|--------------------------------|---|
| Step: 14 *                     | Place NCN-FI-257, FUEL POOL HEAT EXCH B NCWS OUTLET FLOW, into service by performing the following (FPHX B 100' Fuel Bldg): <ul style="list-style-type: none"> <li>Slowly open the local high side isolation valve</li> </ul> |
| Standard:                      | Simulated slowly opening the local high side isolation valve  |
| Examiner Cue:                  | When the examinee has simulated opening the local high side isolation valve:<br><br><b>“The local high side isolation valve operator has been rotated in the counter-clockwise direction”</b>                                 |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>   |

|                                |  |
|--------------------------------|--|
| Step: 15 *                     | Place NCN-FI-257, FUEL POOL HEAT EXCH B NCWS OUTLET FLOW, into service by performing the following (FPHX B 100' Fuel Bldg): <ul style="list-style-type: none"> <li>Verify NCN-FI-257 comes on scale</li> </ul> |
| Standard:                      | Checked NCN-FI-257 and verified it came on scale   |
| Examiner Cue:                  | When NCN-FI-257 is checked:<br><br><b>Use a pen to indicate 0 gpm on NCN-FI-257 (already basically at 0 gpm)</b>   |
| Comments (required for UNSAT): | <b>SAT      UNSAT</b>  |



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|                                |  |                       |
|--------------------------------|--|-----------------------|
| Step: 16 *                     | Adjust NCB-HCV-265, NC WATER OUTLET OF FP HX B, to obtain 1400 – 2400 gpm (Fuel Bldg 100’ at PC Heat Exchanger B)                                  |                       |
| Standard:                      | Simulated throttling open on NCB-HCV-265 to establish 1400-2400 gpm on NCN-FI-257  |                       |
| <b>Examiner Cue:</b>           | When the examinee has simulated throttling open on NCB-HCV-257 and checks NCN-FI-257:<br><br><b>Use a pen to indicate ~ 1600 gpm on NCN-FI-257</b> |                       |
| Comments (required for UNSAT): |  | <b>SAT      UNSAT</b> |

|                                |   |                       |
|--------------------------------|---|-----------------------|
| <b>Examiner Note:</b>          | <b>Exercise caution coming down the ladder, the concrete step juts out and can cause a tripping hazard.</b>   |                       |
| Step: 17 *                     | IF the Shutdown Cooling Heat Exchanger is accessible, THEN unlock and adjust EWB-HCV-54, SDCHX B OUTLET ISOLATION, to obtain 15,400 – 15,600 gpm (EWB-FI-14) total EW system flow (70’ Shutdown HX Room B, 10’ above platform)  |                       |
| Standard:                      | Simulated unlocking and adjusting open EWB-HCV-54 and simulated contacting the control room to verify EW system flow  |                       |
| <b>Examiner Cue:</b>           | If the examinee simulates contacting the control room to determine current EW flow:<br><br><b>“EW flow is currently 15,000 gpm”</b><br><br>When the examinee has simulated throttling EWB-HCV-54 and asks the control room for current EW flow:<br><br><b>“EW flow is now 15,500 gpm. Another operator will complete Appendix 64. This JPM is complete”</b> |                       |
| Comments (required for UNSAT): |   | <b>SAT      UNSAT</b> |

**JPM STOP TIME:**

**RECORD OF REVISIONS**

| REVISION # | REVISION DATE | REASON | COMMENTS                    |
|------------|---------------|--------|-----------------------------|
| 8          | 10/27/2015    | 6      | JPM converted to new format |
|            |               |        |                             |
|            |               |        |                             |
|            |               |        |                             |
|            |               |        |                             |

**REASON REVISED** Enter the numbers corresponding to the reason revised in the Reason Revised column and brief description of changes in Comments Column. Comments are to be numbered consecutively in each revision.

1. Vendor reference document upgrade
2. Plant modification (include number)
3. Procedure upgrade
4. Internal or External Agency Commitment (indicate item number)
5. Technical Specification Change (indicate amendment number)
6. Other (explain in comments)

## **EXAMINEE**

### **INITIAL CONDITIONS:**

- The unit tripped due to a loss of offsite power
- The CRS has entered 40EP-9EO07, Loss of Offsite Power / Loss of Forced Circulation
- It has been determined that Train B Essential Cooling Water (EW) will be aligned to Spent Fuel Pool Cooling
- Other operators have been briefed and stationed in the “B” EW Heat Exchanger Room & at the “B” Essential Chiller to perform required actions

### **INITIATING CUE:**

- The CRS has directed you to perform Attachment 64-B, Align Train B of EW to SFP Cooling of Standard Appendix 64
- The SM has granted permission to break 40AC-0ZZ06, Locked Valve, Breaker and Component Control locks as required

**EXAMINEE**