

# NRC

**ES-301**

## Administrative Topics Outline

**Form ES-301-1**

| Facility: <u>River Bend Station</u>   |               | Date of Examination: 11/12/2012  |
|---|---------------|--|
| Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>  |               | Operating Test Number: _____   |
| Administrative Topic<br>(see Note)  | Type<br>Code* | Describe activity to be performed  |
| Conduct of Operations   | R,M           | (A1) Determine when Hot Shutdown Boron has been injected into the core.<br><br>KA 2.1.25; IR 3.9 |
| Conduct of Operations   | R,N           | (A2) Determine maintenance requirements of an active license.<br><br>KA 2.1.4; IR 3.3            |
| Equipment Control   | R,M           | (A3) Use plant drawings to determine the effect of removing a fuse.<br><br>KA 2.2.15; IR 3.9     |
| Radiation Control   | R,N           | (A4) Obtain radiological information from a survey map.<br><br>KA 2.3.7; IR 3.5                  |
| Emergency Procedures/Plan   |               |  |
| 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: <div style="display: inline-block; vertical-align: top; margin-left: 20px;">           (C)ontrol room, (S)imulator, or Class(R)oom<br/>           (D)irect from bank (<math>\leq 3</math> for ROs; <math>\leq 4</math> for SROs &amp; RO retakes)<br/>           (N)ew or (M)odified from bank (<math>\geq 1</math>)<br/>           (P)revious 2 exams (<math>\leq 1</math>; randomly selected)         </div> |               |  |

# NRC

**ES-301**

## Administrative Topics Outline

**Form ES-301-1**

| Facility: <u>River Bend Station</u>  |               | Date of Examination: 11/12/2012  |
|--|---------------|--|
| Examination Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>   |               | Operating Test Number: _____   |
| Administrative Topic<br>(see Note)   | Type<br>Code* | Describe activity to be performed  |
| Conduct of Operations  | R,M           | (A5) Generate a manual LCO tracking sheet.<br><br>KA 2.1.18; IR 3.8                          |
| Conduct of Operations  | R,D           | (A6) Determine Plant Safety Index during shutdown<br>conditions<br><br>KA 2.1.23; IR 4.4     |
| Equipment Control  | R,M           | (A7) Review and Approve a Completed Surveillance<br>Test Procedure.<br><br>KA 2.2.12; IR 4.1 |
| Radiation Control  | R,M           | (A8) Calculate Maximum Permissible Stay Time<br><br>KA 2.3.7; IR 3.6                         |
| Emergency Procedures/Plan  | R,M           | (A9) Classify an Emergency.<br><br>KA 2.4.41; IR 4.6   |
| <b>NOTE:</b> 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.   |               |  |
| <b>* Type Codes &amp; Criteria:</b> <div style="display: inline-block; vertical-align: top; margin-left: 20px;">         (C)ontrol room, (S)imulator, or Class(R)oom<br/>         (D)irect from bank (<math>\leq 3</math> for ROs; <math>\leq 4</math> for SROs &amp; RO retakes) 1<br/>         (N)ew or (M)odified from bank (<math>\geq 1</math>) 4<br/>         (P)revious 2 exams (<math>\leq 1</math>; randomly selected) 0       </div> |               |  |

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-A1  
Revision: 1  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|   |
|---|
| <b>DETERMINE WHEN HOT SHUTDOWN BORON WEIGHT HAS BEEN<br/>INJECTED INTO THE CORE</b> |
|---|

**REASON FOR REVISION:**

|                    |           |
|--------------------|-----------|
| 2012 NRC Exam – RO | <b>A1</b> |
|--------------------|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7/2/2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 257  | 8/6/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A1**

|                                     |  |  |           |  |                    |          |
|-------------------------------------|--|--|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Determine when Hot Shutdown Boron weight has been injected into the core per EOP-0005 Enclosure 15 |  |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 200051005001   |  |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 2.1.25   |  | 3.9       |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance   |  |           |  | Actual Performance | <b>X</b> |
|                                     | Control Room   |  | Simulator |  | Classroom          | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 5 min.   |  |           |  |                    |          |
| <b>MAX TIME:</b>                    | N/A  |  |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | RO   |  |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | No   |  |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |  |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No   |  |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |  |           |  |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Determine when Hot Shutdown Boron weight has been injected into the core per EOP-0005 Enclosure 15

**Required Power:** N/A

**IC No.:** N/A

**Notes:** Administrative JPM that will be conducted in a classroom.

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | OSP-0053, Rev 16 Attachment 13   |
| <b>Required Materials:</b>         | None provided. Access to procedures available via computer.  |
| <b>Task Standard:</b>              | The tank level which will exist after Hot Shutdown Boron weight has been injected and the time when this level will be reached have been determined in accordance with the Answer Key. |
| <b>Required Plant Condition:</b>   | N/A  |
| <b>Applicable Objectives:</b>      | R-LPOPS-HLO-513 Objective 6  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-A1

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

An Anticipated Transient without Scram (ATWS) has occurred, 32 rods have failed to fully insert into the core.

- Reactor Pressure is 1050 psig and lowering
- Suppression Pool temperature is 115°F and rising
- Both Recirculation Pumps are tripped
- Initial SLC tank level is 3150 gal
- SLC pump 'A' was started at 1515 hours

### **Initiating Cue:**

The Control Room Supervisor has directed you to determine the tank level at which the Hot Shutdown Boron weight has been injected and approximately what time this will occur.

**RJPM-NRC12-A1**

| PERFORMANCE STEP | STANDARD  | S/U   | COMMENTS  |
|------------------|---|---|---|
| *<br>_____1.     | Using the Standby Liquid Control Injection Requirements table on page 2 of 2 of the Attachment 13 of OSP-0053, determine the tank level which must be reached to have injected Hot Shutdown Boron weight into the core. | The candidate used 3100 gallons as a conservative value for tank level, The tank level for Hot Shutdown Boron weight is <b>2474 gals.</b>                                   | _____<br><br><i>Since the initial tank level is between the values on the chart the Note at the top directs the operator to use the smaller value of 3100 gal as initial level.</i> |
| *<br>_____2.     | Using the Standby Liquid Control Injection Requirements table on page 2 of 2 of Attachment 13 of OSP-0053, determine the time when Hot Shutdown Boron weight will be injected.  | The candidate identified that Hot Shutdown Boron should be injected in 16 minutes, therefore the time will be <b>1531 hours</b> when Hot Shutdown Boron Weight is injected. | _____   |

**Terminating Cue:** Hot Shutdown Boron weight tank level and injection time have been determined per OSP-0053 Attachment 13 and record on the Answer Sheet.



**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**ANSWER KEY:**

Tank Level for Hot Shutdown Boron Weight: 2474 gallons

Approximate time at which Hot Shutdown Boron Weight is  
injected: 1531

**RJPM-NRC12-A1**  
**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** An Anticipated Transient without Scram (ATWS) has occurred, 32 rods have failed to fully insert into the core.

- Reactor Pressure is 1050 psig and lowering
- Suppression Pool temperature is 115°F and rising
- Both Recirculation Pumps are tripped
- Initial SLC tank level is 3150 gal
- SLC pump 'A' was started at 1515 hours

**Initiating Cues:** The Control Room Supervisor has directed you to determine the tank level at which the Hot Shutdown Boron weight has been injected and approximately what time this will occur.

**Tank Level for Hot Shutdown Boron Weight:**

\_\_\_\_\_

**Approximate time at which Hot Shutdown Boron Weight is injected:** \_\_\_\_\_

**RIVER  
BEND STATION**

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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|   |
|---|
| <b>DETERMINE MAINTENANCE REQUIREMENTS TO MAINTAIN AN<br/>ACTIVE LICENSE</b> |
|---|

**REASON FOR REVISION:**

|                    |           |
|--------------------|-----------|
| 2012 NRC Exam – RO | <b>A2</b> |
|--------------------|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7/2/2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/6/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A2**

|                          |   |
|--------------------------|---|
| <b>TASK DESCRIPTION:</b> | Determining maintenance requirements to maintain an active license. |
|--------------------------|---|

|                        |       |
|------------------------|-------|
| <b>TASK REFERENCE:</b> | Admin |
|------------------------|-------|

|                                    |       |     |
|------------------------------------|-------|-----|
| <b>K/A REFERENCE &amp; RATING:</b> | 2.1.4 | 3.3 |
|------------------------------------|-------|-----|

|                        |                      |  |           |  |                    |          |
|------------------------|----------------------|--|-----------|--|--------------------|----------|
| <b>TESTING METHOD:</b> | Simulate Performance |  |           |  | Actual Performance | <b>X</b> |
|                        | Control Room         |  | Simulator |  | Classroom          | <b>X</b> |

|                         |        |
|-------------------------|--------|
| <b>COMPLETION TIME:</b> | 5 min. |
|-------------------------|--------|

|                  |     |
|------------------|-----|
| <b>MAX TIME:</b> | N/A |
|------------------|-----|

|                   |    |
|-------------------|----|
| <b>JOB LEVEL:</b> | RO |
|-------------------|----|

|                       |    |
|-----------------------|----|
| <b>TIME CRITICAL:</b> | No |
|-----------------------|----|

|                                     |    |
|-------------------------------------|----|
| <b>EIP CLASSIFICATION REQUIRED:</b> | No |
|-------------------------------------|----|

|                           |    |
|---------------------------|----|
| <b>PSA RISK DOMINATE:</b> | No |
|---------------------------|----|

|                                  |    |
|----------------------------------|----|
| <b>ALTERNATE PATH (FAULTED):</b> | No |
|----------------------------------|----|

**SIMULATOR SETUP SHEET**

**Task Description:** This task requires reviewing watch stand events and determining which operators have met the requirements to maintain an active license.

**Required Power:** N/A

**IC No.:** N/A

**Notes:** **Administrative JPM that will be conducted in a classroom.**

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | Operations Standards & Expectations (OS&E)<br>Section 2.22  |
| <b>Required Materials:</b>         | None provided. Access to OS&E document available<br>via computer.   |
| <b>Task Standard:</b>              | Determination has been made that Operator 2 can fill<br>the July 5, 2012 ATC position and that Operator 1<br>and 3 can not. |
| <b>Required Plant Condition:</b>   | N/A   |
| <b>Applicable Objectives:</b>      | Admin   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-A2

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### Initial Conditions:

A review of the Operations schedule has determined that an insufficient number of people have been scheduled to cover all shift positions on July 5, 2012. Due to numerous vacations, Operations licensed personnel assigned to the office staff must be used to cover the At the Controls (ATC) watch station on July 5<sup>th</sup>. The shift history of office staff individuals is shown below. All other days not shown were worked in office staff positions working 8 hour days.

### Initiating Cue:

Review the work history of the staff personnel below and determine which individual(s) are proficient and can cover the ATC watch on July 5, 2012. Record your answer by circling YES or NO in the space provided.

| Operator 1   | Operator 2   | Operator 3   |
|--|--|--|
| Operator 1 was proficient in the 1 <sup>st</sup> quarter of 2012 | Operator 2 was <u>NOT</u> proficient in the 1 <sup>st</sup> quarter of 2012                            | Operator 3 was proficient in the 1 <sup>st</sup> quarter of 2012 |
| <b>Work History</b>  | <b>Work History</b>  | <b>Work History</b>  |
| 4/10/12 – ATC 0600-1800  | 4/9/2012 – ATC under instruction 0600-1800   | 5/8/12 – ATC 0600-1800   |
| 4/20/12 – Unit 1800-0600   | 4/10/12 – Unit under instruction 0600-1800   | 5/16/12 – Unit 0600-1800   |
| 5/6/12 – Unit 0600-1800  | 4/11/12 – ATC under instruction 0600-1800  | 5/31/12 – Control Building 0600-1800                             |
| 6/17/12 ATC 0600-1800  | 4/12/12 – Conducted a 4 hour plant tour under the instruction of an active licensed operator 0600-1000 | 6/7/12 – ATC 1800-0600   |
| 6/28/12 – Tagging Official 0600-1800                             |  | 6/30/12 Unit 0600-1800   |

RJPM-NRC12-A2

\* Denotes Critical Step

^ Denotes Sequence Critical

(must be performed after previous step marked ^)

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**RJPM-NRC12-A2**

| <b>PERFORMANCE STEP</b> |   | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b> |
|-------------------------|---|--|------------|-----------------|
| * _____ 1.              | Determine eligibility of Operator 1 to work July 5, 2012 to fill At the Controls watch. | Candidate recognized that Operator 1 will <u>not</u> be proficient on July 5, 2012 and annotated as such on the answer sheet.                  | _____      |                 |
| * _____ 2.              | Determine eligibility of Operator 2 to work July 5, 2012 to fill At the Controls watch. | Candidate recognized that Operator 2 will be proficient and can stand the ATC watch on July 5, 2012 and annotated as such on the answer sheet. | _____      |                 |
| * _____ 3.              | Determine eligibility of Operator 3 to work July 5, 2012 to fill At the Controls watch. | Candidate recognized that Operator 3 will <u>not</u> be proficient on July 5, 2012 and annotated as such on the answer sheet.                  | _____      |                 |

**Terminating Cue:** Answers recorded on Answer Sheet.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**ANSWER KEY:**

|            |                                      |                          |
|------------|--------------------------------------|--------------------------|
| Operator 1 | YES                                  | <input type="radio"/> NO |
| Operator 2 | <input checked="" type="radio"/> YES | NO                       |
| Operator 3 | YES                                  | <input type="radio"/> NO |

**RJPM-NRC12-A2**  
**JPM Task Conditions/Cues**  
 (Operator Copy)

**Initial Conditions:** A review of the Operations schedule has determined that an insufficient number of people have been scheduled to cover all shift positions on July 5, 2012. Due to numerous vacations, Operations licensed personnel assigned to the office staff must be used to cover the At the Controls (ATC) watch station on July 5<sup>th</sup>. The shift history of office staff individuals is shown below. All other days not shown were worked in office staff positions working 8 hour days

**Initiating Cues:** Review the work history of the staff personnel below and determine which individual(s) are proficient and can cover the ATC watch on July 5, 2012. Record your answer by circling YES or NO in the space provided.

| <b>Operator 1</b>  | <b>Operator 2</b>  | <b>Operator 3</b>  |
|--|--|--|
| Operator 1 was proficient in the 1 <sup>st</sup> quarter of 2012 | Operator 2 was <u>NOT</u> proficient in the 1 <sup>st</sup> quarter of 2012                            | Operator 2 was proficient in the 1 <sup>st</sup> quarter of 2012 |
| <b>Work History</b>  | <b>Work History</b>  | <b>Work History</b>  |
| 4/10/12 – ATC 0600-1800  | 4/9/2012 – ATC under instruction 0600-1800   | 5/8/12 – ATC 0600-1800   |
| 4/20/12 – Unit 1800-0600   | 4/10/12 – Unit under instruction 0600-1800   | 5/16/12 – Unit 0600-1800   |
| 5/6/12 – Unit 0600-1800  | 4/11/12 – ATC under instruction 0600-1800  | 5/31/12 – Control Building 0600-1800                             |
| 6/17/12 ATC 0600-1800  | 4/12/12 – Conducted a 4 hour plant tour under the instruction of an active licensed operator 0600-1000 | 6/7/12 – ATC 1800-0600   |
| 6/28/12 – Tagging Official 0600-1800                             |  | 6/30/12 Unit 0600-1800   |

(Circle YES or NO)

Operator 1            YES            NO

Operator 2            YES            NO

Operator 3            YES            NO

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-A3  
Revision: 1  
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**JOB PERFORMANCE MEASURE**

---



**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**DETERMINE EFFECTS OF REMOVING CONTROL POWER FUSE FOR  
FUEL BUILDING VENTILATION DAMPER HVF-AOD20A**

**REASON FOR REVISION:**

2012 NRC Exam JPM – RO

**A3**

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7/3/2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/8/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/8/2012  |
| Approved                  | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A3**

|                          |  |
|--------------------------|--|
| <b>TASK DESCRIPTION:</b> | Determine Effects of Removing Control Power Fuse for Fuel Building Ventilation Damper HVF-AOD20A |
|--------------------------|--|

|                        |              |
|------------------------|--------------|
| <b>TASK REFERENCE:</b> | 299003001001 |
|------------------------|--------------|

|                                    |        |     |
|------------------------------------|--------|-----|
| <b>K/A REFERENCE &amp; RATING:</b> | 2.2.15 | 3.9 |
|------------------------------------|--------|-----|

|                        |                      |  |           |  |                    |          |
|------------------------|----------------------|--|-----------|--|--------------------|----------|
| <b>TESTING METHOD:</b> | Simulate Performance |  |           |  | Actual Performance | <b>X</b> |
|                        | Control Room         |  | Simulator |  | Classroom          | <b>X</b> |

|                         |         |
|-------------------------|---------|
| <b>COMPLETION TIME:</b> | 15 min. |
|-------------------------|---------|

|                  |     |
|------------------|-----|
| <b>MAX TIME:</b> | N/A |
|------------------|-----|

|                   |    |
|-------------------|----|
| <b>JOB LEVEL:</b> | RO |
|-------------------|----|

|                       |    |
|-----------------------|----|
| <b>TIME CRITICAL:</b> | No |
|-----------------------|----|

|                                     |    |
|-------------------------------------|----|
| <b>EIP CLASSIFICATION REQUIRED:</b> | No |
|-------------------------------------|----|

|                           |    |
|---------------------------|----|
| <b>PSA RISK DOMINATE:</b> | No |
|---------------------------|----|

|                                  |    |
|----------------------------------|----|
| <b>ALTERNATE PATH (FAULTED):</b> | No |
|----------------------------------|----|

**SIMULATOR SETUP SHEET**

**Task Description:** Determine Effects of Removing Control Power Fuse for Fuel Building Ventilation Damper HVF-AOD20A

**Required Power:** N/A

**IC No.:** N/A

**Notes:** Administrative JPM that will be conducted in a classroom.

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | ESK-7HVF01<br>ESK-7HVF02<br>ESK-7SCC21<br>ESK-10ANN23<br>ARP-P863-75A-B01                           |
| <b>Required Materials:</b>         | ESK-7HVF01<br>ESK-7HVF02<br>ESK-7SCC21  |
| <b>Required Plant Condition:</b>   | N/A   |
| <b>Task Standard:</b>              | Determined the effects of removal of F1-1HVFA06 in panel H13-P851 in agreement with the answer key. |
| <b>Applicable Objectives:</b>      | HLO-542-1, Obj. 5, 6, 7   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.



## RJPM-NRC12-A3

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

Electrical Maintenance is conducting a Work Order to replace the solenoid for HVF-AOD20A. A tag out has been prepared to support this work and personnel are standing by to implement the tag out. The next step of the tagging order requires removal of F1-HVFA06 to de-energize the solenoid to be replaced. Associated components are in their normal standby lineup.

### **Initiating Cue:**

Given the appropriate drawings, the CRS has directed you to determine the following:

1. The fail position of HVF-AOD20A, when the fuse is removed.
2. Any other component(s) positions that are affected by the fuse removal and the associated affect.
3. Identify any control room alarms, status lights and / or component indication affected. (Alarm # is sufficient)

**RJPM-NRC12-A3**

| PERFORMANCE STEP |  | STANDARD  | S/U   | COMMENTS |
|------------------|--|---|-------|----------|
| *_____1.         | Using ESK-7HVF01 & ESK-7HVF02 determine damper fail position.  | 1. The candidate determined that HVF-AOD20A fails OPEN when de-energized  | _____ |          |
| *_____2.         | Using ESK-7HVF01 & ESK-7HVF02 determine other component(s) positions affected by the fuse removal.                 | 2. The candidate determined that HVF-AOD31A also fails OPEN when the fuse is removed.   | _____ |          |
| *_____3.         | Using ESK-7 ESK-7HVF01 & ESK-7HVF02, determine impact of fuse removal on Control Room indication and alarm status. | <p>3. The candidate identified that fuse removal will also cause the following on P863:</p> <p><b>4 of the 6 bulleted items are required for satisfactory performance of this step</b></p> <ul style="list-style-type: none"> <li>• De-energizes (green and red) position indication light for HVF-AOD20A.</li> <li>• De-energizes (green and red) position indication light for HVF-AOD31A.</li> <li>• De-energizes (green and red) position indication light for HVF-AOD3A.</li> <li>• De-energizes (green and red) position indication light for HVF-AOD33A.</li> <li>• Energizes (or turns on) the Amber INOP status light (postage stamp) PG2-1, "FB Vent Dampers"</li> <li>• Initiates alarm window No. 0463</li> </ul> | _____ | .        |

**Terminating Cue:** Fuse removal fail position of HVF-AOD20A, its impact on HVF-AOD31A and Control Room H13-P863 indications and alarms have been listed on Answer Sheet.



**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** Electrical Maintenance is conducting a Work Order to replace the solenoid for HVF-AOD20A. A tag out has been prepared to support this work and personnel are standing by to implement the tag out. The next step of the tagging order requires removal of F1-HVFA06 to de-energize the solenoid to be replaced. Associated components are in their normal standby lineup.

**Initiating Cues:** Given the appropriate drawings, the CRS has directed you to determine the following:

1. The fail position of HVF-AOD20A, when the fuse is removed.
2. Any other component(s) positions that change when the fuse is removed.
3. Identify any control room alarms, status lights and / or component indication affected. (Alarm # is sufficient)

Write answers below:

1.

2.

3.

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-A4  
Revision: 0  
Page 1 of 9

**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|  |
|--|
| <b>OBTAIN RADIOLOGICAL INFORMATION FROM A SURVEY MAP</b> |
|--|

**REASON FOR REVISION:**

|                    |
|--------------------|
| 2012 NRC Exam – RO |
|--------------------|

|           |
|-----------|
| <b>A4</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7/2/2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/6/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A4**

|                                     |   |     |           |  |                    |          |
|-------------------------------------|---|-----|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Radiological information correctly obtained from data on survey map in accordance with EN-RP-106. |     |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | Admin   |     |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 2.3.7   | 3.3 |           |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance  |     |           |  | Actual Performance | <b>X</b> |
|                                     | Control Room  |     | Simulator |  | Classroom          | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 5 min.  |     |           |  |                    |          |
| <b>MAX TIME:</b>                    | N/A   |     |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | RO  |     |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | No  |     |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No  |     |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No  |     |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No  |     |           |  |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** This task requires review of survey information in order to answer questions regarding the radiological conditions in the Steam Jet Air Ejector rooms.

**Required Power:** N/A

**IC No.:** N/A

**Notes:** **Administrative JPM that will be conducted in a classroom.**



**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | Survey Maps for SJAE rooms<br>EN-RP-106  |
| <b>Required Materials:</b>         | Survey Maps for SJAE rooms   |
| <b>Task Standard:</b>              | All radiological protection questions correctly answered regarding radiological conditions in the Steam Jet Air Ejector rooms to allow entry for required inspections. |
| <b>Required Plant Condition:</b>   | N/A  |
| <b>Applicable Objectives:</b>      | Admin  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

**Initial Conditions:**

A plant startup is in progress at 30% power. Steam Jet Air Ejector "A" is in service. Scheduled surveillances require a general inspection walk down of both SJAE rooms. Hydrogen Water Chemistry system is out of service.

**Initiating Cue:**

The CRS has directed you to make entry into both SJAE rooms to perform a general inspection. The Radiological Protection Technician has provided you with survey information and requires you to answer the following questions prior to entry:

(Provide answer in spaces below)

1. What is the highest contamination level in either of the rooms? \_\_\_\_\_
2. Based on these contamination levels, is protective clothing required? \_\_\_\_\_
3. What is the highest general area dose rate that will be encountered \_\_\_\_\_
4. Where will the highest general area dose rate be encounter? (Provide room and compass location relative to SJAE). \_\_\_\_\_
5. What is the value of the highest contact dose? \_\_\_\_\_
6. Where is the highest contact dose located? (Provide room and compass location relative to SJAE). \_\_\_\_\_

**RJPM-NRC12-A4**

| <b>PERFORMANCE STEP</b> |   | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b> |
|-------------------------|---|--|------------|-----------------|
| _____1.                 | Review maps and determine where the highest contamination level is located.             | Candidate reviewed both maps and determined that the highest contamination level is <1000 dpm / 100 cm <sup>2</sup>                        | _____      |                 |
| _____2.                 | Based on contamination levels determine whether or not protective clothing is required. | Candidate recognized that the area is not contaminated therefore protective clothing is not required.                                      | _____      |                 |
| _____3.                 | Review maps and determine the value of the highest general area dose rates.             | Candidate reviewed both maps and determined that the highest general area dose rate is 110mR/hr.   | _____      |                 |
| _____4.                 | Review maps and determine location of highest general area dose rates.                  | Candidate reviewed both maps and determined that the highest general area dose rate is in the "A" SJAE Room on the north side of the SJAE. | _____      |                 |
| _____5.                 | Review maps and determine the value of the highest contact dose rates.                  | Candidate reviewed both maps and determined that the highest general area dose rate is 150 mR/hr.  | _____      |                 |
| _____6.                 | Review maps and determine location of highest contact dose rates.                       | Candidate reviewed both maps and determined that the highest contact dose rate is in the "A" SJAE Room on the north side of the SJAE.      | _____      |                 |
| *_____7.                | Complete answer sheet.  | Candidate correctly annotated the above information on the answer sheet.   | _____      |                 |

**Terminating Cue:** Answer recorded on Answer Sheet.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**ANSWER KEY:**

1. What is the highest contamination level in either of the rooms? <1000 dpm / 100 cm<sup>2</sup>
2. Based on these contamination levels, is protective clothing required? No
3. What is the highest general area dose rate that will be encountered? 110mR / hr
4. Where will the highest general area dose rate be encounter? (Provide room and compass location relative to SJAE)? SJAE Room "A" on the north side of the SJAE
5. What is the value of the highest contact dose? 150 mR / hr
6. Where is the highest contact dose located? (Provide room and compass location relative to SJAE). SJAE Room "A" on the north side of the SJAE

**RJPM-NRC12-A4**  
**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** A plant startup is in progress at 30% power. Steam Jet Air Ejector “A” is in service. Scheduled surveillances require a general inspection walk down of both SJAE rooms. Hydrogen Water Chemistry system is out of service.

**Initiating Cues:** The CRS has directed you to make entry into both SJAE rooms to perform a general inspection. The Radiological Protection Technician has provided you with survey information and requires you to answer the following questions prior to entry:

(Provide answer in spaces below)

1. What is the highest contamination level in either of the rooms? \_\_\_\_\_
2. Based on these contamination levels, is protective clothing required? \_\_\_\_\_
3. What is the highest general area dose rate that will be encountered? \_\_\_\_\_
4. Where will the highest general area dose rate be encounter? (Provide room and compass location relative to SJAE). \_\_\_\_\_
5. What is the value of the highest contact dose? \_\_\_\_\_
6. Where is the highest contact dose located? (Provide room and compass location relative to SJAE). \_\_\_\_\_

**RIVER  
BEND STATION**

Number: **RJPM-NRC12-A5**  
Revision: **01**  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|   |
|---|
| <b>GENERATE A MANUAL LCO TRACKING SHEET</b> |
|---|

**REASON FOR REVISION:**

|                         |
|-------------------------|
| 2012 NRC EXAM JPM - SRO |
|-------------------------|

|           |
|-----------|
| <b>A5</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7/3/2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/6/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A5**

|                                     |                                      |  |           |  |                    |          |
|-------------------------------------|--------------------------------------|--|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | GENERATE A MANUAL LCO TRACKING SHEET |  |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 300061003002                         |  |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | Generic 2.1.18                       |  | 3.8       |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance                 |  |           |  | Actual Performance | <b>X</b> |
|                                     | Control Room                         |  | Simulator |  | Classroom          | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 20 min.                              |  |           |  |                    |          |
| <b>MAX TIME:</b>                    | N/A                                  |  |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | SRO                                  |  |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | No                                   |  |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No                                   |  |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No                                   |  |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No                                   |  |           |  |                    |          |



**SIMULATOR SETUP SHEET**

**Task Description:**     Generate a manual LCO Tracking Sheet

**Required Power:**     N/A

**IC No.:**                N/A

**Notes:**                **Administrative JPM that will be conducted in a classroom.**

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | Technical Specifications 3.7.5<br>Technical Requirement Manual 3.7.5<br>Technical Specification Definitions Pg 1.0-6<br>OSP-0040, LCO TRACKING AND SAFETY<br>FUNCTION DETERMINATION |
| <b>Required Materials:</b>         | Technical Specifications 3.7.5<br>Technical Requirement Manual 3.7.5<br>Technical Specification Definitions Pg 1.0-6<br>OSP-0040, LCO TRACKING AND SAFETY<br>FUNCTION DETERMINATION |
| <b>Required Plant Condition:</b>   | N/A   |
| <b>Task Standard:</b>              | LCO Tracking Sheet complete in accordance with<br>OSP-0040 and JPM Answer Key.  |
| <b>Applicable Objectives:</b>      |   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

**Caution the Operator is NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

**Initial Conditions:**

The plant is operating in Mode 1 at 100% following a startup from a refueling outage.

**Initiating Cue:**

During a review of surveillance testing performed during the outage, the I&C superintendent identified the following condition and has reported it to the control room on 11/15/2012 at 0930.

The Turbine Bypass Valve Response Time testing results are as follows:

The time from initial Turbine Stop Valve movement to Turbine Bypass Valves reaching 80% capacity was .45 seconds.

The time from initial Turbine Stop Valve movement to Turbine Bypass Valve initial movement was 0.08 seconds.

Determine whether or not the results are acceptable. If not acceptable complete the appropriate LCO sheet.

ACCEPTABLE / NOT ACCEPTABLE (Circle one)

**RJPM-NRC12-A5**

| <b>PERFORMANCE STEP</b> |   | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>   |
|-------------------------|---|--|------------|---|
| * _____ 1.              | Determine the acceptability of the Turbine Bypass Valve Response Time test. | Candidate determined that the Turbine Bypass Valve Response Time test results are <b>NOT ACCEPTABLE</b> and annotated as such on the answer sheet. | _____      |   |
| * _____ 2.              | Complete the OSP-0040 LCO tracking sheet.                                   | Candidate completed the LCO tracking sheet in accordance with the ANSWER KEY.  | _____      | <b>EVALUATOR CUE:</b><br><br><b>If requested provide 1-TS-12-0047 as the next available LCO number.</b> |

**Terminating Cue:** LCO Status Sheet completed for inoperable Main Turbine Bypass Valves.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

ANSWER KEY

LCO No.: 1-TS- 12 - 0047

|  |  |  |  |             |
|--|--|--|--|-------------|
| 1 Date: 11/15/2012   | 2 Time: 0930   | 3 % PWR 100%   | 4 Mode: 1  | Page 1 of 1 |
| 5 TS/TRM No.: 3.7.5  |  | 6 Mode Change Allowed: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |             |
| 7 Mark No. C85- Sys. No.: 509<br>Description: Main Turbine Bypass Valve System                           |  | 8 Applicable Modes: 1 2 3 4 5<br>Other: Thermal Power $\geq$ 23.8%                         |  |             |
| 9 CONDITION INITIATING LCO: Scheduled Outage _____ Equipment Failure <input checked="" type="checkbox"/> |  |  |  |             |
| Main Turbine Bypass Valves failed surveillance testing.<br>_____<br>_____<br>_____                       |  |  |  |             |
| 10 Condition   | 11 Required Action   | 12 Completion Time   |  |             |
| A. Main Turbine Bypass System inoperable.  | A.2 Apply the APLHGR, LHGR and MCPR limits for inoperable Main Turbine Bypass System as specified in the COLR. | Required by:<br>Date: 11/15/2012<br>Time: 1130   | Completed:<br>Date: ____/____/____<br>Time: _____<br>Initials: _____ |             |
| B. Required Action and associated Completion Time not met. (This line optional)<br>_____<br>_____        | B.1. Reduce THERMAL POWER to $\leq$ 23.8% RTP.<br>_____<br>_____   | Required by:<br>Date: 11/15/2012<br>Time: 1330   | Completed:<br>Date: ____/____/____<br>Time: _____<br>Initials: _____ |             |
| _____<br>_____<br>_____<br>_____   | _____<br>_____<br>_____<br>_____   | Required by:<br>Date: ____/____/____<br>Time: _____  | Completed:<br>Date: ____/____/____<br>Time: _____<br>Initials: _____ |             |
| 13 LCO 3.0.6 ENTERED<br>NA   |  | 14 LOSS OF SAFETY FUNCTION<br>EVALUATION COMPLETED<br>Initials/KCN: ____/____              |  |             |
| 15 PREPARED BY:  |  | 16 REVIEWED BY:  |  |             |
| <b>LCO CLOSEOUT</b>  |  |  |  |             |
| 17 COMMENTS/CORRECTIVE ACTIONS<br>_____<br>_____<br>_____<br>_____                                       |  | 18 LCO RESTORED DATE/TIME<br>_____<br>_____<br>_____                                       |  |             |
| 19 RESTORED BY:  |  | 20 REVIEWED BY:  |  |             |

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:**

The plant is operating in Mode 1 at 100% following a startup from a refueling outage.

**Initiating Cues:**

During a review of surveillance testing performed during the outage, the I&C superintendent identified the following condition and has reported it to the control room on 11/15/2012 at 0930.

The Turbine Bypass Valve Response Time testing results are as follows:

The time from initial Turbine Stop Valve movement to Turbine Bypass Valves reaching 80% capacity was 0.45 seconds.

The time from initial Turbine Stop Valve movement to Turbine Bypass Valve initial movement was 0.08 seconds.

Determine whether or not the results are acceptable. If not acceptable complete the appropriate LCO sheet.

**ACCEPTABLE   /   NOT ACCEPTABLE (Circle one)**

LCO No.: 1-TS-\_\_\_\_ - \_\_\_\_\_

|   |         |                                  |   |   |
|---|---------|----------------------------------|---|---|
| 1 Date:   | 2 Time: | 3 % PWR                          | 4 Mode:   | Page 1 of ____  |
| 5 TS/TRM No.:   |         |                                  | 6 Mode Change Allowed: ____ Yes ____ No                                       |   |
| 7 Mark No. _____ Sys. No.: _____<br>Description _____   |         |                                  | 8 Applicable Modes: ____ 1 ____ 2 ____ 3 ____ 4 ____ 5<br>Other _____         |   |
| 9 CONDITION INITIATING LCO: Scheduled Outage _____ Equipment Failure _____<br>_____<br>_____<br>_____ |         |                                  |   |   |
| 10 Condition  |         | 11 Required Action               |   | 12 Completion Time  |
| _____<br>_____<br>_____<br>_____  |         | _____<br>_____<br>_____<br>_____ |   | Required by:<br>Date: ____/____/____<br><br>Time: _____<br><br>Completed:<br>Date: ____/____/____<br>Time: _____<br>Initials: _____ |
| _____<br>_____<br>_____<br>_____  |         | _____<br>_____<br>_____<br>_____ |   | Required by:<br>Date: ____/____/____<br><br>Time: _____<br><br>Completed:<br>Date: ____/____/____<br>Time: _____<br>Initials: _____ |
| _____<br>_____<br>_____<br>_____  |         | _____<br>_____<br>_____<br>_____ |   | Required by:<br>Date: ____/____/____<br><br>Time: _____<br><br>Completed:<br>Date: ____/____/____<br>Time: _____<br>Initials: _____ |
| _____<br>_____<br>_____<br>_____  |         | _____<br>_____<br>_____<br>_____ |   | Required by:<br>Date: ____/____/____<br><br>Time: _____<br><br>Completed:<br>Date: ____/____/____<br>Time: _____<br>Initials: _____ |
| 13 LCO 3.0.6 ENTERED  |         |                                  | 14 LOSS OF SAFETY FUNCTION<br>EVALUATION COMPLETED<br>Initials/KCN: ____/____ |   |
| 15 PREPARED BY:   |         |                                  | 16 REVIEWED BY:   |   |

## LCO CLOSEOUT

|   |                           |
|---|---------------------------|
| 17 COMMENTS/CORRECTIVE ACTIONS            | 18 LCO RESTORED DATE/TIME |
| _____<br>_____<br>_____<br>_____<br>_____ |                           |
| 19 RESTORED BY:                           |                           |
| 20 REVIEWED BY:                           |                           |



**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-A6  
Revision: 0  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|  |
|--|
| <b>DETERMINE PLANT SAFETY LEVEL DURING SHUTDOWN<br/>CONDITIONS</b> |
|--|

**REASON FOR REVISION:**

|                         |
|-------------------------|
| 2012 NRC Exam JPM – SRO |
|-------------------------|

|           |
|-----------|
| <b>A6</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7/3/2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/6/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A6**

|                                     |  |  |           |  |                    |          |
|-------------------------------------|--|--|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Determine Plant Safety Level during shutdown conditions per OSP-0037 |  |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 300029001005   |  |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 2.1.23, 4.3/4.4  |  |           |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance   |  |           |  | Actual Performance | <b>X</b> |
|                                     | Control Room   |  | Simulator |  | Classroom          | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 20 min.  |  |           |  |                    |          |
| <b>MAX TIME:</b>                    | N/A  |  |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | SRO  |  |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | No   |  |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |  |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No   |  |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |  |           |  |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Determine Plant Safety Level during shutdown conditions per OSP-0037

**Required Power:** N/A

**IC No.:** N/A

**Notes:** Administrative JPM that will be conducted in a classroom.

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | OSP-0037, Rev 27 Shutdown Operations Protection Plan (SOPP)   |
| <b>Required Materials:</b>         | OSP-0037, Rev 27, Shutdown Operations Protection Plan (SOPP)  |
| <b>Required Plant Condition:</b>   | N/A   |
| <b>Task Standard:</b>              | The SRO has filled out the SOPP Status sheet and identified that the most conservative safety level is YELLOW for Shutdown Cooling. |
| <b>Applicable Objectives:</b>      | RBS-1-LEC-LOR-00910.00 Obj. 4   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

**Initial Conditions:**

RBS is at day 25 of Refueling Outage 15 (RF-15). The last time the SOPP Status Sheet was completed it indicated that all Safety Levels were GREEN. Since that time the following changes have occurred:

- The Upper Storage Pool is +23' 1" and the cavity gate has been closed to prepare for draining the upper cavity.
- Reactor coolant temperature is 105°F.
- Decay heat is Medium
- RHR 'A' was started in Shutdown Cooling; RHR 'B' was secured and is available for shutdown cooling
- All fuel handling activities in Containment and Fuel Building have been completed
- ADHR is not available due to signature testing of the suction valves
- LPCS is now Operable following STP run.
- All other equipment status is unchanged from last shift

**Initiating Cue:**

The oncoming Admin. CRS has been called for a Fitness for Duty random test prior to completing the Plant Safety Index. The OSM has directed you to finish the Plant Safety Level for the on-coming Shift Brief. Complete the SOPP Status Sheet to show the Plant Safety Level per OSP-0037, Shutdown Operations Protection Plan.

**RJPM-NRC12-A6**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b> |
|-------------------------|--|---|------------|-----------------|
| *_____1.                | Using Attachment 1 determine the Safety level for Shutdown Cooling Function Color State          | The candidate using Attachment 1 determined that Med Decay Heat/ Not Flooded Up With only RHR A&B available, ADHR is not available places the plant in YELLOW (TS)  | _____      |                 |
| *_____2.                | Using Attachment 2 determine the Safety level for Inventory Control Function Color State         | The candidate using Attachment 2 determined that RHR A&B and LPCS available therefore 3 ECCS trains are available and >23' above the flange status is still GREEN   | _____      |                 |
| *_____3.                | Using Attachment 6 determine the Safety level for Fuel Building Ventilation Function Color State | Candidate recognized that previous shift the color was Green indicating that 2 HVF Trains were available, with no fuel movement in progress the color remains GREEN | _____      |                 |
| *_____4.                | Using the Color State from the Key Shutdown Function Areas Determine the Overall Risk            | The candidate selected the most conservative Overall Status color of YELLOW in accordance with step 3.12 of OSP-0037.   | _____      |                 |

**Terminating Cue:** OSP-0037, Shutdown Operations Protection Plan (SOPP) status sheet completed.

**ANSWER KEY**  
**SHUTDOWN OPERATIONS PROTECTION PLAN (SOPP)**  
**Status Sheet**

|                            |                    |
|----------------------------|--------------------|
| Shutdown EOOS Safety Index | <u>9.4 - GREEN</u> |
| 1. Shutdown Cooling        | <u>YELLOW</u>      |
| 2. Inventory Control       | <u>GREEN</u>       |
| 3. AC Power                | <u>GREEN</u>       |
| 4. Fuel Pool Cooling       | <u>GREEN</u>       |
| 5. Containment Control     | <u>GREEN</u>       |
| 6. Fuel Building           | <u>GREEN</u>       |
| 7. Reactivity Control      | <u>GREEN</u>       |
| 8. Fire                    | <u>GREEN</u>       |
| OVERALL RISK               | <u>YELLOW</u>      |

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:**

RBS is at day 25 of a Refueling Outage. The last time the SOPP Status Sheet was completed it indicated that all Safety Levels were GREEN. Since that time the following changes have occurred:

- The Upper Storage Pool is +23' 1" and the cavity gate has been closed to prepare for draining the upper cavity.
- Reactor coolant temperature is 105°F.
- Decay heat is Medium
- RHR 'A' was started in Shutdown Cooling; RHR 'B' was secured and is available for shutdown cooling
- All fuel handling activities in Containment and Fuel Building have been completed
- ADHR is not available due to signature testing of the suction valves
- LPCS is now Operable following STP run.
- All other equipment status is unchanged from last shift

**Initiating Cues:**

The individual who was completing the Plant Safety Index determination has been called for a Fitness for Duty random test prior to completing the Plant Safety Index. The OSM has directed you to finish the Plant Safety Level for the on-coming Shift Brief. Complete the SOPP Status Sheet to show the Plant Safety Level per OSP-0037, Shutdown Operations Protection Plan.

**JPM Task Conditions/Cues**  
(Operator Copy)

**SHUTDOWN OPERATIONS PROTECTION PLAN (SOPP)**  
**Status Sheet**

|                            |                    |
|----------------------------|--------------------|
| Shutdown EOOS Safety Index | <u>9.4 - GREEN</u> |
| 1. Shutdown Cooling        | _____              |
| 2. Inventory Control       | _____              |
| 3. AC Power                | <u>GREEN</u>       |
| 4. Fuel Pool Cooling       | <u>GREEN</u>       |
| 5. Containment Control     | <u>GREEN</u>       |
| 6. Fuel Building           | _____              |
| 7. Reactivity Control      | <u>GREEN</u>       |
| 8. Fire                    | <u>GREEN</u>       |
| OVERALL RISK               | _____              |

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-A7  
Revision: 0  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|   |
|---|
| <b>REVIEW AND APPROVE A COMPLETED SURVEILLANCE TEST<br/>PROCEDURE</b> |
|---|

**REASON FOR REVISION:**

|                         |
|-------------------------|
| 2012 NRC Exam JPM – SRO |
|-------------------------|

|           |
|-----------|
| <b>A7</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7/9/2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/6/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A7**

|                                     |  |  |           |  |                    |          |
|-------------------------------------|--|--|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Review a completed performance of a monthly operating surveillance and either approve or document reasons for not approving. |  |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 300132003002   |  |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 2.2.12   |  | 4.1       |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance   |  |           |  | Actual Performance | <b>X</b> |
|                                     | Control Room   |  | Simulator |  | Classroom          | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 20 min.  |  |           |  |                    |          |
| <b>MAX TIME:</b>                    | N/A  |  |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | SRO  |  |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | No   |  |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |  |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No   |  |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | Yes  |  |           |  |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Review a completed performance of a monthly operating surveillance and document reasons for not approving.

**Required Power:** N/A

**IC No.:** N/A

**Notes:** **Administrative JPM that will be conducted in a classroom.**

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | STP-000-0201, Rev 309<br>ADM-0015, Rev 36  |
| <b>Required Materials:</b>         | STP-000-0201, Rev 309 Marked up as completed performance.  |
| <b>Required Plant Condition:</b>   | N/A  |
| <b>Task Standard:</b>              | The candidate has reviewed the complete STP and has NOT signed for approval. Candidate has documented 5 issues leading to disapproval. |
| <b>Applicable Objectives:</b>      | RLP-HLO-0221 Objective 2   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

**Initial Conditions:**

The plant is operating in Mode 1 at 100%. The plant has been online for 256 days. The Monthly Operating Logs, STP-000-0201 was scheduled and has been completed on your shift.

**Initiating Cue:**

As the CRS, review the completed performance of STP-000-0201 and either approve the performance or document the reason(s) for disapproval. Document your answer on the Operator Cue sheet.

| PERFORMANCE STEP | STANDARD  | S/U                       | COMMENTS |
|------------------|---|---------------------------|----------|
| <p>*_____1.</p>  | <p>The candidate reviewed the procedure and did <u>NOT</u> approve the performance.</p> <p>Candidate documented the following reasons for disapproval.</p> <ul style="list-style-type: none"> <li>• Pg 12 of 35 – (1-3 Step 9) CMS-TI40D channel check is Unsatisfactory. This temperature is not consistent with other points monitoring the same parameter. In addition, this temperature is above Tech Spec and EOP entry conditions.</li> <li>• Pg 15 of 35 – (Section 1-4 Step 17) Concurrent Verification has not been performed.</li> <li>• Pg 18 of 35 – (Section 1-5 Step 1) RMS-RE125 not circled indicating surveillance was not performed.</li> <li>• Pg 19 of 35 – (Section 1-6 Step 2) SVV-ES3B recorded reading does not meet the acceptance criteria.</li> <li>• Pg 21 of 35 – (Section 1-7 Step 25) CCP-PNL102 PANEL DOOR was not initialed as being LOCKED CLOSED.</li> </ul> | <p>_____</p> <p>_____</p> |          |

**Terminating Cue:** Procedure has been reviewed, disapproved and reasons documented on Cue Sheet.



**ANSWER KEY**

(Check appropriate box)

APPROVED ☐

DISAPPROVED ☒

Document reason(s) for disapproval below if necessary.

- Pg 12 of 35 – (1-3 Step 9) CMS-TI40D channel check is Unsatisfactory. This temperature is not consistent with other points monitoring the same parameter. In addition, this temperature is above Tech Spec and EOP entry conditions.
- Pg 15 of 35 – (Section 1-4 Step 17) Concurrent Verification has not been performed.
- Pg 18 of 35 – (Section 1-5 Step 1) RMS-RE125 not circled indicating surveillance was not performed.
- Pg 19 of 35 – (Section 1-6 Step 2) SVV-ES3B recorded reading does not meet the acceptance criteria.
- Pg 21 of 35 – (Section 1-7 Step 25) CCP-PNL102 PANEL DOOR was not initialed as being LOCKED CLOSED.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            **Satisfactory / Unsatisfactory**

**Note:** An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** The plant is operating in Mode 1 at 100%. The plant has been online for 256 days. The Monthly Operating Logs, STP-000-0201 was scheduled and has been completed on your shift.

**Initiating Cues:** As the CRS, review the completed performance of STP-000-0201 and either approve the performance or document the reason(s) for disapproval. Document your answer on the Operator Cue sheet..

(Circle One)

APPROVED ☐

DISAPPROVED ☐

Document reason(s) for disapproval below if necessary.

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**RIVER  
BEND STATION**

Number: \***RJPM-NRC12-A8**  
Revision: **0**  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**CALCULATE MAXIMUM PERMISSIBLE STAY TIME**

**REASON FOR REVISION:**

2012 NRC Exam JPM – SRO

**A8**

**PREPARE / REVIEW:**

|                           |             |                  |
|---------------------------|-------------|------------------|
| <u>Angie Orgeron</u>      | <u>1538</u> | <u>7/9/2012</u>  |
| Preparer                  | KCN         | Date             |
| <u>David Bergstrom</u>    | <u>0257</u> | <u>8/6/2012</u>  |
| Technical Review (SME)    | KCN         | Date             |
| <u>Tim Schenk</u>         | <u>0717</u> | <u>7/24/2012</u> |
| Operations Representative | KCN         | Date             |
| <u>John Fralick</u>       | <u>0788</u> | <u>8/6/2012</u>  |
| Facility Reviewer         | KCN         | Date             |

\* Indexing Information

**RJPM-NRC12-A8**

|                                     |  |  |           |  |                    |          |
|-------------------------------------|--|--|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Review radiological condition data, cumulative dose and time to perform several tasks and calculate the maximum permissible stay time to complete a specific task. |  |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 300241004002<br>301023005003   |  |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 2.3.7  |  | 3.6       |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance   |  |           |  | Actual Performance | <b>X</b> |
|                                     | Control Room   |  | Simulator |  | Classroom          | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 20 min.  |  |           |  |                    |          |
| <b>MAX TIME:</b>                    | N/A  |  |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | SRO  |  |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | No   |  |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |  |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No   |  |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |  |           |  |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Review radiological condition data, cumulative dose and time to perform several tasks and calculate the maximum permissible stay time to complete a specific task.

**Required Power:** N/A

**IC No.:** N/A

**Notes:** **Administrative JPM that will be conducted in a classroom.**

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | EN-RP-201, Rev 3   |
| <b>Required Materials:</b>         | EN-RP-201, Rev 3   |
| <b>Required Plant Condition:</b>   | N/A  |
| <b>Task Standard:</b>              | The candidate has reviewed the radiological data, cumulative dose and associated tasks and determined that the maximum permissible stay time for task #3 is 13-15 minutes. |
| <b>Applicable Objectives:</b>      | Admin  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-A8

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

The reactor has scrammed due to a leak in the RWCU pump room which failed to completely isolate. Although automatic isolation occurred, leakage pass isolation valve seats continue to cause elevated temperatures and radiation levels. Efforts are underway to enter affected areas and attempt to manually seat various valves. Only one qualified operator is available to perform ALL the affected tasks. This operator's year to date dose is 780 mRem.

### **Initiating Cue:**

As the CRS, review the radiological information for the specific tasks and the operator's year to date dose. Assuming the same operator completes all 3 tasks, determine the maximum permissible stay time to complete Task #3 without exceeding the routine annual administration dose limit.



**RJPM-NRC12-A8**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b> |
|-------------------------|--|---|------------|-----------------|
| _____1.                 | Review the radiological information for the specific tasks and the operator's year to date dose. | Candidate determined that the operator may receive 1220 mR to complete all tasks and not exceed site administrative limits. (2000mR-780mR=1220mR) | _____      |                 |
| _____2.                 | Determine dose received from Task #1   | Candidate determined that the dose received from Task #1 is 500 mRem  | _____      |                 |
| _____3.                 | Determine dose received from Task #2   | Candidate determined that the dose received from Task #2 is 500 mRem  | _____      |                 |
| *_____4.                | Determine maximum permissible stay time during performance of Task #3.                           | Candidate determined that the maximum permissible stay time for Task #3 is 14.67 minutes (Acceptable range is 13-15 minutes).                     | _____      |                 |

**Terminating Cue:** Maximum permissible stay time has been determined and recorded on the cue sheet. .

**RJPM-NRC12-A8**

**ANSWER KEY**

Maximum Permissible Stay Time in the RWCU Pump Room

**13-15 minutes**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            **Satisfactory / Unsatisfactory**

**Note:** An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## RJPM-NRC12-A8

### JPM Task Conditions/Cues

(Operator Copy)

**Initial Conditions:** The reactor has scrammed due to a leak in the RWCU pump room which failed to completely isolate. Although automatic isolation occurred, leakage pass isolation valve seats continue to cause elevated temperatures and radiation levels. Efforts are underway to enter affected areas and attempt to manually seat various valves. Only one qualified operator is available to perform ALL the affected tasks. This operator's year to date dose is 780 mRem.

**Initiating Cues:** As the CRS, review the radiological information for the specific tasks and the operator's year to date dose. Assuming the same operator completes all 3 tasks, determine the maximum permissible stay time to complete Task #3 without exceeding the routine annual administration dose limit.

| Task Number | Task Description   | Time to complete task | Dose Rate |
|-------------|--|-----------------------|-----------|
| 1           | Drywell entry to close G33-MOVF001   | 10 mins               | 3 Rem     |
| 2           | Steam tunnel entry to close G33-MOVF004  | 15 mins               | 2 Rem     |
| 3           | RWCU Pump Room entry to verify status of leak and close manual valves if necessary | ?                     | 900 mRem  |

Maximum Permissible Stay Time in the RWCU Pump Room \_\_\_\_\_

**RIVER  
BEND STATION**

Number: **RJPM-NRC12-A9**  
Revision: **01**  
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**TIME CRITICAL**

**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|                              |
|------------------------------|
| <b>CLASSIFY AN EMERGENCY</b> |
|------------------------------|

**REASON FOR REVISION:**

|                         |
|-------------------------|
| 2012 NRC EXAM JPM - SRO |
|-------------------------|

|           |
|-----------|
| <b>A9</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7-9-2012  |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/6/2012  |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7/24/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-A9**

|                                     |                           |     |           |  |                    |          |
|-------------------------------------|---------------------------|-----|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | CLASSIFY AN EMERGENCY     |     |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 301001005003              |     |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 2.4.41                    | 4.6 |           |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance      |     |           |  | Actual Performance | <b>X</b> |
|                                     | Control Room              |     | Simulator |  | Classroom          | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 15 min.                   |     |           |  |                    |          |
| <b>MAX TIME:</b>                    | 15 min                    |     |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | SRO                       |     |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | Yes; 10 CFR 50 Appendix E |     |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | Yes                       |     |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No                        |     |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No                        |     |           |  |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Classify an emergency

**Required Power:** N/A

**IC No.:** N/A

**Notes:** This Administrative JPM will be conducted in the classroom.

**DATA SHEET**

**References for Development:** EIP-2-001, Rev 23, CLASSIFICATION OF EMERGENCIES

**Required Materials:** EIP-2-001, Rev 23, CLASSIFICATION OF EMERGENCIES

**Required Plant Condition:** N/A

**Applicable Objectives:** RCBT-EP-SRORMED Obj. 16

**Safety Related Task:** (If K/A less than 3.0)

**Control Manipulations:** N/A

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.



## RJPM-NRC12-A9

If In-Plant or In the Control Room:

**Caution the Operator is NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### Initial Conditions:

While operating in Mode 1 a failure of the feedwater level control system resulted in reactor water level lowering to below the scram setpoint. The reactor did NOT automatically scram. The At the Controls operator placed the Reactor Mode Switch in the SHUTDOWN position and all control rods fully inserted.

Reactor water level and pressure are stable. Lowest reactor water level observed was -20 inches.

During the transient, a small fire occurred at the Reactor Protection System Motor Generator Set "A" output breaker. The fire was extinguished within 8 minutes of discovery.

Identified leakage rate is 37 gpm.

Meteorological data indicates wind speed at 6 mph from 145 degrees. No release is in progress.

### Initiating Cue:

You are the Operations Shift Manager, classify the event, AND fill out the applicable notification short form.

**This is a time critical JPM.**

**RJPM-NRC12-A9**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b> |
|-------------------------|--|---|------------|-----------------|
| * ____ 1.               | Consult EIP-2-001 Classification of Emergencies for this event | Candidate classified the event as an ALERT (SA--3).                   | ____       |                 |
| ____ 2.                 | Complete the notification short form                           | Candidate completed the Short Notification Message Form for an ALERT. | ____       |                 |

**Terminating Cue:** Emergency Plan is applied to classify the event as an ALERT and Alert Short Form completed in accordance with the answer key.

**ANSWER KEY**

**The ALERT form is the 3<sup>rd</sup> of the 4 forms provided.**

| Notification of Alert  |  |   |
|--|--|---|
| Time/Date:   | Current  | Message: 1  |
| <p><b>This is River Bend Station</b></p> <p>An Alert was declared at</p> <div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Current<br/>time</div> <span>on</span> <div style="border: 1px solid black; padding: 5px; text-align: center;">Current date</div> <span>for</span> </div> |  |   |
| <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>SA-3 Reactor Protection System failed to complete and automatic scram once an RPS setpoint was exceeded and manual scram was successful.</b></p> </div>   |  |   |
| <p>Wind from <u>  145  </u> Deg.                      At <u>  6  </u> MPH</p>  |  |   |
| <p>✓ No Release                                      No Protective Actions Required.</p>   |  |   |
| <p><input type="radio"/> Release BELOW federally approved operating limits</p>   |  |   |
| <p><input type="radio"/> Release ABOVE federally approved operating limits</p>   |  |   |
| Authorized by:   | <div style="border: 1px solid black; padding: 5px; min-height: 40px;">Candidate name</div> | <p>Title:</p> <div style="border: 1px solid black; padding: 5px; min-height: 40px;">Emergency Director /<br/>Recovery Manager</div> |

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            **Satisfactory / Unsatisfactory**

**Note:** An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** While operating in Mode 1 a failure of the feedwater level control system resulted in reactor water level lowering to below the scram setpoint. The reactor did NOT automatically scram. The At the Controls operator placed the Reactor Mode Switch in the SHUTDOWN position and all control rods fully inserted.

Reactor water level and pressure are stable. Lowest reactor water level observed was -20 inches.

During the transient, a small fire occurred at the Reactor Protection System Motor Generator Set "A" output breaker. The fire was extinguished within 8 minutes of discovery.

Identified leakage rate is 37 gpm.

Meteorological data indicates wind speed at 6 mph from 145 degrees. No release is in progress.

**Initiating Cues:** You are the Operations Shift Manager, classify the event, AND fill out the applicable notification short form.

**This is a time critical JPM.**

### Notification of General Emergency

Time/Date:

Message:

**This is River Bend Station**

A General Emergency was declared at

on

for

Wind from \_\_\_\_\_ Deg.

At \_\_\_\_\_ MPH

☐ No Release

PAR Reference Scenario No.:

☐ Release BELOW federally approved operating limits

☐ Release ABOVE federally approved operating limits

Authorized by:

Title:

### Notification of Site Area Emergency

Time/Date:

Message:

**This is River Bend Station**

A Site Area Emergency was declared at

on

for

Wind from \_\_\_\_\_ Deg.

At \_\_\_\_\_ MPH

☐ No Release

No Protective Actions Required.

☐ Release BELOW federally approved operating limits

☐ Release ABOVE federally approved operating limits

Authorized by:

Title:

**Notification of Alert**

Time/Date:

Message:

**This is River Bend Station**

An Alert was declared at

on

for

Wind from \_\_\_\_\_ Deg.

At \_\_\_\_\_ MPH

☐ No Release

No Protective Actions Required.

☐ Release BELOW federally approved operating limits☐ Release ABOVE federally approved operating limits

Authorized by:

Title:

**Notification of Unusual Event**

Time/Date:

Message:

**This is River Bend Station**

A Notification of Unusual Event was declared at

on

for

Wind from \_\_\_\_\_ Deg.

At \_\_\_\_\_ MPH

☐ No Release

No Protective Actions Required.

☐ Release BELOW federally approved operating limits☐ Release ABOVE federally approved operating limits

Authorized by:

Title:

# NRC

**ES-301**

## Control Room/In-Plant Systems Outline

**Form ES-301-2**

|   |  |  |  |
|---|--|--|--|
| Facility: <u>River Bend Station</u>   |  | Date of Examination: <u>11/12/2012</u> |  |
| Exam Level: RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>  |  | Operating Test No.: _____              |  |
| Control Room Systems <sup>@</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)  |  |  |  |
| System / JPM Title  | Type Code*   | Safety Function                        |  |
| <b>a. (S1) Respond to High Radiation levels in the Auxiliary Building</b>   | <b>A,S,EN,N</b>  | <b>5</b>                               |  |
| <b>b. (S2) Transfer Reactor Recirculation Pumps from Fast to Slow Speed</b>   | <b>A,S,D</b>   | <b>1</b>                               |  |
| <b>c. (S3) Manual Isolation of a Main Steam Line During Power Operation</b>   | <b>S,D</b>   | <b>3</b>                               |  |
| <b>d. (S4) Shift Divisions of Control Building Chilled Water</b>  | <b>A,S,D,EN</b>  | <b>9</b>                               |  |
| <b>e. (S5) Secure High Pressure Core Spray Following Spurious Initiation</b>  | <b>A,S,D,EN</b>  | <b>2</b>                               |  |
| <b>f. (S6) Start Residual Heat Removal in the Shutdown Cooling Mode</b>   | <b>S,D,L</b>   | <b>4</b>                               |  |
| <b>g. (C1) Respond to a loss of Control Room Annunciators</b>   | <b>C,N</b>   | <b>6</b>                               |  |
| <b>h. (C2) Perform APRM Setdown Channel Functional Test for APRM B</b>  | <b>C,N</b>   | <b>7</b>                               |  |
| In-Plant Systems <sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)   |  |  |  |
| <b>i. (P1) Transfer RCIC Steam Supply Isolation Valve to Alternate Power</b>  | <b>E,L,N,R</b>   | <b>2</b>                               |  |
| <b>j. (P2) Start of Fire Protection Water Pump</b>  | <b>A,D,E</b>   | <b>8</b>                               |  |
| <b>k. (P3) Initiate Full Scram and NSSSS Isolation from the Electrical Protection Assembly (EPA) breakers</b>   | <b>D,E,EN</b>  | <b>7</b>                               |  |
| <b>@</b> 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. |  |  |  |
| * Type Codes  | Criteria for RO / SRO-I / SRO-U  |  |  |
| (A)lternate path<br>(C)ontrol room<br>(D)irect from bank<br>(E)mergency or abnormal in-plant<br>(EN)gineered safety feature<br>(L)ow-Power / Shutdown<br>(N)ew or (M)odified from bank including 1(A)<br>(P)revious 2 exams<br>(R)CA<br>(S)imulator           | 4-6 / 4-6 / 2-3 <b>5</b> <input checked="" type="checkbox"/><br><br>$\leq 9 / \leq 8 / \leq 4$ <b>8</b> <input checked="" type="checkbox"/><br>$\geq 1 / \geq 1 / \geq 1$ <b>2</b> <input checked="" type="checkbox"/><br>- / - / $\geq 1$ (control room system) -<br>$\geq 1 / \geq 1 / \geq 1$ <b>3</b> <input checked="" type="checkbox"/><br>$\geq 2 / \geq 2 / \geq 1$ <b>4; 1(A)</b> <input checked="" type="checkbox"/><br>$\leq 3 / \leq 3 / \leq 2$ (randomly selected) <b>0</b><br>$\geq 1 / \geq 1 / \geq 1$ <b>1</b> <input checked="" type="checkbox"/> |  |  |



# NRC

**ES-301**

## Control Room/In-Plant Systems Outline

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| System / JPM Title  | Type Code*   | Safety Function                        |  |
| <b>a. (S1) Respond to High Radiation levels in the Auxiliary Building</b>   | <b>A,S,EN,N</b>  | <b>5</b>                               |  |
| <b>b. (S2) Transfer Reactor Recirculation Pumps from Fast to Slow Speed</b>   | <b>A,S,D</b>   | <b>1</b>                               |  |
| <b>c. (S3) Manual Isolation of a Main Steam Line During Power Operation</b>   | <b>S,D</b>   | <b>3</b>                               |  |
| <b>d. (S4) Shift Divisions of Control Building Chilled Water</b>  | <b>A,S,D,EN</b>  | <b>9</b>                               |  |
| <b>e. (S5) Secure High Pressure Core Spray Following Spurious Initiation</b>  | <b>A,S,D,EN</b>  | <b>2</b>                               |  |
| <b>f. (S6) Start Residual Heat Removal in the Shutdown Cooling Mode</b>   | <b>S,D,L</b>   | <b>4</b>                               |  |
| <b>g. (C1) Respond to a loss of Control Room Annunciators</b>   | <b>C,N</b>   | <b>6</b>                               |  |
| <b>h.</b>   |  |  |  |
| In-Plant Systems <sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)   |  |  |  |
| <b>i. (P1) Transfer RCIC Steam Supply Isolation Valve to Alternate Power</b>  | <b>E,L,N,R</b>   | <b>2</b>                               |  |
| <b>j. (P2) Start of Fire Protection Water Pump</b>  | <b>A,D,E</b>   | <b>8</b>                               |  |
| <b>k. (P3) Initiate Full Scram and NSSSS Isolation from the Electrical Protection Assembly (EPA) breakers</b>   | <b>D,E,EN</b>  | <b>7</b>                               |  |
| <b>@</b> 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. |  |  |  |
| * Type Codes  | Criteria for RO / SRO-I / SRO-U  |  |  |
| (A)lternate path<br>(C)ontrol room<br>(D)irect from bank<br>(E)mergency or abnormal in-plant<br>(EN)gineered safety feature<br>(L)ow-Power / Shutdown<br>(N)ew or (M)odified from bank including 1(A)<br>(P)revious 2 exams<br>(R)CA<br>(S)imulator           | 4-6 / 4-6 / 2-3 <b>5</b> <input checked="" type="checkbox"/><br><br>$\leq 9 / \leq 8 / \leq 4$ <b>7</b> <input checked="" type="checkbox"/><br>$\geq 1 / \geq 1 / \geq 1$ <b>3</b> <input checked="" type="checkbox"/><br>- / - / $\geq 1$ (control room system) -<br>$\geq 1 / \geq 1 / \geq 1$ <b>2</b> <input checked="" type="checkbox"/><br>$\geq 2 / \geq 2 / \geq 1$ <b>3; 1(A)</b> <input checked="" type="checkbox"/><br>$\leq 3 / \leq 3 / \leq 2$ (randomly selected) <b>0</b><br>$\geq 1 / \geq 1 / \geq 1$ <b>1</b> <input checked="" type="checkbox"/> |  |  |

# NRC

**ES-301**

## Control Room/In-Plant Systems Outline

**Form ES-301-2**

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| System / JPM Title  | Type Code*  | Safety Function                        |  |
| <b>a. (S1) Respond to High Radiation levels in the Auxiliary Building</b>   | <b>A,S,EN,N</b>   | <b>5</b>                               |  |
| <b>b. (S4) Shift Divisions of Control Building Chilled Water</b>  | <b>A,S,D,EN</b>   | <b>9</b>                               |  |
| <b>c. (C1) Respond to a loss of Control Room Annunciators</b>   | <b>C,N</b>  | <b>6</b>                               |  |
| d.  |   |  |  |
| e.  |   |  |  |
| f.  |   |  |  |
| g.  |   |  |  |
| h.  |   |  |  |
| In-Plant Systems <sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)   |   |  |  |
| <b>i. (P1) Transfer RCIC Steam Supply Isolation Valve to Alternate Power</b>  | <b>E,L,N,R</b>  | <b>2</b>                               |  |
| <b>j. (P2) Start of Fire Protection Water Pump</b>  | <b>A,D,E</b>  | <b>8</b>                               |  |
| k.  |   |  |  |
| <b>@</b> 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. |   |  |  |
| * Type Codes  | Criteria for RO / SRO-I / SRO-U   |  |  |
| (A)lternate path<br>(C)ontrol room<br>(D)irect from bank<br>(E)mergency or abnormal in-plant<br>(EN)gineered safety feature<br>(L)ow-Power / Shutdown<br>(N)ew or (M)odified from bank including 1(A)<br>(P)revious 2 exams<br>(R)CA<br>(S)imulator           | 4-6 / 4-6 / 2-3 <b>3</b> <input checked="" type="checkbox"/><br><br>$\leq 9 / \leq 8 / \leq 4$ <b>2</b> <input checked="" type="checkbox"/><br>$\geq 1 / \geq 1 / \geq 1$ <b>2</b> <input checked="" type="checkbox"/><br>- / - / $\geq 1$ (control room system) <b>2</b> <input checked="" type="checkbox"/><br>$\geq 1 / \geq 1 / \geq 1$ <b>2</b> <input checked="" type="checkbox"/><br>$\geq 2 / \geq 2 / \geq 1$ <b>3; 1(A)</b> <input checked="" type="checkbox"/><br>$\leq 3 / \leq 3 / \leq 2$ (randomly selected) <b>0</b> <input checked="" type="checkbox"/><br>$\geq 1 / \geq 1 / \geq 1$ <b>1</b> <input checked="" type="checkbox"/> |  |  |

**RIVER  
BEND STATION**

Number: \***RJPM-NRC12-S1**  
Revision: **01**  
Page 1 of 10

**JOB PERFORMANCE MEASURE**

**ALTERNATE PATH**



**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**RESPOND TO HIGH RADIATION LEVELS IN THE AUXILIARY BUILDING**

**REASON FOR REVISION:**

2012 NRC Exam JPM

**S1**

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6-25-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-S1**

|                                     |   |       |           |          |                    |          |
|-------------------------------------|---|-------|-----------|----------|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Respond to High Radiation Levels in the Auxiliary Building by isolating secondary containment dampers and verifying initiation of Standby Gas Treatment |       |           |          |                    |          |
| <b>TASK REFERENCE:</b>              | 234002003020<br>300159003001  |       |           |          |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 290001  | A2.03 | 3.4/3.6   |          |                    |          |
|                                     | 290001  | A2.06 | 3.7/4.0   |          |                    |          |
|                                     | 290001  | A3.01 | 3.9/4.0   |          |                    |          |
|                                     | 290001  | A4.09 | 3.2/3.2   |          |                    |          |
|                                     | 290001  | A4.10 | 3.4/3.3   |          |                    |          |
|                                     | 261000  | A3.02 | 3.2/3.1   |          |                    |          |
|                                     | 261000  | A3.03 | 3.0/2.9   |          |                    |          |
|                                     | 261000  | A4.03 | 3.0/3.0   |          |                    |          |
|                                     | 261000  | A4.09 | 2.7/2.7   |          |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance  |       |           |          | Actual Performance | <b>X</b> |
|                                     | Control Room  |       | Simulator | <b>X</b> | In-Plant           |          |
| <b>COMPLETION TIME:</b>             | 15 MINUTES.   |       |           |          |                    |          |
| <b>MAX TIME:</b>                    | 30 MINUTES  |       |           |          |                    |          |
| <b>JOB LEVEL:</b>                   | RO/SRO  |       |           |          |                    |          |
| <b>TIME CRITICAL:</b>               | No  |       |           |          |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No  |       |           |          |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No  |       |           |          |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | YES   |       |           |          |                    |          |
| <b>SAFETY FUNCTION</b>              | 5   |       |           |          |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Respond to High Radiation Levels in the Auxiliary Building by isolating secondary containment dampers and verifying initiation of Standby Gas Treatment.

**Required Power:** NA, determined by paired JPM.

**IC No.:** 202

**Notes:** Insert switch override for 1-GT-HVRA19.  
RMS-RE110 in high alarm status

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | OSP-0053, Rev 16  |
| <b>Required Materials:</b>         | OSP-0053, Rev 16 Attachment 21 Hard Card<br>(Simulator copy)  |
| <b>Required Plant Condition:</b>   | ANY   |
| <b>Task Standard</b>               | OSP-0053 Attachment 21 has been completed,<br>failures recognized and compensatory actions taken<br>such that all dampers listed in step 1.2 are closed and<br>both trains of Standby Gas Treatment are in service. |
| <b>Applicable Objectives:</b>      | RLP-STM-0409 Objectives 4c, 5c, 8c  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-S1

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

Radiation monitor RMS-RE110 has just gone into the High Alarm condition.

### **Initiating Cue:**

The CRS has directed you to isolate the Auxiliary Building.

**RJPM-NRC12-S1**

| <b>PERFORMANCE STEP</b> |   | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>   |
|-------------------------|---|--|------------|---|
| 1.1                     | Perform the following:                                |  | <u>NA</u>  | <i>No action performed in this steps. Actions follow below.</i> |
| *<br>_____1.<br>•       | Place HVR-AOD22A, ANNULUS MIX SPLY TO SGT in Man Init | Candidate located/identified and positioned the HVR-AOD22A, ANNULUS MIX SPLY TO SGT to the Man Init position.          | _____      |   |
| *<br>_____2.<br>•       | Place HVR-AOD22B, ANNULUS MIX SPLY TO SGT in Man Init | Candidate located/identified and positioned the HVR-AOD22B, ANNULUS MIX SPLY TO SGT to the Man Init position.          | _____      |   |
| *<br>_____3.<br>•       | Depress AUX BLDG TO SGT FLTR A MANUAL INITIATION      | Candidate located/identified and depressed the “ON” button on the AUX BLDG TO SGT FLTR A MANUAL INITIATION Pushbutton. | _____      |   |
| *<br>_____4.<br>•       | Depress AUX BLDG TO SGT FLTR B MANUAL INITIATION      | Candidate located/identified and depressed the “ON” button on the AUX BLDG TO SGT FLTR B MANUAL INITIATION Pushbutton. | _____      |   |
| 1.2                     | Verify the following dampers are closed:              |  | <u>NA</u>  | <i>No action performed in this step. Actions follow below.</i>  |
| _____<br>5.<br>•        | HVR-AOD143, DN STREAM ISOL SUPPLY                     | Candidate verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.                      | _____      |   |



**RJPM-NRC12-S1**

| PERFORMANCE STEP | STANDARD   | S/U | COMMENTS |
|------------------|--|-----|----------|
| *____7.<br>•     | HVR-AOD164, UP STREAM ISOL SUPPLY<br><br><u><b>ALTERNATE PATH</b></u><br>Candidate recognized that HVR-AOD164 UP STEAM ISOL SUPPLY failed to isolate and turned the control handswitch to the CLOSE position and verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.   | —   |          |
| ____8.<br>•      | HVR-AOD263, SGT UPSTREAM SPLY ISOL<br>Candidate verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.  | —   |          |
| ____9.<br>•      | HVR-AOD264, SGT DNSTREAM SPLY ISOL<br>Candidate verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.  | —   |          |
| ____10.<br>•     | HVR-AOD262, AUX/CNTMT BLDG EXH ISOL<br>Candidate verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.   | —   |          |
| *____11.<br>•    | HVR-AOD214, AUX/CNTMT BLDG EXH ISOL<br><u><b>ALTERNATE PATH</b></u><br>Candidate recognized that HVR-AOD214, AUX/CNTMT BLDG EXH ISOL failed to isolate and turned the control handswitch to the CLOSE position and verified the damper closed by verifying the GREEN light is ON and the RED light is OFF. | —   |          |
| ____12.<br>•     | HVR-AOD161, ANNULUS PRESS CONT SUCT<br>Candidate verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.   | —   |          |
| ____13.<br>•     | HVR-AOD142, APC UP STREAM DISCH<br>Candidate verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.   | —   |          |

**RJPM-NRC12-S1**

| PERFORMANCE STEP |                                     | STANDARD   | S/U | COMMENTS |
|------------------|-------------------------------------|--|-----|----------|
| ____ 14.<br>•    | HVR-AOD261, APC DN STREAM DISCH     | Candidate verified the damper closed by verifying the GREEN light is ON and the RED light is OFF.        | —   |          |
| ____ 15.<br>1.3  | Verify both divisions of GTS start. | Candidate verified the GTS-FN1A and GTS-FN1B are both running by verifying RED indicating lights are ON. | —   |          |

**Terminating Cue: All dampers listed in Step 1.2 of OSP-0053 Attachment 21 are closed and both trains of Standby Gas Treatment are in service.**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** Radiation monitor RMS-RE110 has just gone into the High Alarm condition.

**Initiating Cues:** The CRS has directed you to isolate the Auxiliary Building.

**RIVER  
BEND STATION**

Number: **RJPM-NRC12-S2**  
Revision: **00**  
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**ALTERNATE PATH**

**JOB PERFORMANCE MEASURE**

---



**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|  |
|--|
| <b>TRANSFER RECIRC PUMPS FROM FAST TO SLOW SPEED</b> |
|--|

**REASON FOR REVISION:**

|                   |           |
|-------------------|-----------|
| 2012 NRC Exam JPM | <b>S2</b> |
|-------------------|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6-25-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

## RJPM-NRC12-S2

|                                     |   |  |           |          |                    |          |
|-------------------------------------|---|--|-----------|----------|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Transfer Recirc Pumps from Fast to Slow Speed   |  |           |          |                    |          |
| <b>TASK REFERENCE:</b>              | 202010001001; 400041004001  |  |           |          |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 202001      A4.01: 3.7/3.7;<br>202001      A2.03: 3.6/3.7;<br>202001      A3.07: 3.3/3.3<br>202002      A1.01: 3.2/3.2;<br>202002      A2.01: 3.4/3.4;<br>202002      A4.07: 3.3/3.2<br>295001      AA1.01: 3.5/3.6;<br>295001      AA1.05: 3.3/3.3;<br>295001      AA2.01: 3.5/3.8 |  |           |          |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance  |  |           |          | Actual Performance | <b>X</b> |
|                                     | Control Room  |  | Simulator | <b>X</b> | In-Plant           |          |
| <b>COMPLETION TIME:</b>             | 15 min.   |  |           |          |                    |          |
| <b>MAX TIME:</b>                    | N/A   |  |           |          |                    |          |
| <b>JOB LEVEL:</b>                   | RO/SRO  |  |           |          |                    |          |
| <b>TIME CRITICAL:</b>               | No  |  |           |          |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No  |  |           |          |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No  |  |           |          |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | Yes   |  |           |          |                    |          |
| <b>SAFETY FUNCTION</b>              | 1   |  |           |          |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Transfer Recirc Pumps to SLOW speed.  
**Required Power:** Reactor Power ~40%  
**IC No.:** 210  
**Notes:** **Insert malfunction RCS008B to result in a transfer failure for Reactor Recirculating Pump B.**

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | SOP-0003 Rev 308, REACTOR RECIRCULATION SYSTEM (SYS #053)<br>AOP-0024, Rev 25, THERMAL HYDRAULICS STABILITY CONTROLS                              |
| <b>Required Materials:</b>         | SOP-0003 Rev 308, REACTOR RECIRCULATION SYSTEM (SYS #053) Simulator copy<br>AOP-0024 Rev 25, THERMAL HYDRAULICS STABILITY CONTROLS Simulator copy |
| <b>Required Plant Condition:</b>   | Reactor Power ~40%  |
| <b>Task Standard:</b>              | Reactor Recirculation pump "A" is in slow speed and Reactor Recirculation pump "B" is OFF with the associated discharge valve closed.             |
| <b>Applicable Objectives:</b>      | RLP-STM-0053 Obj 6  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.



## RJPM-NRC12-S2

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

The plant is operating at about 40% power and lowering power to support a drywell entry.

### **Initiating Cue:**

The Control Room Supervisor has directed you Transfer Recirculation Pumps to Slow Speed, per SOP-0003, Section 5.2

**RJPM-NRC12-S2**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>   |
|-------------------------|--|--|------------|---|
| 5.2                     | Transferring from Fast Speed to Slow Speed   |  | <u>NA</u>  | <i>No actions performed by this step.<br/>Actions follow below.</i> |
| * _____ 1.<br>5.2.1.    | Simultaneously depress B33-C001A and B RECIRC PUMP A and B MOTOR BREAKER 5A and 5B XFER TO LFMG pushbuttons. | Candidate simultaneously depressed B33-C001A and B RECIRC PUMP A and B MOTOR BREAKER 5A and 5B XFER TO LFMG pushbuttons.   | _____      |   |
| 5.2.2                   | Observe the following:   |  | <u>NA</u>  | <i>Actions performed below.</i>                                     |
| _____ 2.<br>5.2.2.1.    | Both B33-S001A LFMG MOT BRKR 1A and B33-S001B LFMG MOT BRKR 1B close.  | Candidate verified B33-S001A LFMG MOT BRKR 1A closed.<br><br><b><u>ALTERNATE PATH</u></b><br>Candidate recognized that B33-S001B LFMG MOT BRKR 1B failed to close. | _____      |   |
| _____ 3.<br>5.2.2.2     | Both B33-C001A RECIRC PUMP A MOTOR BREAKER 5A and B33-C001B RECIRC PUMP B MOTOR BREAKER 5B open.             | Candidate verified both B33-C001A RECIRC PUMP A MOTOR BREAKER 5A and B33-C001B RECIRC PUMP B MOTOR BREAKER 5B open.  | _____      |   |

**RJPM-NRC12-S2**

| PERFORMANCE STEP                                    |   | STANDARD  | S/U                       | COMMENTS  |
|---|---|---|---------------------------|---|
| 4.<br>5.2.2.3                                       | WHEN B33-C001A and B, RECIRC PUMP A and B coast down to approximately 360 - 470 RPM, THEN B33-S001A and B LFMG A and B GEN BRKR 2A and 2B close and pump speeds stabilize near 450 RPM.   | <p>Candidate verified that B33-S001A LFMG A GEN BRKR 2A closed and pump speed stabilized near 450 RPM.</p> <p><b><u>ALTERNATE PATH</u></b></p> <p>Recognized and reported that B33-S001B LFMG B GEN BRKR 2B did not close and pump coasting to 0 RPM.</p> | <p>_____</p> <p>_____</p> | <p><b><u>EVALUATOR CUE:</u></b> As the CRS, acknowledge the report that Reactor Recirculation Pump B transfer has failed, THEN direct the candidate to perform the actions of AOP-0024 THERMAL HYDRAULIC STABILITY CONTROL Section 5.9.</p> <p>Also, notify the candidate that another operator will perform GOP-0004, SINGLE LOOP OPERATIONS requirements.</p> |
| <b><i>TRANSITIONING TO AOP-0024 Section 5.9</i></b> |   |   |                           |   |
| 5.9   | <u>IF</u> a single Recirculation Pump Trip occurs, <u>THEN</u> perform the following actions:   |   | <u>NA</u>                 | <i>Actions performed below.</i>   |
| <u>NOTE</u>   | <p>NOTE:</p> <p>Process computer point B33NA01V is used to determine core flow when one Reactor Recirculation Pump is OFF and the other is in fast speed. B33-R613, TOTAL CORE FLOW (Red Pen) is <u>not</u> accurate in this configuration and is <u>not</u> to be used. Refer to ERIS point ONWTDPM (enter GD ONWT* in ERIS ) if remaining Recirc pump configuration is 1 Slow/0</p> |   | <u>NA</u>                 | <i>This is a procedure note. No action is required.</i>   |

**RJPM-NRC12-S2**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>  |
|-------------------------|--|--|------------|--|
| 5.9.1                   | Enter GOP-0004, Single Loop Operation  |  | <u>NA</u>  | <i>No action required. This task is being performed by another operator.</i> |
| _____5.<br>5.9.2        | Place B33-HYV-F060A (B), FLOW CONT VLV for both loops in MANUAL  | Candidate verified both loops are in MANUAL as indicated by MANUAL pushbuttons being backlit at B33-K603A & B  | _____      |  |
| 5.9.3                   | Perform the following actions for the shutdown loop:   |  | <u>NA</u>  | <i>Actions performed below.</i>  |
| <u>CAUTION</u>          | Closure of both suction and discharge valves with seal purge valved in causes high pressures in the isolated loop which can result in damage to the seals. Do <u>not</u> close B33-F023A(B), RECIRC PUMP A(B) SUCTION VALVE and B33-F067A(B), RECIRC PUMP A(B) DISCH VALVE if seal purge is valved in. |  | <u>NA</u>  | <i>No action required. This is a procedure caution.</i>                      |
| * _____6.<br>5.9.3.1.   | Close B33-F067A(B), RECIRC PUMP A(B) DISCH VALVE.  | Candidate closed B33-F067B, RECIRC PUMP B DISCH VALVE by depressing the CLOSE push button and verified valve is closed by checking the RED light OFF and the GREEN light ON. | _____      |  |
| <u>NOTE:</u>            | <u>NOTE:</u><br>Reopening of the Discharge Valve and the FCV following pump coastdown is expected to maintain the shutdown loop temperature within 50°F of the operating loop.   |  | <u>NA</u>  |  |

**RJPM-NRC12-S2**

| PERFORMANCE STEP   |   | STANDARD  | S/U   | COMMENTS   |
|--------------------|---|---|-------|--|
| _____7.<br>5.9.3.2 | IF Recirc pump restart is anticipated,<br>THEN perform the following actions: | Candidate requested guidance from the CRS regarding pump restart. | _____ | <b><u>EVALUATOR CUE:</u> Inform the candidate that pump restart is not anticipated at this time and that the task is complete.</b> |

**Terminating Cue:** Reactor Recirculation pump “A” is in slow speed and Reactor Recirculation pump “B” is OFF with the associated discharge valve closed.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**RJPM-NRC12-S2**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** The plant is operating at about 40% power and lowering power to support a drywell entry.

**Initiating Cues:** The Control Room Supervisor has directed you to Transfer Recirculation Pumps to Slow Speed, per SOP-0003, Section 5.2

**RIVER  
BEND STATION**

Number: **RJPM-NRC12-S3**  
Revision: **00**  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**MANUAL ISOLATION OF A MAIN STEAM LINE DURING POWER  
OPERATION**

**REASON FOR REVISION:**

2012 NRC Exam JPM

**S3**

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6/26/2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information



**RJPM-NRC12-S3**

|                                     |  |       |           |          |                    |          |
|-------------------------------------|--|-------|-----------|----------|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Manual Isolation of a Main Steam Line During Power Operation |       |           |          |                    |          |
| <b>TASK REFERENCE:</b>              | 239008001001   |       |           |          |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 239001   | A2.10 | 3.8/3.9   |          |                    |          |
|                                     | 239001   | A4.01 | 4.2/4.0   |          |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance   |       |           |          | Actual Performance | <b>X</b> |
|                                     | Control Room   |       | Simulator | <b>X</b> | In-Plant           |          |
| <b>COMPLETION TIME:</b>             | 10 min.  |       |           |          |                    |          |
| <b>MAX TIME:</b>                    | N/A  |       |           |          |                    |          |
| <b>JOB LEVEL:</b>                   | RO/SRO   |       |           |          |                    |          |
| <b>TIME CRITICAL:</b>               | No   |       |           |          |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |       |           |          |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No   |       |           |          |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |       |           |          |                    |          |
| <b>SAFETY FUNCTION</b>              | 3  |       |           |          |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Manual Isolation of a Main Steam Line During Power Operation.

**Required Power:**  $\leq 75\%$

**IC No.:** 212

**Notes:**

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | SOP-0011, Rev 027, MAIN STEAM SYSTEM (SYS #109)  |
| <b>Required Materials:</b>         | SOP-0011, Rev 027, MAIN STEAM SYSTEM (SYS #109) (Simulator copy)                         |
| <b>Required Plant Condition:</b>   | ≤75% power   |
| <b>Task Standard:</b>              | Both MSIV on “A” have been slow close and reactor power, pressure, and level are stable. |
| <b>Applicable Objectives:</b>      | RLP-STM-0109 Objectives 3h, 7, 8, 10   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-S3

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

The plant is operating in Mode 1 at 70% power. A packing leak in the steam tunnel has resulted in the need to isolate the “A” steam line to isolate this leak.

### **Initiating Cue:**

The CRS has directed you to isolate the “A” main steam line in accordance with SOP-0011, MAIN STEAM SYSTEM, Section 5.1

**RJPM-NRC12-S3**

| <b>PERFORMANCE STEP</b>       |  | <b>STANDARD</b>  | <b>S/U</b>    | <b>COMMENTS</b>                                      |
|-------------------------------|--|--|---------------|--|
| <u>NOTE:</u>                  | Section 5.1 denotes isolation of Main Steam Line A with MSL B, C, and D parentheses.   |  | <u>NA</u>     | <i>No action required. This is a procedure note.</i> |
|                               | Reactor power is limited to less than or equal to 75% RTP with one Main Steam Line out of service.   |  |               |  |
|                               | Isolation of a main steam line inputs a reactor trip signal to one of the divisional logic circuits of RPS. AOP-0003, Automatic Isolations contains actions to be taken upon an automatic isolation of the main steam lines. |  |               |  |
|                               | A high steam line flow isolation in any steam line causes all MSIVs to close.  |  |               |  |
| <u>      </u> 1.<br>5.1.1     | Lower Reactor power to less than or equal to 75%.  | Candidate verified reactor power less than or equal to 75%.                              | <u>      </u> |  |
| <u>      </u> 2.<br>5.1.2     | Perform a slow closure of B21-AOVF028A(B)(C)(D), MSL A(B)(C)(D) OUTBD MSIV as follows:   |  | <u>NA</u>     | <i>No action required. Actions follow below.</i>     |
| * <u>      </u> 3.<br>5.1.2.1 | Place B21-AOVF028A(B)(C)(D), MSL A(B)(C)(D) OUTBD MSIV, Control Switch in OPEN/SLOW TEST   | Candidate located/identified and positioned B21-AOVF028A to the OPEN/SLOW TEST position. | <u>      </u> |  |

**RJPM-NRC12-S3**

| <b>PERFORMANCE STEP</b>      |   | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>  |
|------------------------------|---|--|------------|--|
| *<br>_____4.<br><br>5.1.2.2. | Depress and hold MSL A(B)(C)(D) OUTBD MSIV TEST Pushbutton.   | Candidate located/identified and depressed the MSL A OUTBD MSIV TEST pushbutton and maintained the button in the depressed condition.  | _____      | <i>The following alarms will annunciate and are expected for this evolution:</i><br><br><ul style="list-style-type: none"> <li>• H13-P808-52A-H01</li> <li>• H13-P680-06A-B06</li> </ul> |
| *<br>_____5.<br><br>5.1.2.3. | <u>WHEN</u> B21-AOVF028A(B)(C)(D), MSL A(B)(C)(D) OUTBD MSIV, is fully closed, <u>THEN</u> place the OPEN-SLOW TEST Control Switch in CLOSE | When B21-AOVF028A reached the fully closed position indicated by GREEN light ON and RED light OFF, the candidate placed the B21-AOVF028A control switch to the CLOSE position. | _____      |  |
| _____6.<br><br>5.1.2.4.      | Release MSL A(B)(C)(D) OUTBD MSIV TEST Pushbutton.  | Candidate released the MSL A OUTBD MSIV TEST pushbutton.   | _____      |  |
| _____7.<br><br>5.1.3.        | Perform a slow closure of B21-AOVF022A(B)(C)(D), MSL A(B)(C)(D) INBD MSIV, as follows:  |  | <u>NA</u>  | <i>No action required. Actions follow below.</i>   |
| *<br>_____8.<br><br>5.1.3.1  | Place B21-AOVF022A(B)(C)(D), MSL A(B)(C)(D) INBD MSIV Control Switch in OPEN/SLOW TEST  | Candidate located/identified and positioned B21-AOVF022A to the OPEN/SLOW TEST position.   | _____      |  |
| *<br>_____9.<br><br>5.1.3.2  | Depress and hold MSL A(B)(C)(D) INBD MSIV TEST Pushbutton.  | Candidate located/identified and depressed the MSL A INBD MSIV TEST pushbutton and maintained the button in the depressed condition.   | _____      | <i>The following alarms will annunciate and are expected for this evolution:</i><br><br><ul style="list-style-type: none"> <li>• H13-P808-52A-H02</li> <li>• H13-P680-06A-B06</li> </ul> |

**RJPM-NRC12-S3**

| <b>PERFORMANCE STEP</b> |   | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b> |
|-------------------------|---|---|------------|-----------------|
| *<br>10.<br>5.1.3.3.    | <u>WHEN</u> B21-AOVF022A(B)(C)(D), MSL A(B)(C)(D) INBD MSIV, is fully closed, <u>THEN</u> place the OPEN-SLOW TEST Control Switch in CLOSE. | When B21-AOVF022 reached the fully closed position indicated by GREEN light ON and RED light OFF, the candidate placed the B21-AOVF022A control switch to the CLOSE position. | _____      |                 |
| 11.<br>5.1.3.4.         | Release MSL A(B)(C)(D) INBD MSIV TEST Pushbutton.   | Candidate released the MSL A INBD MSIV TEST pushbutton.   | _____      |                 |

**Terminating Cue:** The “A” Main Steam Line is isolated in accordance with SOP-0011 Section 5.1.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            **Satisfactory / Unsatisfactory**

**Note:** An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**RJPM-NRC12-S3**

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** The plant is operating in Mode 1 at 70% power. A packing leak in the steam tunnel has resulted in the need to isolate the “A” steam line to isolate this leak.

**Initiating Cues:** The CRS has directed you to isolate the “A” main steam line in accordance with SOP-0011, MAIN STEAM SYSTEM, Section 5.1

**RIVER  
BEND STATION**

Number: **RJPM-NRC12-S4**  
Revision: **00**  
Page 1 of 11

**ALTERNATE PATH**

**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**SHIFT DIVISIONS OF CONTROL BUILDING CHILLERS**

**REASON FOR REVISION:**

2012 NRC Exam JPM

**S4**

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6-25-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

# RJPM-NRC12-S4

|                                     |   |       |           |          |                    |          |
|-------------------------------------|---|-------|-----------|----------|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Shift Control Building Chillers between divisions |       |           |          |                    |          |
| <b>TASK REFERENCE:</b>              | 291012001004                                      |       |           |          |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 290003  | A2.01 | 3.1/3.2   |          |                    |          |
|                                     |   | A3.01 | 3.3/3.5   |          |                    |          |
|                                     |   | A4.01 | 3.2/3.2   |          |                    |          |
|                                     |   | K4.01 | 3.1/3.2   |          |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance                              |       |           |          | Actual Performance | <b>X</b> |
|                                     | Control Room                                      |       | Simulator | <b>X</b> | In-Plant           |          |
| <b>COMPLETION TIME:</b>             | 10 min.   |       |           |          |                    |          |
| <b>MAX TIME:</b>                    | N/A   |       |           |          |                    |          |
| <b>JOB LEVEL:</b>                   | RO/SRO  |       |           |          |                    |          |
| <b>TIME CRITICAL:</b>               | No  |       |           |          |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No  |       |           |          |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No  |       |           |          |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | YES   |       |           |          |                    |          |
| <b>SAFETY FUNCTION</b>              | 9   |       |           |          |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Shift Control Building Chillers between divisions.

**Required Power:** Any

**IC No.:** 210

**Notes: Insert the following:**

**Malfunctions:**

P863\_74a:c\_6

**Overrides:**

DI\_HVK-P1B STOP

LO\_HVC-D2A1-A OFF

T1 LO\_HVK-CHL1A-A ON

T1 LO\_HVK-CHL1A-G ON

T1 LO\_HVK-CHL1A-R OFF

T2 LO\_HVK-CHL1A-G ON delete in 2 seconds

T2 LO\_HVK-CHL1A-R OFF delete in 2 seconds

T2 LO\_HVK-CHL1A-A OFF

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | SOP-0066, Rev 309 Control Building HVAC Chilled Water System (Sys #410)                  |
| <b>Required Materials:</b>         | SOP-0066, Rev 309 Control Building HVAC Chilled Water System (Sys #410) (Simulator copy) |
| <b>Required Plant Condition:</b>   | Any  |
| <b>Task Standard:</b>              | Following identification of failure, original division is returned back to service.      |
| <b>Applicable Objectives:</b>      | RLP-STM-0402, Objectives 7, 8  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-S4

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

HVK-P1A is to be tagged out for scheduled maintenance. The 'A' chiller has been running for 3 days.

### **Initiating Cue:**

The CRS directs you to rotate divisions of HVK from Div 1 to Div 2 with HVK-CHL1B in service with HVK-P1B in accordance with SOP-0066, Control Building HVAC Chilled Water System, Section 5.4.

**RJPM-NRC12-S4**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b>   |
|-------------------------|--|---|------------|---|
| 1.<br>5.4.1             | Check that the operating chiller has been running for at least 20 minutes.   | Candidate verified that the chiller had been running for 3 days per the Initial Conditions          | _____      |   |
| <u>NOTE:</u>            | NOTE: The controls and indications in this section are located at H13-P863, unless otherwise specified.                              |   | <u>NA</u>  | <i>No action required. This is a procedure note.</i>  |
| *<br>5.4.2              | Stop the running Control Building Chilled Water Pump.  | Candidate turned the HVK-P1A pump control switch to the STOP position.                              | _____      | <i>Note: Several annunciators will be received on H13-P863 when this step is performed.</i> |
| 3.<br>5.4.3             | Verify the running chiller automatically trips.  | Candidate verified that HVK-CHL1A tripped by observing the red light extinguish and green light on. | _____      |   |
| <u>NOTE:</u>            | NOTE:<br>Chiller 1B/1D or 1A/1C pre-trip comes in and clears<br><br>Division I Chilled Water Pumps have a 30 second start time delay |   | <u>NA</u>  |   |
| *<br>5.4.4              | Check that the standby chilled water pump starts and its discharge valve opens.  | <u><b>ALTERNATE PATH</b></u><br><br>Candidate identified that the HVK-P1B did not start.            | _____      |   |

**RJPM-NRC12-S4**

| <b>PERFORMANCE STEP</b>            |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b>   |
|------------------------------------|--|---|------------|---|
| *<br>5.4.5                         | IF the standby chilled water pump does not start, THEN go to Step 5.4.7.   | Candidate transitioned to Section 5.4.7 of SOP-0066.  | _____      | <b>EVALUATOR CUE: If a report is provided to the CRS concerning the trip, acknowledge the report.</b> |
| <b>TRANSITION TO SECTION 5.4.7</b> |  |   |            |   |
| <u>NOTE:</u>                       | NOTE:<br>Steps 5.4.7 thru 5.4.11 resets the chiller logic and places the chiller in standby. A chiller can <u>not</u> be started until 2 ½ minutes have elapsed since it was stopped. This time delay allows sufficient time for the guide vanes to close and ensure no-load starting of the chiller |   | <u>NA</u>  | <i>No action required. This is a procedure note.</i>  |
| 6.<br>5.4.7                        | Check the previously running AHUs and fans have stopped  | Candidate checked that previously running AHUs have stopped as follows:<br><br>HVC-ACU1A and 2A Green light ON, Red light OFF and Amber light ON.<br><br>HVC-FN3A Green light ON and Red light OFF. | _____      |   |
| *<br>5.4.8                         | Verify at least 3 minutes has elapsed since chiller was stopped, THEN Reset trips on the previously running AHUs as follows:   | Candidate waited 3 minutes prior to proceeding.   | _____      |   |
| *<br>•<br>8.                       | Depress STOP on HVC-ACU1A(B), CR AHU A(B).   | Candidate depressed STOP on HVC-ACU1A   | _____      |   |



**RJPM-NRC12-S4**

|                              | <b>PERFORMANCE STEP</b>  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b>                                      |
|------------------------------|--|---|------------|--|
| *<br>●                       | 9. Depress STOP on HVC-ACU2A(B), CONTROL BLDG AHU A(B).  | Candidate depressed STOP on HVC-ACU2A                               | _____      |  |
| *<br>●                       | 10. Place HVC-ACU3A(B), EQPT RM AHU A(B) Switch to STOP then back to AUTO.   | Candidate placed switch for HVC-ACU3A to STOP and then back to AUTO | _____      |  |
| _____<br>11.<br>5.4.9        | <u>IF</u> when resetting the AHUs in Step 5.4.8, a running AHU trips, <u>THEN</u> depress the LOCKOUT and then the RESET Pushbutton on the tripped AHU to automatically restart the AHU. |   | <u>NA</u>  | <i>No action required by this conditional step.</i>  |
| <u>NOTE:</u>                 | <u>Note:</u><br>Step 5.4.10 & 5.4.11 Resets the Chilled Water Pump start logic.  |   | <u>NA</u>  | <i>No action required. This is a procedure note.</i> |
| _____<br>12<br>.<br>5.4.10.  | Verify HVK-P1A(B)(C)(D), CHILLED WATER PUMP A(B)(C)(D) Switch for the previously running pump is in STOP.  | Candidate checked that HVK-P1A switch is in STOP.                   | _____      |  |
| *<br>_____<br>13.<br>5.4.11. | Place HVK-P1A(B)(C)(D), CHILLED WATER PUMP A(B)(C)(D) Switch for the previously running pump to AUTO.  | Candidate placed HVK-P1A switch to AUTO                             | _____      |  |

**RJPM-NRC12-S4**

| <b>PERFORMANCE STEP</b> |   | <b>STANDARD</b>                                   | <b>S/U</b> | <b>COMMENTS</b>  |
|-------------------------|---|---|------------|--|
| 5.4.12.                 | Perform the following for the previously running chiller:                                     |   | <u>NA</u>  | <i>No action required. Actions performed below.</i>  |
| * ____ 14.<br>5.4.12.1  | Depress STOP on HVK-CHL1A(B)(C)(D), CONT BLDG CHILLER A(B)(C)(D) Start/Stop/Reset Pushbutton. | Candidate depressed STOP pushbutton on HVK-CHL1A  | _____      |  |
| * ____ 15.<br>5.4.12.2  | Depress RESET on HVK-CHL1A(B)(C)(D) Start/Stop/Reset Pushbutton                               | Candidate depressed RESET pushbutton on HVK-CHL1A | _____      |  |
| 5.4.13                  | Verify the following:   |   | <u>NA</u>  | <i>No action required. Actions performed below.</i>  |
| ____ 16.<br>5.4.13.1    | Standby Chiller starts.   | Candidate verified that HVK-CHL1A restarted.      | _____      |  |
| ____ 17.<br>5.4.13.2    | Standby Chiller Recirc Service Water Pump suction valve opens.                                | Candidate verified that SWP-MOV27A opened.        | _____      |  |
| ____ 18.<br>5.4.13.3    | Standby Chiller Recirc Service Water Pump starts.   | Candidate verified that SWP-P3A starts            | _____      | <b><u>EVALUATOR CUE:</u></b><br><b>When the candidate makes contact with the Control Building operator to perform Section 5.4.14, notify the candidate as the Control Building operator that you will complete the remainder of Section 5.4 of SOP-0066.</b> |

**Terminating Cue:** HVK-CHL1A, is restored to service following the failure of Division 2.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

- Initial Conditions:** HVK-P1A is to be tagged out for scheduled maintenance. The 'A' chiller has been running for 3 days.
- Initiating Cues:** The CRS directs you to rotate divisions of HVK from Div 1 to Div 2 with HVK-CHL1B in service with HVK-P1B in accordance with SOP-0066, Control Building HVAC Chilled Water System, Section 5.4.

**RIVER  
BEND STATION**

Number: **RJPM-NRC12-S5**  
Revision: **00**  
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**ALTERNATE PATH**

**JOB PERFORMANCE MEASURE**

---



**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**SHUTDOWN THE HIGH PRESSURE CORE SPRAY PUMP AFTER AN  
INADVERTENT AUTOMATIC INITIATION**

**REASON FOR REVISION:**

2012 NRC Exam JPM

**S5**

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6-26-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-S5**

|                                     |   |       |           |          |                    |          |
|-------------------------------------|---|-------|-----------|----------|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Shutdown the High Pressure Core Spray Pump after an Inadvertent Automatic Initiation. |       |           |          |                    |          |
| <b>TASK REFERENCE:</b>              | 206016001001  |       |           |          |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 209002  | A1.01 | 3.6/3.7   | 209002   | A1.02              | 3.4/3.6  |
|                                     | 209002  | A1.08 | 3.1/3.3   | 209002   | A2.08              | 3.1/3.2  |
|                                     | 209002  | A3.01 | 3.3/3.3   | 209002   | A3.03              | 3.6/3.6  |
|                                     | 209002  | A3.04 | 3.7/3.7   | 209002   | A4.01              | 3.7/3.7  |
|                                     | 209002  | A4.03 | 3.8/3.8   | 209002   | A4.04              | 3.1/3.1  |
|                                     | 209002  | A4.15 | 3.6/3.6   |          |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance  |       |           |          | Actual Performance | <b>X</b> |
|                                     | Control Room  |       | Simulator | <b>X</b> | In-Plant           |          |
| <b>COMPLETION TIME:</b>             | 10 min.   |       |           |          |                    |          |
| <b>MAX TIME:</b>                    | N/A   |       |           |          |                    |          |
| <b>JOB LEVEL:</b>                   | RO/SRO  |       |           |          |                    |          |
| <b>TIME CRITICAL:</b>               | No  |       |           |          |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No  |       |           |          |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No  |       |           |          |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | YES   |       |           |          |                    |          |
| <b>SAFETY FUNCTION</b>              | 2   |       |           |          |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Shutdown the High Pressure Core Spray Pump after an Inadvertent Automatic Initiation with a failure of the HPCS minimum flow valve to automatically open.

**Required Power:** Reactor Power 70%

**IC No.:** 212

**Notes:** The following malfunctions are snapped into this IC to support this JPM:

**DG002C**  
**HPCS006**

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | SOP-0030, Rev 027 High Pressure Core Spray                                  |
| <b>Required Materials:</b>         | SOP-0030, Rev 027 High Pressure Core Spray<br>(Simulator copy)              |
| <b>Required Plant Condition:</b>   | ANY   |
| <b>Task Standard:</b>              | High Pressure Core Spray Pump is shutdown with the minimum flow valve open. |
| <b>Applicable Objectives:</b>      | RLP-STM-0203 Objectives 3, 4, 7, and 11                                     |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.



If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

**Initial Conditions:**

The plant is operating at about 70% power after an inadvertent HPCS initiation. The HPCS Diesel Generator has been shutdown.

**Initiating Cue:**

The CRS has directed you to shutdown the High Pressure Core Spray Pump using SOP-0030, High Pressure Core Spray, Section 6.

**RJPM-NRC12-S5**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>                                      |
|-------------------------|--|--|------------|--|
| <u>NOTE:</u>            | NOTE:<br>Precautions 2.9 and 2.10 should be referred to prior to HPCS System shutdown  |  | <u>NA</u>  | <i>No action required. This is a procedure note.</i> |
| _____ 1.<br>6.1         | Verify E22A-S2, HPCS MANUAL INITIATION collar is in the DISARM position.   | Candidate attempted to rotate Manual Initiation pushbutton collar to the DISARM position or noted that the red indicator mark on the collar is aligned with the DISARM position. | _____      |  |
| <u>NOTE:</u>            | If the HPCS initiation signal is unable to be reset using E22A-S7, HPCS INITIATION RESET Pushbutton, the HPCS Pump can be overridden and stopped. This will prevent an automatic start of the HPCS Pump until the initiation signals clear and E22A-S7 is depressed.<br><br>Resetting the High Level 8 signal prior to resetting the injection signal will result in opening E22-F004, HPCS INJECT ISOL VALVE. |  | <u>NA</u>  | <i>No action required. This is a procedure note.</i> |
| * _____ 2.<br>6.2       | Depress E22A-S7, HPCS INITIATION RESET pushbutton and check the white light goes off.  | Candidate depressed HPCS INITIATION RESET pushbutton and verified WHITE light is OFF.  | _____      |  |

**RJPM-NRC12-S5**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>                                  |
|-------------------------|--|--|------------|--|
| 6.3                     | Verify closed the following valves:                |  | <u>NA</u>  | <i>No action required. Actions follow below.</i> |
| _____3.<br>6.3.1        | E22-F023, HPCS TEST RETURN VLV TO SUPPRESSION POOL | Candidate located/identified and verified E22-F023 is CLOSED by GREEN light indication ON and RED light indication OFF.  | _____      |  |
| _____4.<br>6.3.2        | E22-F010, HPCS TEST BYPASS VLV TO CST              | Candidate located/identified and verified E22-F010 is CLOSED by GREEN light indication ON and RED light indication OFF.  | _____      |  |
| _____5.<br>6.3.3        | E22-F011, HPCS TEST RETURN VALVE TO CST            | Candidate located/identified and verified E22-F011 is CLOSED by GREEN light indication ON and RED light indication OFF.  | _____      |  |
| * _____6.<br>6.3.4      | E22-F004, HPCS INJECT ISOL VALVE                   | Candidate located/identified and closed E22-F004 by placing the handswitch to the CLOSED position and verifying the GREEN light indication ON and RED light indication OFF following completion of the valve stroke. | _____      |  |

**RJPM-NRC12-S5**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b>   |
|-------------------------|--|---|------------|---|
| *<br>7.<br>6.4          | When flow lowers below 625 gpm on E22-R603, HPCS FLOW, verify E22-F012, HPCS MIN FLOW VALVE TO SUPPRESSION POOL opens.   | <p><b><u>ALTERNATE PATH</u></b></p> <p>Candidate recognized the failure of E22-F012 to open automatically.</p> <p>Candidate manually opened E22-F012 by placing the handswitch in OPEN and verifying RED light ON and GREEN light OFF <u>OR</u> immediately tripped the HPCS pump.</p> <p>ACTION SHOULD OCCUR WITHIN 60 SECONDS</p> | _____      | <p>Candidate may wait for up to 21 seconds for transmitter saturation to dissipate prior to recognizing failure of E22-F012<br/>(Precaution &amp; Limitation 2.2)</p> <p>NOTE: As a conservative action, an immediate pump trip may be initiated. Remaining steps should be performed following the trip.</p> <p><b><u>EVALUATOR CUE:</u></b> As CRS acknowledge report of the failure of E22-F012 to open.</p> |
| _____<br>5.<br>6.5      | If E22-PC003, HPCS LINE FILL PUMP is not running, then start E22-PC003.  | Candidate verified that E22-PC003 running with RED light ON, GREEN light OFF.   | _____      |   |
| *<br>6.<br>6.6          | Trip E22-ACB02, HPCS PUMP SUPPLY BRKR.   | Candidate manually opened breaker E22-ACB02 by placing the handswitch to the TRIP position and verified by GREEN light ON, RED light OFF.   | _____      |   |
| _____<br>7.<br>6.7      | When HPCS Pump discharge pressure lowers below 300 psig on E22-R601, HPCS PUMP DISCH PRESSURE, then verify E22-F012, HPCS MIN FLOW VALVE TO SUPPRESSION POOL closes. | Candidate checked that E22-F012 auto close when pressure drops below 300 psig by observing GREEN light ON, RED light OFF.   | _____      |   |

**RJPM-NRC12-S5**

| PERFORMANCE STEP |  | STANDARD | S/U       | COMMENTS  |
|------------------|--|----------|-----------|---|
| _____8.<br>6.8   | <u>IF</u> the HPCS DG is operating, <u>THEN</u><br>shut down the DG per SOP-0052,<br>HPCS Diesel Generator |          | <u>NA</u> | <i>No action required. Initial conditions stated that the diesel generator was secured.</i> |

**Terminating Cue:** High Pressure Core Spray Pump is shutdown and faulty minimum flow valve was identified.

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** The plant is operating at about 70% power after an inadvertent HPCS initiation. The HPCS Diesel Generator has been shutdown.

**Initiating Cues:** The CRS has directed you to shutdown the High Pressure Core Spray Pump using SOP-0030, High Pressure Core Spray, Section 6.

**RIVER  
BEND STATION**

Number: \***RJPM-NRC12-S6**  
Revision: **01**  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|   |
|---|
| <b>START RESIDUAL HEAT REMOVAL IN THE SHUTDOWN COOLING MODE</b> |
|---|

**REASON FOR REVISION:**

|                   |
|-------------------|
| 2012 NRC Exam JPM |
|-------------------|

|           |
|-----------|
| <b>S6</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6-26-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information



**RJPM-NRC12-S6**

|                                     |  |       |           |          |                    |          |
|-------------------------------------|--|-------|-----------|----------|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Start RHR A in the Shutdown Cooling Mode |       |           |          |                    |          |
| <b>TASK REFERENCE:</b>              | 205011001001                             |       |           |          |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 205000                                   | A4.01 | 3.7/3.7   | A4.02    | 3.6/3.5            |          |
|                                     | 205000                                   | A4.03 | 3.6/3.5   | A4.04    | 3.4/3.3            |          |
|                                     | 205000                                   | A4.06 | 3.8/3.7   | A4.07    | 3.7/3.7            |          |
|                                     | 205000                                   | A4.09 | 3.1/3.1   | A4.10    | 2.9/3.0            |          |
|                                     | 205000                                   | A4.11 | 3.2/3.2   | A4.12    | 3.4/3.4            |          |
|                                     | 205000                                   | K1.14 | 3.6/3.6   |          |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance                     |       |           |          | Actual Performance | <b>X</b> |
|                                     | Control Room                             |       | Simulator | <b>X</b> | In-Plant           |          |
| <b>COMPLETION TIME:</b>             | 20 MINUTES.                              |       |           |          |                    |          |
| <b>MAX TIME:</b>                    | 40 MINUTES                               |       |           |          |                    |          |
| <b>JOB LEVEL:</b>                   | RO/SRO                                   |       |           |          |                    |          |
| <b>TIME CRITICAL:</b>               | No                                       |       |           |          |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No                                       |       |           |          |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No                                       |       |           |          |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No                                       |       |           |          |                    |          |
| <b>SAFETY FUNCTION</b>              | 4  |       |           |          |                    |          |

**SIMULATOR SETUP SHEET**

**Task Description:** Start RHR “A” in the Shutdown Cooling Mode.

**Required Power:** Shutdown, RPV pressure < 135 psig.

**IC No.:** 202

**Notes:** **Insert malfunction: E12MOV064A Breaker Trip**

Place Caution Tag on E12-MOV064A

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | SOP-0031 Rev 315, RESIDUAL HEAT REMOVAL (SYS #204)                                 |
| <b>Required Materials:</b>         | SOP-0031 Rev 315, RESIDUAL HEAT REMOVAL (Simulator copy)                           |
| <b>Required Plant Condition:</b>   | RPV Pressure < 135 psig, Reactor Level > 9.7 inches                                |
| <b>Task Standard</b>               | RHR "A" placed in Shutdown Cooling Mode in accordance with SOP-0031 Section 4.4.9. |
| <b>Applicable Objectives:</b>      | RLP-STM-0204 Objective 8f  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-S6

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### Initial Conditions:

The unit has been shutdown and is being depressurized for a refueling outage. The plant is currently in Mode 4. RHR “A” has been flushed and warmed for Shutdown Cooling operation. The system has been filled and vented.

E12-MOV64A is de-energized and Administrative controls are in place for EHS-MCC2E BKR 5C.  
This valve has been field verified to be closed.

HVR-UC6, AUX BLDG UNIT CLR 6 is in service.

### Initiating Cue:

The CRS has directed you to place RHR “A” in the Shutdown Cooling Mode in accordance with SOP-0031 Section 4.4.9.

| PERFORMANCE STEP |   | STANDARD | S/U       | COMMENTS  |
|------------------|---|----------|-----------|---|
| <u>CAUTION</u>   | <u>CAUTION:</u><br>If adequate core circulation is <u>not</u> maintained, Reactor coolant temperature indication is <u>not</u> accurate. Natural circulation through the core must be established by raising the Reactor water level to greater than or equal to 75 inches to establish natural circulation to allow flow through the core and the feed water annulus |          | <u>NA</u> | <i>No action required. This is a procedure caution.</i> |

RJPM-NRC12-S6

| PERFORMANCE STEP |   | STANDARD | S/U       | COMMENTS  |
|------------------|---|----------|-----------|---|
| 4.4.9.1          | <p><u>NOTE:</u></p> <p>In Mode 5, during startup or line up changes of shutdown cooling, stop fuel movement in the upper cavity and ensure that all bundles are placed in their proper storage locations. This prevents the possibility of a suspended fuel bundle during a concurrent loss of cavity level.</p> <p><u>NOTE:</u></p> <ul style="list-style-type: none"> <li>During SDC Operation, it is preferred to use B21-R605, RX WATER LEVEL SHUTDOWN RANGE for level indication.</li> </ul> <p>Level instrument inputs to RHR isolations may fail to provide Level 3 isolations if the reference leg backfill system is out of service due to the potential of degassing of the reference legs.</p> |          | <u>NA</u> | <i>No action required. This is a procedure note.</i>  |
|                  | <p><u>IF</u> any of the following RHR Shutdown Cooling interlocks are to be bypassed, <u>THEN</u> obtain senior plant management review and approval and verify contingency methods are in place to supply sufficient makeup water if a draining event occurs while the SDC interlocks are bypassed:</p>  |          | <u>NA</u> | <b><u>EVALUATOR CUE:</u> If asked at the CRS, notify the candidate that the listed Shutdown Cooling interlocks will <u>not</u> be bypassed.</b> |

**RJPM-NRC12-S6**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>   |
|-------------------------|--|--|------------|---|
| <u>NOTE:</u>            | Only one Shutdown Cooling Isolation Valve is required to be operable. Opening the power supply breaker or lifting leads on one valve per approved procedures to prevent system isolation and loss of SDC during maintenance or testing is permissible. |  | <u>NA</u>  | <i>No action required. This is a procedure note.</i>                      |
| •                       | Low reactor water level isolation of E12-F008, RHR SHUTDOWN COOLING OUTBD ISOL VALVE and E12-F009, RHR SHUTDOWN COOLING INBD ISOL VALVE.   |  | <u>NA</u>  | <i>No action performed by this step. Interlocks will not be bypassed.</i> |
| •                       | Interlocks between E12-F004, RHR PUMP SUP PL SUCTION VALVE and E12-F006, RHR PUMP SDC SUCTION.   |  | <u>NA</u>  | <i>No action performed by this step. Interlocks will not be bypassed.</i> |
| ____ 1.<br>4.4.9.2      | On H13-P601, verify less than 135 psig Reactor Pressure as indicated on B21-R623A(B), RX LEVEL/PRESSURE RECORDER A(B).   | Candidate located/identified B21-R623A(B), RX LEVEL/PRESSURE RECORDER A(B) and verified reactor pressure is less than 135 psig   | ____       |   |
| 4.4.9.3                 | Verify closed the following  |  | <u>NA</u>  | <i>No action performed in this step. Actions follow below.</i>            |
| ____ 2.<br>4.4.9.3.1    | E12-F004A(B), RHR PUMP A(B) SUP PL SUCTION VALVE   | Candidate located/identified E12-F004A and verified it closed by the GREEN light indicating ON and the RED light indicating OFF. | ____       |   |

**RJPM-NRC12-S6**

| PERFORMANCE STEP    |  | STANDARD   | S/U       | COMMENTS   |
|---------------------|--|--|-----------|--|
| ____3.<br>4.4.9.3.2 | E12-F064A(B), RHR PUMP A(B)<br>MIN FLOW TO SUP PL  | Candidate verified E12-F064A closed by<br>information provided in Initial Conditions.  | ____      |  |
| ____4.<br>4.4.9.3.3 | E12-F024A(B), RHR PUMP A(B)<br>TEST RTN TO SUP PL  | Candidate located/identified E12-F024A and<br>verified it closed by the GREEN light indicating<br>ON and the RED light indicating OFF.               | ____      |  |
| ____5.<br>4.4.9.3.4 | E12-F037A(B), RHR A(B) TO<br>UPPER POOL FPC ASSIST   | Candidate located/identified E12-F037A and<br>verified it closed by the GREEN light indicating<br>ON and the RED light indicating OFF.               | ____      |  |
| ____6.<br>4.4.9.3.5 | E12-F048A(B), RHR A(B) HX<br>BYPASS VALVE.   | Candidate located/identified E12-F048A and<br>verified it closed by the GREEN light indicating<br>ON and the RED light indicating OFF.               | ____      |  |
| ____7.<br>4.4.9.3.6 | E12-F011A(B), RHR A(B) HX CNDS<br>FLUSH TO SUP PL.   | Candidate located/identified E12-F011A and<br>verified it closed by the GREEN light indicating<br>ON and the RED light indicating OFF.               | ____      |  |
| ____8.<br>4.4.9.4   | Place in OFF and initiate<br>administrative controls for<br>EHS-MCC2E(2F) BKR 5C(7B),<br>C002A(B) DISCH MIN FLOW<br>VALVE                          | Candidate verified administrative controls on<br>EHS-MCC2E BKR5C for C002A DISCH MIN<br>FLOW VALVE by information provided in<br>Initial Conditions. | ____      |  |
| 4.4.9.5             | <u>IF</u> Standby Service Water is<br>supplying service water loads, <u>THEN</u><br>on H13-P870, verify closed SPC-<br>AOV16, SPC HX SW DISCH VLV. |  | <u>NA</u> | <i>No action required for this<br/>conditional step. Normal Service<br/>Water is in service.</i> |



**RJPM-NRC12-S6**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b>  |
|-------------------------|--|---|------------|--|
| <u>NOTE:</u>            | <p><u>NOTE:</u></p> <p>Two Standby Service Water Pumps are required in each loop when operating the Standby Service Water System for heat removal through the RHR Heat Exchangers.</p> |   | <u>NA</u>  | <i>No action required. This is a procedure note.</i>   |
| * _____ 9.<br>4.4.9.6   | On H13-P870, throttle open E12-F068A(B), RHR HX A(B) SVCE WTR RTN to establish less than or equal to 5800 gpm flow as indicated on H13-P601, E12-R602A(B), RHR HX A(B) SVCE WTR FLOW.  | Candidate located/identified E12-F068A and throttled open the valve to establish less than or equal to 5800 gpm as indicated on H13-P601, E12-R602A.  | _____      | <i>Note that valve control switch and flow indicator are on different panels and may require the candidate to make several trips across the room to accomplish this step.</i>          |
| _____ 10.<br>4.4.9.7    | Verify Step 4.4.2 has been performed.  | Candidate verified step 4.4.2 complete by requesting the status of Electrical Maintenance PM Task to re-land the thermal overload/loss of power annunciator leads for E12-F009, RHR SHUTDOWN COOLING INBD ISOL VALVE. | _____      | <b><u>EVALUATOR CUE:</u> When requested, as Electrical Maintenance, notify the candidate that the thermal overload/loss of power annunciator lead for E12-F009 has been re-landed.</b> |
| _____ 11.<br>4.4.9.8    | At H13-P601, depress B21H-S32(33), OUTBD(INBD) ISOLATION SEAL-IN RESET Pushbutton.   | Candidate located/identified AND depressed B21H-S32(33) OUTBD(INBD) ISOLATION SEAL-IN RESET PUSHBUTTON on H13-P601.   | _____      |  |
| _____ 12.<br>4.4.9.9    | At H13-P601, check RHR ISOLATION Status Lights are ON for E12-F008 and E12-F009.   | Candidate located/ identified and verified the RHR ISOLATION Status Lights are ON for E12-F008 and E12-F009 on H13-P601.  | _____      |  |

**RJPM-NRC12-S6**

| PERFORMANCE STEP       |   | STANDARD  | S/U       | COMMENTS  |
|------------------------|---|---|-----------|---|
| ____ 13.<br>4.4.9.10   | In the Div 1 RSS Room at C61-PNL001, verify E12-MOVF008 ENABLE/DISABLE Switch is in ENABLE.   | Candidate verified E12-MOVF008 ENABLE/DISABLE Switch is in ENABLE by contacting the Control Building operation to request status. | _____     | <b><u>EVALUATOR CUE:</u> When requested, as Control Building operator, notify the candidate that E12-MOVF008 ENABLE/DISABLE switch in ENABLE.</b> |
| <u>CAUTION</u>         | <u>CAUTION:</u><br>Opening the Shutdown Cooling Isolation Valves with portions of the RHR piping empty, a significant lowering in reactor level can occur. Do <u>not</u> open the Shutdown Cooling Isolation Valves unless the RHR piping including suction lines is completely filled. |   | <u>NA</u> | <i>No action required. This is a procedure caution.</i>   |
| 4.4.9.11               | Verify open the following:  |   | <u>NA</u> | <i>No action required. Actions follow below.</i>  |
| ____ 14.<br>4.4.9.11.1 | E12-F010, RHR SDC MAN ISOL VLV  | Candidate located/identified and verified E12-F010 open by checking RED indicating light ON and GREEN indicating light OFF.       | _____     |   |
| ____ 15.<br>4.4.9.11.2 | E12-F009, RHR SHUTDOWN COOLING INBD ISOL VALVE  | Candidate located/identified and verified E12-F009 open by checking RED indicating light ON and GREEN indicating light OFF.       | _____     |   |
| ____ 16.<br>4.4.9.11.3 | E12-F008, RHR SHUTDOWN COOLING OUTBD ISOL VALVE   | Candidate located/identified and verified E12-F008 open by checking RED indicating light ON and GREEN indicating light OFF.       | _____     |   |

**RJPM-NRC12-S6**

| <b>PERFORMANCE STEP</b>           |   | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b> |
|-----------------------------------|---|--|------------|-----------------|
| ____17.<br>4.4.9.11.4             | E12-F006A(B), RHR PUMP A(B)<br>SDC SUCTION VALVE  | Candidate located/identified and verified E12-F006A open by checking RED indicating light ON and GREEN indicating light OFF.   | ____       |                 |
| ____18.<br>4.4.9.11.5             | E12-F047A(B), RHR A(B) HX<br>INLET VALVE  | Candidate located/identified and verified E12-F0047A open by checking RED indicating light ON and GREEN indicating light OFF.  | ____       |                 |
| *____19.<br>4.4.9.12<br>&<br>NOTE | Verify open one of the following:<br><ul style="list-style-type: none"> <li>E12-F053A(B), RHR PUMP A(B)<br/>SDC INJECTION VALVE</li> </ul> NOTE:<br>Flow can be diverted to the refueling cavity sparger only if the Drywell and RPV heads are removed and in shutdown cooling<br><ul style="list-style-type: none"> <li>E12-F037A(B), RHR A(B) TO<br/>UPPER POOL FPC ASSIST</li> </ul> | Candidate recognized that in Mode 4, the only viable path is through E12-MOV-F053A.<br><br>Candidate located/identified and opened E12-MOV-F053A by holding the control switch in the OPEN position and by verifying the GREEN indicating light OFF and the RED indication light ON. | ____       |                 |
| *____20.<br>4.4.9.13              | Close E12-F003A(B), RHR A(B) HX<br>OUTLET VALVE   | Candidate located/identified and closed E12-F003A by placing the control switch in the CLOSE position and verifying the GREEN indicating light ON and the RED indicating light OFF.  | ____       |                 |
| ____21.<br>4.4.9.14               | Verify the respective cubicle unit cooler is in service   | Candidate verified HVR-UC6, AUX BLDG UNIT CLR 6 in service from initial conditions <u>OR</u> from indicating lights on H13-P870. HVR-UC6, AUX BLDG UNIT CLR 6 is indicated running by RED indicating light ON and GREEN indicating light OFF.  | ____       |                 |

**RJPM-NRC12-S6**

| <b>PERFORMANCE STEP</b>      |  | <b>STANDARD</b>  | <b>S/U</b>                                 | <b>COMMENTS</b>  |
|------------------------------|--|--|--|--|
| <u>CAUTION</u>               | <u>CAUTION:</u><br>Failure to establish greater than 1100 gpm within 25 seconds of pump start may cause pump damage from operation with less than minimum flow requirement. Do <u>not</u> allow more than 25 seconds to elapse before establishing greater than 1100 gpm |  | <u>NA</u>                                  | <i>No action required. This is a procedure caution.</i>  |
| <u>NOTE</u>                  | <u>NOTE:</u><br>The initiation of Shutdown Cooling with the reference leg backfill system out of service can result in more pronounced notching of indicated reactor level requiring reactor level trends to be monitored more closely.                                  |  | <u>NA</u>                                  | <i>No action required. This is a procedure note.</i>   |
| * <u>22.</u><br><br>4.4.9.15 | Start E12-C002A(B), RHR PUMP A(B) and <u>IMMEDIATELY</u> throttle open E12-F048A(B), RHR A(B) HX BYPASS VALVE to obtain greater than or equal to 2000 gpm and less than or equal to 3000 gpm.  | Candidate located/identified and started E12-C002A by placing the control switch to the CLOSE position and verified RED indicating light ON and GREEN indicating light OFF.<br><br><u>AND</u><br><br>Candidate located/identified and opened E12-F048A to obtain 2000-3000 gpm on E12-R603A RHR A LOOP FLOW meter. | —<br><br><br><br><br><br><br><br><br><br>— | <i>The following alarm will annunciate and is expected for this evolution:</i><br><br><ul style="list-style-type: none"> <li>• H13-P680-19A-F07</li> </ul> <i>It is acceptable for the candidate to immediately raise flow to 4000-5000 gpm per the next step without stopping between 2000-3000 gpm. This step is to provide for adequate minimum flow protection for the pump.</i> |

**RJPM-NRC12-S6**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b> |
|-------------------------|--|---|------------|-----------------|
| *____23.<br>4.4.9.16    | Establish a stable flow of greater than or equal to 4000 gpm and less than or equal to 5000 gpm by throttling E12-F048A(B), RHR A(B) HX BYPASS VALVE | Candidate located/identified and continued to open E12-F048A to obtain 4000-5000 gpm on E12-R603A RHR A LOOP FLOW meter.            | ____       |                 |
| *____24.<br>4.4.9.17    | Throttle open E12-F003A(B), RHR A(B) HX OUTLET VALVE to approximately 10 PERCENT as indicated on E12-R611A(B), HX A(B) OUTLET VLV POS                | Candidate located/identified and throttle open E12-F003A to approximately 10 percent as indicated on E12-R611A, HX A OUTLET VLV POS | ____       |                 |

**Terminating Cue: RHR 'A' is operating in the Shutdown Cooling lineup in accordance with SOP-0031 Section 4.4.9**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** The unit has been shutdown and is being depressurized for a refueling outage. The plant is currently in Mode 4. RHR “A” has been flushed and warmed for Shutdown Cooling operation. The system has been filled and vented.

E12-MOV64A is de-energized and Administrative controls are in place for EHS-MCC2E BKR 5C.

This valve has been field verified to be closed.

HVR-UC6, AUX BLDG UNIT CLR 6 is in service.

**Initiating Cues:** The CRS has directed you to place RHR “A” in the Shutdown Cooling Mode in accordance with SOP-0031 Section 4.4.9.

**RIVER  
BEND STATION**

Number: \***RJPM-NRC12-C1**  
Revision: **02**  
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**JOB PERFORMANCE MEASURE**

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**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|   |
|---|
| <b>RESPOND TO A LOSS OF CONTROL ROOM ANNUNCIATORS</b> |
|---|

**REASON FOR REVISION:**

|                   |
|-------------------|
| 2012 NRC Exam JPM |
|-------------------|

|           |
|-----------|
| <b>C1</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 8-22-2012 |
| Preparer                  | KCN  | Date      |
| David Bergstrom           | 0257 | 8/23/2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 8/22/2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/23/2012 |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information



**RJPM-NRC12-C1**

|                                     |  |          |           |  |                    |  |
|-------------------------------------|--|----------|-----------|--|--------------------|--|
| <b>TASK DESCRIPTION:</b>            | RESPOND TO A LOSS OF ALL CONTROL ROOM ANNUNCIATORS                   |          |           |  |                    |  |
| <b>TASK REFERENCE:</b>              | 400083004001   |          |           |  |                    |  |
| <b>K/A REFERENCE &amp; RATING:</b>  | 263000 K2.01 3.1/3.4<br>263000 K3.03 3.4/3.8<br>263000 A4.01 3.3/3.5 |          |           |  |                    |  |
| <b>TESTING METHOD:</b>              | Simulate Performance   | <b>X</b> |           |  | Actual Performance |  |
|                                     | Control Room   | <b>X</b> | Simulator |  | In-Plant           |  |
| <b>COMPLETION TIME:</b>             | 15 MINUTES.  |          |           |  |                    |  |
| <b>MAX TIME:</b>                    | 30 MINUTES   |          |           |  |                    |  |
| <b>JOB LEVEL:</b>                   | RO/SRO   |          |           |  |                    |  |
| <b>TIME CRITICAL:</b>               | NO   |          |           |  |                    |  |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |          |           |  |                    |  |
| <b>PSA RISK DOMINATE:</b>           | No   |          |           |  |                    |  |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |          |           |  |                    |  |
| <b>SAFETY FUNCTION</b>              | 6  |          |           |  |                    |  |

**SIMULATOR SETUP SHEET**

**Task Description:** NA

**Required Power:** NA

**IC No.:** NA

**Notes:** NONE: This JPM is performed in the Control Room and Plant.

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | AOP-0055 Rev 017   |
| <b>Required Materials:</b>         | AOP-0055 Rev 017 Section 5.3                                 |
| <b>Required Plant Condition:</b>   | ANY  |
| <b>Task Standard</b>               | Cause of annunciator loss has been identified and corrected. |
| <b>Applicable Objectives:</b>      | RLP-HLO-547 Objective 4                                      |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)                                       |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-C1

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

While operating at 100 percent power a total loss of control room annunciators occurred. AOP-0055, LOSS OF CONTROL ROOM ANNUNCIATORS has been entered. The Operations Shift Manager is reviewing EIP Emergency Action Levels for applicability. All available operations personnel are stationed to monitor indications for changing plant parameters. Maintenance personnel have been notified of the loss of annunciators.

### **Initiating Cue:**

The CRS has directed you to perform Section 5.3 of AOP-0055 to determine the cause for, and correct the loss of annunciator condition.

**RJPM-NRC12-C1**

| PERFORMANCE STEP       | STANDARD  | S/U                       | COMMENTS  |
|------------------------|---|---------------------------|---|
| <p>_____1.<br/>5.3</p> | <p>Candidate located H13-P630 and observed the status of the 24 VDC and 125 VDC power available lights.</p> <p>Candidate located H13-P850 and observed the status of the 24 VDC and 125 VDC power available lights.</p> | <p>_____</p> <p>_____</p> | <p><b><u>EVALUATOR CUE:</u> When the candidate has located the power available lights in H13-P630, notify the candidate that all lights are extinguished.</b></p> <p><i>Note: There are a total of 4 sets of power supply lights in H13-P630. Three power supplies are behind the right side door, and one behind the middle door.</i></p> <p><b><u>EVALUATOR CUE:</u> When the candidate has located the power available lights in H13-P850, notify the candidate that all lights are extinguished.</b></p> <p><i>Note: There are a total of 5 sets of power supply lights in H13-P850. Two power supplies are behind the left side door and one behind each of the other 3 doors.</i></p> |

**RJPM-NRC12-C1**

| PERFORMANCE STEP         | STANDARD   | S/U  | COMMENTS  |
|--------------------------|--|--|---|
| <p>_____2.<br/>5.3.1</p> | <p><u>IF</u> all power supplies in either H13-P630 <u>OR</u> H13-P850 are observed to be deenergized, <u>THEN</u> dispatch an operator to Main Control Room north end to check the following breakers:</p> <ul style="list-style-type: none"> <li>• For H13-P630, BYS-PNL02B2 BKR 2</li> <li>• For H13-P850, BYS-PNL02B2 BKR 17</li> </ul> | <p>Candidate located, identified and verified BYS-PNL02B2 BKR 2 is in the ON position.</p> <p>Candidate located, identified and verified BYS-PNL02B2 BKR 17 is in the ON position.</p> | <p><b><u>EVALUATOR CUE:</u></b> When the candidate has located BYS-PNL02B2 BKR 2 notify the candidate that the breaker handle is pointing to the <u>left</u> with the red half of the handle exposed.</p> <p><b><u>EVALUATOR CUE:</u></b> When the candidate has located BYS-PNL02B2 BKR 17 notify the candidate that the breaker handle is pointing to the <u>right</u> with the red half of the handle exposed.</p> |
| <p>_____3.<br/>5.3.2</p> | <p><u>IF</u> all power supplies in both H13-P630 <u>AND</u> H13-P850 are observed to be deenergized, <u>THEN</u> dispatch an operator to Normal Switchgear Building 98 ft el. to check BYS-SWG01B BKR 528<sup>1</sup></p>  | <p>Candidate located, identified and verified the status of BYS-SWG01B ACB 528<sup>1</sup></p>   | <p><b><u>EVALUATOR CUE:</u></b> When the candidate has located BYS-SWG01B ACB 528, point to the indicator window to the left of the operating mechanism and state that the window displays the word OPEN.</p> <p><sup>1</sup>Component labeled as ACB vs BKR. Procedure change will be processed after exam.</p>  |

**RJPM-NRC12-C1**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b>   |
|-------------------------|--|---|------------|---|
| * _____ 4.<br>5.3.3     | <p><u>IF</u> any of the following breakers are found to be open, <u>THEN</u> close the applicable breakers:</p> <p>BYS-PNL02B2 BKR 2</p> <p>BYS-PNL02B2 BKR 17</p> <p>BYS-SWG01B BKR 528</p> | Candidate located, identified and simulated closing BYS-SWG01B BKR 528 by simulating movement of the breaker handle downward and then back up to close the breaker. | _____      | <b><u>EVALUATOR CUE:</u> After candidate has simulated closing the BYS-SWG01B BKR 528, point to the indicator window to the left of the operating mechanism and state that the window displays the word CLOSED.</b> |
| _____ 5.<br>5.3.4       | <p><u>IF</u> a breaker was closed in Step 5.3.3 AND the breaker trips open, THEN contact Electrical Maintenance for assistance before attempting another closure.</p>                        | Candidate took no further action.   | <u>NA</u>  | <i>No action required by this step due to the breaker remaining closed in the previous step.</i>  |

**Terminating Cue: BYS-SWG01B has been closed (simulated) restoring power to control room annunciators.**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** While operating at 100 percent power a total loss of control room annunciators occurred. AOP-0055, LOSS OF CONTROL ROOM ANNUNCIATORS has been entered. The Operations Shift Manager is reviewing EIP Emergency Action Levels for applicability. All available operations personnel are stationed to monitor indications for changing plant parameters. Maintenance personnel have been notified of the loss of annunciators.

**Initiating Cues:** The CRS has directed you to perform Section 5.3 of AOP-0055 to determine the cause for, and correct the loss of annunciator condition.

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-C2  
Revision: 02  
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**JOB PERFORMANCE MEASURE**

---



**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|   |
|---|
| <b>PERFORM AVERAGE POWER RANGE MONITOR SETDOWN<br/>CHANNEL FUNCTIONAL TEST FOR APRM "B"</b> |
|---|

**REASON FOR REVISION:**

|                            |
|----------------------------|
| 2012 NRC Exam JPM – SRO/RO |
|----------------------------|

|           |
|-----------|
| <b>C2</b> |
|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6-25-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-C2**

|                                     |  |          |           |  |                    |  |
|-------------------------------------|--|----------|-----------|--|--------------------|--|
| <b>TASK DESCRIPTION:</b>            | Perform the APRM Weekly Setdown Channel Functional Test FOR APRM “B” |          |           |  |                    |  |
| <b>TASK REFERENCE:</b>              | 215001002001   |          |           |  |                    |  |
| <b>K/A REFERENCE &amp; RATING:</b>  | 215005 A4.03   |          | 3.2/3.2   |  |                    |  |
|                                     | 215005 A 4.05  |          | 3.4/3.4   |  |                    |  |
|                                     | 215005 A 4.06  |          | 3.6/3.8   |  |                    |  |
| <b>TESTING METHOD:</b>              | Simulate Performance   | <b>X</b> |           |  | Actual Performance |  |
|                                     | Control Room   | <b>X</b> | Simulator |  | In-Plant           |  |
| <b>COMPLETION TIME:</b>             | 20 minutes   |          |           |  |                    |  |
| <b>MAX TIME:</b>                    | 40 minutes   |          |           |  |                    |  |
| <b>JOB LEVEL:</b>                   | SRO/RO   |          |           |  |                    |  |
| <b>TIME CRITICAL:</b>               | No   |          |           |  |                    |  |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |          |           |  |                    |  |
| <b>PSA RISK DOMINATE:</b>           | No   |          |           |  |                    |  |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |          |           |  |                    |  |
| <b>SAFETY FUNCTION</b>              | 7  |          |           |  |                    |  |

**SIMULATOR SETUP SHEET**

**Task Description:** N/A

**Required Power:** N/A

**IC No.:** N/A

**Notes:** None. This JPM is simulated in the Control Room.

**DATA SHEET**

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | STP-505-4517 Rev 10  |
| <b>Required Materials:</b>         | STP-505-4517 Rev 10  |
| <b>Required Plant Condition:</b>   | Any  |
| <b>Task Standard</b>               | Candidate has simulated performance of STP-505-4517 for APRM B in accordance with Section 7.13 |
| <b>Applicable Objectives:</b>      | RLP-STM-0503 Objectives 23, 24, 26, 27   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-C2

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

### Initial Conditions:

The plant is in Mode 1, operating at 100% power. STP-505-4517, *RPS/CONTROL ROD BLOCK-APRM SETDOWN CHANNEL FUNCTION TEST (C51-K505A THROUGH C51-K605H)* was completed last shift for all APRM except APRM B due to other maintenance on that APRM. APRM B maintenance has now been completed.

### Initiating Cue:

The CRS has directed you to perform **Section 7.13-7.14 for APRM B ONLY** of the weekly surveillance STP-505-4517 *RPS/CONTROL ROD BLOCK-APRM SETDOWN CHANNEL FUNCTION TEST (C51-K505A THROUGH C51-K605H)*.

**RJPM-NRC12-C2**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>   | <b>S/U</b> | <b>COMMENTS</b>  |
|-------------------------|--|---|------------|--|
| <u>NOTE</u>             | <u>NOTE:</u><br>All switches, status lights, test connections, and adjustments are to be made at H13-P670, APRM B unless otherwise noted |   | <u>NA</u>  | <i>No action required. This is a procedure note.</i>   |
| 7.13                    | Channel Functional Test for APRM B   |   | <u>NA</u>  | <i>No action performed in this step.</i>   |
| ____1.<br>7.13.1        | Notify NCO, commencing surveillance testing of APRM B  | Candidate notified the NCO of commencement of APRM B testing. | ____       | <b><u>EVALUATOR CUE:</u> As NCO, acknowledge report of commencement of APRM B testing.</b>   |
| *____2.<br>7.13.2       | At H13-P680, place APRM B in BYPASS  |   | ____       | <i>APRM joystick information is provided via cue to avoid entry into the At The Controls area.</i><br><br><b><u>EVALUATOR CUE:</u></b><br><b>Notify candidate that the Division 2 APRM joystick is toggled to the APRM B position.</b><br><br><b>If the candidate requested the status of the BYPASS light for APRM B, notify him that the light is illuminated.</b> |

**RJPM-NRC12-C2**

|                   |  |  |           |   |
|-------------------|--|--|-----------|---|
| <u>NOTE</u>       | During Mode 1 operation, experience shows that usually, only APRM C and G will bring in an annunciator, SRM Upscale Alarm or Inop  |  | <u>NA</u> | <i>No action required. This is a procedure note.</i>  |
| ____3.<br>7.13.3  | <p>Inform the NCO that performance of Step 7.13.6 enables IRM Annunciator circuitry, therefore if conditions do exist, the following Annunciators will alarm:</p> <ul style="list-style-type: none"> <li>Annunciator, P680-06A-A10, IRM UPSCALE TRIP OR INOP RPS CHAN B</li> <li>Annunciator, P680-06A-C10, IRM UPSCALE</li> </ul> | Candidate notified the NCO that the annunciators listed in the Performance Step may alarm.           | _____     | <b><u>EVALUATOR CUE:</u> As NCO acknowledge report of potential annunciators.</b>   |
| *____4.<br>7.13.4 | Place MODE Switch to PWR FLOW TEST   | Candidate located/identified the MODE Switch and simulated placing it in the PWR FLOW TEST position. | _____     |   |
| ____5.<br>7.13.5  | Verify METER FUNCTION Switch is in AVERAGE   | Candidate located/identified the METER FUNCTION Switch and verified it in the AVERAGE position.      | _____     | <b><u>EVALUATOR CUE:</u> After candidate located/identified the METER FUNCTION switch, point to the AVERAGE position.</b> |
| <u>CAUTION</u>    | <p>IF the Bypass Pushbutton is depressed, the APRM will come out of bypass, and may cause a Half Scram</p> <p>Robust Barriers shall be utilized to prevent depressing the Bypass Pushbutton</p>  |  | <u>NA</u> | <i>No action required. This is a procedure caution.</i>   |



**RJPM-NRC12-C2**

|                         |  |  |           |  |
|-------------------------|--|--|-----------|--|
| * <u>6.</u><br>7.13.6   | Depress and <b><u>hold</u></b> the SETDOWN TEST Pushbutton                         | Candidate located/identified the SETDOWN TEST pushbutton, simulated depressing and simulated maintaining the pushbutton depressed.                         | —         |  |
| * <u>7.</u><br>7.13.7   | Adjust POWER Control for an indication of 8% power on the APRM Front Panel Meter   | Candidate has located/identified the POWER Control and simulated adjusting to obtain a reading of 8% power on the APRM Front Panel Meter                   | —         | <b><u>EVALUATOR CUE:</u> After the candidate has simulated adjustment of the POWER Control, point to 8% on the APRM B Front Panel Meter.</b> |
| <u>8.</u><br>7.13.8     | Momentarily press the Trip Reset Pushbutton  | Candidate has located/identified the Trip Reset pushbutton and simulated momentarily depressing the button.  | —         |  |
| <u>9.</u><br>7.13.9     | Verify Status Light UPSCALE ALARM is OFF   | Candidate has located/identified the UPSCALE ALARM and verified it is OFF.   | —         | <b><u>EVALUATOR CUE:</u> After candidate has located the UPSCALE ALARM light, notify him that the light is OFF.</b>                          |
| <u>NOTE</u>             | <u>NOTE:</u><br>Expected Trip Value = 12%  |  | <u>NA</u> | <i>No action required. This is a procedure note.</i>   |
| * <u>10.</u><br>7.13.10 | Adjust Power Control until Status Light UPSCALE ALARM, just comes on               | Candidate has located/identified the POWER Control and simulated adjusting until the UPSCALE ALARM light comes on and then stops the simulated adjustment. | —         | <b><u>EVALUATOR CUE:</u> After the candidate begins the simulated adjustment, notify the candidate that the UPSCALE ALARM light is ON.</b>   |
| <u>NOTE</u>             | <u>NOTE:</u><br>Check that the alarm came in due to Setdown limits being in effect |  | <u>NA</u> | <i>No action required. This is a procedure note.</i>   |
| * <u>11.</u><br>7.13.11 | Check UPSCALE ALARM came on before 15% on the Front Panel Meter                    | Candidate has located/identified the APRM Front Panel Meter and verified that the UPSCALE ALARM light illuminated before 15%.                              | —         | <b><u>EVALUATOR CUE:</u> After the candidate locates the APRM Front Panel Meter, point to 12% on the APRM B Front Panel Meter.</b>           |

## RJPM-NRC12-C2

|                     |   |  |           |   |
|---------------------|---|--|-----------|---|
| ____12.<br>7.13.12  | Verify Status Light UPSCALE NEUTRON is OFF                            | Candidate has located/identified the UPSCALE NEUTRON light and verified it is OFF.   | ____      | <b><u>EVALUATOR CUE:</u> After the candidate locates the UPSCALE NEUTRON LIGHT notify him that the light is OFF.</b>                            |
| <u>NOTE</u>         | NOTE:<br>Expected Trip Value = 15%.                                   |  | <u>NA</u> | <i>No action required. This is a procedure note.</i>  |
| *____13.<br>7.13.13 | Raise Power Control until Status Light UPSCALE NEUTRON, just comes on | Candidate has located/identified the POWER Control and simulated adjusting until the UPSCALE NEUTRON light comes on and then stops the simulated adjustment. | ____      | <b><u>EVALUATOR CUE:</u> After the candidate begins the simulated adjustment, notify the candidate that the UPSCALE NEUTRON light is ON.</b>    |
| *____14.<br>7.13.14 | Check UPSCALE NEUTRON came on before 20% on the Front Panel Meter     | Candidate has located/identified the APRM Front Panel Meter and verified that the UPSCALE NEUTRON light illuminated before 20%.                              | ____      | <b><u>EVALUATOR CUE:</u> After the candidate locates the APRM Front Panel Meter, point to 15% on the APRM B Front Panel Meter.</b>              |
| ____15.<br>7.13.15  | Adjust Power Control for an indication of 8% on the Front Panel Meter | Candidate has located/identified the POWER Control and simulated adjusting until the Front Panel Meter indicates 8%.   | ____      | <b><u>EVALUATOR CUE:</u> After the candidate begins simulated adjustment of the Power Control, point to 8% on the APRM B Front Panel Meter.</b> |
| ____16.<br>7.13.16  | Release the SETDOWN TEST Pushbutton                                   | Candidate has simulated release of the SETDOWN TEST pushbutton.  | ____      |   |
| ____17.<br>7.13.17  | Momentarily press the Trip Reset Pushbutton                           | Candidate simulated momentary depressing of the Trip Reset pushbutton.   | ____      |   |
| ____18.<br>7.13.18  | Check Status Light UPSCALE ALARM is OFF                               | Candidate has verified the UPSCALE ALARM light is OFF.   | ____      | <b><u>EVALUATOR CUE:</u> After candidate locates/identifies the UPSCALE ALARM light, notify him that the light is OFF.</b>                      |

**RJPM-NRC12-C2**

|                     |  |  |           |  |
|---------------------|--|--|-----------|--|
| ____19.<br>7.13.19  | Check Status Light UPSCALE NEUTRON is OFF  | Candidate has verified the UPSCALE NEUTRON light is OFF.                                     | ____      | <b><u>EVALUATOR CUE:</u> After candidate locates/identifies the UPSCALE NEUTRON light, notify him that the light is OFF.</b>     |
| <u>NOTE</u>         | <u>NOTE:</u><br>All switches, status lights, test connections, and adjustments are to be made at H13-P670, APRM B unless otherwise noted |  | <u>NA</u> | <i>No action required. This is a procedure note.</i>   |
| 7.14                | Restoration of APRM B  |  | <u>NA</u> | <i>No action performed in this step. Actions follow below.</i>   |
| *____20.<br>7.14.1  | Place MODE Switch to OPERATE   | Candidate located/identified and simulated placing the switch to the OPERATE position.       | ____      |  |
| ____21.<br>7.14.2   | Momentarily press the Trip Reset Pushbutton  | Candidate located/identified and simulated momentarily depressing the Trip Reset Pushbutton. | ____      |  |
| 7.14.3              | Verify the following:  |  | <u>NA</u> | <i>No action performed in this step. Actions follow below.</i>   |
| ____22.<br>7.14.3.1 | Status Light UPSCALE ALARM, is off   | Candidate located/identified and verified the UPSCALE ALARM light is off.                    | ____      | <b><u>EVALUATOR CUE:</u> After the candidate located/identified the UPSCALE ALARM light, notify him that the light is OFF.</b>   |
| ____23.<br>7.14.3.2 | Status Light UPSCALE NEUTRON, is off   | Candidate located/identified and verified the UPSCALE NEUTRON light is off.                  | ____      | <b><u>EVALUATOR CUE:</u> After the candidate located/identified the UPSCALE NEUTRON light, notify him that the light is OFF.</b> |

**RJPM-NRC12-C2**

|                     |                                       |  |      |   |
|---------------------|---------------------------------------|--|------|---|
| ____24.<br>7.14.3.3 | Status Light UPSCL THERM TRIP, is off | Candidate located/identified and verified the UPSCALE THERMAL TRIP light is off. | ____ | <b><u>EVALUATOR CUE:</u> After the candidate located/identified the UPSCALE THERMAL TRIP light, notify him that the light is OFF.</b> |
| ____25.<br>7.14.3.4 | Status Light INOP, is off             | Candidate located/identified and verified the INOP light is off.                 | ____ | <b><u>EVALUATOR CUE:</u> After the candidate located/identified the INOP light, notify him that the light is OFF.</b>                 |
| ____26.<br>7.14.4   | Verify APRM B MODE Switch to OPERATE  | Candidate located/identified and verified the APRM B MODE Switch is in OPERATE.  | ____ |   |

**Terminating Cue:** Simulated performance of STP-505-4517 Section 7.13 for APRM B has been completed and APRM B has been restored to operational up to step 7.14.4

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            **Satisfactory / Unsatisfactory**

**Note:** An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**

(Operator Copy)

**Initial Conditions:** The plant is in Mode 1, operating at 100% power. STP-505-4517, *RPS/CONTROL ROD BLOCK-APRM SETDOWN CHANNEL FUNCTION TEST (C51-K505A THROUGH C51-K605H)* was completed last shift for all APRM except APRM B due to other maintenance on that APRM. APRM B maintenance has now been completed.

**Initiating Cues:** The CRS has directed you to perform **Section 7.13-7.14 for APRM B ONLY** of the weekly surveillance STP-505-4517 *RPS/CONTROL ROD BLOCK-APRM SETDOWN CHANNEL FUNCTION TEST (C51-K505A THROUGH C51-K605H)* .

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-P1  
Revision: 03  
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**TIME CRITICAL**

**JOB PERFORMANCE MEASURE**

---



**TRAINING PROGRAM:**

|                                |
|--------------------------------|
| <b>JOB PERFORMANCE MEASURE</b> |
|--------------------------------|

**LESSON PLAN:**

|  |
|--|
| <b>TRANSFER RCIC STEAM SUPPLY ISOLATION VALVE TO ALTERNATE POWER</b> |
|--|

**REASON FOR REVISION:**

|                   |           |
|-------------------|-----------|
| 2012 NRC Exam JPM | <b>P1</b> |
|-------------------|-----------|

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 6-21-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-17-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8/6/2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-P1**

|                                     |  |   |           |  |                    |   |
|-------------------------------------|--|---|-----------|--|--------------------|---|
| <b>TASK DESCRIPTION:</b>            | TRANSFER RCIC STEAM SUPPLY ISOLATION VALVE TO ALTERNATE POWER PER AOP-0031 |   |           |  |                    |   |
| <b>TASK REFERENCE:</b>              | 294001002004   |   |           |  |                    |   |
| <b>K/A REFERENCE &amp; RATING:</b>  | 295016 A1.04 3.1/3.2<br>295016 A1.07 4.2/4.3<br>295016 A1.09 4.0/4.0       |   |           |  |                    |   |
| <b>TESTING METHOD:</b>              | Simulate Performance   | X |           |  | Actual Performance |   |
|                                     | Control Room   |   | Simulator |  | In-Plant           | x |
| <b>COMPLETION TIME:</b>             | 10 MINUTES.  |   |           |  |                    |   |
| <b>MAX TIME:</b>                    | 10 MINUTES   |   |           |  |                    |   |
| <b>JOB LEVEL:</b>                   | RO/SRO   |   |           |  |                    |   |
| <b>TIME CRITICAL:</b>               | YES 10CFR50 Appendix R   |   |           |  |                    |   |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |   |           |  |                    |   |
| <b>PSA RISK DOMINATE:</b>           | No   |   |           |  |                    |   |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |   |           |  |                    |   |
| <b>SAFETY FUNCTION</b>              | 2  |   |           |  |                    |   |



**SIMULATOR SETUP SHEET**

**Task Description:** NA

**Required Power:** NA

**IC No.:** NA

**Notes:** NONE: This JPM is performed in the plant.

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | AOP-0031 Rev 316  |
| <b>Required Materials:</b>         | AOP-0031 Rev 316 Attachment 14  |
| <b>Required Plant Condition:</b>   | ANY   |
| <b>Task Standard</b>               | E51-MOVF063 is powered by a Division 1 power source in accordance with AOP-0031 Attachment 14, within 10 minutes. |
| <b>Applicable Objectives:</b>      | RLP-OPS-AOP031 Objective 5  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-P1

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### Initial Conditions:

While operating at 100 percent power a fire was discovered in the Main Control Room. Initial actions to extinguish the fire have been unsuccessful. AOP-0031, SHUTDOWN FROM OUTSIDE THE CONTROL ROOM has been entered and Control Room abandonment is in progress.

### Initiating Cue:

The CRS has directed you to perform Attachment 14, Section 1.1 of AOP-0031, SHUTDOWN FROM OUTSIDE THE CONTROL ROOM, to transfer E51-MOVF063 to Division 1 alternate power.

**This is a time critical JPM.**

**START TIME: \_\_\_\_\_ Start time to commence after entering Radiologically Controlled Area (RCA).**

| PERFORMANCE STEP |  | STANDARD | S/U        | COMMENTS  |
|------------------|--|----------|------------|---|
| <u>NOTE</u>      | <p><b><u>NOTE</u></b></p> <p><i>Upon arrival at the EHS-MCC2L on Aux Bldg 141' west side or Div I RSS Room the Reactor Building Operator obtains and when directed completes the appropriate steps in this attachment. Upon completion, he remains at the Div I RSS Room and conducts operations as directed by the CRS.</i></p> |          | <u>NA</u>  | <i>This is a procedure note. No action required.</i>  |
| <u>WARNING</u>   | <p><b><u>WARNING</u></b></p> <p>Due to extreme differential pressure, 123 ft el access doors into the Aux Bldg may be a personnel hazard. When operating conditions permit, Aux Bldg access should be from the 95 ft el or 67 ft el.</p>   |          | <u>N/A</u> | <i>This is a procedure warning. No action required. These conditions would be present during an actual event, but not expect during the examination period. It is acceptable to use the 123 ft el access during this examination.</i> |
| 1.1              | <p><u>WHEN</u> directed by the CRS, <u>THEN</u> perform Steps 1.1.1 through 1.1.6</p>  |          | <u>NA</u>  | <i>No action required. Actions follow below.</i>  |

**RJPM-NRC12-P1**

| PERFORMANCE STEP             | STANDARD  | S/U                             | COMMENTS  |
|------------------------------|---|---------------------------------|---|
| <p><u>NOTE</u></p>           | <p><b><u>NOTE:</u></b><br/>Steps 1.1.1 through 1.1.6, in addition to the RCIC lineup steps performed by the ATC operator at the Div I RSS panel, are required to be completed within 10 minutes of scrambling the reactor due to a Main Control Room fire. These actions are performed at EHS-MCC2L, west side and EHS-MCC2D, east side of Aux Bldg, 141' el.</p> | <p align="center"><u>NA</u></p> | <p><i>This is a procedure note. No action is required.</i></p>  |
| <p>* _____ 1.<br/>1.1.1.</p> | <p>Close EHS-MCC2L BKR 6AT, E51-SW63 BRKR 1 ALT DIV I PWR E51-MOVF063</p>   | <p align="center">_____</p>     | <p><b><u>EXAMINER CUE:</u></b><br/>Indicate to the candidate that the breaker handle is pointing to the ON position.</p>  |
| <p>* _____ 2.<br/>1.1.2</p>  | <p>Close EHS-MCC2L BKR 6AB, E51-SW63 BRKR 2 ALT DIV I PWR E51-MOVF063</p>   | <p align="center">_____</p>     | <p><b><u>EXAMINER CUE:</u></b><br/>Indicate to the candidate that the breaker handle is pointing to the ON position.</p>  |
| <p>* _____ 3.<br/>1.1.3</p>  | <p>Open EHS-MCC2D BKR 3C, E51-MOVF063 RCIC &amp; RHR STEAM SUPPLY VALVE.</p>  | <p align="center">_____</p>     | <p><b><u>EXAMINER CUE:</u></b><br/>Indicate to the candidate that the breaker handle is pointing to the OFF position.</p> |

**RJPM-NRC12-P1**

| PERFORMANCE STEP      | STANDARD   | S/U   | COMMENTS   |
|-----------------------|--|---|--|
| *____ 4.<br>1.1.4     | On wall to right side of EHS-MCC2D, close E51-SW63, DIV I ALT PWR SUPPLY E51-MOVF063.                        | Candidate has located/identified E51-SW63 and simulated placing the switch in the ON position.          | <b><u>EXAMINER CUE:</u></b><br><br>Indicate to the candidate that E51-SW63 is turned to the ON position.   |
| *____ 5.<br>1.1.5     | On right side of EHS-MCC2D, place 43-1ICSA02, CONTROL XFER E51-MOVF063 in ALTERNATE and check the following: | Candidate has located/identified 43-1ICSA02 and simulated placing the switch in the ALTERNATE position. | <b><u>EXAMINER CUE:</u></b><br><br>Indicate to the candidate that 43-1ICSA02 is turned to the ALTERNATE position.<br><br><b>COMPLETION TIME:</b> _____ |
| ____ 6.<br>1.1.5<br>• | W2-1ICSA02, DIV I ALT CONTROL POWER E51-MOVF063 is illuminated.  | Candidate has located/identified W2-1ICSA02 and verified light is illuminated.                          | <b><u>EXAMINER CUE:</u></b><br><br>Once the candidate has located W2-1ICSA02, notify him that the light is ON.   |
| ____ 7.<br>1.1.5<br>• | W1-1ICSA02 NORMAL CONTROL POWER E51-MOVF063 is extinguished  | Candidate has located/identified W1-1ICSA02 and verified light is extinguished.                         | <b><u>EXAMINER CUE:</u></b><br><br>Once the candidate has located W1-1ICSA02, notify him that the light is OFF.  |
| <u>NOTE</u>           | <i>The Div I Remote Shutdown Room number is 2903</i>   | <u>NA</u>   | <i>This is a procedure note. No action is required.</i>  |

**RJPM-NRC12-P1**

| PERFORMANCE STEP                        | STANDARD   | S/U  | COMMENTS   |
|---|--|--|--|
| <p align="center">____ 8.<br/>1.1.6</p> | <p>Inform ATC Operator that E51-MOVF063 has been transferred to the Div I Alternate Power.</p> | <p>Candidate notifies the ATC operator that E51-MOVF063 has been transferred to the Div I Alternate Power.</p> | <p><b><u>EXAMINER CUE:</u></b></p> <p><b><u>Role Play:</u> As ATC operator, accept information regarding transfer of E51-MOVF063 to alternate power.</b></p> |

**Terminating Cue: E51-MOVF063 has been transferred to alternate power per AOP-0031 Attachment 14, Section 1.1 within 10 minutes.**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            Satisfactory / Unsatisfactory

**Note:** An "Unsatisfactory" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** While operating at 100 percent power a fire was discovered in the Main Control Room. Initial actions to extinguish the fire have been unsuccessful. AOP-0031, SHUTDOWN FROM OUTSIDE THE CONTROL ROOM has been entered and Control Room abandonment is in progress.

**Initiating Cues:** The CRS has directed you to perform Attachment 14, Section 1.1 of AOP-0031, SHUTDOWN FROM OUTSIDE THE CONTROL ROOM, to transfer E51-MOVF063 to Division 1 alternate power.

**This is a time critical JPM.**

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-P2  
Revision: 01  
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**ALTERNATE PATH**

**JOB PERFORMANCE MEASURE**

---



**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**START OF FIRE PROTECTION WATER PUMP**

**REASON FOR REVISION:**

2012 NRC Exam JPM – SRO/RO

**P2**

**PREPARE / REVIEW:**

|                           |             |                  |
|---------------------------|-------------|------------------|
| <u>Angie Orgeron</u>      | <u>1538</u> | <u>6-20-2012</u> |
| Preparer                  | KCN         | Date             |
| <u>Dave Bergstrom</u>     | <u>0257</u> | <u>7-17-2012</u> |
| Technical Review (SME)    | KCN         | Date             |
| <u>Tim Schenk</u>         | <u>0717</u> | <u>7-24-2012</u> |
| Operations Representative | KCN         | Date             |
| <u>John Fralick</u>       | <u>0788</u> | <u>8-6-2012</u>  |
| Facility Reviewer         | KCN         | Date             |

\* Indexing Information

## RJPM-NRC12-P2

|                                     |                                     |          |           |  |                    |          |
|-------------------------------------|-------------------------------------|----------|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | Start of Fire Protection Water Pump |          |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 286018001004                        |          |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 286000                              | K4.05    | 3.7/3.8   |  |                    |          |
|                                     |                                     | K5.05    | 3.0/3.1   |  |                    |          |
|                                     |                                     | A2.08    | 3.2/3.3   |  |                    |          |
|                                     |                                     | A3.01    | 3.4/3.4   |  |                    |          |
|                                     |                                     | A4.06    | 3.4/3.4   |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance                | <b>X</b> |           |  | Actual Performance |          |
|                                     | Control Room                        |          | Simulator |  | In-Plant           | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 10 min.                             |          |           |  |                    |          |
| <b>MAX TIME:</b>                    | N/A                                 |          |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | All                                 |          |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | No                                  |          |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No                                  |          |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | Yes                                 |          |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | Yes                                 |          |           |  |                    |          |
| <b>SAFETY FUNCTION:</b>             | 8                                   |          |           |  |                    |          |

## **RJPM-NRC12-P2**

### **SIMULATOR SETUP SHEET**

**Task Description:** Start of Fire Protection Water Pump

**Required Power:** N/A

**IC No.:** N/A

**Notes:** **This JPM task is simulated in the plant.**

## RJPM-NRC12-P2

### DATA SHEET

|                                    |  |
|------------------------------------|--|
| <b>References for Development:</b> | SOP-0037 Rev 32, Fire Protection Water System Operating Procedure                              |
| <b>Required Materials:</b>         | SOP-0037, Rev 32 Fire Protection Water System Operating Procedure, Section 4.2.2 through 4.2.3 |
| <b>Required Plant Condition:</b>   | N/A  |
| <b>Task Standard:</b>              | The 'A' Diesel Driven Fire Pump is running with proper cooling water pressure.                 |
| <b>Applicable Objectives:</b>      | STM-250, Obj# N04, N07   |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)   |
| <b>Control Manipulations:</b>      | N/A  |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-P2

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

### **Initial Conditions:**

The plant is operating in Mode 1, at 100% steady state power. FPW-P1B Diesel Fire Pump is tagged out for pump replacement. A fire has occurred in the Auxiliary Boiler/Water Treatment Building. Attempts to start FPW-P1A, Diesel Fire Pump from the Auxiliary Control Room have failed. The power supply to FPW-P2, MOTOR DRIVEN FIRE PUMP, has been damaged by the fire rendering the pump unavailable.

### **Initiating Cue:**

The CRS has directed you to perform a local manual start of FPW-P1A, Diesel Driven Fire Pump, in accordance with SOP-0037 Fire Protection Water System Operating Procedure, beginning at Section 4.2.2.

## RJPM-NRC12-P2

| PERFORMANCE STEP |   | STANDARD | S/U       | COMMENTS   |
|------------------|---|----------|-----------|--|
| 4.2.2.1          | At FPW-MST2, MOTOR DRIVEN FIRE PUMP 2 CONTROLLER, depress START pushbutton to start FPW-P2, MOTOR DRIVEN FIRE PUMP  |          | <u>NA</u> | <i>No action is required for this step. The Initial Conditions indicated that FPW-P2 was unavailable due to power supply damage.</i>   |
| <u>NOTE</u>      | The following pump start method is only to be used in an emergency situation.   |          | <u>NA</u> | <i>No action is required. This is a Procedure Note. In addition, the associated step is not required. The Initial Conditions indicated that FPW-P2 was unavailable due to power supply damage.</i> |
| 4.2.2.2          | <u>IF</u> Step 4.2.2.1 does not start FPW-P2, <u>THEN</u> lift the yellow MANUAL EMERGENCY START ONLY handle on FPW-P2, MOTOR DRIVEN FIRE PUMP 2 CONTROLLER, and latch in the raised position |          | <u>NA</u> | <i>No action is required for this step. The Initial Conditions indicated that FPW-P2 was unavailable due to power supply damage.</i>   |
| <u>NOTE</u>      | <b><u>NOTE</u></b><br>MANUAL 1 and MANUAL 2 correspond to manual starting with Bank 1 or Bank 2 respectively.   |          | <u>NA</u> | <i>No action is required. This is a Procedure Note.</i>  |

## RJPM-NRC12-P2

| PERFORMANCE STEP   |  | STANDARD  | S/U       | COMMENTS   |
|--------------------|--|---|-----------|--|
| _____1.<br>4.2.2.3 | Place the selector switch on controller FPW-MST1A, DIESEL FIRE PUMP 1A CONTROLLER in MANUAL 1 or MANUAL 2.   | Candidate has located/identified the proper controls, and simulated manipulation of the selector switch to either MANUAL 1 or MANUAL 2. | _____     | <b><u>EVALUATOR CUE:</u> After the manipulation has been simulated, notify performer that the “Auto On” light has extinguished.</b>                        |
| 4.2.2.4            | Place the selector switch on controller FPW-MST1B, DIESEL FIRE PUMP 1B CONTROLLER in MANUAL 1 or MANUAL 2  |   | <u>NA</u> | <i>No action required. FPW-P1B was identified as being tagged out in the initiating cue.</i>   |
| <u>NOTE</u>        | <p style="text-align: center;"><b><u>NOTE</u></b></p> <p>Limit the maximum number of start attempts to six.</p> <p>Do <u>not</u> hold the START pushbutton for greater than 30 seconds.</p>    |   | <u>NA</u> | <i>No action is required. This is a Procedure Note.</i>  |
| _____2.<br>4.2.2.5 | <p>Depress and hold local START pushbutton for 15 seconds or until engine starts for the following:</p> <ul style="list-style-type: none"> <li>• FPW-P1A, DIESEL DRIVEN FIRE PUMP A</li> </ul> | Candidate has located/identified the proper controls, and simulated depressing and holding the START pushbutton for 15 seconds          | _____     | <b><u>EVALUATOR CUE:</u> After the performer has simulated depressing the START pushbutton, notify the performer that diesel fire pump fails to crank.</b> |
| _____3.<br>4.2.2.6 | <u>IF</u> FPW-P1A or FPW-P1B failed to attempt to start due to battery problems, <u>THEN</u> re-perform steps 4.2.2.3 through 4.2.2.5 with the battery bank that was <u>not</u> used .         | <p><b><u>ALTERNATE PATH</u></b></p> <p>Candidate has transitioned back to Step 4.2.2.3</p>  | _____     |  |



## RJPM-NRC12-P2

| PERFORMANCE STEP   |  | STANDARD  | S/U       | COMMENTS   |
|--------------------|--|---|-----------|--|
| ____ 4.<br>4.2.2.3 | Place the selector switch on controller FPW-MST1A, DIESEL FIRE PUMP 1A CONTROLLER in MANUAL 1 or MANUAL 2.   | Candidate has located/identified the proper controls, and simulated manipulation of the selector switch to the alternate position.<br>.                                     | ____      |  |
| 4.2.2.4            | Place the selector switch on controller FPW-MST1B, DIESEL FIRE PUMP 1B CONTROLLER in MANUAL 1 or MANUAL 2.   |   | <u>NA</u> | <i>This step is not required. Fire Pump B is tagged out as stated in the initial conditions.</i>   |
| <u>NOTE</u>        | <p style="text-align: center;"><b><u>NOTE</u></b></p> <p>Limit the maximum number of start attempts to six.</p> <p>Do <u>not</u> hold the START pushbutton for greater than 30 seconds.</p>  |   | <u>NA</u> | <i>No action is required. This is a Procedure Note.</i>  |
| ____ 5.<br>4.2.2.5 | <p>Depress and hold local START pushbutton for 15 seconds or until engine starts for the following:</p> <ul style="list-style-type: none"> <li>FPW-P1A, DIESEL DRIVEN FIRE PUMP A</li> </ul> | <p>Candidate has located/identified the proper controls, and simulated depressing and holding the START pushbutton for 15 seconds</p> <p>Candidate proceeded to 4.2.2.7</p> | ____      | <b><u>EVALUATOR CUE:</u> After the performer has simulated depressing the START pushbutton, notify the performer that diesel fire pump fails to crank.</b> |
| ____ 6.<br>4.2.2.7 | <u>IF</u> an engine fails to start, <u>THEN</u> Go To Step 4.2.3.  | <p><b><u>ALTERNATE PATH</u></b></p> <p>Candidate transitions to Step 4.2.3.</p>   | ____      |  |

## RJPM-NRC12-P2

| PERFORMANCE STEP    |  | STANDARD   | S/U       | COMMENTS  |
|---------------------|--|--|-----------|---|
| <u>NOTE</u>         | <p style="text-align: center;"><b><u>NOTE</u></b></p> <p>In the following mode, all other means of stopping the Fire Protection Diesel Engine are disabled, including overspeed protection. The engine continues to run until the Fuel Solenoid Manual Knob is returned to the OUT position.</p> |  | <u>NA</u> | <i>No action is required. This is a Procedure Note.</i>   |
| *_____7.<br>4.2.3.1 | Open FPW-SOV19A,FUEL SUPPLY SOLENOID by turning the knurled manual knob clockwise or IN to open the solenoid.  | Candidate has located/identified the Fuel Supply Solenoid and simulated turning the knob in the clockwise direction.   | _____     | <b><u>EVALUATOR CUE:</u>Notify the performer that the knob has been rotated fully clockwise and stopped.</b>  |
| <u>CAUTION</u>      | Greater than 50 psig cooling water pressure can damage the Diesel Engine Cooling System. Do <u>not</u> exceed 50 psig cooling water pressure.  |  | <u>NA</u> | <i>No action is required. This is a Procedure Caution.</i>  |
| *_____8.<br>4.2.3.2 | Open FPW-V3009, FPW-P1A ENGINE COOLING SYSTEM BYPASS VALVE   | Candidate has located/identified FPW-V3009 and simulated opening the valve by turning the handwheel in the counter-clockwise direction until handwheel motion stops. | _____     | <b><u>EVALUATOR CUE:</u> Notify the performer that handwheel motion has stopped and the valve stem now appears similar to FPW-V176 (Located just below FPW-V3009)</b> |
| *_____9.<br>4.2.3.3 | Throttle open 2 turns FPW-V179, FPW-P1A ENGINE COOLING SYSTEM BYPASS VALVE   | Candidate has located/identified FPW-V179 and simulated throttling the valve by turning the handwheel in the counter-clockwise direction for 2 turns.                | _____     | <b><u>EVALUATOR CUE:</u> If the candidate attempts to read FPW-PI27A point to 0 psig.</b>   |

## RJPM-NRC12-P2

| PERFORMANCE STEP      |   | STANDARD   | S/U       | COMMENTS  |
|-----------------------|---|--|-----------|---|
| 4.2.3.4               | Engage the starter per the following:   |  | <u>NA</u> | <i>No action required. Actions follow below.</i>  |
| *____10.<br>4.2.3.4.1 | Raise the Lever on either of the two starter contactors. FPW-SRT1AA or FPW-SRT1AB, MANUAL START SWITCH "A" FOR PUMP FPW-P1A                   | Candidate has located/identified the starter manual lever and has simulated raising the lever. | ____      | <b><u>EVALUATOR CUE:</u> After one of the levers has been raised, notify the performer that the engine has started.</b> |
| ____11.<br>4.2.3.4.2  | Release the Lever for FPW-SRT1AA(BA) or FPW-SRT1AB(BB), MANUAL START SWITCH "A"(B) FOR PUMP FPW-P1A(B) as soon as the engine starts.          | Candidate has simulated release of the starter manual lever.                                   | ____      |   |
| 4.2.3.4.3             | IF engine fails to start, THEN repeat steps 4.2.3.4.1 and 4.2.3.4.2 above using the other starter contactor.                                  |  | <u>NA</u> | <i>No action is required since the engine started in the previous step.</i>   |
| <u>CAUTION</u>        | Greater than 50 psig cooling water pressure can damage the Diesel Engine Cooling System. Do <u>not</u> exceed 50 psig cooling water pressure. |  | <u>NA</u> | <i>No action is required. This is a Procedure Caution.</i>  |

## RJPM-NRC12-P2

| PERFORMANCE STEP           |  | STANDARD   | S/U   | COMMENTS   |
|----------------------------|--|--|-------|--|
| *<br>_____12.<br>4.2.3.4.4 | Throttle open FPW-V179, FPW-P1A ENGINE COOLING SYSTEM BYPASS VALVE as needed to maintain cooling water pressure greater than 40 psig but less than 50 psig | Candidate located FPW-PI27A & FPW-V179 and turned the handwheel for FPW-V179 until FPW-PI27A indicated >40 psig and < 50 psig. | _____ | <b><u>EVALUATOR CUE:</u></b> Prior to manipulation of FPW-V179, point to 32 psig on FPW-PI27A. After the candidate has simulated manipulation of one additional turn of the handwheel in the counter clockwise direction, point to 45 psig on FPW-PI27A. |

**Terminating Cue:** FPW-P1A, Diesel Fire Pump is running.

**RJPM-NRC12-P2**

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            **Satisfactory / Unsatisfactory**

**Note:** An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **RJPM-NRC12-P2**

### **JPM Task Conditions/Cues**

(Operator Copy)

- Initial Conditions:** The plant is operating in Mode 1, at 100% steady state power. FPW-P1B Diesel Fire Pump is tagged out for pump replacement. A fire has occurred in the Auxiliary Boiler/Water Treatment Building. Attempts to start FPW-P1A, Diesel Fire Pump from the Auxiliary Control Room have failed. The power supply to FPW-P2, MOTOR DRIVEN FIRE PUMP, has been damaged by the fire rendering the pump unavailable
- Initiating Cues:** The CRS has directed you to perform a local manual start of FPW-P1A, Diesel Driven Fire Pump, in accordance with SOP-0037 Fire Protection Water System Operating Procedure, beginning at Section 4.2.2.

**RIVER  
BEND STATION**

Number: \*RJPM-NRC12-P3  
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**TIME CRITICAL**

**JOB PERFORMANCE MEASURE**

---



**TRAINING PROGRAM:**

**JOB PERFORMANCE MEASURE**

**LESSON PLAN:**

**INITIATE FULL SCRAM AND NSSSS ISOLATION FROM THE  
ELECTRICAL PROTECTION ASSEMBLY (EPA) BREAKERS**

**REASON FOR REVISION:**

2012 NRC Exam JPM – SRO/RO

**P3**

**PREPARE / REVIEW:**

|                        |      |           |
|------------------------|------|-----------|
| Angie Orgeron          | 1538 | 6-21-2012 |
| Preparer               | KCN  | Date      |
| Dave Bergstrom         | 0257 | 7-17-2012 |
| Technical Review (SME) | KCN  | Date      |
| Tim Schenk             | 0717 | 7-24-2012 |
| Operations Validation  | KCN  | Date      |
| John Fralick           | 0788 | 8-6-2012  |
| Facility Reviewer      | KCN  | Date      |

\* Indexing Information

**RJPM-NRC12-P3**

|                                     |  |                 |           |  |                    |          |
|-------------------------------------|--|-----------------|-----------|--|--------------------|----------|
| <b>TASK DESCRIPTION:</b>            | As Unit Operator Perform Attachment 13, Section 1.1 of AOP-0031, Shutdown From Outside the Main Control Room Following a Fire in the Main Control Room |                 |           |  |                    |          |
| <b>TASK REFERENCE:</b>              | 400047004001<br>400048004001   |                 |           |  |                    |          |
| <b>K/A REFERENCE &amp; RATING:</b>  | 295016   | AK2.02, 4.0/4.1 |           |  |                    |          |
|                                     | 295016   | AK3.01, 4.1/4.2 |           |  |                    |          |
|                                     | 295016   | AA1.01, 3.8/3.9 |           |  |                    |          |
|                                     | 295016   | AA1.04, 3.1/3.2 |           |  |                    |          |
| <b>TESTING METHOD:</b>              | Simulate Performance   | <b>X</b>        |           |  | Actual Performance |          |
|                                     | Control Room   |                 | Simulator |  | In-Plant           | <b>X</b> |
| <b>COMPLETION TIME:</b>             | 5 minutes  |                 |           |  |                    |          |
| <b>MAX TIME:</b>                    | 5 minutes  |                 |           |  |                    |          |
| <b>JOB LEVEL:</b>                   | SRO/RO   |                 |           |  |                    |          |
| <b>TIME CRITICAL:</b>               | YES, 10 CFR 50 Appendix R  |                 |           |  |                    |          |
| <b>EIP CLASSIFICATION REQUIRED:</b> | No   |                 |           |  |                    |          |
| <b>PSA RISK DOMINATE:</b>           | No   |                 |           |  |                    |          |
| <b>ALTERNATE PATH (FAULTED):</b>    | No   |                 |           |  |                    |          |



**SIMULATOR SETUP SHEET**

**Task Description:** N/A

**Required Power:** N/A

**IC No.:** N/A

**Notes:** None. This JPM is simulated in the plant.

**DATA SHEET**

|                                    |   |
|------------------------------------|---|
| <b>References for Development:</b> | AOP-0031, Shutdown From Outside the Main Control Room, Rev 316  |
| <b>Required Materials:</b>         | AOP-0031, Rev 316 Attachment 13, Section 1.1  |
| <b>Required Plant Condition:</b>   | Any   |
| <b>Task Standard</b>               | A reactor scram and full NSSSS isolation have been initiated from the Electrical Protection Assembly (EPA) breakers within 5 minutes of scrambling the reactor. |
| <b>Applicable Objectives:</b>      | RLP-OPS-AOP031 Objective 5  |
| <b>Safety Related Task:</b>        | (If K/A less than 3.0)  |
| <b>Control Manipulations:</b>      | N/A   |

Items marked with an "\*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

## RJPM-NRC12-P3

If In-Plant or In the Control Room:

**Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.**

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

### **Initial Conditions:**

The Reactor has just been shutdown from 100% power due to a fire in the Control Room that necessitates evacuation.

### **Initiating Cue:**

The CRS has directed you to complete Attachment 13, Section 1.1 of AOP-0031, Shutdown From Outside the Main Control Room, to initiate a Reactor Scram and full NSSSS Isolation.

**This is a time critical JPM.**

**START TIME \_\_\_\_\_ Provide cue and begin start time at Main Control Room door.**

**RJPM-NRC12-P3**

| <b>PERFORMANCE STEP</b> |  | <b>STANDARD</b>  | <b>S/U</b> | <b>COMMENTS</b>  |
|-------------------------|--|--|------------|--|
| <u>NOTE</u>             | <p><b><u>NOTE</u></b></p> <p>The Unit Operator obtains and completes the steps in this attachment. Upon completion, he remains at the Div I RSS Room and conducts operations as directed by the CRS.</p> |  | <u>NA</u>  | <i>This is a procedure note. No action is required.</i>  |
| 1.1                     | <p><u>IF</u> a Control Room fire is in progress, <u>THEN</u> initiate a Reactor Scram confirmatory signal and a full NSSSS Isolation by performing the following:</p>                                    |  | <u>NA</u>  | <i>No action required in this step.</i>  |
| <u>NOTE</u>             | <p>If a Main Control Room fire is in progress, then Steps 1.1.1 shall be completed within 5 minutes of scrambling the reactor.</p>   |  | <u>NA</u>  | <i>This is a procedure note. No action is required.</i>  |
| ____1.<br>1.1.1         | <p>Proceed briskly to Control Bldg 116 ft el Div 1 Electrical Protection Assemblies area (RPS MG area) and perform the following:</p>  | <p>Candidate arrived at Div 1 Electrical Protection Assemblies on Control Building 116 ft el.</p>  | —          |  |
| ____2.<br>1.1.1.1       | <p>At RPS A MOTOR GENERATOR SET, depress <u>AND</u> hold the RPS MG-SET MOTOR OFF pushbutton until the red MOTOR ON light goes off.</p>  | <p>Candidate located/identified the MOTOR OFF pushbutton at RPS A Motor Generator Set and simulated depressing and holding the pushbutton until he received a cue that the red MOTOR ON light was off.</p> | —          | <p><b><u>EVALUATOR CUE:</u></b> After the candidate has located/identified and simulated depressing and holding the MOTOR OFF pushbutton, indicate that the MOTOR ON red light is OFF.</p> |

**RJPM-NRC12-P3**

|                       |  |   |       |   |
|-----------------------|--|---|-------|---|
| *__3.<br>1.1.1.2<br>• | 1. C71-S003C   | Candidate has located/identified C71-S003C and simulated turning the switch counter clockwise to the OFF position.  | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position.  |
| *__4.<br>1.1.1.2<br>• | 2. C71-S003F   | Candidate has located/identified C71-S003F and simulated turning the switch counter clockwise to the OFF position   | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position.  |
| *__5.<br>1.1.1.2<br>• | 3. C71-S003A   | Candidate has located/identified C71-S003A and simulated turning the switch counter clockwise to the OFF position   | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position.  |
| *__6.<br>1.1.1.2<br>• | 4. C71-S003E   | Candidate has located/identified C71-S003E and simulated turning the switch counter clockwise to the OFF position   | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position.  |
| __7.<br>1.1.1.3       | At RPS B MOTOR GENERATOR SET, depress <u>AND</u> hold the RPS MG-SET MOTOR-OFF pushbutton until the red MOTOR ON light goes off. | Candidate has located/identified the MOTOR OFF pushbutton at RPS B Motor Generator Set and simulated depressing and holding the pushbutton until he received a cue that the red MOTOR ON light was off. | _____ | <b><u>EVALUATOR CUE:</u></b> After the candidate has located/identified and simulated depressing and holding the MOTOR OFF pushbutton, indicate that the MOTOR ON red light is OFF. |
| *__8.<br>1.1.1.4<br>• | 1. C71-S003H   | Candidate has located/identified C71-S003H and simulated turning the switch counter clockwise to the OFF position   | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position.  |

### RJPM-NRC12-P3

|                        |              |   |       |  |
|------------------------|--------------|---|-------|--|
| *__9.<br>1.1.1.4<br>•  | 2. C71-S003D | Candidate has located/identified C71-S003D and simulated turning the switch counter clockwise to the OFF position | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position. |
| *__10.<br>1.1.1.4<br>• | 3. C71-S003G | Candidate has located/identified C71-S003G and simulated turning the switch counter clockwise to the OFF position | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position. |
| *__11.<br>1.1.1.4<br>• | 4. C71-S003B | Candidate has located/identified C71-S003B and simulated turning the switch counter clockwise to the OFF position | _____ | <b><u>EVALUATOR CUE:</u></b><br>Indicate to the candidate that the breaker is in the OFF position. |

**Terminating Cue:** A reactor scram and full NSSSS isolation have been initiated from the Electrical Protection Assemblies (EPA) Area in accordance with AOP-0031 Attachment 13 Section 1.1, within 5 minutes.

COMPLETION TIME \_\_\_\_\_

**VERIFICATION OF COMPLETION**

Operator: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator: \_\_\_\_\_ KCN: \_\_\_\_\_

Date: \_\_\_\_\_ License (Circle one): RO / SRO No. of Attempts: \_\_\_\_\_

**Follow-up Questions:**

**Follow-up Question Response:**

Time to complete JPM: \_\_\_\_\_ minutes

Comments / Feedback:

**RESULT:**            **Satisfactory / Unsatisfactory**

**Note:** An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**JPM Task Conditions/Cues**  
(Operator Copy)

**Initial Conditions:** The Reactor has just been shutdown from 100% power due to a fire in the Control Room that necessitates evacuation.

**Initiating Cues:** The CRS has directed you to complete Attachment 13, Section 1.1 of AOP-0031, Shutdown From Outside the Main Control Room, to initiate a Reactor Scram and full NSSSS Isolation.

**This is a time critical JPM.**



## Appendix D

## Scenario Outline

Form ES-D-1

| Facility: <u>River Bend Station</u>  | Scenario No.: <u>1</u>      | Op-Test No.: _____ |  |
|--|-----------------------------|--------------------|--|
| Examiners: _____ Operators: _____<br>_____<br>_____  |                             |                    |  |
| Initial Conditions:  |                             |                    |  |
| <u>Mode 1, Reactor power 68%. Power ascension in progress following downpower for Feedwater pump 'C' seal replacement. APRM B in bypass due to downscale failure. FWS-P1A &amp; B in service.</u>  |                             |                    |  |
| Turnover: Shift priorities: 1) Start lube oil system for FWS-P1C in preparation for pump start. 2) Place 3 <sup>rd</sup> Feed Reg Valve in service. 3) Raise reactor power in accordance with Reactivity Control Plan Step 20, then await further guidance from reactor engineering. |                             |                    |  |
| Event No.  | Malf. No.                   | Event Type*        | Event Description  |
| 1  | NA                          | N (CRS,BOP)        | Start Feedwater pump "C" lube oil system per SOP-0009.   |
| 2  | NA                          | N (CRS,ATC)        | Place 3 <sup>rd</sup> Feedwater Regulating Valve in service per SOP-0009.  |
| 3  | NA                          | R (ATC)            | Raise reactor power in accordance with the reactivity control plan Step 20.  |
| 4  | NMS015F                     | I (CRS,ATC)        | (Tech Spec) APRM F Upscale failure due to flow converter downscale failure and half scram.                             |
| 5  | MSC011                      | C(CRS)             | (Tech Spec) 171' airlock inner door seal failure.  |
| 6  | p870_54a:<br>g_5<br>FAIL ON | C(CRS,BOP)         | Steam Packing Exhauster failure requiring equipment rotation.  |
| 7  | EHC001<br>RPS001A           | M (ALL)            | Main Turbine Trip/Anticipated Transient Without Scram with MSIVs open due to failure of RPS to completely de-energize. |
| 8  | FWS004B                     | C (CRS,ATC)        | Feedwater Master Level Controller output fails high.   |
| 9  | EHC002B                     | C (CRS,BOP)        | Main Turbine Bypass Valves fail closed.  |
|  |                             |                    |  |
|  |                             |                    |  |
|  |                             |                    |  |
|  |                             |                    |  |
|  |                             |                    |  |
|  |                             |                    |  |
| * (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor   |                             |                    |  |

Total Malfunctions (5-8) **(7)**APRM F, 171' airlock, Stm Packing Exh., Turb trip, ATWS, Master Controller, Turb Bypass Valves.

Malfunctions after EOP entry (1-2) **(2)** Feedwater Master Controller, Turbine Bypass Valves

Abnormal Events (2-4) **(2)** AOP-2, AOP-3

Major Transients (1-2) **(1)** ATWS

EOPs entered (1-2) **(2)** EOP-1, EOP-2

EOP contingencies (0-2) **(1)** EOP-1A

Critical Tasks (2-3) **(2)** Terminate injection to <-56", Begin control rod insertion

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>1</u>                   |           |  |
|---|-----------|--|
| Event Description: <u>Start Feedwater pump "C" lube oil system per SOP-0009</u> |           |  |
| Event Initiation: Initiated by crew.  |           |  |
| CUE: Turnover item.   |           |  |
| Time  | Position  | Applicant's Actions or Behavior  |
|   | CRS       | Direct the BOP to start up the lube oil system for Feedwater pump C in accordance with SOP-0009 Section 4.1  |
|   | BOP       | Startup the lube oil system for Feedwater pump C in accordance with SOP-0009 Section 4.1 as follows:<br><br>4.1.1 Communicate with Turbine Building operator to verify adequacy of reservoir oil level.  |
|   | ROLE PLAY | As Turbine Building operator, notify the BOP that oil level on FWL-PI119C is approximately midrange.   |
|   | BOP       | Continue startup the lube oil system for Feedwater pump C in accordance with SOP-0009 Section 4.1 as follows:<br><br>4.1.2 Check operation of FWL-P2C as follows:<br>1. Place control switch to START<br>2. On H13-P680, check red RX FWP P1C MN LO PMP PRESS NORM light is on.<br>3. Return the pump control switch to STOP.<br>4.1.3 Check operation of FWL-P3C as follows:<br>1. Place control switch to START<br>2. On H13-P680, check red RX FWP P1C MN LO PMP PRESS NORM light is on.<br>3. Return the pump control switch to STOP.<br>4.1.4 Communicate with the Turbine Building operator to verify adequacy of the gear increaser oil level in the bulls-eye. |
|   | ROLE PLAY | As Turbine Building operator, notify the BOP that oil level is visible in the C gear increaser bulls-eye.  |

## NRC

|  |                          |   |
|--|--------------------------|---|
|  | BOP                      | <p>Continue startup the lube oil system for Feedwater pump C in accordance with SOP-0009 Section 4.1as follows:</p> <p>4.1.5 Check operation of FWL-P5C as follows:</p> <ol style="list-style-type: none"> <li>1. Place the pump control switch to START</li> <li>2. On H13-P680, check red RX FWP P1C GEAR INCR LO PRESS NORM light is ON.</li> <li>3. Return the pump control switch to STOP.</li> </ol>  |
|  | BOP                      | <p>4.1.6 Place the control switches for the following pumps to AUTO:</p> <ol style="list-style-type: none"> <li>1. FWL-P1C</li> <li>2. FWL-P5C</li> </ol> <p>4.1.7 At H13-P680, depress RX FWP P1C LUBE OIL SYSTEM START pushbutton and check the following:</p> <ol style="list-style-type: none"> <li>1. FWL-P1C starts</li> <li>2. FWL-P5C starts</li> <li>3. RX FWP P1C MN LO PUMP PRESS NORM red light is ON</li> <li>4. RX FWP P1C GEAR INCR LO PRESS NORM red light is ON</li> </ol> <p>4.1.8 Place the control switches for the following pumps in AUTO:</p> <ol style="list-style-type: none"> <li>1. FWL-P2C</li> <li>2. FWL-P3C</li> </ol> <p>4.1.9 Communicate with Turbine Building operator to verify proper oil flows through sight glasses on feed pump, motor bearings, and gear increaser supply on Feedwater pump C.</p> |
|  | ROLE PLAY                | As Turbine Building operator, accept direction to verify proper oil flow on Feedwater pump C. Report that oil flow is satisfactory.   |
|  | <i>Termination Point</i> | <i>Event is terminated upon completion of SOP-0009 Section 4.1</i>  |

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>  1  </u> Event No.: <u>  2  </u>                             |                   |   |
|---|-------------------|---|
| Event Description: <u>Place 3<sup>rd</sup> Feedwater Regulating Valve in service per SOP-0009</u> |                   |   |
| Event Initiation: Initiated by crew.  |                   |   |
| CUE: Turnover item.   |                   |   |
| Time  | Position          | Applicant's Actions or Behavior   |
|   | CRS               | Direct the ATC to place the 3 <sup>rd</sup> Feedwater Regulating Valve in service accordance with SOP-0009 Section 4.11   |
|   | BOP               | <p>Place the 3<sup>rd</sup> FWREG Valve in Service in accordance with SOP-0009 Section 4.11 as follows:</p> <ul style="list-style-type: none"> <li>4.11.1 Verify at least one FWREG valve is in service on master level control per Section 4.9.</li> <li>4.11.2 Verify closed FWS-MOV27C, FWREG VLV 1C INLT Valve</li> <li>4.11.3 Ensure C33-R601B, FWREG VALVE C FLOW CONTROLLER IN MANUAL, set at 0%.</li> <li>4.11.4 IF the amber CONT SIGNAL FAILURE light is ON, THEN depress the C FWREG VLV CONT SIGNAL FAILURE RESET Pushbutton</li> <li>4.11.5 Test stroke C33-LVF001C, FWREG VALVE C as follows: <ul style="list-style-type: none"> <li>1. Communicate with the turbine building operator to locally monitor valve position.</li> <li>2. Use the OPEN and CLOSE pushbuttons on C33-R601B, FWREG VALVE C FLOW CONTROLLER to stroke open and closed C33-LVF001C.</li> <li>3. Communicate with turbine building operator to verify proper valve movement and smooth operation.</li> <li>4. Check C33-LVF001C full closed.</li> <li>5. Open FWS-MOV27C, FWREG VLV 1C INLT Valve.</li> </ul> </li> <li>4.11.6 Open C33-LVF001C, FWREG VALVE C until all in service FWREGs are at the same position.</li> <li>4.11.7 Place C33-R601B in AUTO.</li> </ul> |
|   | ROLE PLAY         | Accept direction from ATC to locally verify smooth operation of regulating valve and report back that operation was smooth following the full stroke exercise.  |
|   | Termination Point | Event is terminated when all 3 Feedwater Regulating Valves are in service.  |

| Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>3</u>                                 |          |   |
|---|----------|---|
| Event Description: Raise reactor power in accordance with the reactivity control plan Step 20 |          |   |
| Event Initiation: Initiated by crew.  |          |   |
| CUE: Turnover item.   |          |   |
| Time  | Position | Applicant's Actions or Behavior   |
|   | CRS      | Direct the reactor power ascension in accordance with the Reactivity Control Plan (RCP) |

# NRC

|  |                          |  |
|--|--------------------------|--|
|  | ATC                      | <ul style="list-style-type: none"> <li>○ Accept the direction for power ascension.</li> </ul> <p><i>ATC may choose either SOP-0071, Section 5.1.1 Notch Control Rod Withdrawal <u>OR</u> Section 5.2.1 Continuous Rod Movement. Either is correct. Both sets of actions are provided below.</i></p> <ul style="list-style-type: none"> <li>○ Withdraw control rods in accordance with RCP by using SOP-0071 Section 5.1.1 Notch Control Rod Withdrawal.               <ol style="list-style-type: none"> <li>1. At H13-P680, on the ROD SELECT MODULE, select the rod to be moved.</li> <li>2. Depress SELECTED GROUP button to check positions of control rods within group are correct prior to movement</li> <li>3. Check that a Rod Withdraw Block or Inhibit does <u>not</u> exist.</li> <li>4. On H13-P680, depress and hold, WITHDRAW Pushbutton until the IN indicator is lit or the start of rod motion is observed.</li> <li>5. Check that the new rod notch position displayed is the next highest <u>even</u> number.</li> </ol> </li> </ul> <p style="text-align: center;"><u><b>OR</b></u></p> <ul style="list-style-type: none"> <li>○ Withdraw control rods in accordance with RCP by using SOP-0071 Section 5.2.1 Continuous Rod Movement.               <ol style="list-style-type: none"> <li>1. At H13-P680, on the ROD SELECT MODULE, select the rod to be moved.</li> <li>2. Check that a Rod Withdrawal Block Inhibit does <u>not</u> exist.</li> <li>3. On H13-P680, simultaneously depress and hold the following pushbuttons:                   <ul style="list-style-type: none"> <li>• C11A-S214, CONT WITHDRAW</li> <li>• C11A-S334, WITHDRAW</li> </ul> </li> <li>4. <u>WHEN</u> the rod notch position displayed is <u>immediately</u> above the desired rod notch position, <u>THEN</u> release both pushbuttons.</li> <li>5. <u>IF</u> achieved rod position is <u>not</u> the desired rod position, <u>THEN</u> use notch movement per Section 5.1 to obtain correct position.</li> </ol> </li> <li>○ Repeat the rod motion as needed to satisfy the steps indicated on the turnover sheet.</li> <li>○ Report the power ascension complete.</li> </ul> |
|  | <i>Termination Point</i> | <i>Event is terminated when Step 20 of the Reactivity Control Plan has been completed.</i>   |
|  |                          |  |

# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>  1  </u> Event No.: <u>  4  </u>  |                          |  |
|--|--------------------------|--|
| <b>Event Description:</b> (Tech Spec) APRM F Upscale failure due to flow converter downscale failure and half scram  |                          |  |
| <b>Event Initiation:</b> At lead evaluator discretion.   |                          |  |
| <b>CUE:</b> Annunciator: H13-P680 6A A03 APRM B or F Upscale Trip or INOP & H13-P680 5A A10 RPS TRIP LOGIC B OR D ACTIVATED & H13-P680 6A C01 APRM UPSCALE |                          |  |
| Time   | Position                 | Applicant's Actions or Behavior  |
|  | ATC                      | <ul style="list-style-type: none"> <li>Recognize and report APRM F failure and half scram condition.</li> <li>Per ARP 680-5A-A10, verify no individual rod scrams.</li> </ul>  |
|  | CRS                      | <ul style="list-style-type: none"> <li>Accept report of failed APRM</li> <li>Notify maintenance of failed instrument. Make OSP-0046 notifications, notify Reactor Engineering.</li> <li>Enter Technical Specification 3.3.1.1. Condition A.</li> <li>Recognize potential LCO for TS 3.3.2.1</li> <li>Direct ATC to remove APRM B from bypass and place APRM F in bypass, then reset the half scram.</li> </ul> |
|  | ATC                      | <ul style="list-style-type: none"> <li>Remove APRM B from bypass and place APRM F in bypass</li> <li>Reset the half scram.</li> </ul>  |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Work Management or Maintenance accept report of failed instrument.</li> </ul>  |
|  | BOP                      | <ul style="list-style-type: none"> <li>Obtain APRM F status from backpanel indications.</li> </ul>   |
|  | <i>Termination Point</i> | <i>Event is terminated when CRS has applied Technical Specifications to the APRM failure and has given direction to bypass the APRM and reset the half scram.</i>  |
|  |                          |  |

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>5</u>                  |                   |   |
|--|-------------------|---|
| Event Description: (Tech Spec) 171' airlock outer door seal failure            |                   |   |
| Event Initiation: At lead evaluator discretion.                                |                   |   |
| Cue: Annunciator: H13-P863/71A/B05 AUX BLDG/CNMT AL OUTBOARD DOOR SEAL FAILURE |                   |   |
| Time   | Position          | Applicant's Actions or Behavior   |
|  | BOP               | <ul style="list-style-type: none"> <li>Recognize and report annunciator status to CRS</li> <li>Respond to annunciator per ARP.</li> <li>Dispatch personnel to locally verify status of airlock.</li> </ul>  |
|  | CRS               | <ul style="list-style-type: none"> <li>Accept report of airlock annunciator status.</li> </ul>  |
|  | ROLE PLAY         | <ul style="list-style-type: none"> <li>As reactor building operator, accept direction to locally verify status of airlock.</li> <li>Report that the 171' airlock outer door seal has failed.</li> </ul>   |
|  | CRS               | <ul style="list-style-type: none"> <li>Upon receipt of confirmation of door seal failure, enter Technical Specification 3.6.1.2 Condition A.</li> <li>Within 1 hour of inoperability, verify OPERABLE door (inner door) is CLOSED.</li> <li>Within 24 hours of inoperability, verify OPERABLE door (inner door) is LOCKED.</li> </ul> |
|  | Termination Point | Event is terminated when the CRS has applied Technical Specifications to the airlock failure.   |
|  |                   |   |
|  |                   |   |
|  |                   |   |
|  |                   |   |
|  |                   |   |
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|  |                   |   |
|  |                   |   |



## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>1</u> Event No.: <u>6</u>                      |                   |   |
|--|-------------------|---|
| Event Description: Steam Packing Exhauster B failure requiring equipment rotation. |                   |   |
| Event Initiation: At lead evaluator discretion.                                    |                   |   |
| Cue: Annunciator: H13-P870 54A G05 STEAM PACKING EXH FAN MOTOR HIGH TEMPERATURE    |                   |   |
| Time   | Position          | Applicant's Actions or Behavior   |
|  | BOP               | <ul style="list-style-type: none"> <li>Recognize and report annunciator status on Steam Packing Exhauster.</li> <li>Dispatch Turbine Building operator to verify local status of Steam Packing Exhauster.</li> </ul>  |
|  | CRS               | <ul style="list-style-type: none"> <li>Accept report of Steam Packing Exhauster high temperature condition.</li> <li>Direct BOP to swap Steam Packing Exhauster A in accordance with ARP and SOP-0015.</li> <li>Notify maintenance of high temperature condition on the Steam Packing Exhauster B.</li> </ul>   |
|  | ROLE PLAY         | <ul style="list-style-type: none"> <li>As Turbine Building operator accept direction to verify local status of Steam Packing Exhauster.</li> <li>Provide local report that the B exhauster motor is extremely hot.</li> </ul>   |
|  | BOP               | <ul style="list-style-type: none"> <li>Swap Steam Packing Exhausters per SOP-0015 Section 5.3 as follows:               <ul style="list-style-type: none"> <li>5.3.1 Partially open TME-MOVD1 for the fan to be started.</li> <li>5.3.2 WHEN at least 3 minutes have elapsed, THEN close TME-MOVD1 for the fan to be started.</li> <li>5.3.3 Start TME-SPEM-A.</li> <li>5.3.4 Throttle open TME-MOVD1 while closing TME-MOVD2 to maintain greater than or equal to 16 inches and less than or equal to 18 inches of water as indicated on TME-PIEPR-9.</li> <li>5.3.5 WHEN TME-MOVD2 is completely closed, THEN stop TME-SPEM-B.</li> </ul> </li> </ul> |
|  | ROLE PLAY         | <ul style="list-style-type: none"> <li>After equipment rotation, as Turbine Building operator notify BOP that Packing Exhauster A is running fine with normal vibration and temperature.</li> </ul>   |
|  | Termination Point | <i>Event is terminated when the standby Steam Packing Exhauster has been placed in service and the previously running Steam Packing Exhauster has been secured.</i>   |

Op-Test No.: \_\_\_\_\_ Scenario No.: 1 Event No.: 7

**Event Description:** Main Turbine Trip/Anticipated Transient Without Scram with MSIVs open due to failure of RPS to de-energize.

**Event Initiation:** At lead evaluator discretion.

**Cue:** Numerous annunciators, turbine trip light indication, control rods remain withdrawn with a scram signal present.

| Time | Position | Applicant's Actions or Behavior  |
|------|----------|--|
|      | ATC      | <ul style="list-style-type: none"> <li>Place the mode switch to shutdown</li> <li>Determine that all control rods did not fully insert</li> <li>Arm and depress all four manual scram pushbuttons</li> <li>Determine that all control rods did not fully insert</li> <li>Arm and initiate Alternant Rod Insertion</li> <li>Determine that all control rods did not fully insert</li> <li>Give the SRO an ATWS report</li> </ul>  |
|      | SRO      | <p>Accept ATWS report from ATC</p> <ul style="list-style-type: none"> <li>Enter EOP-1 and transition to EOP-1A RPV control ATWS</li> <li>Direct the following EOP-1A actions: <ul style="list-style-type: none"> <li>ATC Trip both reactor recirc pumps</li> <li>BOP Terminate and prevent injection with HPCS</li> <li>BOP Inhibit ADS</li> <li>BOP Install EOP-5 Enclosures 16 and 24</li> <li>ATC Terminate injection with feedwater and lower reactor water level to -60" to -140"</li> <li>BOP Initiate Standby liquid control system</li> <li>BOP Install EOP-5 Enclosures 14, 12, and 10</li> <li>BOP Maximize CRD cooling water flow</li> <li>Direct a pressure band of 800-1090 psig with Bypass Valves and Drains</li> </ul> </li> </ul> |

# NRC

|  |     |   |
|--|-----|---|
|  | ATC | <ul style="list-style-type: none"> <li>• Trip both reactor recirc pumps as follows:               <ul style="list-style-type: none"> <li>○ Depress STOP, RECIRC PUMP BREAKER 5A.</li> <li>○ Depress STOP, RECIRC PUMP BREAKER 5B.</li> <li>○ TRIP LFMG BRKR 1A</li> <li>○ TRIP LFMG BRKR 1B</li> </ul> </li> </ul>  |
|  | BOP | <ul style="list-style-type: none"> <li>• Terminate and prevent injection with High Pressure Core Spray as follows:               <ul style="list-style-type: none"> <li>○ Override Injection / Initiate High Pressure Core Spray</li> <li>○ Verify E22-F004 amber override light is lit.</li> <li>○ Stop the High Pressure Core Spray pump.</li> <li>○ Notify the SRO that injection from HPCS has been terminated and prevented.</li> </ul> </li> <li>• Inhibit ADS as follows:               <ul style="list-style-type: none"> <li>○ Place Div I ADS key lock switch to INHIBIT</li> <li>○ Place Div II ADS key lock switch to INHIBIT</li> </ul> </li> <li>• Install EOP-5 enclosures 16, 24, 14, 12, and 10.               <ul style="list-style-type: none"> <li>○ Request the back panel operator to perform needed actions</li> <li>○ Verify that IAS-MOV106 is open</li> </ul> </li> </ul> |
|  | ATC | <ul style="list-style-type: none"> <li>• <b><u>CRITICAL TASK</u></b> Terminate injection with feedwater and lower reactor water level to -60" to -140" when directed by the SRO in accordance with EOP-1A Step RLA-13.               <ul style="list-style-type: none"> <li>○ Place the master RPV level controller into manual</li> <li>○ Lower master controller output signal to "0"</li> <li>○ When level is &lt;-60" control level in the band by using the OPEN / CLOSED pushbutton on the selected controller.</li> </ul> </li> </ul> <p><i>Reference Event 8</i></p>  |

# NRC

|  |                          |  |
|--|--------------------------|--|
|  | BOP                      | <ul style="list-style-type: none"> <li>• Initiate Standby liquid control system as follows:               <ul style="list-style-type: none"> <li>○ Place SLC PUMP A(B) (NOT BOTH), control switch to RUN.</li> <li>○ Verify the following:                   <ul style="list-style-type: none"> <li>• SQUIB CONTINUITY A(B), light goes Off.</li> <li>• C41-F001A(B), SLC PUMP A(B) SUCT VLV, Opens.</li> <li>• C41-C001A(B), SLC PUMP A(B), Starts.</li> </ul> </li> <li>○ Notify SRO of SLC injection status.</li> <li>○ Verify IAS-MOV106 is Open.</li> <li>○ Record SLC Tank Level gallons.</li> </ul> </li> <li>• <u>CRITICAL TASK</u> Begin control rod insertion               <ul style="list-style-type: none"> <li>○ Request the back panel operator to perform needed actions to install Enclosures 10, 12, and 14, as needed.</li> </ul> </li> <li>• Maximize CRD cooling water flow as follows:               <ul style="list-style-type: none"> <li>○ Start C11-C001AP(BP), CRD AUX OIL PUMP A(B).</li> <li>○ Verify C11-C001A(B), CRD PUMP A(B), white control power available light on.</li> <li>○ Start C11-C001A(B), CRD PUMP A(B).</li> <li>○ Place CRD HYDRAULICS FLOW CONTROLLER, in MANUAL and raise signal to 100%.</li> <li>○ Fully Open C11-F003, CRD DRIVE WATER PRESS CONTROL VALVE.</li> <li>○ Verify IAS-MOV106 is Open.</li> </ul> </li> <li>• Stabilize/maintain pressure 800-1090 psig with Bypass Valves and Drains.</li> </ul> <p><i>Reference Event 9</i></p> |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>• If directed, accept direction as Control Building operator to report to the Division III Diesel Generator</li> </ul>  |
|  | <i>Termination Point</i> | <i>Event is terminated when Critical Tasks have been performed and the plant has been stabilized.</i>  |
|  |                          |  |
|  |                          |  |
|  |                          |  |



## Appendix D

## Required Operator Actions

[Form ES-D-2](#)Op-Test No.: \_\_\_\_\_ Scenario No.: 1 Event No.: 9

Event Description: Main Turbine Bypass Valves fail closed.

**Event Initiation:** Event is initiated 5 minutes after the Mode Switch is not in RUN position.**Cue:** GREEN closed lights on for Turbine Bypass Valves with reactor pressure above the pressure setpoint.

| Time | Position                 | Applicant's Actions or Behavior  |
|------|--------------------------|--|
|      | BOP/ATC                  | <ul style="list-style-type: none"> <li>Recognize and report failure of Bypass Valves</li> <li>Utilize other methods of pressure control (additional drains and safety relief valves as necessary)</li> </ul>       |
|      | SRO                      | <ul style="list-style-type: none"> <li>Accept report of failed Bypass Valves</li> <li>Direct BOP to use alternate methods of pressure control (additional drains and safety relief valves as necessary)</li> </ul> |
|      | <i>Termination Point</i> | <i>Event is terminated when alternate pressure control methods have been placed in service.</i>  |
|      |                          |  |
|      |                          |  |
|      |                          |  |
|      |                          |  |
|      |                          |  |
|      |                          |  |

**RIVER  
BEND STATION  
SIMULATOR SCENARIO**

Number: **\*RSMS-NRC12-1**  
Revision: **01**  
Page 1 of **13**  
Approximate Time: 1 Hour(s)  
Record Type: **\*Z01.24**



**TRAINING PROGRAM:**

**SIMULATOR TRAINING**

**LESSON PLAN:**

**\* Turbine Trip/ATWS/ Master Controller High and Bypass Valves Closed**

**REASON FOR REVISION:**

NRC 2012 exam

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7-11-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-26-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-23-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

## **I. DESCRIPTION OF SCENARIO**

This scenario begins with the plant at 68% power due Feedwater pump maintenance.

Events for this scenario:

- Startup lube oil system for return of the C Feedwater pump.
- Place the 3<sup>rd</sup> Feedwater Regulating valve in service.
- Raise reactor power with control rods.
- APRM F Upscale failure (Technical Specifications)
- 171' airlock seal failure (Technical Specifications).
- Steam Packing Exhauster high temperature requiring equipment rotation.
- Turbine Trip and RPS Fails to De-energize
- FWS Master Controller output fails high.
- Main Turbine Bypass Valves fail closed.

## **II. TERMINAL OBJECTIVES**

1. Establish safe and stable plant conditions following a Master FWLCV failure with ATWS per plant procedures.



IV. INITIAL CONDITIONS/SHIFT TURNOVER

| INITIAL<br>CONDITION | TRAINING<br>FOCUS | EQUIPMENT STATUS   | REQUIRED<br>DOCUMENTS                          |
|----------------------|-------------------|--|--|
| IC <u>#217</u>       |                   | <p><b>Power:</b> 68%</p> <p><b>Core:</b> Xenon equilibrium</p> <p><b>Equipment OOS:</b> APRM B</p> <p><b>STPs Due:</b> NONE</p> <p><b>LCOs:</b> Potential LCO on APRM B</p> <p><b>Evolutions in progress:</b> Power ascension following feedwater pump maintenance.</p> <p><b>Problem/Lit annunciators:</b> None</p> | <p><b>STP:</b> None</p> <p><b>GOP-0001</b></p> |

V. GENERAL INSTRUCTIONS

| Event Number    | MFS-OR-REM-SCH   | Expected Operator Actions |
|-----------------|--|---------------------------|
| Simulator Setup |  |                           |
|                 | <p><u>Malfunctions</u></p> <p><b>T4 NMS015F</b> APRM F Flow Converter Fails Downscale<br/> <b>T5 RPS001A</b> RPS FAILS TO SCRAM – ALL SIGNALS<br/> <b>T6 p870_54a:g_5 FAIL ON</b><br/> <b>T7 EHC001</b> Main Turbine Trip<br/> <b>T8 FWS004B</b> Master Controller output fails high.<br/> <b>T9 EHC002B</b> Turbine Bypass Valves failed closed.</p> <p><u>Overrides</u></p> <p><b>T5 p863_71a:b_5 FAIL ON</b></p> <p><u>Remote Functions</u></p> <p><b>T10 EOP010</b> Encl 10 Fuses removed (30 second intervals)<br/> <b>T12 EOP012A</b> Encl 12 RPS Jumpered<br/> <b>T12 EOP012B</b> Encl 12 ARI Jumpered<br/> <b>T14 EOP014</b> Encl 14 RCIC Jumpered<br/> <b>T16 EOP016</b> Encl 16 Jumpered<br/> <b>T24 EOP024</b> Encl 24 Jumpered</p> |                           |

| Event Number  | MFS-OR-REM-SCH  | Expected Operator Actions |   |
|---|---|---------------------------|---|
| <b>Simulator Setup</b>  | <p><b><u>EVENT TRIGGERS</u></b></p> <p><b>T8</b> Wide Range Level &lt;-42”</p> <p><b>T9 (5 minutes after Mode Switch is not in RUN)</b></p> <p>Check for Caution Tags</p>   |                           |   |
| <b>Event 0</b>  | <b>RUN</b>  | CREW:                     | Board walk down / Turnover.   |
| <b>Event 1</b><br>Start Feedwater Pump C lube oil system<br><i>Event initiated by crew from turnover sheet.</i>                       | <b>ROLE PLAY</b><br>As the turbine building operator, if requested report that all pre-start checks (oil levels for feed pump and gear increaser) are complete and SAT.<br><br>After pump start, if requested report that all post-start checks are complete and SAT. | SRO                       | Direct the UO to start Feedwater Pump C lube oil system.  |
|   |   | UO                        | Start the Feedwater Pump C lube oil system per SOP-0009.  |
| <b>Event 2</b><br>Place 3 <sup>rd</sup> Feedwater Regulating Valve in service.<br><i>Event initiated by crew from turnover sheet.</i> | <b>ROLE PLAY</b><br>As the turbine building operator take direction to monitor feedwater regulating valve during test stroke and report smooth travel during valve stroke.  | SRO                       | Direct ATC to place C feedwater regulating valve in service.  |
|   |   | ATC                       | <ul style="list-style-type: none"> <li>Accept the direction for placing C feedwater regulating valve in service.</li> <li>Place C feedwater regulating valve in service.</li> </ul> |

|  |   |     |   |
|--|---|-----|---|
| <b>Event 3</b><br><br>Raise reactor power in accordance with reactivity control plan.<br><br><i>Event initiated by crew from turnover sheet.</i>     |   | SRO | Direct ATC to perform step 20 of reactivity control plan.   |
|  |   | ATC | <ul style="list-style-type: none"> <li>Accept the direction to perform step 20 of reactivity control plan.</li> <li>Perform step 20 of reactivity control plan.</li> </ul>  |
| <b>Event 4</b><br><br>APRM F flow converter fails downscale causing APRM F upscale trip.<br><br><i>Event initiated at Lead Evaluator discretion.</i> | <b>T4 NMS015F</b> APRM F Flow converter fails downscale.<br><br><b>ROLE PLAY:</b> As work management or maintenance, accept report of failed APRM.<br><br>When APRM back panel information is requested, notify requestor that APRM B is downscale. | ATC | <ul style="list-style-type: none"> <li>Recognize and report APRM failure</li> <li>Verify no individual rod scrams</li> </ul>  |
|  |   | UO  | <ul style="list-style-type: none"> <li>Verify indications of APRM F in Backpanel</li> </ul>   |
|  |   | SRO | <ul style="list-style-type: none"> <li>Accept report from ATC of APRM failure.</li> <li>Notify maintenance of APRM failure, complete OSP-0046 notifications, notify Reactor Engineering.</li> <li>Enter TS 3.3.1.1 Condition A.</li> <li>Recognize potential LCO for TS 3.3.2.1</li> <li>Direct ATC to remove APRM B from bypass and place APRM F to bypass and reset scram.</li> </ul> |
|  |   | ATC | <ul style="list-style-type: none"> <li>When directed, remove APRM B from bypass and place APRM F to bypass and reset half scram.</li> </ul>   |

|   |  |     |   |
|---|--|-----|---|
| <b>Event 5</b><br>171' Airlock Seal Failure.<br><br><i>Event initiated at Lead Evaluator discretion.</i><br><br>Time _____<br>Call Back _____   | <b>T5 MSC011</b> Containment Airlock Seal Failure (171')   | UO  | <ul style="list-style-type: none"> <li>Recognize and report 171' airlock seal failure annunciator.</li> <li>Dispatch reactor building operator to investigate.</li> </ul>   |
|   | <b>ROLE PLAY</b><br>As the reactor building operator, accept direction to investigate 171' airlock seals. After 5 minutes, report a seal failure (a hole in the seal).<br>If directed accept instructions to lock the operable door.     | SRO | <ul style="list-style-type: none"> <li>Accept the report</li> <li>Enter Tech. Specs 3.6.1.2 Condition A.</li> <li>Notify work management or maintenance of seal condition and request OSP-0046 notifications.</li> </ul>  |
| <b>Event 6</b><br>Steam Packing Exhauster high temperature condition requiring equipment rotation.<br><br><i>Event initiated at Lead Evaluator discretion.</i><br><br>Time _____<br>Call Back _____ | <b>T6 p870_54a:g_5 FAIL ON</b>   | UO  | <ul style="list-style-type: none"> <li>Recognize and report high temperature annunciator on the steam packing exhauster</li> <li>Contact turbine building operator to verify local status of packing exhauster.</li> </ul>  |
|   | <b>ROLE PLAY</b><br>As the turbine building operator, accept the direction to investigate the high temperature annunciator on the packing exhauster.<br><br>After 5 minutes, report that the packing exhauster motor B is extremely hot. | SRO | <ul style="list-style-type: none"> <li>Accept the report from the UO concerning high temperature on the packing exhauster.</li> <li>Direct UO to rotate the equipment to the standby packing exhauster (A).</li> <li>Contact WMC concerning the high temperature condition on the packing exhauster.</li> </ul> |

|   |   |     |   |
|---|---|-----|---|
| <b>Event 7</b><br>Main Turbine Trip<br>RPS Fails to Scram – All Signals<br><i>Event initiated at Lead Evaluator discretion.</i> | <b>T7 EHC001</b> Main Turbine trip/ATWS<br><br><b>ROLE PLAY:</b> If directed, as Control Building operator accept direction to report to the Division III Diesel Generator. | ATC | <ul style="list-style-type: none"> <li>• Recognize and report a turbine trip has occurred with a failure of RPS to de-energize.</li> <li>• Place the mode switch to shutdown</li> <li>• Determine that all control rods did not fully insert</li> <li>• Arm and depress all four manual scram pushbuttons</li> <li>• Determine that all control rods did not fully insert</li> <li>• Arm and initiate Alternant Rod Insertion</li> <li>• Determine that all control rods did not fully insert</li> <li>• Give the CRS an ATWS report</li> </ul>   |
|   |   | SRO | <ul style="list-style-type: none"> <li>• Accept report from the ATC</li> <li>• Enter EOP-1 and transition to EOP-1A RPV control ATWS</li> <li>• Direct EOP-1A actions: <ul style="list-style-type: none"> <li>• ATC trip both reactor recirc pumps</li> <li>• UO terminate and prevent injection with HPCS</li> <li>• UO inhibit ADS</li> <li>• UO install EOP-5 enclosures 16 and 24</li> <li>• ATC terminate injection with feedwater and lower reactor water level to -60” to -140”</li> <li>• UO initiate Standby liquid control system</li> <li>• UO install EOP-5 enclosures 10 and 14</li> <li>• UO maximize CRD cooling water flow</li> </ul> </li> </ul> |
|   |   | ATC | <ul style="list-style-type: none"> <li>• Trip both reactor recirc pumps</li> <li>• Terminate injection with feedwater and lower reactor water level to -60” to -140”</li> </ul>   |

|   |   |     |   |
|---|---|-----|---|
| <b>Event 7 (cont'd)</b>   |   | UO  | <ul style="list-style-type: none"> <li>• Terminate and prevent injection with HPCS</li> <li>• Inhibit ADS</li> <li>• Install EOP-5 enclosures 16 and 24</li> <li>• Initiate Standby liquid control system</li> <li>• Install Enclosures to support control rod insertion</li> <li>• <b><u>CRITICAL TASK</u></b> Begin control rod insertion</li> <li>• Maximize CRD cooling water flow</li> </ul> |
|   |   | ATC | <ul style="list-style-type: none"> <li>• Trip both recirc pumps</li> <li>• <b><u>CRITICAL TASK</u></b> Terminate injection to maintain -60" to -140".</li> </ul>  |
| <b>Event 8</b><br>FWS Master Controller output fails high.<br><br><i>Event initiated at Reactor Water Level 2 (-43")</i>                      | <b>T8 FWS004B</b> FWS Master Controller output fails high | ATC | <ul style="list-style-type: none"> <li>• Recognize and report the failure of the master controller</li> <li>• Place Feedwater level control valves A, B and C into manual</li> <li>• Manually control reactor level within the given band of -60" to -140"</li> </ul>   |
|   |   | SRO | Direct manual control of the feedwater level control valves   |
| <b>Event 9</b><br>Main Turbine Bypass Valves fail CLOSED.<br><br><i>Event initiated 5 minutes after the Mode Switch is placed in SHUTDOWN</i> | <b>T9 EHC002B</b> Main Turbine Bypass Valves fail CLOSED. | ATC | Recognize and report the turbine bypass valves have failed closed.  |
|   |   | UO  | Recognize and report failure of bypass valves. Control pressure by alternate means (additional drain and safety relief valves.  |
|   |   | SRO | Accept report of failed bypass valves<br>Direct alternate pressure control methods with additional drains and safety relief valves.   |

|   |               |  |
|---|---------------|--|
| Termination is at the discretion of the Chief Examiner. | <b>FREEZE</b> | <u><b>Critical Task Review:</b></u><br><b>1. Injection to the RPV terminated to lower level to &lt;-56”</b><br><b>2. Begin Control Rod Insertion</b> |
|---|---------------|--|



## **VI. TERMINATION CRITERIA:**

The exercise should be terminated when the performance objectives have been achieved or the operators are unable to diagnose and respond effectively to the scenario.

The following conditions provide an indication of performance objective achievement for this scenario; Critical Tasks are indicated with an \*:

- Level and Pressure control is established
- \*Rods Insertion has commenced
- \*Terminate feed water injection to lower power

## **VII. REFERENCES**

### **A. Plant Procedures**

1. GOP-0005, Power Maneuvering
2. AOP-0001, Reactor Scram
3. AOP-0002, Turbine Trip
4. AOP-0003, Automatic Isolations
5. EOP-1, RPV Control
6. EOP-1A RPV Control ATWS
7. EOP-2, Primary Containment Control

|  |  |   |
|--|--|---|
| Offgoing OSM:<br><br><div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>(Print)</span> <span>KCN</span> </div> | Oncoming OSM:<br><br><div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>(Print)</span> <span>KCN</span> </div> | Off-Going Shift<br><br><div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">             N<br/><input type="checkbox"/> </div> <div style="text-align: center;">             D<br/><input type="checkbox"/> </div> </div><br>Date |
| <b>PART I - TO BE REVIEWED PRIOR TO ASSUMING THE SHIFT</b>   |  |   |
| UNIT STATUS <u>MODE</u> <u>1</u> <u>RX POWER</u> <u>68%</u>  |  |   |
| EVOLUTIONS (COMPLETED / IN PROGRESS / PLANNED); GENERAL INFORMATION  |  |   |
| Power ascension in progress following downpower for Feedpump C seal replacement.   |  |   |
| Start Feedpump C lube oil system   |  |   |
| Place the 3 <sup>rd</sup> Feed Reg Valve in service.   |  |   |
| Raise power per reactivity control plan step 20  |  |   |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <b>SIGNIFICANT LCO STATUS</b> </div> <div style="width: 48%;"> <b>EOOS STATUS</b> </div> </div>                       |  |   |
| Potential LCO APRM B due to downscale failure  |  | 10.0 Green  |
| <div style="border-bottom: 1px solid black; height: 1.2em;"></div>   |  | <div style="border-bottom: 1px solid black; height: 1.2em;"></div>  |
| <b>EQUIPMENT STATUS</b>  |  | <b>PROTECTED EQUIPMENT</b>  |
| APRM B placed in bypass to clear alarms  |  | <div style="border-bottom: 1px solid black; height: 1.2em;"></div>  |
| <div style="border-bottom: 1px solid black; height: 1.2em;"></div>   |  | <div style="border-bottom: 1px solid black; height: 1.2em;"></div>  |

☐  
 Night Orders

☐  
 Standing Orders

☐  
 Board Walkdown

☐  
 Temp Alts

(Signature: Oncoming OSM Review Completed)    KCN

**Appendix D**
**Scenario Outline**
**Form ES-D-1**

|   |                        |                    |
|---|------------------------|--------------------|
| Facility: <u>River Bend Station</u>   | Scenario No.: <u>2</u> | Op-Test No.: _____ |
| Examiners: _____ Operators: _____<br>_____<br>_____   |                        |                    |
| Initial Conditions: <u>Mode 1, 100% power, Division 1 work week, Div 1 DG tagged out</u>  |                        |                    |
| Turnover: <u>Shift Priorities: 1) Alternate HDL Pumps from A to B due to report of seal leakage on A. 2) Run STP-402-0201 for scheduled surveillance.</u> |                        |                    |

| Event No. | Malf. No.  | Event Type*      | Event Description  |
|-----------|--|------------------|--|
| 1         | NA   | N (CRS,ATC)      | Alternate HDL Pumps from A to B due to reported seal leakage.                                |
| 2         | NA   | N (CRS,BOP)      | Run STP-402-0201, MAIN CONTROL ROOM A/C TRAIN A OPERABILITY TEST for scheduled surveillance. |
| 3         | CRDM2809 Uncoupled                                     | R(ATC)<br>C(CRS) | (Tech Spec) Control Rod Drop – Control Rod 28-09   |
| 4         | CRD001A  | C<br>(CRS,BOP)   | (Tech Spec) CRD pump trip  |
| 5         | FWS001A  | C (CRS, ATC)     | Feedwater A pump trip  |
| 6         | ED004F   | C (ALL)          | Trip of NJS-LDC1F/Loss of Feed/Reactor Scram   |
| 7         | RCS007<br>E22MOV<br>F004<br>BREAKER<br>TRIP<br>RCIC001 | M (ALL)          | Coolant leak in the drywell with loss of power to E22-F004 and trip of RCIC                  |
| 8         | ED003H<br>RHR009B<br>RHR001C                           | C (CRS,BOP)      | ENS-SWG1A bus loss, RHR B fails to auto start, E12-F042C injection valve fails.              |
|           |  |                  |  |
|           |  |                  |  |
|           |  |                  |  |

\* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

 Total Malfunctions (5-8) **(6)** Rod drop, CRD trip, Feedpump trip, NJS Bus, Leak, E12-F042C

 Malfunctions after EOP entry (1-2) **(2)** Leak, E12-F042C

 Abnormal Events (2-4) **(3)**AOP-0061, AOP-0006, AOP-0003

 Major Transients (1-2) **(1)** Leak

 EOPs entered (1-2) **(2)** EOP-1, EOP-2

 EOP contingencies (0-2) **(2)** Alternate Level Control, Emergency Depressurization

 Critical Tasks (2-3) **(3)** Insert control rod 28-09, Open SRVs to depressurize vessel, manually start RHR B.

# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>1</u>                    |                          |   |
|--|--------------------------|---|
| Event Description: Alternate HDL Pumps from A to B due to reported seal leakage. |                          |   |
| Event Initiation: Initiated by crew.   |                          |   |
| <b>Cue:</b> From turnover sheet.   |                          |   |
| Time   | Position                 | Applicant's Actions or Behavior   |
|  | SRO                      | <ul style="list-style-type: none"> <li>Direct ATC to alternate Heater Drain Pumps from HDL-P1A to HDL-P1B in accordance with SOP-0010.</li> </ul>   |
|  | ATC                      | <ul style="list-style-type: none"> <li>Alternate from HDL-P1A to HDL-P1B in accordance with SOP-0010 Section 5.1 as follows:               <ul style="list-style-type: none"> <li>5.1.1 Open HDL-MOV58B by placing the control switch in OPEN on H13-P870.</li> <li>5.1.2 Communicate with Turbine Building operator to determine if pump is rotating.</li> <li>5.1.3 If not rotating, then have Turbine Building operator verify HDL-V601 is open.</li> </ul> </li> </ul>  |
|  | ROLE PLAY                | As Turbine Building operator report that HDL-P1B is NOT rotating and that HDL-V601 is open. <ul style="list-style-type: none"> <li>If requested also notify ATC that oil level is satisfactory and the pump is ready to be started.</li> </ul>  |
|  | ATC                      | <ul style="list-style-type: none"> <li>Continue alternating HDL pumps in accordance with SOP-0010 Section 5.1 as follows:               <ul style="list-style-type: none"> <li>5.1.4 Start HDL-P1B by depressing the START pushbutton on H13-P680.</li> <li>5.1.6 Open HDL-MOV55B by depressing the OPEN pushbutton on H13-P680.</li> <li>5.1.7 Close HDL-MOV58B by placing the control switch in the CLOSE position on H13-P870.</li> <li>5.1.8 Close HDL-MOV55A by depressing the CLOSE pushbutton on H13-P680.</li> <li>5.1.9 Stop HDL-P1A by depressing the STOP pushbutton on H13-P680.</li> <li>5.1.10 Communicate with the Turbine Building operator to verify idle pump is not rotating backwards.</li> </ul> </li> </ul> |
|  | ROLE PLAY                | When requested, notify ATC that HDL-P1A is NOT rotating backwards.  |
|  | <i>Termination Point</i> | <i>Event is terminated when HDL-P1B is in service and HDL-P1A is secured.</i>   |

# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>2</u>   |                          |  |
|---|--------------------------|--|
| Event Description: Run STP-402-0201, MAIN CONTROL ROOM A/C TRAIN A OPERABILITY TEST for scheduled surveillance. |                          |  |
| Event Initiation: Initiated by crew.  |                          |  |
| <b>Cue:</b> From turnover sheet.  |                          |  |
| Time  | Position                 | Applicant's Actions or Behavior  |
|   | CRS                      | <ul style="list-style-type: none"> <li>Direct BOP to perform STP-402-0201</li> </ul>   |
|   | BOP                      | <ul style="list-style-type: none"> <li>Perform STP-402-0201 as follows:               <div style="margin-left: 20px;">                 7.1.5 Contact Electrical Maintenance to obtain current and voltage readings on the filter train heater during the HVC-FN1A start.               </div> </li> </ul>  |
|   | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Electrical Maintenance personnel take direction to obtain current and voltage reading on the filter heater during the HVC-FN1A start.</li> </ul>   |
|   | BOP                      | <div style="margin-left: 20px;">             7.2.1. Open the following dampers:             <div style="margin-left: 20px;">               1. Open HVC-AOD19C, LOCAL AIR INTAKE.<br/>               2. Open HVC-AOD19E, LOCAL AIR INTAKE.             </div> </div> <div style="margin-left: 20px;">             7.2.2 Start HVC-FN1A, CR FILTER UNIT FAN A and record start time           </div> <div style="margin-left: 20px;">             7.2.3 Check the following dampers open:             <div style="margin-left: 20px;">               1. HVC-AOD43A, FILTER 3A INLET<br/>               2. HVC-AOD3A, FILTER 3A FAN DISCH             </div> </div> <div style="margin-left: 20px;">             7.2.4 Close HVC-MOV1A, CR AHU OUTSIDE AIR SPLY           </div> <div style="margin-left: 20px;">             7.2.5 Close HVC-MOV1B, CR AHU OUTSIDE AIR SPLY           </div> <ul style="list-style-type: none"> <li>Acknowledge annunciator H13-P863-74A-G02. (<i>Expected for this evolution</i>).</li> </ul> <div style="margin-left: 20px;">             7.2.6 Communicate with Control Building operator to verify local status checking for normal appearance, sound, and vibration.           </div> <div style="margin-left: 20px;">             7.2.7 Communicate with Electrical Maintenance to obtain current and voltage readings.           </div> |
|   | ROLE PLAY                | <p>As Control Building operator report that HVC-FN1A, CR FILTER UNIT FAN A filter train is running normally.</p> <p>As Electrical Maintenance report that current and voltage readings are normal and they will be logged in the procedure prior to the end of the shift.</p> <p>As back panel operator, provide outside air temperature of 82°F when requested.</p>   |
|   | <i>Termination Point</i> | <i>Event is terminated when HVC-FN1A is in service in accordance with STP-402-0201.</i>  |

# NRC

## Appendix D

## Required Operator Actions

Form ES-D-2

| Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>3</u><br>Event Description: (Tech Spec) Control Rod Drop – Control Rod 28-09<br><b>Event Initiation:</b> At lead evaluator discretion<br><b>Cue:</b> Unexplained rise in reactor power |                          |   |
|--|--------------------------|---|
| Time   | Position                 | Applicant's Actions or Behavior   |
|  | ATC                      | <ul style="list-style-type: none"> <li>Recognize and report an unexplained rise in reactor power.</li> <li>Take action to lower power to &lt;100%</li> <li>Diagnose Rod Drop as cause for rise in power.</li> </ul>   |
|  | SRO                      | <ul style="list-style-type: none"> <li>Notify reactor engineering of the rise in power.</li> <li>Direct entry into AOP-0061, MISPOSITIONED CONTROL ROD</li> </ul>   |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Reactor Engineer, indicate the rise in power is in the vicinity of LPRM string 30-07.</li> </ul>  |
|  | SRO                      | <ul style="list-style-type: none"> <li>Direct ATC to perform a coupling check on the rods surrounding LPRM string 30-07 in accordance with SOP-0071 Section 5.4</li> <li>Direct ATC to enter AOP-0061 when the rod drop has been confirmed by coupling check.</li> <li>Direct ATC to fully insert control rod 28-09 in accordance with AOP-0061.</li> <li>Enter Technical Specification LCO 3.1.3 Condition C.</li> </ul>   |
|  | ATC                      | <ul style="list-style-type: none"> <li>Perform a coupling check on rods surrounding LPRM string 30-07 as follows:               <ul style="list-style-type: none"> <li>Select the rod on the full core display</li> <li>Check that position is at 48</li> <li>Check that Rod Withdrawal Block or Inhibit does not exist</li> <li>Attempt to withdraw control rod past 48 by depressing C11A-S334 WITHDRAW pushbutton.</li> </ul> <p><i>The following annunciator will occur on control rod 28-09 only.</i></p> <ul style="list-style-type: none"> <li>Recognize and report CONTROL ROD OVERTRAVEL condition on control rod 28-09.</li> <li>Depress ROD UNCOUPLED pushbutton and observe red light on 28-09.</li> <li><u>CRITICAL TASK</u> - In accordance with AOP-0061 full insert control rod 28-09.</li> </ul> </li> </ul> |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>If requested, as Reactor Building operator, take direction to locally isolate control rod 28-09 using V103 and V105 on CRDM 28-09.</li> </ul>  |
|  | <i>Termination Point</i> | <i>Event is terminated when control rod 28-09 has been fully inserted and Technical Specifications have been applied to the control rod failure.</i>  |

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>4</u>       |           |  |
|---|-----------|--|
| Event Description: (Tech Spec) CRD pump                             |           |  |
| <b>Event Initiation:</b> At lead evaluator discretion               |           |  |
| <b>Cue:</b> Annunciator: H13-P601 22A A01 CRD PUMP A OR B AUTO TRIP |           |  |
| Time  | Position  | Applicant's Actions or Behavior  |
|   | BOP       | <ul style="list-style-type: none"> <li>Recognize and report trip of CRD pump "A"</li> <li>Communicate to Reactor Building operator CRD pump trip and verify readiness of CRD "B" for a start.</li> </ul>   |
|   | SRO       | <ul style="list-style-type: none"> <li>Acknowledge trip of CRD pump "A". Direct BOP to perform ARP-601-22A-A01.</li> <li>Notify work management or maintenance of CRD pump trip.</li> <li>Enter Technical Specification 3.1.5 Condition B when the second accumulator fault occurs. <i>(Candidate may also enter Condition A on the first fault, but due to the short duration between faults, he may only enter Condition B which is more restrictive).</i></li> </ul>  |
|   | ROLE PLAY | <ul style="list-style-type: none"> <li>As reactor building operator take direction to locally verify readiness of CRD "B" to be started and perform an inspection of CRD "A" to ascertain cause of trip. After receipt of 2<sup>nd</sup> accumulator fault, notify BOP that CRD "B" is ready to start. If needed to delay start of CRD pump, notify BOP that water is spraying from CRD A and you will establish a spray barrier prior to the CRD B start.</li> <li>As control building operator take direction to check local status of CRD "A" breaker indication to ascertain cause of trip. After 5 minutes report breaker indicates the CRD pump tripped on overcurrent.</li> </ul> |
|   | ATC       | <ul style="list-style-type: none"> <li>Acknowledge CRDM high temperature annunciators. <i>(~1 minute after trip)</i></li> <li>Monitor for accumulator faults. <i>(1<sup>st</sup> fault ~6 minutes after trip; 2<sup>nd</sup> fault ~7 minutes after trip).</i></li> </ul>  |



## NRC

|  |                          |  |
|--|--------------------------|--|
|  | BOP                      | <ul style="list-style-type: none"> <li>• Perform ARP-601-22A-A01 OPERATOR ACTIONS Step 1 to start CRD “B” as follows:               <ol style="list-style-type: none"> <li>a. Start Aux Oil Pump C11-C001BP</li> <li>b. Place Flow Controller C11-R600 to MANUAL</li> <li>c. Close C11-R600</li> <li>d. Verify White Control Power Light on for CRD pump to be started.</li> <li>e. Start Standby Pump C11-C001B</li> <li>f. Verify amps &lt;45 amps</li> <li>g. When flow drops below 45 gpm on C11-R606, then slowly throttle open C11-R600 to achieve 45 gpm.</li> <li>h. When C11-R600 is nulled out, Then place in AUTO.</li> </ol> </li> </ul> |
|  | <i>Termination Point</i> | <i>Event is terminated when CRD Pump B has been placed in service and Control Rod Drive System parameters are returned to normal.</i>  |

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>5</u>    |                   |   |
|--|-------------------|---|
| Event Description: Feedwater A pump trip                         |                   |   |
| <b>Event Initiation:</b> At lead evaluator discretion            |                   |   |
| Cue: Annunciator: H13-P680-03A-A01 RX FW PUMP BREAKERS AUTO TRIP |                   |   |
| Time   | Position          | Applicant's Actions or Behavior   |
|  | ATC               | <ul style="list-style-type: none"> <li>Recognize and report trip of "A" Feedwater pump</li> </ul>   |
|  | ATC or BOP        | <ul style="list-style-type: none"> <li>Communicate with Turbine Building and Control Building operators and direct them to the pump and breaker to ascertain cause of the trip.</li> </ul>  |
|  | SRO               | <ul style="list-style-type: none"> <li>Acknowledge trip of "A" Feedwater pump</li> <li>Direct ATC to enter AOP-0006.</li> <li>Notify work management or maintenance of trip.</li> <li>Notify Reactor Engineering and Chemistry of power change.</li> </ul>  |
|  | ATC               | <ul style="list-style-type: none"> <li>Lower power to mitigate any level transient in accordance with AOP-0006 by reducing reactor recirculation flow with B33-K603A &amp; B flow controllers.</li> <li>If Level 4 is reached, verify a flow control valve runback occurs.</li> <li>When level is restored above Level 4, reset the flow control valve runback in accordance with ARP-680-04 A03 &amp; A09 LONG TERM ACTIONS Step 2 as follows:               <ol style="list-style-type: none"> <li>Adjust B33-K603A to obtain zero% LIMITER ERROR</li> <li>Adjust B33-K603B to obtain zero% LIMITER ERROR</li> <li>Perform the following to reset the cavitation interlocks:                   <ol style="list-style-type: none"> <li>Depress CAVITATION INTLK RECIRC PMP A RESET pushbutton and verify H13-P680/04A/A03 resets</li> <li>Depress CAVITATION INTLK RECIRC PMP B RESET pushbutton and verify H13-P680/04A/A09 resets</li> </ol> </li> </ol> </li> </ul> |
|  | ROLE PLAY         | <ul style="list-style-type: none"> <li>As Turbine Building operator accept direction to investigate cause of pump trip.</li> <li>As Control Building operator accept direction to investigate feedpump breaker to determine cause of trip.</li> <li>As Auxiliary Control Room operator, accept report of power change.</li> </ul>   |
|  | Termination Point | Event is terminated when the plant is stabilized following the trip of Feedwater Pump A.  |

# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>2</u> Event No.: <u>6</u><br>Event Description: Trip of NJS-LDC1F/Loss of Feed/Reactor Scram.<br><b>Event Initiation:</b> At lead evaluator discretion<br><b>Cue:</b> Numerous annunciators including H13-P808/86A/E07 NJS-LDC1E OR 1F UNDERVOLTAGE, trip of remaining Feedwater pumps due to loss of lube oil systems. |                          |  |
|---|--------------------------|--|
| Time  | Position                 | Applicant's Actions or Behavior  |
|   | ATC                      | <ul style="list-style-type: none"> <li>Recognize and report loss of all high pressure feedwater from H13-P680.</li> <li>Place the mode switch in SHUTDOWN position.</li> <li>Deliver scram report</li> <li>Perform actions of AOP-1 and AOP-2</li> </ul>   |
|   | SRO                      | <ul style="list-style-type: none"> <li>Direct a reactor level band of -20" to 51" with RCIC and HPCS</li> <li>Direct a pressure band of 500 to 1090 psig with bypass valves and steam line drains until the MSIVs close.</li> <li>Then direct pressure control with SRVs</li> <li>Direct performance of AOP-0001 Reactor Scram and AOP-0002 Turbine Generator trip to the ATC</li> <li>Direct the performance of AOP-0003 Automatic Isolations to the BOP</li> <li>Enter Alternate Level Control</li> <li>Direct BOP to Inhibit ADS</li> <li>Direct injection with Standby Liquid Control</li> <li>Direct maximizing Control Rod Drive</li> <li>Communicate with work management or maintenance concerning bus loss, RCIC trip and HPCS failure</li> </ul> |
|   | BOP                      | <ul style="list-style-type: none"> <li>Attempt initiation of HPCS and RCIC. Recognize and report trip of RCIC and failure of E22-MOVF004(<i>See Event 7</i>)</li> <li>Verify isolations per AOP-0003</li> <li>Inhibit ADS</li> <li>Initiate Standby Liquid Control</li> <li>Maximize Control Rod Drive</li> </ul>  |
|   | <i>Termination Point</i> | <i>Event is terminated when Critical Tasks of Event 8 are met and critical plant parameters are stabilized.</i>  |
|   |                          |  |

**Form ES-D-2**

**Cue:** Rising drywell temperature and pressure.



**RIVER  
BEND STATION  
SIMULATOR SCENARIO**

Number: **\*RSMS-NRC12-2**  
Revision: **01**  
Page 1 of **13**  
Approximate Time: 1 Hour(s)  
Record Type: **\*Z01.24**



**TRAINING PROGRAM:**

**SIMULATOR TRAINING**

**LESSON PLAN:**

**\* CRD Trip/FWS Pump Trip/Loss of HP Feed**

**REASON FOR REVISION:**

NRC 2012 exam

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7-12-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-26-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information

## **I. DESCRIPTION OF SCENARIO**

This scenario begins with the plant at 100% power.

Events for this scenario:

- Alternate Heater Drain Pumps due to seal leakage.
- Run Control Building Filter Train surveillance test
- Respond to a Control Rod Drop.
- Respond to a Control Rod Drive Pump trip
- Respond to a Feedwater Pump trip
- Respond to a loss of a 480 VAC bus which results in a total loss of feedwater
- Respond to a coolant leak in the drywell and failures of high pressure emergency injection systems.
- Emergency depressurization to allow injection of low pressure systems.

## **II. TERMINAL OBJECTIVES**

1. Establish safe and stable plant conditions following Emergency Depressurization.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

| INITIAL<br>CONDITION | TRAINING<br>FOCUS | EQUIPMENT STATUS   | REQUIRED<br>DOCUMENTS |
|----------------------|-------------------|--|-----------------------|
| IC #218              |                   | <p><b>Power:</b> 100%</p> <p><b>Core:</b> Xenon equilibrium</p> <p><b>Equipment OOS:</b> Div 1 EDG tagged out<br/>Protected Division signs for Division 2.<br/>EOOS 9.5 Green</p> <p><b>STPs Due:</b> 402-0201<br/><b>LCOs:</b> Div 1 EDG</p> <p><b>Evolutions in progress:</b> None.</p> <p><b>Problem/Lit annunciators:</b> None</p> | STP-402-0201          |



V. GENERAL INSTRUCTIONS

| Event Number    | MFS-OR-REM-SCH   | Expected Operator Actions  |
|-----------------|--|--|
| Simulator Setup |  |  |
|                 | <p><u>Malfunctions</u></p> <p><b>CRDM2809</b> Stuck (30) and Uncoupled</p> <p><b>RHR009B</b> RHR B trip</p> <p><b>T3 CRDM2809</b> Uncoupled</p> <p><b>T4 CRD001A</b> CRD Pump A trip</p> <p><b>T5 FWS001A</b> Feedwater Pump A trip</p> <p><b>T6 ED004F</b> NJS-LDC1F trip</p> <p><b>T6 CNM006 Final 100</b> Condensate filter differential pressure</p> <p><b>T7 RCS007</b> Coolant leak in the drywell</p> <p><b>Final: 200 gpm Ramp 0:05:00</b></p> <p><b>T8 ED003H</b> ENS-SWG1A trip.</p> <p><b>T8 RHR001C</b> E12-F042C fails</p> <p><b>T9 E22MOVF004 BREAKER TRIP</b></p> <p><b>T10 RCIC001</b> RCIC trip</p> <p><u>REMOTE FUNCTIONS</u></p> <p><b>T16 EOP016 Encl 16</b> Jumpered</p> <p><u>EVENT TRIGGERS</u></p> <p><b>T7 Wide Range &lt;-43"</b></p> <p><b>T8 Wide Range &lt;143"</b></p> <p><b>T9 HPCS Breaker Closed</b></p> <p><b>T10 RCIC Speed &gt;50%</b></p> | <p><u>EQUIPMENT STATUS</u></p> <p>Caution Tags Removed</p> <p>HDL-P1A in service</p> <p>CRD-P1A in service</p> <p>SFC-P1B in service</p> <p>Div 1 EDG tagged out</p> |

| Event Number   | MFS-OR-REM-SCH   | Expected Operator Actions |   |
|--|--|---------------------------|---|
| <b>Event 0</b>   | <b>RUN</b>   | CREW:                     | Board walk down / Turnover.   |
| <b>Event 1</b><br>Alternate HDL pumps<br><br><i>Event initiated by crew from turnover sheet</i>  | <b>ROLE PLAY</b><br>As the turbine building operator, if requested report that all pre-start checks are complete and SAT.<br>(Pump B not rotating)<br><br>Post start checks include pump A not rotating.   | SRO                       | Direct the ATC rotate HDL pump from A to B.   |
|  |  | ATC                       | Rotate HDL pumps in accordance with SOP-0010.   |
| <b>Event 2</b><br>Perform STP-402-0201<br><br><i>Event initiated by crew from turnover sheet</i> | <b>ROLE PLAY</b><br>When requested, as back panel operator provide an outside air temperature of 82°F.<br><br>As electrical maintenance, take direction to monitor voltage and current reading on fan start.<br><br>As control building operator, when dispatched, report that HVC-FN1A is running normally. | SRO                       | Direct UO to perform STP-402-0201   |
|  |  | UO                        | <ul style="list-style-type: none"> <li>• Contact EM to support performance of STP-402-0201.</li> <li>• Perform STP-402-0201.</li> </ul> |

|  |   |     |   |
|--|---|-----|---|
| <b>Event 3</b><br>Control Rod Drop<br><i>Event initiated at lead evaluator discretion</i><br><br>Time _____<br><br>Call Back _____ | <b>T3 CRDM2809</b> Uncoupled<br><br><b>ROLE PLAY</b><br><br>As Reactor Engineer, after receiving report of unexplained rise in power, notify the crew that the rise in power is in the vicinity of LPRM string 30-07.<br><br>As reactor building operator, take direction to isolate control rod 28-09 using V103 and V105 at CRDM 28-09.<br><br>As back panel operator, if requested provide information that several APRMs received upscale alarms. | ATC | <ul style="list-style-type: none"> <li>Recognize and report an unexplained rise in power.</li> <li>It is possible the ATC recognizes and reports a high MW<sub>th</sub> condition and takes action to reduce power with flow</li> <li>Perform a coupling check per SOP-0071 of control rod 28-09.</li> <li><b><u>CRITICAL TASK</u></b> Fully insert dropped control rod in accordance with AOP-0061.</li> </ul> |
|  |   | SRO | <ul style="list-style-type: none"> <li>Accept report of rise in power.</li> <li>Notifications to rx engineering/chemistry/OSP-46.</li> <li>Direct performance of a coupling check on rod 28-09</li> <li>Direct entry into AOP-0061.</li> <li>Direct ATC to fully insert dropped control rod</li> <li>Enter Tech Spec LCO 3.1.3 Condition C.</li> </ul>  |

|   |   |     |   |
|---|---|-----|---|
| <b>Event 4</b><br>CRD Pump A Trip<br><i>Event initiated at lead evaluator discretion</i><br><br>Time _____<br><br>Call Back _____ | <b>T4 CRD001A</b> CRD Pump A trip<br><br><b>ROLE PLAY</b><br>As reactor building operator take direction to locally verify readiness of CRD “B” to be started and perform an inspection of CRD “A” to ascertain cause of trip.<br><br>After 2 <sup>nd</sup> accumulator fault is received, notify BOP that CRD “B” is ready to start. If needed to delay start of CRD pump, notify BOP that water is spraying from CRD A and you will establish a spray barrier prior to the CRD B start.<br><br>As control building operator take direction to check local status of CRD “A” breaker indication to ascertain cause of trip.<br>After 5 minutes report breaker indicates the CRD pump tripped on overcurrent. | UO  | <ul style="list-style-type: none"> <li>Recognize and report trip of CRD pump “A”</li> <li>Communicate to Reactor Building operator CRD pump trip and verify readiness of CRD “B” for a start.</li> <li>Start CRD B in accordance with ARP-601-22A-A01</li> </ul>                  |
|   |   | SRO | <ul style="list-style-type: none"> <li>Accept report from CRD Pump trip.</li> <li>Notify maintenance of pump trip</li> <li>Enter TS 3.1.5 Condition B when the second accumulator fault occurs.</li> <li>Direct UO to perform ARP-601-22A-A01 guidance to start CRD B.</li> </ul> |
|   |   | ATC | <ul style="list-style-type: none"> <li>Monitor for CRDM High Temperature condition (~1 minute)</li> <li>Monitor for accumulator faults (1<sup>st</sup> fault ~ 6 mins, 2<sup>nd</sup> fault ~7 mins)</li> </ul>   |

|  |  |     |   |
|--|--|-----|---|
| <b>Event 5</b><br>Feedwater Pump A trip<br><i>Event initiated at lead evaluator discretion</i><br><br>Time _____<br>Call Back _____<br><br>Time _____<br>Call Back _____ | <b>T5 FWS001A</b> Feedwater Pump A trip  | ATC | <ul style="list-style-type: none"> <li>Recognize and report trip of FWS “A”</li> <li>Lower power in accordance with AOP-0006 to within feedpump capability</li> <li>At Level 4, verify runback occurs</li> <li>Reset runback in accordance with ARP</li> <li></li> </ul>  |
|  | <b>ROLE PLAY</b><br><br>As Work Management Center, accept request to perform OSP-0046 notifications and request for maintenance support.<br><br>As Turbine Building operator accept direction to investigate cause of pump trip. After 5 minutes, report there is no visible cause for trip.<br><br>As Control Building operator accept direction to investigate feedpump breaker to determine cause of trip. After 5 minutes, report that 86 lockout device is tripped.<br><br>As Auxiliary Control Room operator accept notification of Feedwater Pump trip. | SRO | <ul style="list-style-type: none"> <li>Accept the report of feedpump trip</li> <li>Direct entry into AOP-0006.</li> <li>Direct ATC to reset runback when level is restored and stable.</li> <li>Notify Rx Engineering, Chemistry, and the system Operator of power change.</li> <li>Notify work management or maintenance of trip.</li> </ul> |

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| <b>Event 6</b><br>Trip of NJS-LDC1F and total loss of feedwater<br><br><i>Event initiated at lead evaluator discretion</i> | <b>T6 ED004F</b> NJS-LDC1F trip<br><b>T6 CNM006</b> Condensate Filters Hi DP<br><br><b>ROLE PLAY</b><br><br>As Work Management Center, accept request to perform OSP-0046 notifications and request for maintenance support for bus loss, resetting RCIC, and HPCS injection valve. | UO  | <ul style="list-style-type: none"> <li>Recognize and report trip of NJS-LDC1F</li> <li>Initiate RCIC</li> <li>Recognize and report RCIC failure</li> <li>Initiate HPCS</li> <li>Recognize and report HPCS failure</li> <li>When directed, inhibit ADS</li> <li>When directed, initiate SLC</li> </ul>  |
|  |   | ATC | <ul style="list-style-type: none"> <li>Recognize and report total loss of feedwater</li> <li>Place the mode switch in shutdown</li> <li>Deliver scram report</li> <li>Perform actions of AOP-1 and AOP-2.</li> </ul>   |
|  |   | SRO | <ul style="list-style-type: none"> <li>Acknowledge the scram report</li> <li>Direct UO to initiate RCIC and/or HPCS</li> <li>Direct a level band of -20" to 51"</li> <li>Direct a pressure band of 500-1090 psig</li> <li>Direct AOP-1, AOP-2 and AOP-3</li> <li>Enter Alternate Level Control</li> <li>Direct Inhibit ADS</li> <li>Direct Initiate SLC</li> </ul> |
| <b>Event 7</b><br>Coolant leak in the drywell<br><br><i>Event initiated at Reactor Water Level 2.</i>                      | <b>T7 RCS007</b> Coolant leak in the drywell<br><br><b>ROLE PLAY</b><br><br>When HPCS & RCIC failures are reported, notify the CRS candidate that they cannot be restored.  | ALL | <ul style="list-style-type: none"> <li>Recognize and report indications of a coolant leak in the drywell</li> </ul>  |
|  |   | SRO | <ul style="list-style-type: none"> <li>Direct pressure band of 500-1090 psig AND when &lt;700 psig, establish band of 500-700 psig.</li> <li>Enter EOP-2</li> <li>Direct installation of Enclosure 20 for drywell cooling restoration.</li> </ul>  |

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| <b>Event 7 (cont'd)</b>   | <b>T16 EOP016 Encl 16 Jumpered</b>  | UO   | <ul style="list-style-type: none"> <li>• Restore drywell cooling per Enclosure 20.</li> <li>• Install Enclosure 16.</li> <li>• Recognize and report RHR B failure to start.</li> </ul>   |
|   |   | ATC  | <ul style="list-style-type: none"> <li>• Lower pressure to 500-700 psig</li> </ul>   |
| <b>Event 8</b><br>Loss of ENS SWG A, failure of RHR B and E12-MOVF042C<br><br><i>Event initiated at Reactor Water Level 1</i> | <b>T8 ED003H</b> ENS SWG A trip<br><b>RHR009B</b> RHR B fails to start<br><b>RHR001C</b> E12-F042C fails to open<br><br><b>ROLE PLAY:</b><br><b>If requested as Auxiliary Control Room operator, notify Main Control Room that Condensate Filters all indicate high differential pressure. Backwash attempts are in progress.</b> | ATC  | <ul style="list-style-type: none"> <li>• <b><u>CRITICAL TASK</u></b> When directed, open 7 ADS/SRVs</li> </ul>   |
|   |   | SRO  | <ul style="list-style-type: none"> <li>• When level can not be restored and maintained above -186" and an injection system is available, direct opening 7 ADS SRVs.</li> </ul>   |
|   |   | UO   | <ul style="list-style-type: none"> <li>• Recognize and report loss of ENS-SWG1A</li> <li>• Recognize and report RHR B failure to start if not previously recognized during drywell leak.</li> <li>• Recognize and report failure of E12-F042C.</li> <li>• <b><u>CRITICAL TASK</u></b> – Manually start RHR B.</li> <li>• Restore RPV level to established band.</li> </ul> |
| Termination is at the discretion of the Chief Examiner.   | <b>FREEZE</b>   | <b><u>Critical Task Review:</u></b><br>1. <b>Insert dropped control rod.</b><br>2. <b>Open 7 ADS/SRVs</b><br>3. <b>Manually start RHR B.</b> |  |

## **VI. TERMINATION CRITERIA:**

The exercise should be terminated when the performance objectives have been achieved or the operators are unable to diagnose and respond effectively to the scenario.

The following conditions provide an indication of performance objective achievement for this scenario; Critical Tasks are indicated with an \*:

- Level and Pressure control was established.
- \* Dropped control rod was fully inserted.
- \*When level could not be restored and maintained above -186" and an injection system was available, opened 7 ADS SRVs.
- \*Manually started RHR B to restore level.



## **VII. REFERENCES**

### **A. Plant Procedures**

1. AOP-0061, Mispositioned Control Rod
2. AOP-0001, Reactor Scram
3. AOP-0002, Turbine Trip
4. AOP-0003, Automatic Isolations
5. EOP-1, RPV Control
6. EOP-2, Primary Containment Control

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| Offgoing OSM:<br><br><div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>(Print)</span> <span>KCN</span> </div> | Oncoming OSM:<br><br><div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>(Print)</span> <span>KCN</span> </div> | Off-Going Shift<br><br><div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">N<br/><input type="checkbox"/></div> <div style="text-align: center;">D<br/><input type="checkbox"/></div> </div><br>Date |
| <b>PART I - TO BE REVIEWED PRIOR TO ASSUMING THE SHIFT</b>   |  |   |
| UNIT STATUS <u>MODE</u> <u>1</u> <u>RX POWER</u> <u>100%</u>   |  |   |
| EVOLUTIONS (COMPLETED / IN PROGRESS / PLANNED); GENERAL INFORMATION  |  |   |
| Seal leak reported on HDL-P1A. Rotate to HDL-P1B after turnover is complete.   |  |   |
| Perform STP-402-0201, Control Building Filter Train Monthly STP run  |  |   |
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| SIGNIFICANT LCO STATUS   |  | EOOS STATUS   |
| Div 1 EDG.   |  | 9.5 Green   |
|  |  |   |
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| EQUIPMENT STATUS   |  | PROTECTED EQUIPMENT   |
| Div 1 EDG tagged out   |  | Division 2  |
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☐  
 Night Orders

☐  
 Standing Orders

☐  
 Board Walkdown

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 Temp Alts

(Signature: Oncoming OSM Review Completed)    KCN

| Facility: <u>River Bend Station</u>   | Scenario No.: <u>3</u>        | Op-Test No.: _____ |  |
|---|-------------------------------|--------------------|--|
| Examiners: _____  |                               | Operators: _____   |  |
| _____   |                               | _____              |  |
| _____   |                               | _____              |  |
| <p>Initial Conditions: <u>Mode 1, 100% power. Startup Feed Reg Valve in Augmentation Mode per SOP-0009 to support maintenance on Feed Reg Valve "C". Feed Reg Valve "C" has been returned to service. Downpower for sequence exchange this shift.</u></p> <p>Turnover: <u>Shift Priorities: 1)Remove Startup Feed Reg Valve from Augmentation Mode. 2)Start RHR B for STP-204-6302 and notify IST personnel when the pump is running at reference conditions. 3)Lower reactor power for sequence exchange per the reactivity control plan while field personnel gather data following RHR B pump start.</u></p> |                               |                    |  |
| Event No.   | Malf. No.                     | Event Type*        | Event Description  |
| 1   | NA                            | N (CRS,ATC)        | Remove Startup Feedwater Regulating Valve from Augmentation Mode and place in standby  |
| 2   | NA                            | N (CRS,BOP)        | Perform STP-204-6302 Section 7.1, RHR B Quarterly Surveillance.  |
| 3   | NA                            | R(ATC)             | Lower reactor power with Reactor Recirculation flow in accordance with the Reactivity Control Plan Step 1.   |
| 4   | RHR002B                       | C(CRS,BOP)         | (Tech Spec) RHR B trips  |
| 5   | DI-CNM-HA68A-CAM              | C(CRS,ATC)         | Feedwater Pump "A" minimum flow valve fails open.  |
| 6   | RCIC005                       | I(CRS,BOP)         | (Tech Spec) Inadvertent RCIC initiation.   |
| 7   | RCIC004<br>RCIC006<br>RPS001B | M(ALL)             | RCIC steam supply line break in the RCIC Room and Main Steam Tunnel with failure of RCIC Steam Supply Valves fail to isolate. Auto scram signals fail. |
| 8   | MSS008G<br>MSS008D<br>MSS008I | C(CRS,BOP)         | Three Safety Relief Valves fail to energize when required for emergency depressurization.  |
| 9   | FWS005A                       | C(CRS,ATC)         | Startup Feedwater Regulating Valve fails closed.   |
| * (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor  |                               |                    |  |

Total Malfunctions (5-8) **(6)** RHR B trip, A min flow, RCIC initiation, RCIC steam leak, SRV failure, Startup Reg Valve Failure

Malfunctions after EOP entry (1-2) **(2)** SRV failure, Startup Reg Valve

Abnormal Events (2-4) **(2)** AOP-0006-Min flow failure, AOP-0003-Steam Leak

Major Transients (1-2) **(1)** Steam leak with failure to isolate affecting multiple areas

EOPs entered (1-2) **(2)** EOP-1, EOP-3

EOP contingencies (0-2) **(1)** Emergency Depressurization

Critical Tasks (2-3) **(2)** Place the mode switch in shutdown, Emergency Depressurize when more than one area exceeds

Max Safe Temp or Rad Levels.

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)Op-Test No.: \_\_\_\_\_ Scenario No.: 3 Event No.: 1**Event Description:** Remove Startup Feedwater Regulating Valve from Augmentation Mode and place in standby**Event Initiation:** Initiated by crew.**Cue:** From turnover sheet.

| Time | Position                 | Applicant's Actions or Behavior   |
|------|--------------------------|---|
|      | CRS                      | <ul style="list-style-type: none"> <li>Direct ATC to remove the Startup Feedwater Regulating Valve from Augmentation Mode per SOP-0009 Section 5.4</li> </ul>   |
|      | ATC                      | <ul style="list-style-type: none"> <li>Remove Startup Feedwater Regulating Valve from Augmentation Mode in accordance with SOP-0009 Section 5.4 as follows:               <ul style="list-style-type: none"> <li>5.4.1 Place C33-R602 in Manual by depressing the Manual (Yellow) pushbutton.</li> <li>5.4.2 Close C33-LVF002 to 0% using the CLOSE pushbutton on C33-R602 while observing level is maintained by the Master Flow Controller.</li> <li>5.4.3 Check the in service regulating valves are able to maintain level while less than or equal to 92% open.</li> <li>5.4.4 Adjust C33-R602 tape set to 34 inches.</li> </ul> </li> </ul> |
|      | <i>Termination Point</i> | <i>Event is terminated when the Startup Feedwater Regulating Valve is removed from augmentation mode in accordance with SOP-0009 Section 5.4</i>  |
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## Appendix D

## Required Operator Actions

[Form ES-D-2](#)Op-Test No.: \_\_\_\_\_ Scenario No.: 3 Event No.: 2**Event Description:** Perform STP-204-6302 Section 7.1, RHR B Quarterly Surveillance**Event Initiation:** Initiated by crew.**Cue:** From turnover sheet.

| Time | Position  | Applicant's Actions or Behavior   |
|------|-----------|---|
|      | CRS       | <ul style="list-style-type: none"> <li>Direct BOP to perform Section 7.1 of STP-204-6302, RHR B Quarterly Surveillance</li> </ul>   |
|      | BOP       | <ul style="list-style-type: none"> <li>Perform STP-204-6302, RHR B Quarterly Surveillance Section 7.1 as follows:               <ul style="list-style-type: none"> <li>7.1.1 Communicate with IST personnel in the field to verify pump oil level and installation of suction pressure test gauge.</li> </ul> </li> </ul>   |
|      | ROLE PLAY | <ul style="list-style-type: none"> <li>When requested, communicate to the BOP that RHR "B" pump oil level is within the High and Low marks on the Upper and Lower sightglasses AND the suction pressure gauge is installed.</li> </ul>  |
|      | BOP       | <ul style="list-style-type: none"> <li>Continue performance of STP-204-6302, RHR B Quarterly Surveillance as follows:               <ul style="list-style-type: none"> <li>7.1.2 If Suppression Pool Cooling is desired THEN:                   <ol style="list-style-type: none"> <li>Verify SPC-AOV16, SPC HX SW DISCH VLV is CLOSED.</li> <li>Throttle open E12-F068B, RHR HX B SVCE WTR RTN.</li> </ol> </li> <li>7.1.3 Start E12-C002B, RHR PUMP B as follows:                   <ol style="list-style-type: none"> <li>Start E12-C002B, RHR PUMP B</li> <li>Verify pump amps &lt; 91 amps on H13-P601, E12-PC002B RHR PUMP B MOTOR AMPS</li> </ol> </li> <li>7.1.4 Open and time E12-F024B, RHR PUMP B TEST RTN TO SUP PL</li> <li>7.1.5 Record stroke time on Data Sheet 4.</li> <li>7.1.6 Check closed E12-F064B, RHR PUMP B MIN FLOW TO SUP PL</li> <li>7.1.7 Close E12-F048, RHR B HX BYPASS VALVE</li> <li>7.1.8 Throttle closed E12-F003B, RHR B HX OUTLET VALVE to establish Reference Value of 5100 gpm on E12-R603B, RHR B LOOP FLOW</li> </ul> </li> <li>Notify IST personnel that RHR B is running at reference conditions.</li> </ul> |

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|  | <i>Termination<br/>Point</i> | <i>Event is terminated when RHR B is running at reference conditions in accordance with STP-204-6302.</i> |
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## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

Op-Test No.: \_\_\_\_\_ Scenario No.: 3 Event No.: 3

**Event Description:** Lower reactor power with Reactor Recirculation flow in accordance with the Reactivity Control Plan

**Event Initiation:** Initiated by crew.

**Cue:** From turnover sheet.

| Time | Position                 | Applicant's Actions or Behavior  |
|------|--------------------------|--|
|      | CRS                      | <ul style="list-style-type: none"> <li>Direct ATC to lower reactor power with Reactor Recirculation flow in accordance the Reactivity Control Plan.</li> </ul>   |
|      | ATC                      | <ul style="list-style-type: none"> <li>Lower reactor power in accordance with the Reactivity Control Plan and SOP-0003 Section 5.9.1.1 as follows:               <ol style="list-style-type: none"> <li>Verify B33-K603A(B) are in Manual</li> <li>Determine which loop is to be adjusted by observing Loop flows on B33-R612A and B33-R612B. Both loops may have to be adjusted to obtain desired power while maintaining Loop Flow mismatch within 5%.</li> <li>Note current valve position, generator load, MWth, APRMs and loop flows.</li> <li>Lower Reactor Recirculation Flow by toggling momentarily B33-K603A(B) controllers in the closed direction.</li> <li>Verify servo error returns to its previous position.</li> <li><i>This step is not applicable</i></li> <li>Observed for expected changes in valve position, generator load, MWth, APRMs and loop flows.</li> <li>Repeat the above until desired power level is achieved.</li> </ol> </li> </ul> |
|      | <i>Termination Point</i> | <i>Event is terminated when Step 1 of the Reactivity Control Plan is complete with reactor power at 2967 MWth.</i>   |
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## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>3</u> Event No.: <u>4</u>           |                          |  |
|---|--------------------------|--|
| <b>Event Description:</b> (Tech Spec) RHR B Trips                       |                          |  |
| <b>Event Initiation:</b> Initiated at Lead Evaluator discretion         |                          |  |
| <b>Cue:</b> Annunciator: H13-P601-17A-A4, RHR PUMP "B" MOTOR AUTO TRIP. |                          |  |
| Time  | Position                 | Applicant's Actions or Behavior  |
|   | BOP                      | <ul style="list-style-type: none"> <li>Recognize and report trip of RHR "B"</li> </ul>   |
|   | CRS                      | <ul style="list-style-type: none"> <li>Acknowledge trip of RHR "B"</li> <li>Notify Work Management Center or Maintenance of trip</li> <li>Enter LCO 3.5.1 Condition A and LCO 3.6.2.3 Condition A.</li> <li>Direct BOP to complete shutdown of RHR "B" per STP-204-6302 starting at step 7.1.12</li> </ul>   |
|   | BOP                      | <ul style="list-style-type: none"> <li>Complete shutdown of RHR "B" per STP-204-6302 as follows:<br/>           7.1.12 Close E12-F024B, RHR PUMP B TEST RTN TO SUP P<br/>           7.1.15.1 Open/Verify open E12-F003B, RHR B HX OUTLET VALVE<br/>           7.1.15.2 Open E12-F048, RHR B HX BYPASS VALVE<br/>           7.1.15.3 Open E12-F064B, RHR PUMP B MIN FLOW TO SUP PL<br/>           7.1.15.4 Close E12-F068B, RHR HX B SVCE WTR RTN         </li> </ul> |
|   | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Control Building operator take direction to investigate RHR pump breaker following trip.</li> <li>As Reactor Building operator take direction to investigate RHR pump trip and take direction to perform fill and vent of RHR C if necessary.</li> </ul>   |
|   | <i>Termination Point</i> | <i>Event is terminated when the RHR line up has been restored to standby and Technical Specifications have been applied to the pump failure condition.</i>   |
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# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>3</u> Event No.: <u>5</u>                         |                          |   |
|---|--------------------------|---|
| <b>Event Description:</b> Feedwater Pump "A" minimum flow valve fails open            |                          |   |
| <b>Event Initiation:</b> Initiated at Lead Evaluator discretion                       |                          |   |
| <b>Cue:</b> RED indicating light on FWS-FV2A is ON and GREEN indicating light is OFF. |                          |   |
| Time  | Position                 | Applicant's Actions or Behavior   |
|   | ATC                      | <ul style="list-style-type: none"> <li>Recognize and report FWR-FV2A failed open.</li> </ul>  |
|   | CRS                      | <ul style="list-style-type: none"> <li>Accept report of failed minimum flow valve</li> <li>Direct entry into AOP-0006 and direct referencing AOP-0007 for applicability.</li> </ul>   |
|   | ATC                      | <ul style="list-style-type: none"> <li>Enter AOP-0006</li> <li>Take manual control of FWR-FV2A by placing the controller in manual and depressing the CLOSE pushbutton.</li> <li>Refer to AOP-0007 for applicability</li> </ul> |
|   | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Turbine Building operator take direction to investigate failure of Feedwater pump A minimum flow valve.</li> </ul>  |
|   | <i>Termination Point</i> | <i>Event is terminated the appropriate notifications have occurred and the minimum flow valve has been manually closed.</i>   |
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## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>3</u> Event No.: <u>6</u>   |                          |   |
|---|--------------------------|---|
| <b>Event Description:</b> (Tech Spec) Inadvertent RCIC initiation   |                          |   |
| <b>Event Initiation:</b> Initiated at Lead Evaluator discretion   |                          |   |
| <b>Cue:</b> Annunciator: H13-P601-21A-E02 GLAND SEAL COMPRESSOR AUTO START, E51-F045 RED indicating light ON, GREEN indicating light OFF. |                          |   |
| Time  | Position                 | Applicant's Actions or Behavior   |
|   | BOP                      | <ul style="list-style-type: none"> <li>Recognize and report inadvertent initiation of RCIC.</li> </ul>  |
|   | CRS                      | <ul style="list-style-type: none"> <li>Accept report of RCIC initiation.</li> <li>Verify by 2 independent means adequacy of reactor water level and direct BOP to trip RCIC.</li> </ul>   |
|   | BOP                      | <ul style="list-style-type: none"> <li>Verify by 2 independent means adequacy of reactor water level and trip RCIC as follows:               <ul style="list-style-type: none"> <li>Depress E51A-S17, RCIC TURBINE TRIP Pushbutton.</li> <li>Verify E51-MOVC002 RCIC TRIP &amp; THROTTLE VALVE indicates closed.</li> <li>Verify RCIC speed lowering on E51-C002-1, RCIC TURB SPEED.</li> </ul> </li> </ul> |
|   | CRS                      | When RCIC is tripped, Enter LCO 3.5.3 Condition A.  |
|   | <i>Termination Point</i> | <i>Event is terminated when RCIC has been tripped and Technical Specifications have been applied for the RCIC failure and tripped condition.</i>  |
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## Appendix D

## Required Operator Actions

[Form ES-D-2](#)Op-Test No.: \_\_\_\_\_ Scenario No.: 3 Event No.: 7

**Event Description:** RCIC steam supply line break in the RCIC Room and Main Steam Tunnel with failure of RCIC Steam Supply Valves fail to isolate

**Event Initiation:** Initiated at Lead Evaluator discretion

**Cue:** Rising radiation levels at main plant exhaust and RCIC room, rising temperatures in RCIC room and steam tunnel.

| Time | Position | Applicant's Actions or Behavior   |
|------|----------|---|
|      | BOP      | <ul style="list-style-type: none"> <li>Recognize and report elevated temperature in RCIC room and Main Steam Tunnel.</li> <li>Enter AOP-0003, AUTOMATIC ISOLATIONS.</li> <li>Recognize and report failure of RCIC to isolate.</li> <li>Attempt manual isolation of E51-F063 and E51-F064.</li> <li>Obtain RCIC room and Main Steam Tunnel temperatures from back panel indications.</li> <li>Continue to monitor and report temperatures throughout event.</li> <li>Control pressure 500-1090 psig and notify CRS when &lt;700 psig.</li> </ul> |

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|  | CRS | <ul style="list-style-type: none"> <li>• Accept report of elevated temperature in RCIC room and Main Steam Tunnel.</li> <li>• Direct entry into AOP-0003</li> <li>• When Steam Tunnel temperature exceeds 144°F or RCIC Room temperature exceeds 144°F, enter EOP-0003.</li> <li>• Accept report of failure of RCIC to isolate and direct attempt at manual isolation.</li> <li>• Before RCIC Room or Steam Tunnel Temperatures exceed 200°F, Enter EOP-0001 and direct a manual reactor scram. <i>(EOP entry may occur as a result of the MSIV isolation)</i></li> <li>• Accept Scram Report from ATC</li> <li>• Establish level band of -20" to 51"</li> <li>• Establish pressure band of 500-1090 psig with direction to ultimately be below 700 psig. When below 700 psig, adjust band to 500-700 psig.</li> <li>• Notify Work Management or Maintenance of RCIC leak and failure to isolate.</li> <li>• When &gt;200°F is reached in more than one area, transition to Emergency Depressurization.</li> <li>• Direct opening 7 ADS SRVs</li> </ul> |
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|  |                          |  |
|--|--------------------------|--|
|  | ATC                      | <ul style="list-style-type: none"> <li>• <b><u>CRITICAL TASK</u></b> Place the Mode Switch in Shutdown (<i>Automatic scram on MSIV isolation fails</i>)</li> <li>• Check all control rods fully inserted</li> <li>• Deliver Scram Report</li> <li>• Verify Feedwater System is operating to restore reactor water level as follows:               <ul style="list-style-type: none"> <li>○ Verify level in prescribed band</li> <li>○ Transfer to the Startup Level Controller as follows:                   <ul style="list-style-type: none"> <li>▪ Place the Master controller to Manual and set output to 0 using the CLOSE pushbutton.</li> <li>▪ Select SINGLE ELEM control</li> <li>▪ Roll the Startup Feedwater Level Controller tape set to 18 inches.</li> <li>▪ Place the Startup Feedwater Level Controller to AUTO as desired.</li> </ul> </li> <li>○ Reduce to one Feed Pump.</li> <li>○ Depress Close on out of service Feed Reg Valve isolation MOVs.</li> <li>○ Reduce to two Condensate Pumps</li> <li>○ Secure Operating Heater Drain Pumps</li> <li>○ Request installation of Feed Pump Level 8 jumpers</li> </ul> </li> </ul> |
|  | <i>Termination Point</i> | <i>Event is terminated when the RPV has been depressurized and plant parameters are stable.</i>  |
|  |                          |  |
|  |                          |  |

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)Op-Test No.: \_\_\_\_\_ Scenario No.: 3 Event No.: 8**Event Description:** Three Safety Relief Valves fail to energize when required for emergency depressurization

Event Initiation: Event initiated when operator attempts to open failed SRVs

**Cue:** 3 ADS SRV RED indicating light fails to illuminate and GREEN indicating light remains illuminated.

| Time | Position                 | Applicant's Actions or Behavior   |
|------|--------------------------|---|
|      | BOP                      | <ul style="list-style-type: none"> <li>• <b><u>CRITICAL TASK</u></b> When directed, open 7 ADS SRVs as follows: <ul style="list-style-type: none"> <li>○ On H13-P601, place the control switches for the 7 ADS to OPEN and verify solenoid is energized (RED light ON, GREEN light OFF).</li> <li>○ Recognize and report 3 ADS SRVs failed to energize.</li> <li>○ Open 3 additional SRVs to accomplish Emergency Depressurization.</li> </ul> </li> </ul> <p><i><u>NOTE:</u> For critical task criteria, a total of 5 SRVs are required to Emergency Depressurize.</i></p> |
|      | CRS                      | <ul style="list-style-type: none"> <li>• Accept report of ADS SRV failure.</li> <li>• Direct opening of 3 other SRVs to satisfy Emergency Depressurization.</li> </ul>  |
|      | <i>Termination Point</i> | <i>Event is terminated when additional SRVs have been opened to accomplish Emergency Depressurization.</i>  |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |
|      |                          |   |

**Form ES-D-2**

**Cue:** Output demand of Feedwater Regulating Valve indicates zero and Feedwater Flow to vessel is isolated.

**RIVER  
BEND STATION  
SIMULATOR SCENARIO**

Number: **\*RSMS-NRC12-3**  
Revision: **01**  
Page 1 of **13**  
Approximate Time: 1 Hour(s)  
Record Type: **\*Z01.24**



**TRAINING PROGRAM:**

**SIMULATOR TRAINING**

**LESSON PLAN:**

**\* RHR B Trip/FW Min Flow Failure/Inadvertent RCIC Initiation/  
RCIC Steam Leak/ RPS Auto Signal Failure/**

**REASON FOR REVISION:**

NRC 2012 exam

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7-18-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0257 | 7-26-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information



## **I. DESCRIPTION OF SCENARIO**

This scenario begins with the plant at 100% power.

Events for this scenario:

- Remove Startup Feedwater Regulating Valve from Augmentation Mode
- Perform STP-204-6302 Section 7.1
- Lower reactor power with flow
- Respond to RHR B trip
- Respond to FWS A minimum flow valve failing open
- Respond to inadvertent RCIC initiation
- Respond to RCIC steam leak in RCIC Room and Steam Tunnel
- Respond to failed SRVs
- Respond to failed Startup Level Control valve

## **II. TERMINAL OBJECTIVES**

1. Establish safe and stable plant conditions following Emergency Depressurization.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

| INITIAL<br>CONDITION | TRAINING<br>FOCUS | EQUIPMENT STATUS  | REQUIRED<br>DOCUMENTS |
|----------------------|-------------------|---|-----------------------|
| IC #220              |                   | <p><b>Power:</b> 100%</p> <p><b>Core:</b> Xenon equilibrium</p> <p><b>Equipment OOS:</b> NA</p> <p><b>STPs Due:</b> 204-6302</p> <p><b>LCOs:</b> NA</p> <p><b>Evolutions in progress:</b> Feed Reg Valve C has been returned to service. Remove Startup Reg Valve from Augmentation mode after turnover.</p> <p><b>Problem/Lit annunciators:</b> None</p> | STP-204-6302          |

V. GENERAL INSTRUCTIONS

| Event Number    | MFS-OR-REM-SCH   | Expected Operator Actions |
|-----------------|--|---------------------------|
| Simulator Setup |  |                           |
|                 | <p style="text-align: center;"><u>Malfunctions</u></p> <p><b>RPS001A</b> RPS Fails to Scram-All Signals<br/> <b>MSS008G, MSS008D, MSS008I</b> 3 SRVs fail to open<br/> <b>RCIC007</b> – E51F063 fails to isolate<br/> <b>RCIC008</b> – E51F064 fails to isolate<br/> <b>T4 RHR002B</b> RHR B trip<br/> <b>T5 DI_CNM-HA68A-CAM</b><br/> <b>T5 DI_CNM-HA68A-COS</b><br/> <b>T5 DI_CNM-HA68A-COS delete in 1 second</b><br/> <b>T15</b> - Feed pump A min flow fails open<br/> <b>T6 RCIC005</b> Inadvertent RCIC initiation<br/> <b>T7-RCIC004</b> RCIC Steam Leak in the RCIC Room. Final 60 gpm Ramp 0:10:00<br/> <b>T7-RCIC005</b> RCIC Steam Leak in the Steam Tunnel. Final 2000 gpm Ramp 0:10:00<br/> <b>T9 CWS008</b> Turbine Building Chilled Water Pump trip.<br/> <b>T10 FWS005A</b> Startup Feed Reg Valve fails closed. <b>Delay 0:05:00</b></p> |                           |

| Event Number           | MFS-OR-REM-SCH   | Expected Operator Actions |
|------------------------|--|---------------------------|
| <b>Simulator Setup</b> | <p style="text-align: center;"><b><u>Overrides</u></b></p> <p><b>T9 DI_HVR-UC8 STOP Delay 0:05:00</b><br/> <b>T9 p863_75a:a_5 Delay 0:05:00</b><br/> <b>T9 p863_75a:b_5 Delay 0:05:00</b><br/> <b>T9 p863_75aa:c_6 Delay 0:05:00</b><br/> <b>T9 p863_75a:c_8 Delay 0:05:00</b></p> <p style="text-align: center;"><b><u>EVENT TRIGGERS</u></b></p> <p><b>T9</b> 5 min after Mode Switch not in RUN<br/> <b>T15</b> zdi6(9)</p> <p style="text-align: center;"><b><u>EQUIPMENT STATUS</u></b></p> <p>Startup Reg Valve in Augmentation Mode<br/> with controller set at 40 inches.</p> <p>Place Div 1 Protected signs<br/> RISK is NORMAL</p> <p>Check all caution tags removed</p> |                           |

|  |  |       |   |
|--|--|-------|---|
| <b>Event 0</b>   | <b>RUN</b>   | CREW: | Board walk down / Turnover.   |
| <b>Event 1</b><br>Remove Startup Feed Reg Valve from Augmentation Mode<br><br><i>Event initiated by crew</i> |  | SRO   | <ul style="list-style-type: none"> <li>Direct the ATC to remove the Startup Reg Valve from Augmentation Mode.</li> </ul>  |
|  |  | ATC   | <ul style="list-style-type: none"> <li>Remove the Startup Reg Valve from Augmentation Mode per SOP-0009.</li> </ul>   |
| <b>Event 2</b><br>Run STP-204-6302<br><br><i>Event initiated by crew</i>                                     | <b>ROLE PLAY</b><br><br>As IST personnel, when requested notify BOP that: <ul style="list-style-type: none"> <li>RHR B oil levels are SAT</li> <li>Suction pressure test gauge is installed.</li> </ul><br>Accept information that RHR B is running at reference conditions and notify BOP that you will begin taking data IAW section 7.1.9 of the STP. | SRO   | <ul style="list-style-type: none"> <li>Direct UO to perform STP-204-6302</li> </ul>   |
|  |  | UO    | <ul style="list-style-type: none"> <li>Contact IST to support performance of STP-204-6302.</li> <li>Perform STP-204-6302.</li> <li>Notify IST personnel when reference conditions are established.</li> </ul> |
| <b>Event 3</b><br>Lower power with Reactor Recirculation flow<br><br><i>Event initiated by crew</i>          |  | SRO   | <ul style="list-style-type: none"> <li>Direct ATC to lower power in accordance with the reactivity control plan</li> </ul>  |
|  |  | ATC   | <ul style="list-style-type: none"> <li>Lower power in accordance with reactivity control plan</li> </ul>  |

|   |   |     |   |
|---|---|-----|---|
| <b>Event 4</b><br>RHR B trip<br><br><i>Event initiated at Lead Evaluator discretion</i><br><br>Time _____<br>Call Back _____<br><br>Time _____<br>Call Back _____ | <b>T4 RHR002B RHR Pump B trip</b><br><br><b>ROLE PLAY:</b><br>As Control Building operator accept direction to investigate RHR B pump breaker. After 5 minutes, report that the overcurrent flag has dropped at the breaker.<br><br>As Reactor Building operator accept direction to investigate RHR B pump trip and to perform fill and vent on RHR C.<br><br>As backpanel, report that line pressures for RHR B/C are 27 psig and steady. | UO  | <ul style="list-style-type: none"> <li>Recognize and report trip of RHR B</li> <li>Communicate to IST personnel trip of RHR B</li> <li>Perform ARP-601-17A-A04/C02</li> <li>Close RHR B Test Return (E12-MOVFO24B)</li> <li>Secure RHR B lineup</li> </ul>  |
|   |   | SRO | <ul style="list-style-type: none"> <li>Accept report of RHR B trip.</li> <li>Notify work control or maintenance of pump trip. Request OSP-0046 notifications</li> <li>Enter TS 3.5.1 Condition A and TS 3.6.2.3. Condition A.</li> <li>Direct BOP to secure RHR B lineup per STP-204-6302 starting at 7.1.12</li> </ul> |
| <b>Event 5</b><br>Feedwater A minimum flow valve fails open<br><br><i>Event initiated at Lead Evaluator discretion</i>  | <b>T5 DI_CNM-HA68A-COS</b><br>Feedwater A minimum flow valve fails open   | ATC | <ul style="list-style-type: none"> <li>Recognize and report FWS “A” min flow valve failure</li> <li>Enter AOP-0006; reference AOP-0024</li> <li>Place minimum flow valve controller in manual and depress CLOSE pushbutton to close valve.</li> </ul>   |
|   |   | SRO | <ul style="list-style-type: none"> <li>Accept the report of min flow failure</li> <li>Direct entry into AOP-0006 and reference to AOP-0007.</li> <li>Direct ATC to attempt manual closure of FWR-FV2A.</li> <li>Notify work management or maintenance of failure and request OSP-0046 notifications.</li> </ul>         |

|   |  |     |   |
|---|--|-----|---|
| <b>Event 6</b><br>Inadvertent RCIC Initiation<br><br><i>Event initiated at Lead Evaluator discretion</i>                                | <b>T6 RCIC005</b> Inadvertent RCIC Initiaion<br><br><b>ROLE PLAY:</b><br>When requested, as back panel operator notify operator that RCIC Level 2 initiation trip units are failed downscale.<br><br>As Work Management Center accept request for maintenance support and request to perform OSP-0046 notifications.   | BOP | <ul style="list-style-type: none"> <li>Recognize and report initiation of RCIC</li> <li>Verify by 2 independent means adequacy of reactor water level and trip RCIC.</li> </ul>   |
|   |  | SRO | Accept report of RCIC initiation<br>Verify by 2 independent means adequacy of reactor water level and direct BOP to trip RCIC.<br>When RCIC is tripped, enter LCO 3.5.3. Condition A.   |
| <b>Event 7</b><br>RCIC Steam supply line break in RCIC Room and Steam Tunnel<br><br><i>Event initiated at Lead Evaluator discretion</i> | <b>T7 RCIC004, RCIC005</b> RCIC steam leak in the RCIC Room and Steam Tunnel<br><br><b>RPS001B</b> prevents automatic scram requiring placement of Mode Switch to Shutdown.<br><br><b>ROLE PLAY:</b><br>When requested, as back panel operator notify operator of Main Steam Tunnel Temperatures (modeled on “Alias”)<br><br>As WMC, accept request for help with RCIC failure | ALL | Recognize and report indications of a steam leak in RCIC room and Steam Tunnel  |
|   |  | SRO | <ul style="list-style-type: none"> <li>Accept report of elevated temperatures in RCIC room and steam tunnel.</li> <li>Direct entry into AOP-0003.</li> <li>Direct manual isolation attempt of RCIC</li> <li>Enter EOP-0003</li> <li>Enter EOP-0001</li> <li>Direct manual scram</li> <li>Accept scram report from ATC</li> <li>Establish level band of -20” to 51”</li> <li>Establish pressure band of 500-1090 psig with direction to ultimately be below 700 psig, then change band to 500-700 psig.</li> <li>Notify WMC or maintenance of RCIC leak and failure to isolate E51-MOVFO63/64.</li> <li>When Max Safe is reached in more than one area, enter Emergency Depressurization</li> <li>Direct opening 7 ADS SRVs</li> </ul> |

|  |   |     |   |
|--|---|-----|---|
| <b>Event 7 (cont'd)</b>  |   | BOP | <ul style="list-style-type: none"> <li>• Enter AOP-0003</li> <li>• Recognize and report failure of RCIC to isolate</li> <li>• Attempt manual isolation of E51-F063 &amp; F064.</li> <li>• Obtain RCIC room and steam tunnel temperatures throughout event.</li> <li>• Recognize and report MSIV isolation.</li> </ul>                         |
|  |   | ATC | <ul style="list-style-type: none"> <li>• When directed or when the MSIVs isolate, place the Mode Switch in Shutdown</li> <li>• Deliver scram report</li> <li>• Perform hard card for Feedwater post scram actions.</li> <li>• Control pressure 500-1090 psig and notify SRO when &lt;700 psig, then control pressure 500-700 psig.</li> </ul> |
| <b>Event 8</b><br><br>Three SRVs fail to energize when required for Emergency Depressurization<br><br><i>Event initiated when operator attempts to open SRVs</i> | <b>T8 MSS008G, MSS008D, MSS008I</b><br><br><b>Following Emergency Depressurization, if leak isolation support has been requested delete RCIC004, RCIC 005, RCIC007 and RCIC008 malfunctions to allow isolation of RCIC.</b> | BOP | <ul style="list-style-type: none"> <li>• <b><u>CRITICAL TASK</u></b> When directed, open 7 ADS/SRVs <ul style="list-style-type: none"> <li>○ Recognize and report failure of 3 SRVs to energize.</li> <li>○ Open 3 additional SRVs to accomplish emergency depressurization.</li> </ul> </li> </ul>   |
|  |   | SRO | <ul style="list-style-type: none"> <li>• Accept report of SRV failure.</li> <li>• Direct opening 3 additional SRVs to accomplish ED.</li> </ul>   |



|   |               |  |   |
|---|---------------|--|---|
| <b>Event 9</b><br>Startup Feedwater Regulating Valve fails closed<br><br><i>Event initiated 5 minutes after Mode Switch is removed from RUN position.</i> |               | ATC  | <ul style="list-style-type: none"> <li>Recognize and report failure of Startup Feedwater Regulating Valve</li> <li>Place Feedwater Regulating Valve back in service per Post Scram Feedwater hard card.</li> <li>Verify level control capability</li> </ul> |
|   |               | CRS  | <ul style="list-style-type: none"> <li>Accept report of Startup Feedwater Regulating Valve failure.</li> <li>Direct ATC to place a Feedwater Reg Valve in service.</li> </ul>   |
| Termination is at the discretion of the Chief Examiner.   | <b>FREEZE</b> | <u><b>Critical Task Review:</b></u> <ol style="list-style-type: none"> <li><b>Place the Mode Switch in Shutdown when any secondary containment parameter reaches its Max Safe Operating value</b></li> <li><b>Open 7 ADS/SRVs when 2 or more areas reach Max Safe Operating value and a primary system is discharging outside primary or secondary containment.</b></li> </ol> |   |

## **VI. TERMINATION CRITERIA:**

The exercise should be terminated when the performance objectives have been achieved or the operators are unable to diagnose and respond effectively to the scenario.

The following conditions provide an indication of performance objective achievement for this scenario. Critical Tasks are indicated with an \*:

- Level and Pressure control is established.
- \*Mode Switch placed in Shutdown.
- \*Opened 7 ADS valves

## **VII. REFERENCES**

### **A. Plant Procedures**

1. SOP-0009, Feedwater
2. STP-204-6302, RHR Quarterly Surveillance
3. AOP-0001, Reactor Scram
4. AOP-0002, Turbine Trip
5. AOP-0003, Automatic Isolations
6. EOP-1, RPV Control
7. EOP-3, Secondary Containment Control

|   |               |   |
|---|---------------|---|
| Offgoing OSM:   | Oncoming OSM: | Off-Going Shift   |
| <div style="display: flex; justify-content: space-between;"> <span>_____</span> <span>_____</span> </div> <div style="display: flex; justify-content: space-between;"> <span>(Print)</span> <span>KCN</span> <span>(Print)</span> <span>KCN</span> </div> |               | <div style="display: flex; justify-content: space-around;"> <span>N</span> <span>D</span> </div> <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> <input type="checkbox"/> </div> <div style="margin-top: 10px;">Date</div> |

**PART I - TO BE REVIEWED PRIOR TO ASSUMING THE SHIFT**

UNIT STATUS    MODE    1                      RX POWER    100%

**EVOLUTIONS (COMPLETED / IN PROGRESS / PLANNED); GENERAL INFORMATION**

Startup Feedwater Regulating Valve is in service in Augmentation Mode to support FW Reg Vlv C maintenance. Reg Vlv C maintenance is complete and it is in service. Remove Startup Reg Vlv from Augmentation Mode per SOP-0009.

Perform STP-204-6302, Div II RHR Pump and Valve Operability. Section 7.5 will not be performed;.  
 Suppression Pool Cooling is desired.

Notify IST personnel when reference conditions are established on RHR B.

Lower power with recirculation flow in accordance with Reactivity Control Plan Step 1.

| SIGNIFICANT LCO STATUS                                   | EOOS STATUS         |
|--|---------------------|
| .  | 10.0 Green          |
|  |                     |
|  |                     |
| EQUIPMENT STATUS   | PROTECTED EQUIPMENT |
| Startup Feedwater Regulating Valve in Augmentation mode. |                     |
|  |                     |
|  |                     |

☐  
 Night Orders

☐  
 Standing Orders

☐  
 Board Walkdown

☐  
 Temp Alts

(Signature: Oncoming OSM Review Completed)    KCN

|   |                        |                    |
|---|------------------------|--------------------|
| Facility: <u>River Bend Station</u>   | Scenario No.: <u>4</u> | Op-Test No.: _____ |
| Examiners: _____  |                        | Operators: _____   |
| _____   |                        | _____              |
| _____   |                        | _____              |
| Initial Conditions: <u>Mode 1, 75% power.</u>   |                        |                    |
| Turnover: <u>Shift Priorities: 1) Start Feedwater Pump "A" 2) Continue power ascension with recirc flow per reactivity control plan. 3) Transfer Steam Seal Evaporator to Extraction Steam.</u> |                        |                    |

| Event No. | Malfunction No.     | Event Type*  | Event Description  |
|-----------|---------------------|--------------|--|
| 1         | NA                  | N (SRO, ATC) | Start a Reactor Feedwater Pump "A"                                       |
| 2         | NA                  | R (ATC)      | Raise reactor power with reactor recirculation flow                      |
| 3         | NA                  | N (SRO-BOP)  | Transfer Steam Seal Evaporator to Extraction Steam                       |
| 4         | RMS016A             | I(SRO)       | (Technical Specification) Failure of RMS-RE16A Drywell Radiation Monitor |
| 5         | ED004Q              | C (SRO, BOP) | (Technical Specification) Loss of EJS-LDC2B                              |
| 6         | FWS016A             | I(SRO,ATC)   | Feedwater flow input to Feedwater Level Control failure                  |
| 7         | ED001               | M (ALL)      | Loss of offsite power  |
| 8         | RCIC003A            | C(SRO,BOP)   | RCIC Flow controller fails low   |
| 9         | SWP-P2A<br>BKR TRIP | C(SRO,ATC)   | SWP-P2A pump breaker trip  |
|           |                     |              |  |
|           |                     |              |  |
|           |                     |              |  |
|           |                     |              |  |
|           |                     |              |  |

\* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Total Malfunctions (5-8) **(6)** EJS-LDC2B, RMS-RE16A, FWLC input, Loss of Offsite power, RCIC controller, SWP-P2A

Malfunctions after EOP entry (1-2) **(2)** RCIC controller, SWP-P2A

Abnormal Events (2-4) **(2)** AOP-0006, AOP-0001

Major Transients (1-2) **(1)** Loss of offsite power

EOPs entered (1-2) **(1)** EOP-0001

EOP contingencies (0-2) **(1 potential)** Alternate Level Control

Critical Tasks (2-3) **(2)** Take manual control of FW, Maintain reactor water level >-162" with RCIC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>1</u> |           |  |
|---|-----------|--|
| Event Description: Start Reactor Feedwater Pump "A"           |           |  |
| Event Initiation: Initiated by crew.                          |           |  |
| Cue: From turnover sheet.                                     |           |  |
| Time  | Position  | Applicant's Actions or Behavior  |
|   | SRO       | <ul style="list-style-type: none"> <li>Direct start of Reactor Feedwater Pump "A" per SOP-0009 Section 4.5</li> </ul>  |
|   | ATC       | <p>4.5 Start Reactor Feedwater Pump "A" as follows:</p> <p>4.5.1 Verify lube oil system in service</p> <p>4.5.2 Communicate with Turbine Building operator to verify the following:</p> <ul style="list-style-type: none"> <li>▪ CCS-V280 is OPEN</li> <li>▪ CCS-V268 is OPEN</li> <li>▪ CCS-V331 is OPEN</li> <li>▪ CCS-V332 is OPEN</li> <li>▪ CCS-V292 is OPEN</li> <li>▪ CCS-V295 is OPEN</li> <li>▪ CCS-V261 is OPEN</li> <li>▪ CCS-V272 is OPEN</li> <li>▪ </li> </ul> <p>4.5.3 Feedwater Pump "A" seals are vented.</p> <p>4.5.4 Feedwater Pump "A" has been warmed.</p> <p>4.5.5 FWS-V28 is OPEN.</p> <p>4.5.6 Verify CNM-H/A68A is in AUTO and set at 68%</p> <p>4.5.7 Communicate with Turbine Building operator to verify the pump is not rotating.</p> |
|   | ROLE PLAY | <ul style="list-style-type: none"> <li>When requested, as the Turbine Building operator, inform the ATC operator that:             <ul style="list-style-type: none"> <li>○ CCS-V280 is OPEN</li> <li>○ CCS-V268 is OPEN</li> <li>○ CCS-V331 is OPEN</li> <li>○ CCS-V332 is OPEN</li> <li>○ CCS-V292 is OPEN</li> <li>○ CCS-V295 is OPEN</li> <li>○ CCS-V261 is OPEN</li> <li>○ CCS-V272 is OPEN</li> </ul> </li> <li>Feedwater Pump "A" seals have been vented.</li> <li>Feedwater Pump "A" has been warmed.</li> <li>FWS-V28 is OPEN.</li> <li>A general visual inspection has been performed and Feedwater Pump "A" is NOT rotating and is prepared for a START.</li> </ul>   |
|   | ATC       | <p>4.5.8, 4.5.9 Communicate with Auxiliary Control Room to verify sufficient Condensate Demineralizers <u>and</u> Condensate Filtration filters are in service to support pump start.</p>  |

# NRC

|  |                          |   |
|--|--------------------------|---|
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Auxiliary Control Room operator, when requested, inform ATC that sufficient Condensate Demineralizers and Filters are in service to support pump start.</li> </ul>  |
|  | ATC                      | <p>4.5.10 Verify FWR-FV2A is operable and unisolate.</p> <p>4.5.11 Verify the following CCS valves are fully opened:</p> <ul style="list-style-type: none"> <li>CCS-V5003A</li> <li>CCS-V5004A</li> </ul>   |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Turbine Building operator, when requested, inform ATC operator that CCS-V5003A and CCS-V5004A are fully open.</li> </ul>  |
|  | ATC                      | <p>4.5.12 Direct Turbine Building operator to close P73-PIT-R115A-V2 and verify P73-VF114A is open.</p>   |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>When requested, inform ATC that P73-PIT-R115A-V2 is closed and P73-VF114A is open.</li> </ul>  |
|  | ATC                      | <p>4.5.13 Depress the STOP pushbutton on FWS-P1A to reset any trips.</p> <p>4.5.14 Start FWS-P1A, RX FWP P1A by maintaining the START pushbutton depressed until FWR-FV2A, RX FWP P1A MIN FLOW Valve has opened and the pump has started.</p> <p>4.5.15 Check motor amps on FWS-A03 are greater than 200 amps but less than or equal to 311 amps.</p> <p>4.5.16 <i>This step not applicable.</i></p> <p>4.5.17 Open FWS-MOV26A, RX FWP P1A DISCH VLV.</p> <p>4.5.18 Verify closed FWS-MOV109, FEED PUMP BYPASS.</p> <ul style="list-style-type: none"> <li>Direct Turbine Building operator to continue field performance starting at Step 4.5.19.</li> </ul> |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Turbine Building operator, accept direction to continue procedure performance starting at Step 4.5.19</li> </ul>  |
|  | <i>Termination Point</i> | <i>Event is terminated when Feedwater pump A is in service with its discharge valve open.</i>   |
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## Appendix D

## Required Operator Actions

[Form ES-D-2](#)Op-Test No.: \_\_\_\_\_ Scenario No.: 4 Event No.: 2

Event Description: Raise reactor power with reactor recirculation flow

Event Initiation: Initiated by crew.

Cue: From turnover sheet.

| Time | Position                 | Applicant's Actions or Behavior  |
|------|--------------------------|--|
|      | SRO                      | <ul style="list-style-type: none"> <li>Direct ATC to raise power with reactor recirculation flow in accordance with the reactivity control plan.</li> </ul>  |
|      | ATC                      | <ul style="list-style-type: none"> <li>Raise power with reactor recirculation flow in accordance with the reactivity control plan and SOP-0003 Section 5.9.1.2 as follows:               <ol style="list-style-type: none"> <li>Verify B33-K603A(B) is in Manual</li> <li>Determine which B33-K603A(B) is to be adjusted by observing Loop Flows on B33-R612A and B33-R612B. Both loops may have to be adjusted to obtain the desired Reactor Power while maintaining Loop Flow mismatch within 5%.</li> <li>Note the current valve position, generator load, MWth, APRMs and loop flows.</li> <li>Raise flow by toggling momentarily B33-K603A(B) in the open direction (right) using slow detent while observing a servo error deviation in the positive direction.</li> <li>Verify the servo error returns to its previous position.</li> <li><i>This step is not applicable.</i></li> <li>Observe valve position, generator load, MWth, APRMs and loop flows for expected changes.</li> <li>Repeat steps as necessary until the desired power level is reached.</li> </ol> </li> </ul> |
|      | <i>Termination Point</i> | <i>Event is terminated when Reactivity Control Plan Step 80 is complete and reactor thermal power is ~ 2425 MWth.</i>  |
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## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>3</u>         |                          |  |
|---|--------------------------|--|
| Event Description: Transfer Steam Seal Evaporator to Extraction Steam |                          |  |
| Event Initiation: Initiated by crew.                                  |                          |  |
| Cue: From turnover sheet.   |                          |  |
| Time  | Position                 | Applicant's Actions or Behavior  |
|   | SRO                      | <ul style="list-style-type: none"> <li>Direct transfer of SSE to Extraction Steam per SOP-0015</li> </ul>  |
|   | BOP                      | <ul style="list-style-type: none"> <li>Transfer SSE to Extraction Steam per SOP-0015 Section 5.1 as follows:               <ul style="list-style-type: none"> <li>5.1.2 Verify annunciator P870-52A-E03, 3<sup>RD</sup> PT EXTR ST AND MAIN STEAM DIFF PRESS LOW is clear</li> <li>5.1.3 Verify ESS-MOV112, STEAM SEAL EVAPORATOR is closed</li> <li>5.1.4 Verify ESS-MOV117, 3<sup>RD</sup> PT HTR EXTR SHUTOFF is open</li> <li>5.1.5 Slowly throttle open ESS-MOV112, STEAM SEAL EVAPORATOR using the control switch and the STOP pushbutton.</li> <li>5.1.6 When ESS-MOV112, STEAM SEAL EVAPORATOR show dual indication, close DTM-AOV118, EXTR STM TO SSE &amp; RW RBLR.</li> <li>5.1.7 Monitor trip unit ESS-ES112 while throttling ESS-MOV112, STEAM SEAL EVAPORATOR. If setpoint approaches 5.5 psid, ESS-MOV112 may be left throttled.</li> </ul> </li> </ul> |
|   | ROLE PLAY                | If back panel information is requested for ESS-ES112, provide a reading of 10 psid.  |
|   | <i>Termination Point</i> | <i>Event is terminated when the Steam Seal Evaporator is being supplied by Extraction Steam.</i>   |

# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>4</u><br>Event Description: (Technical Specification) Failure of RMS-RE16A Drywell Radiation Monitor<br>Event Initiation: Initiated at Lead Evaluator discretion.<br>Cue: Annunciator: H13-P863-71A-B06 |                          |   |
|---|--------------------------|---|
| Time  | Position                 | Applicant's Actions or Behavior   |
|   | BOP                      | <ul style="list-style-type: none"> <li>Recognize and report upscale alarm on RMS-RE16A</li> <li>Compare to RMS-RE16B and determine RMS-RE16A has failed.</li> </ul> |
|   | SRO                      | <ul style="list-style-type: none"> <li>Accept report of failure of RMS-RE16A</li> <li>Enter Technical Specification LCO 3.3.3.1 Condition A.</li> </ul>             |
|   | <i>Termination Point</i> | <i>Event is terminated when Technical Specifications have been applied to the failed radiation monitor.</i>   |
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# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>5</u><br>Event Description: (Technical Specification) Loss of EJS-LDC2B<br>Event Initiation: Initiated at Lead Evaluator discretion.<br>Cue: Annunciator: H13-P877-32-D04 |                          |  |
|---|--------------------------|--|
| Time  | Position                 | Applicant's Actions or Behavior  |
|   | BOP                      | <ul style="list-style-type: none"> <li>Recognize and report loss of EJS-LDC2B.</li> <li>Dispatch Reactor Building operator to EJS-LDC2B to ascertain cause of trip.</li> </ul>   |
|   | SRO                      | <ul style="list-style-type: none"> <li>Acknowledge report of EJS-LDC2B.</li> <li>Notify Work Management Center of bus loss.</li> <li>Enter Technical Specification LCO 3.8.9 Condition A.</li> <li>Direct start of HVR-UC1A, CONTMT UNIT CLR A</li> <li>Direct start of HVR-UC11A, AUX BLDG UNIT CLR 11A</li> <li>Acknowledge low pressure condition on RHR B &amp; C and direct racking out of RHR B and C pump breakers</li> <li>Enter Technical Specification 3.5.1 Condition C and 3.6.2.3 Condition A when pump breakers are racked out.</li> </ul> |
|   | BOP                      | <ul style="list-style-type: none"> <li>Start HVR-UC1A, CONTMT UNIT CLR A as follows:               <ul style="list-style-type: none"> <li>Depress the START pushbutton for HVR-UC1A and verify HVN-TV5A opens.</li> </ul> </li> <li>Start HVR-UC11A, AUX BLDG UNIT CLR 11A as follows:               <ul style="list-style-type: none"> <li>Depress the START pushbutton for HVR-UC11A and verify proper operation.</li> </ul> </li> <li>Respond to RHR B &amp; C low pressure annunciators</li> </ul>   |
|   | ROLE PLAY                | <ul style="list-style-type: none"> <li>As Reactor Building operator, take direction to investigate cause of trip of EJS-LDC2B. After 10 minutes, notify BOP that there is no obvious reason for bus loss.</li> <li>As Reactor Building operator, if requested following start of HVR-UC1A and HVR-UC11A, notify BOP that both coolers are operating normally.</li> <li>As Control Building operator, take direction to rack out RHR B &amp; C pump breakers.</li> </ul>  |
|   | <i>Termination Point</i> | <i>Event is terminated when Technical Specifications have been applied to the failed electrical bus and RHR B &amp; C after pump breakers are racked out.</i>  |

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)Op-Test No.: \_\_\_\_\_ Scenario No.: 4 Event No.: 6

Event Description: Feedwater flow input to Feedwater Level Control fails high

Event Initiation: Initiated at Lead Evaluator discretion.

Cue: Lowering reactor water level, feed flow indicator on p680 rising.

| Time | Position                 | Applicant's Actions or Behavior  |
|------|--------------------------|--|
|      | ATC                      | <ul style="list-style-type: none"> <li>Recognize and report lowering reactor water level</li> <li>Enter AOP-0006, CONDENSATE/FEEDWATER FAILURES.</li> <li><b><u>CRITICAL TASK:</u></b> Take manual control of feedwater level control by placing the Master Controller in manual and controlling valve positions with the OPEN and CLOSE pushbutton as needed to maintain level.</li> <li>Diagnose failure as feedflow input failure.</li> </ul> |
|      | SRO                      | <ul style="list-style-type: none"> <li>Accept report of lowering reactor water level</li> <li>Direct entry into AOP-0006, CONDENSATE/FEEDWATER FAILURES.</li> <li>Notify Work Management Center or maintenance of failure.</li> </ul>  |
|      | <i>Termination Point</i> | <i>Event is terminated when reactor water level is stable and under manual control.</i>  |
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# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>7</u>                  |                          |   |
|--|--------------------------|---|
| Event Description: Loss of offsite power                                       |                          |   |
| Event Initiation: Initiated at Lead Evaluator discretion.                      |                          |   |
| Cue: Standby diesel generator initiation, loss of voltage to non-safety busses |                          |   |
| Time   | Position                 | Applicant's Actions or Behavior   |
|  | ATC                      | <ul style="list-style-type: none"> <li>Recognize and report the loss of offsite power</li> <li>Place the Mode Switch in Shutdown</li> <li>Verify all control rods fully inserted</li> <li>Deliver scram report</li> <li>Perform AOP-0004, LOSS OF OFFSITE POWER               <ul style="list-style-type: none"> <li>Dispatch operators to operating diesel generators</li> <li>Verify diesel are supplying their respective switchgears</li> <li>Verify initiation of Standby Service Water. <i>See event 9.</i></li> <li>Dispatch personnel to rack out HPCS pump breaker</li> <li>Attempt manual start of Div 3 DG</li> </ul> </li> <li>Perform AOP-0001, REACTOR SCRAM and AOP-0002, MAIN TURBINE AND GENERATOR TRIPS.</li> </ul> |
|  | SRO                      | <ul style="list-style-type: none"> <li>Acknowledge scram report</li> <li>Direct entry into AOP-0004, LOSS OF OFFSITE POWER</li> <li>Direct entry into AOP-0001, REACTOR SCRAM, AOP-0002, MAIN TURBINE AND GENERATOR TRIPS, and AOP-0003, AUTOMATIC ISOLATIONS.</li> <li>Enter EOP-0001, RPV CONTROL</li> <li>Direct level band of -20" to 51" with RCIC</li> <li>Direct pressure band of 500-1090 psig</li> <li>Communicate with System Operator to coordinate restoration of power.</li> </ul>   |
|  | BOP                      | <ul style="list-style-type: none"> <li>Initiate RCIC <i>See event 8.</i></li> <li>Control reactor pressure 500-1090 psig with Safety Relief Valves</li> <li>Perform AOP-0003, AUTOMATIC ISOLATIONS</li> </ul>   |
|  | ROLE PLAY                | <ul style="list-style-type: none"> <li>When contacted, as System Operator notify the SRO that loss of power problem has occurred at Fancy Point Switchyard and crews are on their way to the switchyard to determine the cause and establish an estimated time for restoration.</li> </ul>  |
|  | <i>Termination Point</i> | <i>Event is terminated when plant parameters are stable and Critical Task of subsequent event is met.</i>   |

# NRC

## Appendix D

## Required Operator Actions

[Form ES-D-2](#)

| Op-Test No.: _____ Scenario No.: <u>4</u> Event No.: <u>8</u><br>Event Description: RCIC Flow controller fails low<br>Event Initiation: Initiated when RCIC turbine speed is >90% rated speed<br>Cue: RCIC flow lower than 600 gpm |                          |  |
|--|--------------------------|--|
| Time   | Position                 | Applicant's Actions or Behavior  |
|  | BOP                      | <ul style="list-style-type: none"> <li>Recognize and report failure of RCIC controller</li> <li><b><u>CRITICAL TASK</u></b> Take manual control of RCIC to maintain level &gt; Top of Active Fuel (&gt;-162") by placing the controller in MANUAL and depressing the OPEN pushbutton.</li> </ul> |
|  | SRO                      | <ul style="list-style-type: none"> <li>Acknowledge report of RCIC controller failure</li> <li>Direct BOP to take manual control of RCIC if not already performed.</li> </ul>   |
|  | <i>Termination Point</i> | <i>Event is terminated when RCIC controller is placed in manual and RCIC is injecting to the RPV satisfying the Critical Task.</i>   |
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**RIVER  
BEND STATION  
SIMULATOR SCENARIO**

Number: **\*RSMS-NRC12-4**  
Revision: **01**  
Page 1 of **12**  
Approximate Time: 1 Hour(s)  
Record Type: **\*Z01.24**



**TRAINING PROGRAM:**

**SIMULATOR TRAINING**

**LESSON PLAN:**

**\* EJS-LDC2B Failure/FWLC Failure/Loss of Offsite Power/**

**REASON FOR REVISION:**

NRC 2012 exam

**PREPARE / REVIEW:**

|                           |      |           |
|---------------------------|------|-----------|
| Angie Orgeron             | 1538 | 7-20-2012 |
| Preparer                  | KCN  | Date      |
| Dave Bergstrom            | 0275 | 7-27-2012 |
| Technical Review (SME)    | KCN  | Date      |
| Tim Schenk                | 0717 | 7-24-2012 |
| Operations Representative | KCN  | Date      |
| John Fralick              | 0788 | 8-6-2012  |
| Facility Reviewer         | KCN  | Date      |

\* Indexing Information



## **I. DESCRIPTION OF SCENARIO**

This scenario begins with the plant at 75% power.

Events for this scenario:

- Perform a start of Feedwater Pump “A”
- Raise reactor power with recirculation flow.
- Transfer Steam Seal Evaporator (SSE) to Extraction Steam
- Respond to Failure of RMS-RE16A
- Respond to loss of EJS-LDC2B
- Respond to Feedwater Level Control failure
- Respond to a Loss of Offsite Power, with RCIC controller failure and SWP-P2A failure.

## **II. TERMINAL OBJECTIVES**

1. Establish safe and stable plant conditions following Loss of Offsite Power.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

| INITIAL<br>CONDITION | TRAINING<br>FOCUS | EQUIPMENT STATUS  | REQUIRED<br>DOCUMENTS                      |
|----------------------|-------------------|---|--|
| IC #221              |                   | <p><b>Power:</b> 75%</p> <p><b>Core:</b> Xenon equilibrium</p> <p><b>Equipment OOS:</b> NA</p> <p><b>STPs Due:</b><br/><b>LCOs:</b> NA</p> <p><b>Evolutions in progress:</b> Power ascension</p> <p><b>Problem/Lit annunciators:</b> None</p> | <p><b>SOP-0009</b><br/><b>SOP-0015</b></p> |

V. GENERAL INSTRUCTIONS

| Event Number    | MFS-OR-REM-SCH  | Expected Operator Actions |
|-----------------|---|---------------------------|
| Simulator Setup |   |                           |
|                 | <p><u>Malfunctions</u></p> <p>DG002C Div 3 DG fails to start</p> <p>T4 RMS016, RMS-RE16A Fails high</p> <p>T5 ED0041, EJS-LDC2B Bus Fault</p> <p>T6 FWS0016A, FW flow A fails High</p> <p>T7 ED001 Loss of Offsite Power</p> <p>T7 SWP-P2A BKR TRIP, d: 00:01:00</p> <p>T8 RCIC003A RCIC Controller fails low<br/>d:00:01:00</p> <p><u>EVENT TRIGGERS</u></p> <p>T8 RCIC Turbine &gt;90% speed</p> <p><u>EQUIPMENT STATUS</u></p> <p>HVR-UC1B &amp; HVR-UC1C in service</p> |                           |

| Event Number  | MFS-OR-REM-SCH  | Expected Operator Actions |  |
|---|---|---------------------------|--|
| <b>Event 0</b>  | <b>RUN</b>  | CREW                      | Board walk down / Turnover.  |
| <b>Event 1</b><br>Start FWS-P1A<br><br><i>Event initiated by crew</i> | <b>ROLE PLAY</b><br><br><b>As Turbine Bldg operator (TB), when asked, notify ATC that all required CCS cooling water valves are open</b><br><br><b>As TB, when asked, notify ATC that pump seals have been vented.</b><br><br><b>As TB, when asked, notify ATC that the pump has been warmed.</b><br><br><b>As TB, when asked, notify ATC that FWS-V28 is open</b><br><br><b>As TB, when asked, notify ATC that the feedpump is not rotating and the pump is prepared to start.</b><br><br><b>As Auxiliary Control Room operator, when asked, notify ATC that sufficient Condensate Demineralizers and Condensate Filtration Filters are in service to support pump start.</b><br><br><b>As TB, when asked, notify ATC that CCS-V5003A &amp; V5004A are fully open.</b><br><br><b>As TB, when asked, notify ATC operator that HWC is in service, but isolated to Feed Pump A.</b><br><br><b>ROLE PLAY</b> | SRO                       | <ul style="list-style-type: none"> <li>Direct start of FWS-P1A</li> </ul>    |
|   |   | ATC                       | <ul style="list-style-type: none"> <li>Start FWS-P1A per SOP-0009</li> </ul> |

| Event Number  | MFS-OR-REM-SCH  | Expected Operator Actions |   |
|---|---|---------------------------|---|
| <b>Event 1 (cont'd)</b>   | <p>As Turbine Building operator, when asked, notify ATC that P73-PIT-R115A-V2 is closed and P73-VF114A is open.</p> <p>As Turbine Building operator, accept direction to continue procedure performance at Step 4.5.19.</p> |                           |   |
| <b>Event 2</b><br>Raise reactor power with Recirculation flow<br><br><i>Event initiated by crew</i> |   | SRO                       | <ul style="list-style-type: none"> <li>Direct ATC to raise power with recirculation flow in accordance with reactivity control plan.</li> </ul> |
|   |   | ATC                       | <ul style="list-style-type: none"> <li>Raise reactor power in accordance with reactivity control plan.</li> </ul>                               |
| <b>Event 3</b><br>Transfer SSE to Extraction Steam<br><br><i>Event initiated by crew</i>            | <b>ROLE PLAY</b><br>When BOP requires back panel information, notify BOP that the current differential pressure is 10 psid.   | SRO                       | <ul style="list-style-type: none"> <li>Direct BOP to transfer SSE to Extraction Steam per SOP-0015</li> </ul>                                   |
|   |   | BOP                       | <ul style="list-style-type: none"> <li>Transfer SSE to Extraction Steam per SOP-0015.</li> </ul>  |

|  |  |     |  |
|--|--|-----|--|
| <b>Event 4</b><br>Failure of RMS-RE16A<br><br><i>Event initiated at Lead Evaluator discretion</i>  | <b>T4 RMS016, RMS-RE16A Fails high</b>   | BOP | <ul style="list-style-type: none"> <li>Recognize and report failure of RMS-RE16A</li> </ul>  |
|  |  | SRO | <ul style="list-style-type: none"> <li>Acknowledge report of RMS-RE16A failure</li> <li>Enter Tech Spec LCO 3.3.3.1 Condition A</li> <li>Notify Work Management Center and request maintenance support, and OSP-0046 notifications</li> </ul>  |
| <b>Event 5</b><br>Loss of EJS-LDC2B<br><br><i>Event initiated at Lead Evaluator discretion</i><br><br>Time _____<br>Call back _____<br><br>Time _____<br>Call back _____ | <b>T5 ED0041, EJS-LDC2B Bus Fault</b><br><br><b>ROLE PLAY:</b><br><b>As Reactor Building operator, accept direction to investigate loss of EJS-LDC2B.</b><br><b>After 10 minutes, notify BOP that there is no obvious reason for the trip.</b><br><br><b>As Reactor Building operator, if requested following start of HVR-UC1A and HVR-UC11A, notify BOP that both coolers are running normally.</b><br><br><b>As Control Building operator accept direction to rack out RHR B &amp; C pump breakers. (Initiate Trigger 15 – breakers will rack out on a timer)</b> | BOP | <ul style="list-style-type: none"> <li>Recognize and report loss of EJS-LDC2B</li> <li>Dispatch Reactor Building Operator to investigate trip.</li> <li>Start HVR-UC1A</li> <li>Start HVR-UC11A</li> <li>Start available drywell unit cooler</li> </ul>  |
|  |  | SRO | <ul style="list-style-type: none"> <li>Acknowledge report of loss of EJS-LDC2B</li> <li>Enter Tech Spec LCO 3.8.9 Condition A</li> <li>Direct start of HVR-UC1A per SOP-0059</li> <li>Direct start of HVR-UC11A per SOP-0065</li> <li>Direct start of available drywell unit cooler</li> <li>Notify Work Management Center and request maintenance support.</li> <li>Notify Duty Manager and make OSP-0046 notifications</li> <li>Enter Tech Spec LCO 3.5.1 Condition C &amp; 3.6.2.3 Condition A when pump breakers are racked out</li> </ul> |

|  |   |     |  |
|--|---|-----|--|
| <b>Event 6</b><br>Feed flow input to FWLC failure<br><br><i>Event initiated at Lead Evaluator discretion</i> |   | ATC | <ul style="list-style-type: none"> <li>Recognize and report lowering reactor water level</li> <li><b><u>CRITICAL TASK:</u></b> Take manual control of feedwater level control.</li> </ul>  |
|  |   | SRO | <ul style="list-style-type: none"> <li>Direct entry into AOP-0006</li> <li>Notify Work Management Center of failure</li> </ul>   |
| <b>Event 7</b><br>Loss of offsite power<br><br><i>Event initiated at Lead Evaluator discretion</i>           | <b>ROLE PLAY</b><br><b>As System Operator notify the SRO that the loss of power problem has occurred at Fancy Point Switchyard and crews are on their way to the switchyard to determine the cause and establish an estimated time for restoration.</b> | ATC | <ul style="list-style-type: none"> <li>Recognize and report loss of offsite power</li> <li>Place the Mode Switch in SHUTDOWN</li> <li>Verify all rods fully inserted</li> <li>Deliver scram report</li> <li>Control pressure with SRVs 500 to 1090 psig</li> <li>Perform AOP-0004</li> </ul>   |
|  |   | SRO | <ul style="list-style-type: none"> <li>Acknowledge scram report</li> <li>Direct entry into AOP-0004, AOP-0001, AOP-0002, and AOP-0003</li> <li>Enter EOP-0001</li> <li>Direct level band of -20 to 51" with RCIC</li> <li>Direct pressure band of 500 to 1090 psig with SRVs</li> <li>Communicate with System Operator to coordinate power restoration.</li> </ul> |
|  |   | BOP | <ul style="list-style-type: none"> <li>Initiate RCIC and maintain level -20 to 51".<br/><i>See event 8.</i></li> <li>Perform AOP-0003</li> </ul>   |

|  |               |  |  |
|--|---------------|--|--|
| <b>Event 8</b><br>RCIC Flow Controller failure<br><br><i>Event initiated when RCIC Turbine speed &gt;90% of rated speed</i>    |               | BOP  | <ul style="list-style-type: none"> <li>Recognize and report failure of RCIC controller</li> <li><b><u>CRITICAL TASK:</u></b> Take manual control of RCIC to maintain level &gt;Top of Active Fuel (-162")</li> </ul>   |
|  |               | SRO  | <ul style="list-style-type: none"> <li>Acknowledge report of RCIC controller failure</li> <li>Direct BOP to take manual control if not already performed.</li> </ul>   |
| <b>Event 9</b><br>SWP-P2A pump breaker trip<br><br><i>Event initiated one minute following Event 7 (Loss of Offsite Power)</i> |               | ATC  | <ul style="list-style-type: none"> <li>Recognize and report trip of SWP-P2A</li> <li>Recognize and report lack of cooling to Div 1 DG</li> <li>Open SWP-MOV505A and SWP-MOV505B OR Secure Div 1 DG</li> <li>Reduce loads cooled by Div 1 Service Water</li> </ul>        |
|  |               | SRO  | <ul style="list-style-type: none"> <li>Acknowledge trip of SWP-P2A</li> <li>Recognize lack of cooling to Div 1 DG and direct opening SWP-MOV505A and SWP-MOV505B OR securing Div 1 DG</li> <li>Notify Work Management Center and request maintenance support.</li> </ul> |
| Termination is at the discretion of the Chief Examiner.  | <b>FREEZE</b> | <b><u>Critical Task Review:</u></b> <ol style="list-style-type: none"> <li>Take manual control of Feedwater</li> <li>Restore or maintain reactor water level &gt;-162" with RCIC.</li> </ol> |  |



## **VI. TERMINATION CRITERIA:**

The exercise should be terminated when the performance objectives have been achieved or the operators are unable to diagnose and respond effectively to the scenario.

The following conditions provide an indication of performance objective achievement for this scenario; Critical Tasks are indicated with an \*:

- Level and Pressure control is established.
- \*Take manual control of feedwater and recover level control following FWLC failure.
- \*Maintain/restore level  $>-162''$  with RCIC.

## **VII. REFERENCES**

### **A. Plant Procedures**

1. SOP-0009, Feedwater
2. SOP-0015, Gland Seal System and Exhaust System
3. AOP-0001, Reactor Scram
4. AOP-0002, Turbine Trip
5. AOP-0003, Automatic Isolations
6. EOP-1, RPV Control
7. EOP-3, Secondary Containment Control

|   |   |  |
|---|---|--|
| Offgoing OSM: _____<br><div style="text-align: center;">(Print)</div>                           | Oncoming OSM: _____<br><div style="text-align: center;">(Print)</div> | Off-Going Shift<br>N      D<br><input type="checkbox"/> <input type="checkbox"/><br><br>Date |
| PART I - TO BE REVIEWED PRIOR TO ASSUMING THE SHIFT   |   |  |
| UNIT STATUS <u>MODE</u> <u>1</u> <u>RX POWER</u> <u>75%</u>                                     |   |  |
| EVOLUTIONS (COMPLETED / IN PROGRESS / PLANNED); GENERAL INFORMATION                             |   |  |
| Shift Priorities:   |   |  |
| 1) Start Reactor Feedwater Pump A per SOP-0009 Section 4.5                                      |   |  |
| 2) Continue power ascension with reactor recirculation flow per Reactivity Control Plan Step 80 |   |  |
| 3) Transfer Steam Seal Evaporator to Extraction Steam per SOP-0015 Section 5.1                  |   |  |
|   |   |  |
|   |   |  |
| SIGNIFICANT LCO STATUS  | EOOS STATUS   |  |
|   | 10.0 Green  |  |
|   |   |  |
|   |   |  |
| EQUIPMENT STATUS  | PROTECTED EQUIPMENT   |  |
|   |   |  |
|   |   |  |
|   |   |  |

☐  
 Night Orders

☐  
 Standing Orders

☐  
 Board Walkdown

☐  
 Temp Alts

\_\_\_\_\_  
 (Signature: Oncoming OSM Review Completed)

\_\_\_\_\_  
 KCN

| Facility: River Bend Station              |   |  | Date of Exam: 11/12/2012 |             |  | Operating Test No.: |             |  |             |             |  |             |             |                       |                                    |   |   |   |
|---|---|--|--------------------------|-------------|--|---------------------|-------------|--|-------------|-------------|--|-------------|-------------|-----------------------|------------------------------------|---|---|---|
| A<br>P<br>P<br>L<br>I<br>C<br>A<br>N<br>T | E<br>V<br>E<br>N<br>T<br><br>T<br>Y<br>P<br>E | Scenarios  |                          |             |  |                     |             |  |             |             |  |             |             | T<br>O<br>T<br>A<br>L | M<br>I<br>N<br>I<br>M<br>U<br>M(*) |   |   |   |
|   |   | 1  |                          |             | 2  |                     |             | 3  |             |             | 4  |             |             |                       | R                                  | I | U |   |
|   |   | C<br>R<br>E<br>W<br><br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |                          |             | C<br>R<br>E<br>W<br><br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |                     |             | C<br>R<br>E<br>W<br><br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |             |             | C<br>R<br>E<br>W<br><br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |             |             |                       |                                    |   |   |   |
|   |   | S<br>R<br>O  | A<br>T<br>C              | B<br>O<br>P | S<br>R<br>O  | A<br>T<br>C         | B<br>O<br>P | S<br>R<br>O  | A<br>T<br>C | B<br>O<br>P | S<br>R<br>O  | A<br>T<br>C | B<br>O<br>P |                       |                                    |   |   |   |
|   |   | U1   | R2                       | R3          | U2   | R3                  | R2          |  |             |             |  |             |             |                       |                                    |   |   |   |
| RO  | RX  | -  |                          |             |  |                     |             |  |             |             |  |             |             |                       | 0                                  | 1 | 1 | 0 |
| <input type="checkbox"/> SRO-I            | NOR   | 1,2  |                          |             |  |                     |             |  |             |             |  |             |             |                       | 2                                  | 1 | 1 | 1 |
| <input type="checkbox"/> SRO-U            | I/C   | 4,5,6,<br>8,9  |                          |             |  |                     |             |  |             |             |  |             |             |                       | 5                                  | 4 | 4 | 2 |
| <input checked="" type="checkbox"/> U1    | MAJ   | 7  |                          |             |  |                     |             |  |             |             |  |             |             |                       | 1                                  | 2 | 2 | 1 |
|   | TS  | 4,5  |                          |             |  |                     |             |  |             |             |  |             |             |                       | 2                                  | 0 | 2 | 2 |
| RO  | RX  |  | 3                        |             |  |                     | -           |  |             |             |  |             |             |                       | 1                                  | 1 | 1 | 0 |
| <input checked="" type="checkbox"/> R2    | NOR   |  | 2                        |             |  |                     | 2           |  |             |             |  |             |             |                       | 2                                  | 1 | 1 | 1 |
| <input type="checkbox"/> SRO-I            | I/C   |  | 4,8                      |             |  |                     | 4,6,8       |  |             |             |  |             |             |                       | 5                                  | 4 | 4 | 2 |
| <input type="checkbox"/> SRO-U            | MAJ   |  | 7                        |             |  |                     | 7           |  |             |             |  |             |             |                       | 2                                  | 2 | 2 | 1 |
| <input type="checkbox"/>                  | TS  |  | -                        |             |  |                     | -           |  |             |             |  |             |             |                       | 0                                  | 0 | 2 | 2 |
| RO  | RX  |  |                          | -           |  | 3                   |             |  |             |             |  |             |             |                       | 1                                  | 1 | 1 | 0 |
| <input checked="" type="checkbox"/> R3    | NOR   |  |                          | 1           |  | 1                   |             |  |             |             |  |             |             |                       | 2                                  | 1 | 1 | 1 |
| <input type="checkbox"/> SRO-I            | I/C   |  |                          | 6,9         |  | 5,6                 |             |  |             |             |  |             |             |                       | 4                                  | 4 | 4 | 2 |
| <input type="checkbox"/> SRO-U            | MAJ   |  |                          | 7           |  | 7                   |             |  |             |             |  |             |             |                       | 2                                  | 2 | 2 | 1 |
| <input type="checkbox"/>                  | TS  |  |                          | -           |  | -                   |             |  |             |             |  |             |             |                       | 0                                  | 0 | 2 | 2 |
| RO  | RX  |  |                          |             | -  |                     |             |  |             |             |  |             |             |                       | 0                                  | 1 | 1 | 0 |
| <input type="checkbox"/> SRO-I            | NOR   |  |                          |             | 1,2  |                     |             |  |             |             |  |             |             |                       | 2                                  | 1 | 1 | 1 |
| <input type="checkbox"/> SRO-U            | I/C   |  |                          |             | 3,4,5,<br>6,8  |                     |             |  |             |             |  |             |             |                       | 5                                  | 4 | 4 | 2 |
| <input checked="" type="checkbox"/> U2    | MAJ   |  |                          |             | 7  |                     |             |  |             |             |  |             |             |                       | 1                                  | 2 | 2 | 1 |
|   | TS  |  |                          |             | 3,4  |                     |             |  |             |             |  |             |             |                       | 2                                  | 0 | 2 | 2 |

Instructions:

- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (\*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

| Facility: River Bend Station  |   |  |             | Date of Exam: 11/12/2012 |  |             |             | Operating Test No.:                                      |             |             |  |             |             |                       |  |   |   |   |
|---|---|--|-------------|--------------------------|--|-------------|-------------|--|-------------|-------------|--|-------------|-------------|-----------------------|--|---|---|---|
| A<br>P<br>P<br>L<br>I<br>C<br>A<br>N<br>T   | E<br>V<br>E<br>N<br>T<br><br>T<br>Y<br>P<br>E | Scenarios  |             |                          |  |             |             |  |             |             |  |             |             | T<br>O<br>T<br>A<br>L | M<br>I<br>N<br>I<br>M<br>U<br>M<br>(*) |   |   |   |
|   |   | 1  |             |                          | 2  |             |             | 3  |             |             | 4  |             |             |                       |  |   |   |   |
|   |   | C<br>R<br>E<br>W<br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |             |                          | C<br>R<br>E<br>W<br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |             |             | C<br>R<br>E<br>W<br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |             |             | C<br>R<br>E<br>W<br>P<br>O<br>S<br>I<br>T<br>I<br>O<br>N |             |             |                       |  |   |   |   |
|   |   | S<br>R<br>O  | A<br>T<br>C | B<br>O<br>P              | S<br>R<br>O  | A<br>T<br>C | B<br>O<br>P | S<br>R<br>O  | A<br>T<br>C | B<br>O<br>P | S<br>R<br>O  | A<br>T<br>C | B<br>O<br>P |                       |  |   |   |   |
|   |   | U3   | I2          | R1                       | I2   | I1          | R1          | I1   | R1          | I2          |  |             |             |                       |  | R | I | U |
| RO<br><input type="checkbox"/> SRO-I<br><input type="checkbox"/> SRO-U<br><input checked="" type="checkbox"/> U3    | RX  | -  |             |                          |  |             |             |  |             |             |  |             |             | 0                     | 1                                      | 1 | 0 |   |
|   | NOR   | 1,2  |             |                          |  |             |             |  |             |             |  |             |             | 2                     | 1                                      | 1 | 1 |   |
|   | I/C   | 4,5,6,8,9  |             |                          |  |             |             |  |             |             |  |             |             | 5                     | 4                                      | 4 | 2 |   |
|   | MAJ   | 7  |             |                          |  |             |             |  |             |             |  |             |             | 1                     | 2                                      | 2 | 1 |   |
|   | TS  | 4,5  |             |                          |  |             |             |  |             |             |  |             |             | 2                     | 0                                      | 2 | 2 |   |
| RO<br><input type="checkbox"/> SRO-I<br><input checked="" type="checkbox"/> I2<br>SRO-U<br><input type="checkbox"/> | RX  |  | 3           |                          | -  |             |             |  |             | -           |  |             |             | 1                     | 1                                      | 1 | 0 |   |
|   | NOR   |  | 2           |                          | 1,2  |             |             |  |             | 2           |  |             |             | 4                     | 1                                      | 1 | 1 |   |
|   | I/C   |  | 4,8         |                          | 3,4,5,6,8  |             |             |  |             | 4, 6, 8     |  |             |             | 10                    | 4                                      | 4 | 2 |   |
|   | MAJ   |  | 7           |                          | 7  |             |             |  |             | 7           |  |             |             | 3                     | 2                                      | 2 | 1 |   |
|   | TS  |  | -           |                          | 3,4  |             |             |  |             | -           |  |             |             | 2                     | 0                                      | 2 | 2 |   |
| RO<br><input checked="" type="checkbox"/> R1<br>SRO-I<br><input type="checkbox"/> SRO-U<br><input type="checkbox"/> | RX  |  |             | -                        |  |             | -           |  | 3           |             |  |             |             | 1                     | 1                                      | 1 | 0 |   |
|   | NOR   |  |             | 1                        |  |             | 2           |  | 1           |             |  |             |             | 3                     | 1                                      | 1 | 1 |   |
|   | I/C   |  |             | 6,9                      |  |             | 4,6,8       |  | 5,9         |             |  |             |             | 7                     | 4                                      | 4 | 2 |   |
|   | MAJ   |  |             | 7                        |  |             | 7           |  | 7           |             |  |             |             | 3                     | 2                                      | 2 | 1 |   |
|   | TS  |  |             | -                        |  |             | -           |  | -           |             |  |             |             | 0                     | 0                                      | 2 | 2 |   |
| RO<br><input type="checkbox"/> SRO-I<br><input checked="" type="checkbox"/> I1<br>SRO-U<br><input type="checkbox"/> | RX  |  |             |                          |  | 3           |             | -  |             |             |  |             |             | 1                     | 1                                      | 1 | 0 |   |
|   | NOR   |  |             |                          |  | 1           |             | 1,2  |             |             |  |             |             | 3                     | 1                                      | 1 | 1 |   |
|   | I/C   |  |             |                          |  | 5,6         |             | 4,5,6,8,9  |             |             |  |             |             | 7                     | 4                                      | 4 | 2 |   |
|   | MAJ   |  |             |                          |  | 7           |             | 7  |             |             |  |             |             | 2                     | 2                                      | 2 | 1 |   |
|   | TS  |  |             |                          |  | -           |             | 4,6  |             |             |  |             |             | 2                     | 0                                      | 2 | 2 |   |

Instructions:

- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
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|  |   |                                 |             |                                |   |                     |             |   |   |                 |                    |                                |                                |  |  |  |
|--|---|---------------------------------|-------------|--------------------------------|---|---------------------|-------------|---|---|-----------------|--------------------|--------------------------------|--------------------------------|--|--|--|
| Facility: River Bend   |   | Date of Examination: 11/12/2012 |             |                                |   | Operating Test No.: |             |   |   |                 |                    |                                |                                |  |  |  |
| Competencies   | APPLICANTS                                |                                 |             |                                |   |                     |             |   |   |                 |                    |                                |                                |  |  |  |
|  | ATC                                       |                                 |             |                                | BOP                                       |                     |             |   | SRO                                       |                 |                    |                                |                                |  |  |  |
|  | RO <input checked="" type="checkbox"/>    |                                 |             |                                | RO <input checked="" type="checkbox"/>    |                     |             |   | RO <input type="checkbox"/>               |                 |                    |                                | RO <input type="checkbox"/>    |  |  |  |
|  | SRO-I <input checked="" type="checkbox"/> |                                 |             |                                | SRO-I <input checked="" type="checkbox"/> |                     |             |   | SRO-I <input checked="" type="checkbox"/> |                 |                    |                                | SRO-I <input type="checkbox"/> |  |  |  |
| SRO-U <input type="checkbox"/>   |   |                                 |             | SRO-U <input type="checkbox"/> |   |                     |             | SRO-U <input checked="" type="checkbox"/> |   |                 |                    | SRO-U <input type="checkbox"/> |                                |  |  |  |
| SCENARIO   |   |                                 |             | SCENARIO                       |   |                     |             | SCENARIO                                  |   |                 |                    | SCENARIO                       |                                |  |  |  |
| 1 2 3 4  |   |                                 |             | 1 2 3 4                        |   |                     |             | 1 2 3 4                                   |   |                 |                    | 1 2 3 4                        |                                |  |  |  |
| Interpret/Diagnose Events and Conditions   | 4,7, 8                                    | 5,6, 7                          | 5,7, 9      |                                | 6,7 9                                     | 4,6, 7,8            | 4,6, 7,8    |   | 4,6 7,8 9                                 | 3,4 5,6 7,8     | 4,5, 6,7, 8,9      |                                |                                |  |  |  |
| Comply With and Use Procedures (1)   | 2,3, 4,7, 8                               | 1,3, 5,6, 7                     | 1,3, 5,7, 9 |                                | 1,6 7,9                                   | 2,4, 6,7, 8         | 2,4, 6,7, 8 |   | 1,2 4,5 6,7 8,9                           | 1,2 3,4 5,6 7,8 | 1,2, 4,5, 6,7, 8,9 |                                |                                |  |  |  |
| Operate Control Boards (2)   | 2,3, 4,7, 8                               | 1,3, 5,6, 7                     | 1,3, 5,7, 9 |                                | 1,6 7                                     | 2,4, 6,7, 8         | 2,4, 6,7, 8 |   |   |                 |                    |                                |                                |  |  |  |
| Communicate and Interact   | 2,3, 4,7, 8                               | 1,3, 5,6, 7                     | 1,3, 5,7, 9 |                                | 1,6 7,9                                   | 2,4, 6,7, 8         | 2,4, 6,7, 8 |   | 1,2 4,5 6,8 9                             | 1,2 3,4 5,6 7,8 | 1,2, 4,5, 6,7, 8,9 |                                |                                |  |  |  |
| Demonstrate Supervisory Ability (3)  |   |                                 |             |                                |   |                     |             |   | 1,2 4,5 6,7 8,9                           | 1,2 3,4 5,6 7,8 | 1,2, 4,5, 6,7, 8,9 |                                |                                |  |  |  |
| Comply With and Use Tech. Specs. (3)   |   |                                 |             |                                |   |                     |             |   | 4,5                                       | 3,4             | 4,6                |                                |                                |  |  |  |
| Notes:<br>(1) Includes Technical Specification compliance for an RO.<br>(2) Optional for an SRO-U.<br>(3) Only applicable to SROs. |   |                                 |             |                                |   |                     |             |   |   |                 |                    |                                |                                |  |  |  |

**Instructions:**

Check the applicants' license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.