

RBS JOB PERFORMANCE MEASURE

ES-301 RO Admin Topic No. A.1.1

JPM NUMBER: 976-03 Rev. 0, ADMIN

TASK DESCRIPTION: Complete Daily Log Verification of Power Distribution Limits during Single Loop Operation.

K/A REFERENCE & RATING: 2.1.19 (3.0/3.0)

TASK REFERENCE: 302001002001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: X Simulator: X In-Plant: X

COMPLETION TIME: 5 minutes

MAX. TIME: N/A

JOB LEVEL: RO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/04/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Joseph Clark</u> | <u>0260</u> | <u>12/10/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/10/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Complete Daily Log Verification of Power Distribution Limits during Single Loop Operation.

Required Power: NA

IC No.: NA

Notes: Administrative JPM that does not require simulator.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|--|
| References for Development: | STP-000-0001, Daily Operating Logs GOP-0004, Single Loop Operation |
| Required Materials: | STP-000-0001, Daily Operating Logs, Data Sheet 1 GOP-0004, Single Loop Operation Attached POWERPLEX Core Performance Log |
| Required Plant Condition: | NA |
| Applicable Objectives: | HLO-, Objectives |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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 “A” Reactor Recirc Pump tripped from full power and GOP-0004, Single Loop Operation has been entered. Reactor Engineering has NOT implemented a new core monitoring system thermal limit deck for Single Loop Operation.

Initiating Cue: The CRS has directed you to complete Step 114 of STP-000-0001, Data Sheet, with the attached Core Performance Log data.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|--------------|---|
| <p>1. <u>STEP 114 NOTES</u></p> <p>Power Distribution Limits shall be verified to be within the limits stated in Technical Specifications within 12 hours after Thermal Power is = 23.8% of rated thermal power and once per 24 hours thereafter.</p> <p>During Single Loop Operation, refer to GOP-0004 to determine if administrative limits are applicable.</p> | <p>Refer to administrative limits in GOP-0004 Step 3.4.</p> | <p>_____</p> | <p>CUE: Reactor Engineering has not implemented the appropriate core monitoring system thermal limit deck.</p> <p>NOTE: Do NOT provide GOP-0004, Attachment 1 until requested by candidate.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-----------------------------|--|
| <p>2. GOP-0004 Step 3.4</p> <p>During Single Loop Operation, an administrative limit of 0.980 shall be applied to MFLCPR and an administrative limit of 0.79 shall be applied to MAPRAT while core flow is greater than 50% rated. The administrative limits may be removed once Reactor Engineering implements the appropriate core monitoring system thermal limit deck.</p> | <p>Uses 0.980 Admin limit for MFLCPR and 0.79 for MAPRAT.</p> | <p align="center">_____</p> | <p>CUE: If asked as CRS, Reactor Engineering has not implemented the appropriate core monitoring system thermal limit deck.</p> |
| <p>* 3. Reviews Core Performance Log to obtain values for MFLPD, MAPRAT, and MFLCPR for operating log Step 114.</p> | <p>Fills in Step 114 identifying MAPRAT at 0.811 as exceeding SLO administrative limit.</p> <p>Notifies CRS of MAPRAT exceeding limit.</p> | <p align="center">_____</p> | <p>CUE: As CRS, acknowledge MAPRAT exceeding limit.</p> <p>NOTE: Reading being circled is NOT critical.</p> |

Terminating Cue: Step 114 of STP-000-0001, Data Sheet 1 completed and MAPRAT identified as exceeding limit.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The "A" Reactor Recirc Pump tripped from full power and GOP-0004 Single Loop Operation has been entered.

Reactor Engineering has NOT implemented a new core monitoring system thermal limit deck for Single Loop Operation.

Initiating Cues: The CRS has directed you to complete Step 114 of STP-000-0001, Data Sheet 1, with the attached Core Performance Log data.

POWERPLEX – III CORE PERFORMANCE LOG – OPS - 03FEB10 – 164555

B1-01-04 (02.11.03 @ 2100)

GEOM=FULL

PREDICT CALCULATION – UPD TDXEC PREV PCS Y

RESTART 03FEB10 - 161100

| | | | | | | | | |
|--------|---------|--------|-----------|---------|--------|---------|-------|----------|
| POWER | 2036.0 | MWTH | CYCLE EXP | 10133.4 | MWD/MT | CMFLCPR | .951 | 23-22 |
| | (67.0%) | | CORE EXP | 23317.4 | MWD/MT | CMAPRAT | .811 | 21-32-17 |
| FLOW | 45.4 | MLB/HR | PRESS | 1015.0 | PSIA | CMFLPD | .824 | 21-32-17 |
| | (53.7%) | | DHS | 30.40 | BTU/LB | CMTPF | 2.558 | 19-32-15 |
| ELEC | 719.6 | MWE | WFW | 7.473 | MLB/HR | FCBB | 1.879 | 2.46 FT |
| ROD-LN | 106.9 | % | TFW-A | 383.7 | DEG F | P-PCS | .000 | 17-34-18 |
| K-EFF | 1.0054 | | NON-EQ XE | .00 | | P-PCFC | -.252 | 35-10-10 |

| CONTROL RODS SYMMETRIC, | | | | | C.R. SEQUENCE: B-1, | | | | | C.R. DENSITY: .070 | | | | |
|-------------------------|----|----|----|-------|---------------------|----|----|----|----|--------------------|----|----|----|--|
| 04 | 08 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | | |
| 53 | | | -- | -- | -- | -- | -- | -- | -- | | | | 53 | |
| 49 | | -- | -- | -- | -- | -- | -- | -- | -- | | | | 49 | |
| 45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | 45 | |
| 41 | -- | -- | -- | 06 | -- | 12 | -- | 06 | -- | -- | -- | -- | 41 | |
| 37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | 37 | |
| 33 | -- | -- | 10 | P 24* | -- | -- | -- | 24 | -- | 10 | -- | -- | 33 | |
| 29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | 29 | |
| 25 | -- | -- | 10 | -- 24 | -- | -- | -- | 24 | -- | 10 | -- | -- | 25 | |
| 21 | -- | -- | -- | -- | R-- | 12 | -- | -- | -- | | | | 21 | |
| 17 | -- | -- | -- | 06 | -- | -- | -- | 17 | -- | -- | -- | -- | 17 | |
| 13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | 13 | |
| 09 | | -- | -- | -- | -- | -- | -- | -- | -- | | | | 09 | |
| 05 | | -- | -- | -- | -- | -- | -- | -- | -- | | | | 05 | |
| | 04 | 08 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | |

KEY
R-MFLCPR
M-MAPRAT
X-FDLRX
P-PRECOND
*-MULT
SUBST RODS

THERMAL LIMIT DETAIL (TOP 5)

| MFLCPR | LOC | MAPRAT | LOC | MFLPD | LOC | TPF | LOC | AXIAL REL POWER | LOC | NOTCH | RPOW |
|--------|-------|--------|----------|-------|----------|-------|----------|-----------------|-----|-------|-------|
| .951 | 23-22 | .811 | 21-32-17 | .824 | 21-32-17 | 2.558 | 19-32-15 | 25 | | | .098 |
| .931 | 27-22 | .773 | 19-24-17 | .763 | 19-32-17 | 2.461 | 21-34-15 | 24 | 00 | | .315 |
| .928 | 21-28 | .760 | 19-32-17 | .751 | 19-24-17 | 2.438 | 23-48-04 | 23 | 02 | | .801 |
| .925 | 15-22 | .739 | 15-20-09 | .746 | 29-48-04 | 2.376 | 35-12-04 | 22 | 04 | | 1.007 |
| .920 | 13-20 | .737 | 13-26-21 | .746 | 29-48-04 | 2.376 | 35-12-04 | 21 | 06 | | 1.100 |

FUEL TYPE DETAIL

| TYPE | LHGR | MAX LHGR | LOC | BATCH | AVG EXP |
|------|--------|----------|----------|-------|---------|
| 14 | 7.427 | | 15-20-20 | | 32.972 |
| 15 | 6.380 | | 05-20-20 | | 27.034 |
| 16 | 5.005 | | 05-30-20 | | 27.375 |
| 17 | 7.140 | | 19-22-17 | | 20.836 |
| 18 | 8.616 | | 19-28-17 | | 26.561 |
| 19 | 9.622 | | 21-32-15 | | 28.341 |
| 20 | 9.045 | | 21-28-17 | | 12.792 |
| 21 | 10.185 | | 19-32-17 | | 12.224 |

AXIAL DISTRIBUTION DETAIL

| CORE -AVERAGE | POWER (PINER) | AXIAL REL POWER | LOC | NOTCH | RPOW |
|---------------|---------------|-----------------|-----|-------|-------|
| | | | 17 | 14 | 1.146 |
| | | | 16 | 16 | 1.189 |
| | | | 15 | 18 | 1.189 |
| | | | 14 | 20 | 1.193 |
| | | | 13 | 22 | 1.199 |
| | | | 12 | 24 | 1.184 |
| | | | 11 | 26 | 1.179 |
| | | | 10 | 28 | 1.180 |
| | | | 09 | 30 | 1.178 |
| | | | 08 | 32 | 1.166 |
| | | | 07 | 34 | 1.149 |
| | | | 06 | 36 | 1.124 |
| | | | 05 | 38 | 1.100 |
| | | | 04 | 40 | 1.071 |
| | | | 03 | 42 | .996 |
| | | | 02 | 44 | .780 |
| | | | 01 | 46 | .204 |

| RADIAL RING | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------|------|------|------|------|------|------|-----|
| RING REL POWER | 1.07 | 1.26 | 1.29 | 1.20 | 1.21 | 1.13 | .59 |

RBS JOB PERFORMANCE MEASURE

ES-301 RO Admin Topic No. A.1.2

JPM NUMBER: 402-01 Rev. 0, ADMIN

TASK DESCRIPTION: Determine Effects of Removing Control Power Fuse for Control Room Ventilation Damper HVC-AOD8B.

K/A REFERENCE & RATING: 2.1.24 (2.8/3.1)

TASK REFERENCE: 300246003001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: X Simulator: _____ In-Plant: X

COMPLETION TIME: 15 minutes

MAX. TIME: N/A

JOB LEVEL: RO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|----------------------|-------------|----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>1/29/03</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Frank McLean</u> | <u>0803</u> | <u>1/30/03</u> |
| | | KCN | DATE: |
| Approved by: | <u>Angie Orgeron</u> | <u>1538</u> | <u>1/30/03</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Determine the effects a fuse removal on system operation and Control Room Indication.

Required Power: NA

IC No.: NA

Notes: Administrative JPM that will not be done in the simulator.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: ESK-7HVC07, ESK-7SCC16, ESK-10ANN15
PID-22-09B, ARP-P863-74A-D07

Required Materials: ESK-7HVC07, ESK-7SCC16, ESK-10ANN15
PID-22-09A,PID-22-09B,PID-22-09C,
ARP-P863-74A

Required Plant Condition: NA

Applicable Objectives: HLO-542, Objectives 4 & 5

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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: Mechanical Maintenance has a MAI to work on the actuator linkage for the “B” Control Room Air Handling Unit inlet damper, HVC-AOD8B. The Air Handling Unit has been tagged out and Electricians are ready to remove 5 amp Fuse F3 in Panel P852 to de-energize the solenoid-operated air valve HVC-SOV8B to isolate the pneumatics from HVC-AOD8B for work to begin.

Initiating Cue: Given ESK-7HVC07, the CRS has directed you to determine the following:

1. The fail position of HVCAOD8B.
2. Any other component(s) affected by the fuse removal.
3. The effect(s) the fuse removal will have on Control Room Panel P863 alarms and indications.

NOTE: To pass the JPM, you must determine Items 1 and 2, and at least THREE of the FOUR effects on P863 alarms and indications for Item 3.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|-------------------------|-----|---|
| * Using ESK-7HVC07 and/or P&ID-22-09, determines damper fail position. | HVC-AOD8B fails closed. | — | NOTE: Provide additional prints, ESK-7SCC16, ESK-10ANN15 or PID-22-09 when requested by candidate. |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------|--|
| * Using ESK-7HVC07, determines other components affected. | HVC-AOD6B will also be de-energized or disabled. | _____ | NOTE: Candidates may state (though not required) that relay 74A will be de-energized. |
| * Using ESK-7HVC07, ESK-7SCC16, ESK-10ANN15, and ARPs, identifies impact of fuse removal on Control Room indication and alarm status. | States fuse removal will cause the following on P863: <ul style="list-style-type: none"> • De-energizes (red and green) position indication lights for HVC-AOD8B. • De-energizes (red and green) position indication lights for HVC-AOD6B. • Energizes (or turns on) the Amber inop status light (postage stamp) “Cont Bldg Dmprs.” • Initiates alarm window No. 0409 on P863, Annunciator “DIV 2 CONTROL BLDG VENT SYSTEM INOP”. | _____ | NOTE: Must have three of the four bulleted items correct to meet pass criteria for this critical step. Candidates may include in their response (though not required) that the fuse removal de-energizes relay 74A, which actuates the inop status light and annunciator. CUE: If candidate only provides Alarm Window No. 0409, as CRS state that you want the Title of the alarm window and provide ARP-P863-74A. NOTE: Candidate must identify alarm window from print to be provided ARP-P863-74A. |

Terminating Cue: Provided fuse removal fail position of HVC-AOD8B, its impact on HVC-AOD6B and Control Room P863 indications and alarms.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

Mechanical Maintenance has a MAI to work on the actuator linkage for the “B” Control Room Air Handling Unit inlet damper, HVC-AOD8B.

The Air Handling Unit has been tagged out and Electricians are ready to remove 5 amp Fuse F3 in Panel P852 to de-energize the solenoid-operated air valve HVC-SOV8B to isolate the pneumatics from HVC-AOD8B for work to begin.

Initiating Cues:

Given ESK-7HVC07, the CRS has directed you to determine the following:

1. The fail position of HVCAOD8B.
2. Any other component(s) affected by the fuse removal.
3. The effect(s) the fuse removal will have on Control Room Panel P863 alarms and indications.

NOTE:

To pass the JPM, you must determine Items 1 and 2, and at least THREE of the FOUR effects on P863 alarms and indications for Item 3.

RBS JOB PERFORMANCE MEASURE

ES-301 RO Admin Topic No. A.2

JPM NUMBER: 204-08, Rev. 0 ADMIN

TASK DESCRIPTION: Perform Independent Verification of "A" RHR Heat Exchanger tagout

K/A REFERENCE & RATING: 2.2.13 (3.6/3.8)

TASK REFERENCE: 300057003001/300097003001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 8 minutes

MAX. TIME: N/A

JOB LEVEL: RO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): Yes

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/05/02</u> |
| | | KCN | DATE |
| Ops Validation: | <u>Joseph Clark</u> | <u>0260</u> | <u>12/10/02</u> |
| | | KCN | DATE |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/10/02</u> |
| | | KCN | DATE |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Perform Independent Verification of “A” RHR Heat Exchanger tagout.

Required Power: NA

IC No.: 139

Notes:

1. Close E12-F074A RHR A HX Up Stream Vent Valve and place switch cover tag for E12-F047A RHR A HX Inlet Valve on the control switch
2. Close E12-F047A RHR A HX Inlet Valve and place switch cover tag for E12-F074A RHR A HX Up Stream Vent Valve on the control switch
3. Close and tag remaining P601 control switches per attached Clearance form.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|--|
| References for Development: | ADM-0076, Verification Program ADM-0027, Protective Tagging |
| Required Materials: | Tagging Sheet for RHR A Heat Exchanger Clearance RB-03-0122 |
| Required Plant Condition: | Any |
| Applicable Objectives: | HLO-201, Objective 2 |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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: A Clearance has been authorized for the “A” RHR Heat Exchanger. The RHR system component lineup has been completed and the tags have been hung.

Initiating Cue: The CRS has given you the attached tagging sheet and directed you to perform an Independent Verification of the tags on P601 for the “A” RHR Heat Exchanger Clearance RB-03-0122.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|--|
| * 1. Verifies tags on P601 Section 21 for the “A” RHR Heat Exchanger Clearance. | Verifies all tagged components are in the proper position and the tag numbers match the tag sheet. Identifies Switch cover tags for E12-F074A and E12-F047A are reversed (incorrectly placed). Informs CRS of tagging discrepancy. | _____ | <p>CUE: As CRS, direct operator to remove the incorrectly placed tags and return them to you to initiate a Condition Report.</p> <p>NOTE: It is satisfactory for the candidate to remove the tags and deliver them to the CRS when informing the CRS of the tagging error.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|----------|
| 2. Removes incorrectly placed tags. | Incorrectly placed tags removed and given to CRS for disposition. | _____ | |
| * 3. Signs and initials the tag sheet. | Signature, date, and time on next available "O/T" line in upper left hand column of tag sheet. Initials IND VERIFY boxes only for the three correctly placed tags. | _____ | |

Terminating Cue: Independent verification has been completed and incorrectly placed tags removed.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

A Clearance has been issued for the “A” RHR Heat Exchanger.

The RHR system component lineup has been completed and the tags are hung.

Initiating Cues:

The CRS has given you the attached tagging sheet and directed you to perform an Independent Verification of the tags on P601 for the “A” RHR Heat Exchanger Clearance RB-03-0122.

RBS JOB PERFORMANCE MEASURE

ES-301 RO Admin Topic No. A.3

JPM NUMBER: 001-01, Rev. 0 ADMIN

TASK DESCRIPTION: Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

K/A REFERENCE & RATING: 2.3.1 (2.6/3.0)
2.3.4 (2.5/3.1)

TASK REFERENCE:

TESTING METHOD: Simulate Performance: X Actual Performance: X
Control Room: Simulator: In-Plant: X

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: RO & SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|------------------------|---------------|-------------------|
| Prepared by: | <u> Roger Persons </u> | <u> 0862 </u> | <u> 12/06/02 </u> |
| | | KCN | DATE: |
| Ops Validation: | <u> Joseph Clark </u> | <u> 0260 </u> | <u> 12/10/02 </u> |
| | | KCN | DATE: |
| Approved by: | <u> Mike Wagner </u> | <u> 0035 </u> | <u> 12/10/02 </u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

Required Power: NA

IC No.: NA

Notes: This Admin JPM will be conducted in conjunction with in-plant JPM 800-21 Establish Emergency Containment Venting per EOP Enclosure 21 which requires CAA entry (**RO JPM No. 13, SRO-Instant JPM No. 13, SRO-Upgrade JPM No. 9**).

It is intended that the attached **JPM Task Conditions/Cues** sheet for this JPM be provided to the candidate upon completing in-plant JPM 800-21 in the Auxiliary Building.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|---|
| References for Development: | EOI Rad Worker Training |
| Required Materials: | Standard personal safety equipment for entry into CAA |
| Required Plant Condition: | Any |
| Applicable Objectives: | RWT01 |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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: With the plant at power, it has become necessary to swap the CRD Pump discharge filters.

Initiating Cue: The CRS has directed you to swap the CRD Pump discharge filters requiring you to locally position the manual filter isolation valves.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|---|
| 1. Reviews RWP 2003-1002, if necessary. | Candidate may review or from recent entries be familiar with requirements based on date of RWP. | _____ | |
| * 2. Obtain Electronic Alarming Dosimeter (EAD) from the rack outside the CAA entrance and activate at the access turnstile using appropriate Radiation Work Permit (RWP) number, and enters CAA when access is granted. | Candidate will obtain an EAD and insert the EAD into the activation slot and SCAN the bar code on his TLD and follow instructions on the screen. Entering RWP number and answering the questions on the computer fields of the access terminal. Once all fields have been entered appropriately access is granted. | _____ | NOTE: The RWP Number will be either 2003-1002. |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|---|
| 3. Dons personal safety equipment as required inside the CAA. | Hard hat, safety glasses and ear plugs worn where required in the CAA. | _____ | |
| * 4. While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements. | While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements. | _____ | <p>NOTE: None of the areas for the JPMs should access any High Radiation Areas or Contamination Areas.</p> <p>CUE: Upon completion of Emergency Containment Venting JPM in Auxiliary Building, provide candidate the attached JPM Task Conditions/Cues(Operator Copy) sheet.</p> |
| 5. Determines radiological status of area around CRD Pump discharge filters. | Determines or knows that the area around CRD Pump discharge filters is a contamination area. | _____ | <p>NOTE: CRD Pump discharge filters are in the basement elevation of the Fuel Building.</p> <p>CUE: State that actual entry into the contamination area will NOT be required. Discuss requirements for entering and exiting area to complete the task.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------|--|
| * 6. Determines requirements for entry into the contaminated area around the CRD Pump discharge filters. | NO additional dosimetry, single PCs and NO Pre-Job Brief. | _____ | NOTE: Candidate may wish to call HP Desk at CAA entrance for requirements if he isn't sure of details in RWP 2003-1002. |
| * 7. Exiting of the CAA the candidate enters the control point area and enters a PCM-1 Monitor. | Candidate clears PCM-1 Monitor and exits. | _____ | NOTE: If candidate shows radon contamination portions of apparel such as hard hat may be left with Health Physics for decay. |
| * 8. If hand carried materials were carried into the CAA they will be cleared through the Tool Contamination Monitor (TCM). | Candidate will place hand carried items in the TCM for counting. | _____ | |
| 9. After clearing the PCM-1 the candidate exits through the Portal Monitor. | Candidate clears Portal Monitor and exits. | _____ | |
| 10. Deactivates Merlin Guerlin at terminal at final exit of session. | Candidate will deactivate his EAD and return it to Health Physics rack. | _____ | |

Terminating Cue: Entry and egress from CAA completed.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: With the plant at power, it has become necessary to swap to swap the CRD Pump discharge filters.

Initiating Cues: The CRS has directed you to swap the CRD Pump discharge filters requiring you to locally position the manual filter isolation valves.

RBS JOB PERFORMANCE MEASURE

ES-301 RO Admin Topic No. A.4

JPM NUMBER: 940-02, Rev. 1 ADMIN

TASK DESCRIPTION: Make Required EP Notifications

K/A REFERENCE & RATING: 2.4.39 (3.3/3.1) 2.4.43 (2.8/3.5)

TASK REFERENCE: 301010005004

TESTING METHOD: Simulate Performance: X Actual Performance: _____
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 5 minutes

MAX. TIME: N/A

JOB LEVEL: RO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/05/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Fred Hurst</u> | <u>0628</u> | <u>12/09/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/10/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Make Required EP Notifications

Required Power: NA

IC No.: NA

Notes: Ensure the ESP-COMM computer is setup with Station in control
“Simulator”.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: EIP-2-006, Notifications

Required Materials: EIP-2-006, Notifications
Completed Short Notification Message Form

Required Plant Condition: Any

Applicable Objectives: EP-23, Objective 1

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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: An ongoing fire on the 116' elevation of the Control Building has damaged both Control Building Filter trains. The Fire Brigade Leader expects to have the fire extinguished within the next 20 minutes. As Emergency Director/Recovery Manager, the OSM has just classified this event as a Site Area Emergency. The normal communicator was incapacitated by smoke from the fire.

Initiating Cue: The OSM has provided you the Short Notification Form and directed you to make the required notifications to state and local authorities per EIP-2-006, Notifications. **[NOTE: Message transmittal should be SIMULATED.]**

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|--|
| 1. Verify Station in Control is appropriate. | Station in Control Simulator | _____ | NOTE: Computer will be set up with station in control Simulator and the message number rezeroed. The candidate may perform the first two steps of the E-Plan Aid to take control and rezero, but it is not necessary that he do so. |
| * 2. Start preparation of a Notification Message Form Click on “Start Event” button | Start Event screen opens. | _____ | CUE: Drill Status should be selected. |
| 3. Input event declaration time. | Inputs time from Short Notification Form | | NOTE: Info on short form |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------|---|
| * 4. If this is a real emergency, select the “NO” option in the “This is a Drill” box. | Selects “NO” option | _____ | <p>CUE: Instruct candidate to SELECT “YES” Option in the “This is a Drill” box (for the JPM).</p> <p>NOTE: If the “NO” option is selected and the message inadvertently transmitted, it will go out to all agencies as an actual emergency message.</p> |
| 5. Click on the “OK” button to continue to the short NMF. Click on the “Cancel” button to stop without building a short form. | Clicks on “OK” button | _____ | |
| * 6. A short NMF (Short Form) will appear on the screen, with the countdown timer displayed in the upper right corner. Select the event classification from the drop down menu. | Site Area Emergency selected from drop down menu. | _____ | |
| * 7. Type in the message for the short NMF along with wind direction and speed into the available boxes. | Types “Fire in the Control Building,” wind direction “225” degrees and speed at “5” MPH in the available boxes. | _____ | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|-------|---|
| * 8. Select “Yes” or “No” for radiological release, as appropriate. | Selects “No” for radiological release | _____ | |
| 9. Input the Recovery Manager’s name and title into the available boxes. | Inputs name and title from short form. | _____ | |
| 10. At this point the Recovery Manager should review the message form. | Requests Recovery Manager review. | _____ | CUE: As Emergency Director/Recovery Manager verify Site Area Emergency information from short form. |
| * 11. Transmit the message. Click on the “Xmit” button on the toolbar across the top of the screen. A screen will be displayed with “Group” and “Individual” buttons. To address: <ul style="list-style-type: none"> • click on the “Group” button • click on the “All” box to send NMF to ALL locations. • Click on the “Transmit” button at the bottom of the screen to transmit the NMF. | Screen with “Group” and “Individual” buttons opens. Selects “Group” Selects “All” Would then click on “Transmit” to send message. | _____ | <p>NOTE: <u>Terminate the JPM before the candidate clicks on the “Transmit” button at the bottom of the screen as this will actually send the message to the agencies.</u></p> |

Terminating Cue: Notifications made to state and local authorities for Site Area Emergency.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

An ongoing fire on the 116' elevation of the Control Building has damaged both Control Building Filter trains.

The Fire Brigade Leader expects to have the fire extinguished within the next 20 minutes.

As Emergency Director/Recovery Manager, the OSM has just classified this event as a Site Area Emergency.

The normal communicator was incapacitated by smoke from the fire.

Initiating Cues:

The OSM has provided you the Short Notification Form and directed you to make the required notifications to state and local authorities per EIP-2-006, Notifications. **[NOTE: Message transmittal should be SIMULATED.]**

RBS JOB PERFORMANCE MEASURE

ES-301 SRO Admin Topic No. A.1.1

JPM NUMBER: 053-07, Rev. 1 ADMIN

TASK DESCRIPTION: Perform Calculations Per GOP-0004 For Entering Single Loop Operation

K/A REFERENCE & RATING: 2.1.7 (3.7/4.4)

TASK REFERENCE: 300066003001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): Yes

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/05/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Joseph Clark</u> | <u>0260</u> | <u>12/10/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/10/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Perform Calculations Per GOP-0004 For Entering Single Loop Operation

Required Power: 60%

IC No.: 139

Notes: Loop B Flow recorder pen on C51-R614 is failed downscale requiring use of Group Point B33NA007 for Flow Calculation.

Ensure Point B33NA007 is reading 12.77 Mlbm/hr.

Ensure Steam Tables are available.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: GOP-0004, Single Loop Operation, Attachment 1

Required Materials: GOP-0004, Single Loop Operation, Attachment 1

Required Plant Condition: 60% Power

Applicable Objectives: HLO-, Objectives

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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 "A" Reactor Recirc Pump tripped from full power and GOP-0004 Single Loop Operation has been entered.

Initiating Cue: The CRS has directed you to complete Step 4 of GOP-0004, Attachment 1.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|---------------------------|--|
| <p>* 1. Within one hour of entering Single Loop Operation, verify the following:</p> <p>Thermal Power is less than or equal to 79% Rated Thermal Power (2400 MWTH)</p> <p>_____ CMWTH = _____ % \leq 79% 3039 (TSR 3.4.1.1.2)</p> <p>2. <u>AND</u></p> <p>At H13-P680, B33-HYVF060A and B33-HYVF060B, FLOW CONT VALVE, is in LOOP MANUAL. (TSR 3.4.1.1.3)</p> | <p>Determines power to be 60% \pm1%.</p> <p>Verifies both Recirc FCV M/A Stations in MANUAL.</p> <p>AMBER lights ON.</p> | <p>_____</p> <p>_____</p> | <p>NOTE: PMS screen provides between 1830-1835 CMWTH.</p> |

JPM-05307.01

* Denotes **Critical Step**
 ^ Denotes **Sequence Critical**
 (must be performed after previous step marked ^)

Page 4 of 7

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|---------------------------|---|
| <p>3. Total loop flow in running loop is less than 33 kgpm using one of the following methods (N/A method <u>not</u> used): (TSR 3.4.1.1.1)</p> <p>* 4. Use computer point for the operating loop (LOOP A - B33NA005 or B33NA006; LOOP B - B33NA007 or B33NA008) and convert from mlbm/hr to kgpm using the following formula:</p> $\frac{\text{flow}}{\text{(flow)}} \times \frac{\text{sv}}{\text{(sv)}} \times (124.68) = \frac{\text{kgpm}}{\text{(kgpm)}}$ <p>where flow = loop flow from computer point in mlbm/hr. sv = specific volume from steam tables (Vf) (dependent on loop temp) in ft³/lbm.</p> <p>* 5. TSR 3.4.1.1.1 Condition A, Volumetric loop flow greater than limit.</p> <p>Required Action A.1, Initiate action to reduce flow immediately.</p> | <p>NA Step 1. Obtain flow from C51-R614, LOOP A/B FLOW RECORDER, for the operating loop.</p> <p>Obtains 525°F operating loop temperature from PMS screen.</p> <p>Determines flow to be 33.5 kgpm, ±0.2 kgpm</p> <p>Identifies flow as exceeding 33 kgpm and refers to TSR 3.4.1.1.1 and reports to CRS in Condition A with Required to immediately initiate action to reduce flow to within limit.</p> | <p>_____</p> <p>_____</p> | <p>NOTE: Loop B Flow recorder pen on C51-R614 is failed downscale requiring use of Group Point B33NA007 for Flow Calculation.</p> <p>NOTE: Simulator only models B33NA007. If POINT DATA for B33NA008 is requested PMS screen will respond with error message at bottom of screen INVALID POINT REQUESTED.</p> <p>B33NA007 reads ~12.77 Mlbm/hr</p> <p>Vf for 525°F is 0.021045 by interpolation</p> <p>CUE: As CRS, acknowledge report.</p> <p>Terminate JPM.</p> |

Terminating Cue: Step 4 of GOP-0004, Attachment 1 is completed.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The "A" Reactor Recirc Pump tripped from full power and GOP-0004 Single Loop Operation has been entered.

Initiating Cues: The CRS has directed you to complete Step 4 of GOP-0004, Attachment 1.

RBS JOB PERFORMANCE MEASURE

ES-301 SRO Admin Topic No. A.1.2

JPM NUMBER: 256-04, Rev. 0 ADMIN

TASK DESCRIPTION: Complete LCO Status Sheet for Inoperative Div.1 Standby Diesel Generator.

K/A REFERENCE & RATING: 2.1.12 (2.9/4.0)

TASK REFERENCE: 300061003002

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: X Simulator: X In-Plant: X

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/08/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Joseph Clark</u> | <u>0260</u> | <u>12/12/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/12/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Complete LCO Status Sheet for Inoperative Div.1 Standby Diesel Generator.

Required Power: NA

IC No.: NA

Notes: Administrative JPM that does not require simulator.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|---|
| References for Development: | OSP-0040, LCO Tracking And Safety Function Determination Program Tech Spec 3.8.1, AC Sources - Operating |
| Required Materials: | LCO Status Sheet Technical Specifications |
| Required Plant Condition: | Mode 1 |
| Applicable Objectives: | HLO-408, Objective 2 |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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 leak in the Service Water supply to the Division 1 Standby Diesel Generator has been discovered and isolated at 1400 hours today. The Division 1 Standby Diesel Generator has been declared inoperable. No other Technical Specification LCOs exist at this time. Restoration of Service Water to the Diesel is expected to take about 8 hours.

Initiating Cue: Complete attached LCO Status Sheet LCO No. 03-016 for the Inoperative Division 1 Standby Diesel Generator.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|---|
| * 1. Complete LCO Status Sheet Blocks 5, 6, and 8. | Completes LCO Status Sheet Blocks 5, 6, and 8 per attached LCO Status Sheet. | _____ | NOTE: LCO Status Sheet KEY provided showing correct entries. |
| * 2. Provide a brief description of the Condition(s) entered. All conditions that must be entered due to the inoperability should be documented. | Completes LCO Status Sheet Block 10 per attached LCO Status Sheet. | _____ | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|----------|
| * 3. Provide the Required Actions if the TS/TRM LCO is not met. | Completes LCO Status Sheet Block 11 per attached LCO Status Sheet. | _____ | |
| * 4. Record the Completion Time associated with each Required Action. | Completes LCO Status Sheet Block 12 per attached LCO Status Sheet. | _____ | |
| 5. When an LCO is entered for a system designated as a support system in Attachment 1, Support – Supported LCO Matrix of this procedure, evaluate the operability of the supported system. If T.S. 3.0.6 is to be used to prevent entering Conditions and Required Actions for supported systems, perform an evaluation per T.S. 5.5.10 to ensure that no loss of safety function exists. | Completes LCO Status Sheet Blocks 13 through 15 per attached LCO Status Sheet. | _____ | |

Terminating Cue: LCO Status Sheet LCO No. 03-016 for the Inoperative Division1 Standby Diesel Generator completed.

RBS JOB PERFORMANCE MEASURE

LCO STATUS SHEET *KEY*

LCO No.: 03-016

| | | | | |
|---|--|--|--|--------------------|
| 1 Date: 2/10/03 | 2 Time: 1000 | 3 % PWR 100 | 4 Mode: 1 | Page 1 of <u>1</u> |
| 5 TS/TRM No.: TS 3.8.1 | | | 6 Mode Change Allowed: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 7 Mark No. <u>EGS-EG1A</u> Sys. No.: <u>309</u> Description <u>Division 1 Standby Diesel Generator</u> | | | 8 Applicable Modes: <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 Other _____ | |
| 9 CONDITION INITIATING LCO: Scheduled Outage _____ Equipment Failure <input checked="" type="checkbox"/> <i>A leak on the service water return line from the Division 1 Standby Diesel Generator required isolation of service water to the Division 1 Diesel.</i> | | | | |
| 10 Condition | 11 Required Action | 12 Completion Time | | |
| <u>B. One required DG inoperable</u> | <u>B.1 Perform SR 3.8.1.1 for OPERABLE required offsite circuit(s)</u> | Required by: Date: <u>2/10/03</u> Time: <u>1100</u> | Completed: Date: ___/___/___ Time: _____ Initials: _____ | |
| <u>B.</u> | <u>B.2 Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required features(s) are inoperable.</u> | Required by: Date: ___/___/___ Time: _____ | Completed: Date: ___/___/___ Time: _____ Initials: _____ | |
| <u>B.</u> | <u>B.3.1 Determine operable DG(s) are not inoperable due to common cause failure.</u> <u>OR</u> <u>B.3.2 Perform SR 3.8.1.2 for OPERABLE DG(s)</u> | Required by: Date: <u>2/11/03</u> Time: <u>1000</u> | Completed: Date: ___/___/___ Time: _____ Initials: _____ | |
| <u>B.</u> | <u>B.4 Restore required DG to OPERABLE status.</u> | Required by: Date: <u>2/24/03</u> Time: <u>1000</u> | Completed: Date: ___/___/___ Time: _____ Initials: _____ | |
| 13 LCO 3.0.6 ENTERED <p align="center">NA</p> | | 14 LOSS OF SAFETY FUNCTION EVALUATION COMPLETED Initials/KCN: ___/___ | | |
| 15 PREPARED BY: <i>Candidate's Name</i> | | 16 REVIEWED BY: | | |

LCO CLOSEOUT

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

**RBS JOB PERFORMANCE MEASURE
VERIFICATION OF COMPLETION**

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: Satisfactory / Unsatisfactory

Evaluator's Signature: _____ Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

The leak in the Service Water supply to the Division 1 Standby Diesel Generator has been discovered and isolated at 1400 hours today.

The Division 1 Standby Diesel Generator has been declared inoperable.

No other Technical Specification LCOs exist at this time.

Restoration of Service Water to the Diesel is expected to take about 8 hours.

Initiating Cues:

Complete attached LCO Status Sheet LCO No. 03-016 for the inoperative Division 1 Standby Diesel Generator.

LCO STATUS SHEET

LCO No.: 03-016

| | | | | |
|---|---------------------|--------------------|---|--------------------|
| 1 Date: 2/10/03 | 2 Time: 1000 | 3 % PWR 100 | 4 Mode: 1 | Page 1 of <u>1</u> |
| 5 TS/TRM No.: | | | 6 Mode Change Allowed: <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 7 Mark No. <u>EGS-EG1A</u> Sys. No.: <u>309</u> Description <u>Division 1 Standby Diesel Generator</u> | | | 8 Applicable Modes: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 Other _____ | |

9 CONDITION INITIATING LCO: Scheduled Outage _____ Equipment Failure
A leak on the service water return line from the Division 1 Standby Diesel Generator required isolation of service water to the Division 1 Diesel.

| 10 Condition | 11 Required Action | 12 Completion Time | |
|--------------|--------------------|--|---|
| _____ | _____ | Required by: Date: ___/___/___ Time: _____ | Completed: Date: ___/___/___ Time: _____ Initials: _____ |
| _____ | _____ | Required by: Date: ___/___/___ Time: _____ | Completed: Date: ___/___/___ Time: _____ Initials: _____ |
| _____ | _____ | Required by: Date: ___/___/___ Time: _____ | Completed: Date: ___/___/___ Time: _____ Initials: _____ |
| _____ | _____ | Required by: Date: ___/___/___ Time: _____ | Completed: Date: ___/___/___ Time: _____ Initials: _____ |
| _____ | _____ | Required by: Date: ___/___/___ Time: _____ | Completed: Date: ___/___/___ Time: _____ Initials: _____ |

| | |
|----------------------|--|
| 13 LCO 3.0.6 ENTERED | 14 LOSS OF SAFETY FUNCTION EVALUATION COMPLETED Initials/KCN: ___/___ |
|----------------------|--|

| | |
|-----------------|-----------------|
| 15 PREPARED BY: | 16 REVIEWED BY: |
|-----------------|-----------------|

LCO CLOSEOUT

| | |
|--------------------------------|---------------------------|
| 17 COMMENTS/CORRECTIVE ACTIONS | 18 LCO RESTORED DATE/TIME |
| _____ | _____ |

| | |
|-----------------|-----------------|
| 19 RESTORED BY: | 20 REVIEWED BY: |
|-----------------|-----------------|

RBS JOB PERFORMANCE MEASURE

ES-301 SRO Admin Topic No. A.3

JPM NUMBER: 001-01, Rev. 0 ADMIN

TASK DESCRIPTION: Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

K/A REFERENCE & RATING: 2.3.1 (2.6/3.0)
2.3.4 (2.5/3.1)

TASK REFERENCE:

TESTING METHOD: Simulate Performance: X Actual Performance: X
Control Room: Simulator: In-Plant: X

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: RO & SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|------------------------|---------------|-------------------|
| Prepared by: | <u> Roger Persons </u> | <u> 0862 </u> | <u> 12/06/02 </u> |
| | | KCN | DATE: |
| Ops Validation: | <u> Joseph Clark </u> | <u> 0260 </u> | <u> 12/10/02 </u> |
| | | KCN | DATE: |
| Approved by: | <u> Mike Wagner </u> | <u> 0035 </u> | <u> 12/10/02 </u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Entry and Exit from Controlled Access Area Including Entry Into A Contamination Zone.

Required Power: NA

IC No.: NA

Notes: This Admin JPM will be conducted in conjunction with in-plant JPM 800-21 Establish Emergency Containment Venting per EOP Enclosure 21 which requires CAA entry (**RO JPM No. 13, SRO-Instant JPM No. 13, SRO-Upgrade JPM No. 9**).

It is intended that the attached **JPM Task Conditions/Cues** sheet for this JPM be provided to the candidate upon completing in-plant JPM 800-21 in the Auxiliary Building.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|---|
| References for Development: | EOI Rad Worker Training |
| Required Materials: | Standard personal safety equipment for entry into CAA |
| Required Plant Condition: | Any |
| Applicable Objectives: | RWT01 |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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: With the plant at power, it has become necessary to swap the CRD Pump discharge filters.

Initiating Cue: The CRS has directed you to swap the CRD Pump discharge filters requiring you to locally position the manual filter isolation valves.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|---|
| 1. Reviews RWP 2003-1002, if necessary. | Candidate may review or from recent entries be familiar with requirements based on date of RWP. | _____ | |
| * 2. Obtain Electronic Alarming Dosimeter (EAD) from the rack outside the CAA entrance and activate at the access turnstile using appropriate Radiation Work Permit (RWP) number, and enters CAA when access is granted. | Candidate will obtain an EAD and insert the EAD into the activation slot and SCAN the bar code on his TLD and follow instructions on the screen. Entering RWP number and answering the questions on the computer fields of the access terminal. Once all fields have been entered appropriately access is granted. | _____ | NOTE: The RWP Number will be either 2003-1002. |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|---|
| 3. Dons personal safety equipment as required inside the CAA. | Hard hat, safety glasses and ear plugs worn where required in the CAA. | _____ | |
| * 4. While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements. | While in CAA the candidate observes and adheres to ALL applicable Postings and entry requirements. | _____ | <p>NOTE: None of the areas for the JPMs should access any High Radiation Areas or Contamination Areas.</p> <p>CUE: Upon completion of Emergency Containment Venting JPM in Auxiliary Building, provide candidate the attached JPM Task Conditions/Cues(Operator Copy) sheet.</p> |
| 5. Determines radiological status of area around CRD Pump discharge filters. | Determines or knows that the area around CRD Pump discharge filters is a contamination area. | _____ | <p>NOTE: CRD Pump discharge filters are in the basement elevation of the Fuel Building.</p> <p>CUE: State that actual entry into the contamination area will NOT be required. Discuss requirements for entering and exiting area to complete the task.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------|--|
| * 6. Determines requirements for entry into the contaminated area around the CRD Pump discharge filters. | NO additional dosimetry, single PCs and NO Pre-Job Brief. | _____ | NOTE: Candidate may wish to call HP Desk at CAA entrance for requirements if he isn't sure of details in RWP 2003-1002. |
| * 7. Exiting of the CAA the candidate enters the control point area and enters a PCM-1 Monitor. | Candidate clears PCM-1 Monitor and exits. | _____ | NOTE: If candidate shows radon contamination portions of apparel such as hard hat may be left with Health Physics for decay. |
| * 8. If hand carried materials were carried into the CAA they will be cleared through the Tool Contamination Monitor (TCM). | Candidate will place hand carried items in the TCM for counting. | _____ | |
| 9. After clearing the PCM-1 the candidate exits through the Portal Monitor. | Candidate clears Portal Monitor and exits. | _____ | |
| 10. Deactivates Merlin Guerlin at terminal at final exit of session. | Candidate will deactivate his EAD and return it to Health Physics rack. | _____ | |

Terminating Cue: Entry and egress from CAA completed.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: With the plant at power, it has become necessary to swap to swap the CRD Pump discharge filters.

Initiating Cues: The CRS has directed you to swap the CRD Pump discharge filters requiring you to locally position the manual filter isolation valves.

RBS JOB PERFORMANCE MEASURE

ES-301 SRO Admin Topic No. A.4

JPM NUMBER: 980-01, Rev. 0 ADMIN

TASK DESCRIPTION: Determine Protective Action Recommendations

K/A REFERENCE & RATING: 2.4.44 (2.1/4.0)

TASK REFERENCE: 301016005003

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: X Simulator: X In-Plant: X

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP NA

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/07/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Joseph Clark</u> | <u>0260</u> | <u>12/10/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/10/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Determine Protective Action Recommendations

Required Power: NA

IC No.: NA

Notes: Administrative JPM that does not require simulator.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: EIP-2-007, Protective Action Recommendation Guidelines

Required Materials: EIP-2-007, Protective Action Recommendation Guidelines

Required Plant Condition: Shutdown with release in progress

Applicable Objectives: EP-42.12, Objective 11

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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: A General Emergency has been declared due to a release in progress following a large break LOCA inside containment. Minimum Protective Action Recommendations were issued. Due to the combination of Hydrogen Concentration and Containment pressure, Emergency Containment Venting is now required.

Initiating Cue: As acting Recovery Manager, determine the appropriate Protective Action Recommendations and complete a Notification of General Emergency short form using the attached dose projections and meteorological information.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|----------|
| 1. Use (EIP-2-007) Attachments 1, 2, and 3 to formulate Protective Action Recommendations (PARs). | Uses EIP-2-007 Attachment 2 to evaluate and Attachment 3 to determine PAR scenario number. | _____ | |
| * 2. Determines upgraded PARs are required. | PAR upgraded to Scenario 19 and Notification short form completed. | _____ | |

Terminating Cue: Notification of General Emergency short form completed.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

A General Emergency has been declared due to a release in progress following a large break LOCA inside containment.

Minimum Protective Action Recommendations were issued.

Due to the combination of Hydrogen concentration and Containment pressure, Emergency Containment Venting is now required.

Initiating Cues:

As acting Recovery Manager, determine the appropriate Protective Action Recommendations and complete a Notification of General Emergency short form using the attached dose projections and meteorological information.

RBS JOB PERFORMANCE MEASURE

DOSE ASSESSMENT for Emergency Containment Venting

DISTANCE DOSE RATE CALCULATIONS

TEDE Dose (REM):

| | |
|---------------|---------|
| Site Boundary | 3.95E1 |
| 2 Miles | 6.49E0 |
| 5 Miles | 1.08E0 |
| 10 Miles | 2.02E-1 |

CEDE Dose (REM)

| | |
|---------------|---------|
| Site Boundary | 6.02E-1 |
| 2 Miles | 1.06E-1 |
| 5 Miles | 2.44E-2 |
| 10 Miles | 7.55E-3 |

Meteorological Data

| | |
|-----------------|---------|
| Wind Speed | 2.1 mph |
| Wind Direction | 330° |
| Delta T | -0.8°F |
| Stability Class | D |

RBS JOB PERFORMANCE MEASURE

**ES-301 RO/SRO-I and SRO U
Systems JPM No. B.1.1**

JPM NUMBER: 053-08, Rev. 0

TASK DESCRIPTION: Restart Recirculation Pump A in Fast Speed Following Trip at Power (with Suction Temperature Alarm Before Start)

K/A REFERENCE & RATING: 202001 K1.10 (2.8/2.8) A4.10 (3.3/3.4)
A2.21 (3.3/3.7) A4.01 (3.7/3.7)
202002 K4.02 (3.0/3.0)

TASK REFERENCE: 202008001001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 15 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): Yes

SAFETY FUNCTION GROUP 1

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>862</u> | <u>12/02/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Steve Fiore</u> | <u>0124</u> | <u>12/07/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/09/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Restart Recirculation Pump A in Fast Speed Following Trip at Low Power (with Suction Temperature Alarm Before Start)

Required Power: 38%

IC No.: 148

Notes: Insert Annunciator Override, **P680_04a:c_2, t1**

Turn down intensity on PMS screens at P680 to simulate it being out of service.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: SOP-0003, Reactor Recirculation System (SYS #053)

Required Materials: SOP-0003, Reactor Recirculation System (SYS #053)

Required Plant Condition: 38% Power

Applicable Objectives: STM-053, Objectives H11

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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 “A” Reactor Recirc Pump tripped during a plant startup. The plant has been in GOP-0004 Single Loop Operation for the last six hours. GOP-0004, Attachment 1 was completed. The cause of the trip has been determined and the “A” Reactor Recirc Pump is ready to be started. Attachment 2, Return to Two Loop Operation has been completed through Step 2 and the Recirculation Pump Startup in SOP-0003 has been completed through Step 4.4.10. An extra Control Room Operator is standing by to provide temperature readings from P614 since PMS is out of service.

Initiating Cue: The CRS has directed you to complete restarting the idle Recirculation Pump A per SOP-0003, Reactor Recirculation.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|----------|
| 1. Verify seal purge flow, #1 seal cavity pressure, and #2 seal cavity pressure are normal as follows: Pump A(B) #1 seal cavity pressure as indicated on B33-R603A(B), SEAL CAVITY #1 PRESS is 10 to 15 psig above reactor pressure. | Reactor pressure = 975 psig SEAL CAVITY #1 pressure ~ 1040 psig | _____ | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|---|
| 2. Pump A(B) #2 seal cavity pressure as indicated on B33-R602A(B), SEAL CAVITY #2 PRESS is approximately 1/2 of #1 seal cavity pressure. | SEAL CAVITY #2 pressure ~ 500 psig | _____ | |
| 3. The following seal flow annunciators are clear: Annunciator P680-04A-C05(C11), RECIRC PUMP A(B) SEAL CLG WATER LOW FLOW Annunciator P680-04A-E05(E11), RECIRC PUMP A(B) SEAL STAGING HIGH/LOW FLOW | Both annunciators are clear. | _____ | NOTE: Neither annunciator is alarming due to plant conditions. |
| 4. At H13-P614, check motor and pump temperatures normal on Recorder B33-R601, RECIRC PUMP/MOTORS TEMP. MONITORING. | Requests from P614 and continues based on temperatures given being normal. | _____ | CUE: As Operator at P614, report motor winding, pump bearing and seal temperatures all range from 95 to 105°F. |
| 5. Check annunciators on H13-P680-04A are clear for the pump being started. | All annunciators are clear for pump being started, except the two normal for this condition. | _____ | NOTE: Annunciators P680-04A-A01 and E01 are normal for this condition. |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-----------------------------|---|
| <p>6. Within 15 minutes prior to starting an idle recirculation loop, verify the following:</p> <p>At H13-P614, thermal interlocks are satisfied by monitoring recorders B33-R604, RECIRC LOOP WATER TEMP. MONITORING and B21-R643, REACTOR VESSEL TEMP. MONITORING.</p> <p><u>IF</u> RPV pressure is greater than or equal to 25 psig, <u>THEN</u> differential temperature between bottom head coolant and reactor pressure vessel coolant is less than or equal to 100°F</p> <p><u>IF</u> recovering an idle loop, <u>THEN</u> flow through the operating loop is less than or equal to 50% of rated loop flow.</p> <p>Differential temperature between coolant in the Recir Loop to be started and reactor pressure vessel coolant is less than or equal to 50°F.</p> | <p>Requests from P614 and continues based on 68°F being less than 100°F</p> <p>Verifies on P680 Loop Flow Recorder C51-R614 to be 16.3 – 16.4 kgpm</p> <p>Requests fromm P614 and continues based on 47°F being less than 50°F</p> | <p align="center">_____</p> | <p>CUE: As Operator at P614, report differential temperature between RPV bottom head and RPV coolant is 68°F.</p> <p>NOTE: 50% of rated loop flow is equivalent to 16.50 kgpm.</p> <p>CUE: As Operator at P614, report differential temperature between “A” Recirc Loop and RPV is 47°F.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-------|--|
| * 7. Depress B33-C001A(B), RECIRC PUMP A(B) MOTOR BREAKER 5A(B) RELEASE pushbutton on the STOP/PUSH TO LOCK control switch. | RELEASE pushbutton depressed. | _____ | PUSH TO LOCK button releases and annunciator P680-04A-E01, RECIRC PUMP A AUTO TRANSFER CIRCUIT INOP clears. |
| * 8. Verify B33-C001A(B) PUMP A(B) MOT BRKR 4A(B) is closed. | BRKR 4A is closed. RED light ON, GREEN light OFF | _____ | NOTE: Breaker is closed |
| * 9. Depress B33-C001A(B) PUMP A(B) MOT BRKR 3A(B) CLOSE pushbutton. | BRKR 3A is closed. RED light ON, GREEN light OFF | _____ | NOTE: Annunciator P680-04A-A01 RECIRC MOTOR A TRIP clears when Breaker 3A is closed, and trigger t1 will initiate P680-04A-C02 alarm. |
| 10. Silence and acknowledge annunciator P680-04A-C02, RECIRC PUMP A TEMP INTERLOCK ACTUATED. | Annunciator P680-04A-C02, silenced and acknowledged. | _____ | NOTE: ALTERNATE PATH |
| 11. Requests P614 status of vessel drain and recirc loop suction temperatures. | P614 temperatures requested. | _____ | CUE: At P614, cause of alarm is differential temperature between "A" Recirc Loop and RPV now reading 51°F. |
| 12. Verify B33-F023A, RECIRC PUMP A SUCTION VLV and B33-F067A, RECIRC PUMP A DISCH VLV are open. | Both valves are open. RED lights ON, GREEN lights OFF | _____ | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|--|--|
| <p>* 13. Close C11-F024A, RX RECIRC PMP A SEAL PURGE LINE ISOL VLV.</p> <p>14. Reopen C11-F024A immediately prior to starting the recirc pump</p> <p>15. Resets annunciator P680-04A-C02, RECIRC PUMP A TEMP INTERLOCK ACTUATED.</p> | <p>Contacts Reactor Building Operator to close C11-F024A.</p> <p>C11-F024A is closed.</p> <p>Contacts Reactor Building Operator to open C11-F024A.</p> <p>C11-F024A is open.</p> <p>Annunciator P680-04A-C02, reset.</p> | <p>_____</p> <p>_____</p> <p>_____</p> | <p>CUE: Reactor Building Operator has closed C11-F024A</p> <p>NOTE: Alarm P680-04A-C02 clears.</p> <p>CUE: Time compression used to move 10 minutes forward. At P614, differential temperature between "A" Recirc Loop and RPV now reading 40°F.</p> <p>CUE: Reactor Building Operator has opened C11-F024A.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------------------------|---|
| <p>* 16. <u>IF</u> one pump is operating in FAST SPEED <u>AND</u> the idle pump is to be operated in FAST SPEED, <u>THEN</u> depress the B33-C001A RECIRC PUMP A MOTOR BREAKER 5A control switch for the Recirc Pump to be started and perform the following:</p> <p style="padding-left: 40px;">Verify B33-C001A RECIRC PUMP A MOTOR BREAKER 5A closes.</p> <p style="padding-left: 40px;">Check for a surge on B33-R609A, PUMP A AMPS as the Recirc Pump accelerates to full speed of 1800 RPM.</p> | <p>B33-C001A RECIRC PUMP A MOTOR BREAKER 5A closed and pump running.</p> <p>Breaker 5A closed.</p> <p style="padding-left: 40px;">RED lights ON, GREEN lights OFF</p> <p>Starting current dies back down to running current.</p> | <p align="center">—</p> | <p>NOTE: 5A breaker should close ~2 seconds after the pushbutton is depressed.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------------------------|---|
| <p>17. Monitor Recirc Pump A and Jet Pump Operation at the following:</p> <ol style="list-style-type: none"> 1) Pump A Diff Press on B33-R605A, PUMP A DP. 2) JP Loop A Total Flow on B33-R612A, TOTAL FLOW. 3) The following seal flow annunciators are clear: <ul style="list-style-type: none"> • Annunciator P680-04A-C05, RECIRC PUMP A SEAL CLG WATER LOW FLOW • Annunciator P680-04A-E05, RECIRC PUMP A SEAL STAGING HIGH/LOW FLOW | <p>Monitors Pump DP and JP Loop A Total Flow</p> <p>PUMP A DP rises to 280 psid</p> <p>Loop A TOTAL FLOW rises to 9×10^6 lbm/hr</p> <p>Annunciators cleared (were not alarming during evolution).</p> | <p align="center">—</p> | <p>NOTE: LPRM DOWNSCALE alarm on P680 will clear momentarily following pump start, then begin alarming. Normal for the evolution.</p> |

Terminating Cue: Reactor Recirc Pump “A” is running at Fast Speed.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

The "A" Reactor Recirc Pump tripped during a plant startup.

The plant has been in GOP-0004 Single Loop Operation for the last six hours.

GOP-0004, Attachment 1 was completed.

The cause of the trip has been determined and the "A" Reactor Recirc Pump is ready to be started.

Attachment 2, Return to Two Loop Operation has been completed through Step 2 and the Recirculation Pump Startup in SOP-0003 has been completed through Step 4.4.10.

An extra Control Room Operator is standing by to provide temperature reading from P614 since PMS is out of service.

Initiating Cues:

The CRS has directed you to complete restarting the idle Recirculation Pump A per SOP-0003, Reactor Recirculation.

RBS JOB PERFORMANCE MEASURE

ES-301 RO/SRO-I Systems JPM No. B.1.2

JPM NUMBER: 501-03, Rev. 0

TASK DESCRIPTION: Transfer from Startup Feedwater Level Controller to the Master Feedwater Level Controller

K/A REFERENCE & RATING: 259002 K5.01 (3.1/3.10) A4.03 (3.8/3.6)

TASK REFERENCE: 259013001001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP 2

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/01/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Steve Fiore</u> | <u>0124</u> | <u>12/07/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/09/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Transfer from Startup Feedwater Level Controller to the Master Feedwater Level Controller.

Required Power: 10%

IC No.: 145

Notes: “A” FWREG Valve in service
1 ELEM/3 ELEM pushbutton in 1 ELEM
Startup Level Controller in operation set at 36 inches

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: SOP-0009, Reactor Feedwater System (SYS #107)

Required Materials: SOP-0009, Reactor Feedwater System (SYS #107)

Required Plant Condition: Plant startup at 10% power

Applicable Objectives: STM-107B, Objectives H2, H3, H5, and H9

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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: A plant startup is in progress and reactor power is 10%. RPV level is being maintained with the Startup Level Controller. One Reactor Feed Pump and one Condensate Pump in operation. FWREG Valve A is in service.

Initiating Cue: The CRS has directed you to transfer from the Startup Level Controller to the Master Level Controller to control level at 36 inches.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-----|----------|
| 1. Check feedwater flow is approximately 10% or 1.31×10^6 lbm/hr. | Feedwater flow ~10% or 1.31×10^6 lbm/hr | — | |
| 2. Verify 1 ELEM is selected on the SINGLE ELEMENT THREE ELEMENT SELECT Switch | 1 ELEM selected. | — | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|-------|--|
| 3. Place C33-R600, FW REG VALVES MASTER FLOW CONTROLLER in AUTO as follows: 1. Adjust tape set 2 inches above actual vessel level and observe the deviation signal is positive. | Tape Set 2 inches above actual level, deviation signal positive | _____ | NOTE: Depends on actual level reading on MASTER Controller but should be a tape setting of about 37-38 inches |
| 4. 2. Lower tape set 2 inches below actual vessel level and observe the deviation signal is negative. | Tape Set 2 inches above actual level, deviation signal negative | _____ | NOTE: Depends on actual level reading on MASTER Controller but should be a tape setting of about 33-34 inches |
| 5. 3. Match tape set to actual vessel level in order to null the deviation signal. | Tape Set to match actual level. | _____ | |
| * 6. 4. Depress the AUTO Pushbutton and check the green light above the pushbutton is on. | GREEN light on, YELLOW light off. | _____ | |
| * 7. Place C33-R602, START UP FWREG VALVE FLOW CONTROLLER in MANUAL. | YELLOW light on, GREEN light off. | _____ | |
| * 8. Use the manual CLOSE Pushbutton on C33-R602, START UP FWREG VALVE FLOW CONTROLLER to close C33-FV002, START UP FWREG Valve while ensuring reactor level is maintained by the Master Level Controller. | C33-FV002 closed, level maintained. | _____ | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|------------------------|-------|----------|
| 9. Adjust C33-R600, FW REG VALVES MASTER FLOW CONTROLLER Tape Set to maintain the reactor level requested by the OSS/CRS. | Tape Set to 36 inches. | _____ | |

Terminating Cue: Master Level Controller in AUTO and Single Element Control with Tape Set for 36 inches.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

A plant startup is in progress and reactor power is 10%.
RPV level is being maintained with the Startup Level Controller.
One Reactor Feed Pump and one Condensate Pump in operation.
FWREG Valve A is in service.

Initiating Cues:

The CRS has directed you to transfer from the Startup Level Controller to the Master Level Controller to control level at 36 inches.

RBS JOB PERFORMANCE MEASURE

**ES-301 RO/SRO-I System JPM No. B.1.3
SRO-U JPM No. B.1.2**

JPM NUMBER: 109-05, Rev. 0

TASK DESCRIPTION: Open Inboard MSIVs After Closure Following Scram

K/A REFERENCE & RATING: 239001 K4.09 (3.3/3.3) A4.01 (4.2/4.0)
A4.01 (3.2/3.2)

TASK REFERENCE: 239007001001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 15 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP 2

| | | | |
|------------------------|----------------------|--------------------|--------------------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> KCN | <u>12/01/02</u> DATE: |
| Ops Validation: | <u>Joseph Clark</u> | <u>0260</u> KCN | <u>12/10/02</u> DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> KCN | <u>12/10/02</u> DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Open Inboard MSIVs After Closure Following Scram

Required Power: 0

IC No.: 146

Notes: Requires an additional operator/instructor at P680 to maintain RPV water level and silence any annunciators during evolution.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: SOP-0011, Main Steam System (SYS #109)

Required Materials: SOP-0011, Main Steam System (SYS #109)

Required Plant Condition: Plant shutdown, ~600 psig

Applicable Objectives: STM-109, Objective H7

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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 Inboard MSIVs were closed following a scram to limit cooldown rate with one of the turbine bypass valves failed open. During the short outage following the scram the plant has remained in Mode 3 Hot Shutdown. The Turbine bypass valves have been repaired and the plant is making preparations for startup.

Initiating Cue: The CRS has directed you to coordinate with the ATC and open the Inboard MSIVs using SOP-0011, beginning at Step 4.2.10.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|---|
| * 1. Verify closed the following: <ul style="list-style-type: none"> • B21-MOVF021, MSL WARMUP HDR COND DRAIN BYP VALVE • B21-AOVF033, MSL WARMUP HDR COND DRAIN VALVE • B21-MOVF068, MSL DRAIN HDR COND DRAIN BYP VALVE • B21-AOVF069, MSL DRAIN HDR COND DRAIN VALVE | All listed valves are closed. GREEN light ON RED light OFF | _____ | <p>NOTE: B21-AOVF033 and B21-AOVF069 are closed.</p> <p>B21-MOVF021 and B21-MOVF068 are throttled open for current plant conditions and must be closed in this step.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|--|---|
| <p>* 2. Verify open the following:</p> <ul style="list-style-type: none"> • B21-MOVF016, MSL WARMUP HDR INBD CONTMT ISOL VLV • B21-MOVF019, MSL WARMUP HDR OUTBD CONTMT ISOL VLV • B21-MOVF085, MSL WARMUP HDR SHUTOFF VALVE <p>* 3. Open slowly B21-MOVF020, MSL WARMUP HDR SUPPLY VALVE to equalize pressure across the inboard MSIVs.</p> <p>4. Monitor differential pressure across the inboard MSIVs using the following:</p> <ul style="list-style-type: none"> • C33-R605, REACTOR PRESSURE • MSS-PI101, MAIN STEAM HEADER PRESSURE | <p>All listed valves are open.</p> <p>RED light ON</p> <p>GREEN light OFF</p> <p>B21-MOVF020 slowly opened.</p> <p>Monitors differential pressure.</p> | <p>_____</p> <p>_____</p> <p>_____</p> | <p>NOTE: B21-MOVF016 and B21-MOVF019 must be opened.</p> <p>B21-MOVF085 is already open.</p> <p>PROCEDURE NOTE: Opening an MSIV can cause a Reactor water level transient. Slowly opening the MSIV using the OPEN/SLOW TEST position and intermittent release of the TEST Pushbutton can mitigate the level transient.</p> |

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

The Inboard MSIVs were closed following a scram to limit cooldown rate with one of the turbine bypass valves failed open.

During the short outage following the scram the plant has remained in Mode 3 Hot Shutdown.

The Turbine bypass valves have been repaired and the plant is making preparations for startup.

Initiating Cues:

The CRS has directed you to coordinate with the ATC and open the Inboard MSIVs using SOP-0011, beginning at Step 4.2.10.

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Shutdown HPCS following Spurious Automatic Initiation (with Line Fill Pump Trip)

Required Power: 100%

IC No.: 147

Notes: Trigger **t1** will automatically initiate HPCS Line Fill Pump Trip with 3 second time delay when HPCS Pump Supply Breaker control switch is placed in TRIP position.

Trigger **t2** will automatically remove HPCS INJECTION LINE PRESSURE LOW annunciator with 1 second time delay when HPCS Pump Supply Breaker control switch is placed in CLOSE position.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: SOP-0030, High Pressure Core Spray (SYS #203)

Required Materials: SOP-0030, High Pressure Core Spray (SYS #203)
ARP-P601-16A

Required Plant Condition: 100% Power

Applicable Objectives: STM-203, Objectives H4

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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 operating at rated conditions and HPCS spuriously initiated. Adequate core cooling is assured and was verified by two independent means. RPV level is stable and the ATC is standing by to shutdown HPCS.

Initiating Cue: The CRS has directed you to coordinate with the ATC and shutdown HPCS returning it to standby lineup.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|----------|
| 1. Verify E22A-S2, HPCS MANUAL INITIATION collar is in the DISARM position. | Collar in DISARM position (rotated fully counter-clockwise). | _____ | |
| * 2. Depress E22A-S7, HPCS INITIATION RESET Pushbutton and check the white light goes off. | White light above RESET pushbutton off. | _____ | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|--|--|
| <p>* 3. Verify the following valves are closed:</p> <ul style="list-style-type: none"> • E22-F023, HPCS TEST RETURN VLV TO SUPPRESSION POOL • E22-F010, HPCS TEST BYPASS VLV TO CST • E22-F011, HPCS TEST RETURN VALVE TO CST • E22-F004, HPCS INJECT ISOL VALVE <p>4. <u>WHEN</u> flow lowers below 625 gpm on E22-R603, HPCS FLOW, <u>THEN</u> verify E22-F012, HPCS MIN FLOW VALVE TO SUPPRESSION POOL opens.</p> <p>5. <u>IF</u> E22-PC003, HPCS LINE FILL PUMP is <u>not</u> running, <u>THEN</u> start E22-PC003.</p> | <p>Listed valves are closed.</p> <p>Informs ATC he will be securing HPCS injection flow before closing E22-F004.</p> <p>E22-F012 opens below 625 gpm (following pump trip in Step 6).</p> <p>E22-PC003 running.</p> | <p>_____</p> <p>_____</p> <p>_____</p> | <p>NOTE: The first three valves are closed. E22-F004 is open due to the spurious initiation and must be closed.</p> |
| <p>* 6. Trip E22-ACB02, HPCS PUMP SUPPLY BRKR.</p> | <p>E22-ACB02 open</p> | <p>_____</p> | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|---|---|
| 7. <u>WHEN</u> HPCS Pump discharge pressure lowers below 300 psig on E22-R601, HPCS PUMP DISCH PRESSURE, <u>THEN</u> verify E22-F012, HPCS MIN FLOW VALVE TO SUPPRESSION POOL closes. | E22-F012 closed. | _____ | NOTE: Three seconds after HPCS Pump control switch is placed in TRIP, t1 initiates Line Fill Pump trip which is followed by annunciator in next step. NOTE: ALTERNATE PATH |
| 8. Silence and acknowledge annunciator P601-16A-G04, HPCS INJECTION LINE PRESSURE LOW. 9. Attempt to start the HPCS LINE FILL PUMP if <u>not</u> running. 10. <u>IF</u> unable to start the HPCS LINE FILL PUMP, <u>THEN</u> consider placing HPCS in operation as following: * 11. 1. Close the E22-F001, HPCS PUMP CST SUCTION VALVE. * 12. 2. Open the E22-F015, HPCS PUMP SUP PL SUCTION VALVE. | Annunciator P601-16A-G04 silenced and acknowledged Attempts start, Fill Pump remains tripped. Communicates ARP recommendation to CRS. E22-F001 closed. E22-F015 open. | _____ _____ _____ _____ _____ | CUE: As back panel operator, report Line Fill (Water Leg) Pump discharge pressure on E22-PISN650 on H13-P625 is 20 psig, if requested. CUE: If asked, as CRS direct attempt to restart Line Fill Pump. NOTE: ARP-P601-16A-G04 from here on. CUE: CRS directs placing HPCS in Suppression Pool to Suppression Pool recirc mode. |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|-------------------------------------|-------|---|
| * 13. 3. Start the HPCS Pump and verify E22-F012, HPCS MIN FLOW VALVE TO SUPPRESSION POOL opens. | HPCS Pump running and E22-F012 open | _____ | NOTE: HPCS INJECTION LINE PRESSURE LOW annunciator will clear when HPCS Pump starts. |
| 14. 4. Throttle open E22-F023, HPCS TEST RETURN VLV TO SUPPRESSION POOL to achieve flow of 2000 - 3000 gpm as indicated on E22-F603. | Flow on E22-F603, 2000 – 3000 gpm | _____ | CUE: Evaluator terminates JPM |

Terminating Cue: HPCS Pump running in Suppression Pool to Suppression Pool recirc mode.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

The plant is operating at rated conditions and HPCS spuriously initiated.
Adequate core cooling is assured and was verified by two independent means.
RPV level is stable and the ATC is standing by to shutdown HPCS.

Initiating Cues:

The CRS has directed you to coordinate with the ATC and shutdown HPCS
returning it to standby lineup.

RBS JOB PERFORMANCE MEASURE

ES-301 RO/SRO-I System JPM No. B.1.5

JPM NUMBER: 309-05, Rev. 0

TASK DESCRIPTION: Parallel Offsite Power With Div 1 EDG Supplying ENS-SWG1A.

K/A REFERENCE & RATING: 264000 A2.01 (3.5/3.6) A2.05 (3.6/3.6)
A4.02 (3.4/3.4)
295003 AA1.02 (4.2/4.3)

TASK REFERENCE: 264009001001

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: Yes

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP 6

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/01/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Joseph Clark</u> | <u>0260</u> | <u>12/10/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/10/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Parallel Offsite Power With Div 1 EDG Supplying ENS-SWG1A.

Required Power: Cold Shutdown following a Loss of Offsite Power

IC No.: 145

Notes: This JPM will be done in the simulator in concurrent with JPM 501-03, Transfer From SUFWRV to Master FWRV Controller.

The simulator will be setup for a startup at 10% power for JPM 501-03. However, the P877 panel configuration is consistent with expected conditions for performance of this JPM as the final step in recovering Offsite Power. ENS-SWG1B has been returned to normal lineup and Div II EDG has been shutdown.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|---|
| References for Development: | AOP-0004, Loss of Offsite Power SOP-0053, Standby Diesel Generator and Auxiliaries (SYS#309) |
| Required Materials: | SOP-0053, Standby Diesel Generator and Auxiliaries (SYS#309) |
| Required Plant Condition: | 0% power following LOP |
| Applicable Objectives: | STM-053S, Objectives H12 |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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: A Loss of Offsite Power has occurred with the plant in cold shutdown. AOP-0004, Loss of Offsite Power was entered and all required actions taken. Plant conditions are stable and Offsite power is being restored to the plant per AOP-0004, Section 5.16. AOP-0004 has been completed through Step 5.16.11.

Initiating Cue: The CRS has directed you to parallel Offsite Power to the ENS-SWG1A per SOP-0053 using the normal supply breaker ACB06.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------|----------|
| * 1. <u>IF</u> ENS-ACB06(26), NORMAL SUPPLY BRKR is to be closed, <u>THEN</u> place the REMOTE SYNC SW to NORM. | REMOTE SYNC SW to NORM. | _____ | |
| 2. Adjust diesel voltage, as observed on V-1RUN-1SYDA(B)01, RUNNING VOLTAGE to approximately 1- 2 volts above V-1IN-1SYDA(B)01, INCOMING VOLTAGE using the STBY DIESEL GENERATOR A(B) VOLTAGE REGULATOR CONT. | RUNNING VOLTAGE to approximately 1- 2 volts above V-1IN-1SYDA(B)01, INCOMING VOLTAGE. | _____ | |

JPM-30905.00

* Denotes **Critical Step**
 ^ Denotes **Sequence Critical**
 (must be performed after previous step marked ^)

Page 4 of 7

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-----------------------------|----------|
| <p>* 3. Adjust diesel speed, using the STBY DIESEL GENERATOR A(B) GOVERNOR CONTROL, to bring the frequency within the range of grid frequency. Adjust speed so the SY-1-SYDA(B)01, STBY BUS A(B) SYNCHROSCOPE indicator is rotating slowly in the SLOW direction (counterclockwise).</p> | <p>SYNCHROSCOPE indicator is rotating slowly in the SLOW direction.</p> | <p align="center">_____</p> | |
| <p>* 4. WHEN the synchroscope indicator is moving slowly in the SLOW direction AND the synchroscope indicator is 5 minutes to 2 minutes before the 12 o'clock position, THEN close the desired feeder breaker, ENS-ACB06(26), NORMAL SUPPLY BRKR or ENS-ACB04(24), ALTERNATE SUPPLY BRKR. Verify the red breaker closed light comes ON. If not, return the breaker handswitch to TRIP.</p> | <p>NORMAL SUPPLY BRKR closed.</p> <p>RED light ON</p> <p>GREEN light OFF</p> | <p align="center">_____</p> | |
| <p>5. As soon as diesel load has stabilized, return the REMOTE SYNC SW to OFF and shutdown Standby Diesel Generator per Section 6.1 of this procedure.</p> | <p>REMOTE SYNC SW returned to OFF</p> | <p align="center">_____</p> | |

Terminating Cue: Offsite Power paralleled with ENS-SWG1A.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

A Loss of Offsite Power has occurred with the plant in cold shutdown. AOP-0004, Loss of Offsite Power was entered and all required actions taken.

The plant is stable and Offsite power is available.

Electrical power from Offsite is being returned to station busses.

Initiating Cues:

The CRS has directed you to parallel Offsite Power to the ENS-SWG1A per SOP-0053 using the normal supply breaker ACB06.

RBS JOB PERFORMANCE MEASURE

ES-301 RO/SRO-I System JPM No. B.1.6

JPM NUMBER: 500-02, Rev. 0

TASK DESCRIPTION: Bypass Control Rod position information in RACS Cabinets

K/A REFERENCE & RATING: 214000 A4.01 (3.2/3.3)

201005 K1.05 (3.5/3.5) A2.02 (2.8/3.2)

TASK REFERENCE: 214003004001

TESTING METHOD: Simulate Performance: X Actual Performance: _____
Control Room: X Simulator: _____ In-Plant: _____

COMPLETION TIME: 18 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP 7

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/01/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Robert Peek</u> | <u>0546</u> | <u>12/07/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/09/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Bypass Control Rod position information in RACS Cabinets

Required Power: NA

IC No.: NA

Notes: This JPM is to be performed in the Main Control Room.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|---|
| References for Development: | SOP-0071, Rod Control and Information System (SYS #500) |
| Required Materials: | SOP-0071, Rod Control and Information System (SYS #500) |
| Required Plant Condition: | Any |
| Applicable Objectives: | STM-500, Objective H14 |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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: A reactor startup is in progress. Due to failed Rod Position Indication channels on Control Rod 24-17, the RC&IS Pattern Controller has initiated a Control Rod Withdrawal Block. In order to continue the startup, it is necessary to bypass Control Rod 24-17 in the RACS Cabinets.

Initiating Cue: The CRS has directed you to bypass both Rod Position Indication channels for Control Rod 24-17 in the RACS Cabinets..

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|--------------|--|
| <p>1. On Attachment 5, Full Core Map, determine the binary numbers corresponding to the column (X) and the row (Y) coordinates for the rod to be bypassed.</p> | <p>Obtains address for CR 24-17 as:</p> <p style="padding-left: 40px;">X coordinate = 00010 (X₀ through X₄)</p> <p style="padding-left: 40px;">Y coordinate = 01100 (Y₀ through Y₄)</p> | <p>_____</p> | <p>NOTE: Key must be obtained to open plexiglass covers in RACS.</p> <p>Inform candidate, plexiglass covers need NOT be opened.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|--------------|---|
| <p>* 2. On H13-P651, Rod Bypass File A3, enter the address obtained above into the Bypass Cards Ident Select Switches of one bypass card.</p> | <p>Demonstrates entering X coordinate = 00010 and Y coordinate = 01100 using Ident Select Switches</p> <p>Toggle switch to the “right” is 1, toggle switch to the “left” is 0.</p> <p>(See attached RACS Rod Bypass Cards drawing for correct switch configurations.)</p> | <p>_____</p> | <p>NOTE: Candidate can select any one of the cards (8 available) not being used.</p> <p>CUE: X coordinate entered, Y coordinate entered.</p> <p>NOTE: It may be necessary to record actual binary coordinates entered in Steps 2 and 3 on examiners copy of procedure Attachment 5, Full Core Map to cue candidate in Step 6 below if coordinates are entered incorrectly.</p> |
| <p>* 3. On H13-P652, Rod Bypass File A3, enter the same address as Step 5.10.2 into the Bypass Cards Ident Select Switches of one bypass card.</p> | <p>Demonstrates entering X coordinate = 00010 and Y coordinate = 01100 using Ident Select Switches</p> <p>Toggle switch to the “right” is 1, toggle switch to the “left” is 0.</p> <p>(See attached RACS Rod Bypass Cards drawing for correct switch configurations.)</p> | <p>_____</p> | <p>NOTE: Candidate can select any one of the cards (8 available) not being used.</p> <p>CUE: X coordinate entered, Y coordinate entered.</p> |
| <p>* 4. On H13-P651, Rod Bypass File A3, place the BYPASS SWITCH in the BYPASSED Position on the effected card.</p> | <p>Demonstrates placing BYPASS SWITCH in BYPASSED position</p> | <p>_____</p> | <p>CUE: BYPASS SWITCH in BYPASSED</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|--|---|
| <p>* 5. On H13-P652, Rod Bypass File A3, place the BYPASS SWITCH in the BYPASSED Position on the effected card.</p> <p>6. Check that the BYPASSED LED comes on for the correct Control Rod.</p> <p>7. Direct a second technically qualified operator to verify the Control Rod position information is bypassed correctly.</p> | <p>Demonstrates placing BYPASS SWITCH in BYPASSED position</p> <p>Requests ATC to check POSITION BYP. LED ON for Control Rod 24-17 on P680.</p> <p>Requests verification from second operator.</p> | <p>_____</p> <p>_____</p> <p>_____</p> | <p>CUE: BYPASS SWITCH in BYPASSED</p> <p>CUE: As ATC at P680, GREEN POSITION BYP. LED is ON for Control Rod 24-17 or using attached copy of Attachment 5, provide the incorrect Control Rod bypassed if candidate inputs the wrong coordinates.</p> <p>NOTE: Candidate may use information in cue above to correct his mistake and redo the steps to correct his error and pass the JPM.</p> <p>CUE: JPM is terminated.</p> |

Terminating Cue: Both Rod Position Indication channels in the RACS for Control Rod 24-17 are bypassed.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

A reactor startup is in progress.

Due to failed Rod Position Indication channels on Control Rod 24-17, the RC&IS Pattern Controller has initiated a Control Rod Withdrawal Block.

In order to continue the startup, it is necessary bypass Control Rod 24-17 in the RACS Cabinets.

Initiating Cues:

The CRS has directed you to bypass both Rod Position Indication channels for Control Rod 24-17 in the RACS Cabinets.

RBS JOB PERFORMANCE MEASURE

ES-301 RO/SRO-I System JPM No. B.1.7
SRO-U JPM No. B.1.3

JPM NUMBER: 403-03, Rev. 3

TASK DESCRIPTION: Place the Drywell in High Volume Purge Using Standby Gas Treatment Train A.

K/A REFERENCE & RATING: 261000 K1.01 (3.4/3.6) K1.02 (3.0/3.4)
A4.01 (3.2/4.0) A4.03 (3.0/3.0)
288000 A2.04 (3.7/3.8) A4.01 (3.1/2.9)
272000 A1.01 (3.2/3.2)

TASK REFERENCE: 2223120101

TESTING METHOD: Simulate Performance: _____ Actual Performance: X
Control Room: _____ Simulator: X In-Plant: _____

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP 9

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/02/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Steve Fiore</u> | <u>0124</u> | <u>12/07/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/09/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Place the Drywell in High Volume Purge Using Standby Gas Treatment Train A.

Required Power: 0%, Cold Shutdown Mode 4

IC No.: 146

Notes:

1. Remove HOLD Tags from dampers HVR-AOV125 & 126 and HVR-AOV147 & 148 P863.
2. imf RMS-RE103, 2.00 E-7
3. Caution statement does not allow operation of the Drywell Purge valves in Modes 1, 2 or 3.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: SOP-0059, Containment HVAC System (SYS #403)

Required Materials: SOP-0059, Containment HVAC System (SYS #403)

Required Plant Condition: Cold Shutdown Mode 4

Applicable Objectives: STM-403, Objectives H2, H7, and H8
STM-257, Objectives H3, H5, H6, and H7

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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 shutdown and depressurized in Mode 4. Drywell Purge is required prior to opening the Drywell for maintenance access. Administrative controls on HVR-AOV125 & 126, DW PURGE BACKUP ISOL and HVR-AOV147 & 148, DW PURGE ISOL have been released and the HOLD tags on P863 removed.

Initiating Cue: The CRS has directed you to place the Reactor Building HVAC in Drywell High Volume Purge using Standby Gas Treatment Train A, GTS-FN1A using SOP-0059, beginning at Step 5.7.3.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|-------|--|
| 1. Verify the following dampers are open: <ul style="list-style-type: none"> • HVR-AOD164, UP STREAM ISOL SUPPLY • HVR-AOD143, DN STREAM ISOL SUPPLY | Both dampers are open. RED light ON GREEN light OFF | _____ | CUE: If requested, confirm that the plant is in MODE 4. |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-----------------------------|---|
| <p>* 2. Open the following dampers and valves:</p> <ul style="list-style-type: none"> • HVR-AOV165, CONTMT SPLY OUTBD ISOL • HVR-AOV123, CONTMT SPLY INBD ISOL • HVR-AOV125 & 126, DW PURGE BACKUP ISOL • HVR-AOV147 & 148, DW PURGE ISOL • HVR-AOV128, CONTMT RTN INBD ISOL • HVR-AOV166, CONTMT RTN OUTBD ISOL • HVR-AOD245, CONTMT PURGE TO SGT • HVR-AOD162, CONTMT PURGE TO SGT | <p>All listed dampers are open.</p> <p>RED light ON</p> <p>GREEN light OFF</p> | <p align="center">_____</p> | <p>NOTE: HVR-AOV125 and HVR-AOV126 have separate indicating lights.</p> <p>NOTE: HVR-AOV147 and HVR-AOV148 have separate indicating lights.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|--|---|
| <p>* 3. Start GTS-FN1A(B), SGT EXH FAN A(B) by depressing the START Pushbutton and verify the following:</p> <ol style="list-style-type: none"> 1. GTS-AOD1A(B), SGT FILTER A(B) SUCT ISOL opens. 2. GTS-FN1A(B), SGT EXH FAN A(B) starts. 3. GTS-AOD3A(B), SGT EXH FAN A(B) DISCH opens. <p>4. <u>IF</u> an Annulus Mixing System Initiation is received, <u>THEN</u> take action in accordance with the associated annunciator Alarm Response Procedures.</p> <p>* 5. Place HVR-FN8, HIGH VOL CONTMT/DW PURGE to START and verify HVR-AOD244, HIGH VOL FAN DISCH opens.</p> | <p>Standby Gas Treatment GTS-FN1A START pushbutton depressed.</p> <p>GTS-AOD1A: RED light ON GREEN light OFF</p> <p>GTS-FN1A: RED light ON GREEN light OFF</p> <p>GTS-AOD3A: RED light ON GREEN light OFF</p> <p>Monitor P863 for annunciators</p> <p>HVR-FN8, HIGH VOL CONTMT/DW PURGE to START.</p> <p>HVR-FN8: RED light ON GREEN light OFF</p> <p>HVR-AOD244: RED light ON GREEN light OFF</p> | <p>_____</p> <p>_____</p> <p>_____</p> | <p>NOTE: Pushbutton must be held depressed until suction damper AOD1A is full open or fan will trip.</p> <p>NOTE: Annulus Mixing will not receive an initiation signal.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|-----|--|
| <p>6. Verify proper filter operation by observing the following differential pressure and radiation indications:</p> <ul style="list-style-type: none"> • GTS-FLT1A(B), SGT FILTER TRAIN local component differential pressure instruments • RMS-RE21A&B, CONTMT PURGE ISOL • RMS-RE103, SGT FILTER EXH RAD MONITOR | <p>Dispatch Reactor Building Operator to check GTS Filter Train A local indications.</p> <p>Monitor radiation indications</p> | | <p>CUE: Reactor Building Operator responds that he will check GTS Filter Train A local indications</p> <p>CUE: Radiation monitors are operating and reading less than ALERT alarm values with no unexpected trends</p> |

Terminating Cue: Drywell High Volume Purge is in progress using Standby Gas Treatment Train A, GTS-FN1A.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: Satisfactory / Unsatisfactory

Evaluator's Signature: _____ Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

The plant is shutdown and depressurized in Mode 4.

Drywell Purge is required prior to opening the Drywell for maintenance access.

Administrative controls on HVR-AOV125 & 126, DW PURGE BACKUP ISOL and HVR-AOV147 & 148, DW PURGE ISOL have been released and the HOLD tags on P863 removed.

Initiating Cues:

The CRS has directed you to place the Reactor Building HVAC in Drywell High Volume Purge using Standby Gas Treatment Train A, GTS-FN1A using SOP-0059, beginning at Step 5.7.3.

RBS JOB PERFORMANCE MEASURE

**ES-301 RO/SRO-I and SRO-U Systems
JPM No. B.2.1**

JPM NUMBER: 800-21, Rev. 1

TASK DESCRIPTION: Establish Emergency Containment Venting per EOP Enclosure 21

K/A REFERENCE & RATING: 223002 K1.10 (3.1/3.2) K4.08 (3.3/3.7)
50000 EK1.01 (3.3/3.9)

TASK REFERENCE: 200023005002

TESTING METHOD: Simulate Performance: X Actual Performance: _____
Control Room: X Simulator: _____ In-Plant: X

COMPLETION TIME: 25 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): No

SAFETY FUNCTION GROUP 5

| | | | |
|------------------------|----------------------|--------------------|--------------------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> KCN | <u>12/03/02</u> DATE: |
| Ops Validation: | <u>Robert Peek</u> | <u>0546</u> KCN | <u>12/07/02</u> DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> KCN | <u>12/09/02</u> DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Establish Emergency Containment Venting per EOP Enclosure 21

Required Power: NA

IC No.: NA

Notes: This JPM is to be performed in the Main Control Room and in the Plant.

JPM 001-01, Entry and Exit from Controlled Access Area, is done in conjunction with the final step of this JPM requiring entry into the CAA (Auxiliary Building).

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks

Required Materials: EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks
Key to Control Room Emergency Locker

Required Plant Condition: Any

Applicable Objectives: HLO-516, Objective 1

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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: A large break LOCA has occurred in the Drywell. Containment pressure is 12 psig and Containment Hydrogen concentration cannot be maintained in the Safe Zone of the Hydrogen Deflagration Overpressure Limit (HDOL). Normal Containment Vent and Purge, Hydrogen Mixing and the Hydrogen Recombiners have been secured. EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has been installed.

Initiating Cue: The CRS has directed you install EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---------------------------|-------|--|
| * 1. OBTAIN EOP-0005 ENCL 21 jumper kit from the Control Room Emergency Locker. | Obtains jumper kit. | _____ | NOTE: Simulate obtaining jumper kit |
| 2. INSPECT kit for 2 jumpers | Kit contains two jumpers. | _____ | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-----------------------------|---|
| <p>* 3. DEFEAT isolation interlocks as follows:</p> <p>1. Location:1H13*P852 Bay E(left side of bay)</p> <ul style="list-style-type: none"> • Affected Terminal Boards: <p style="padding-left: 40px;">TB0175 (5th row of terminal boards from door, 2nd board from top)</p> <p style="padding-left: 40px;">TB0317(2nd row of terminal boards from door, top terminal board)</p> <p>Jumper No. 1</p> <p>JUMPER Terminal 12 on TB0175</p> <p style="padding-left: 80px;">to</p> <p>Terminal 2 on TB0317</p> | <p>Locates P852 Bay E, opens door and shows how/where Jumper No. 1 is installed.</p> | <p align="center">_____</p> | <p>CUE: Jumper No.1 installed.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|-----------------------------|--|
| <p>* 4. 2. Location: 1H13*P952 Bay A Affected Relay: 45-1HVRB20 (2nd row of relays from top, 4th relay from left) Jumper No. 2 JUMPER Terminal M1 on Relay Block 45-1HVRB20. to Terminal R1 on Relay Block 45-1HVRB20.</p> | <p>Locates P952 Bay A, opens door and shows how/where Jumper No. 2 is installed.</p> | <p align="center">_____</p> | <p>CUE: Jumper No.2 installed.</p> |
| <p>* 5. OPEN 1HVR*AOV128 CONTMT RTN INBD ISOL as directed by the CRS.</p> | <p>At P863, demonstrates placing HVR-AOV128 control switch to open momentarily and verifies valve open RED light ON GREEN light OFF</p> | <p align="center">_____</p> | <p>CUE: CRS directs you to open 1HVR*AOV128. CUE: 1HVR*AOV128 RED light on, GREEN light off</p> |
| <p>* 6. VENT Primary Containment as follows: 1. OBTAIN EOP-0005 ENCL 21 key, one (1) for CPP-PNL102.</p> | <p>Obtains ENCL 21 Key.</p> | <p align="center">_____</p> | |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-----------------------------|--|
| <p>7. 2. VERIFY the Annulus Mixing System in operation with flow to SGTS.</p> | <p>At P863, verifies at least one Annulus Mixing Train in operation aligned to SGTS:</p> <p>HVR-FN11A(B) ANNULUS MIXING FAN on</p> <p>RED light ON</p> <p>GREEN light OFF</p> <p>HVR-AOD53A(B) ANNULUS MIX FAN A(B) DISCH open</p> <p>RED light ON</p> <p>GREEN light OFF</p> <p>HVR- AOD22A(B) ANNULUS MIX SPLY TO SGTopen</p> <p>RED light ON</p> <p>GREEN light OFF</p> | <p align="center">_____</p> | <p>CUE: Annulus Mixing is in operation with flow to SGTS.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|--------------|--|
| <p>8. 3. VERIFY the SGTS in operation with flow to the main plant exhaust duct.</p> | <p>At P863, verifies at least one SGTS Train in operation aligned to main plant exhaust duct:</p> <p>GTS-AOD1A(B) SGT FILTER A(B) SUCT ISOL open</p> <p>RED light ON</p> <p>GREEN light OFF</p> <p>GTS -FN1A(B) SGT EXH FAN A(B) on</p> <p>RED light ON</p> <p>GREEN light OFF</p> <p>GTS –AOD3A(B) SGT EXH FAN A(B) DISCH open</p> <p>RED light ON</p> <p>GREEN light OFF</p> | <p>_____</p> | <p>CUE: SGTS is aligned to Main Plant Stack.</p> |
| <p>9. 4. VERIFY 1IAS*MOV107 INST AIR SHUTOFF VALVE <u>AND</u> 1IAS*MOV106 INST AIR OUTBD ISOL are open (1H13*P870)</p> | <p>At P870, verifies both MOVs are open.</p> <p>RED light ON</p> <p>GREEN light OFF</p> | <p>_____</p> | <p>CUE: 1IAS*MOV107 and 1IAS*MOV106 both have RED light on, GREEN light off</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | | STANDARD | S/U | COMMENTS |
|------------------|--|--|-------|--|
| 10. | 5. VERIFY 1HVR*AOV128 CONTMT RTN INBD ISOL is open (1H13*P863). | At P863, verifies 1HVR*AOV128 open. RED light ON GREEN light OFF | _____ | CUE: 1HVR*AOV128 RED light on, GREEN light off |
| * 11. | 6. OPEN 1HVR-AOD127 CONTMT PURGE RTN ISOL (1H13*P863). | At P863, demonstrates placing HVR-AOV127 control switch to open momentarily and verifies valve open RED light ON GREEN light OFF | _____ | CUE: 1HVR-AOD127 RED light on, GREEN light off. NOTE: The next step is in the plant (Aux Bldg) requiring CAA entry. |
| * 12. | 7. OPEN 1CPP*MOV105 H2 PURGE FAN DISCH VALVE TO ANNULUS at 1CPP-PNL102 (171 ft Aux Bldg East Side, Containment Purge FLT 6/HVR FAN 14 Room). | Locates panel, opens door with key and demonstrates placing CPP*MOV105 control switch to open momentarily and verifies valve open RED light ON GREEN light OFF | _____ | CUE: CPP*MOV105 RED light on, GREEN light off.. |

Terminating Cue: EOP-0005, Enclosure 21 installation has been completed and the Containment is being vented.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

A large break LOCA has occurred in the Drywell.

Containment pressure is 12 psig and Containment Hydrogen concentration cannot be maintained in the Safe Zone of the Hydrogen Deflagration Overpressure Limit (HDOL).

Normal Containment Vent and Purge, Hydrogen Mixing and the Hydrogen Recombiners have been secured.

EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has been installed.

Initiating Cues:

The CRS has directed you install EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks.

RBS JOB PERFORMANCE MEASURE

**ES-301 RO/SRO-I and SRO-U Systems
JPM No. B.2.2**

JPM NUMBER: 200-08, Rev. 0

TASK DESCRIPTION: Place Div. 1 Standby Service Water System in service from the Remote Shutdown Panel (with SWP-P2A Pump Trip)

K/A REFERENCE & RATING: 264000 K6.07 (3.8/3.9)
295016 AK2.01 (4.4/4.5) AK2.02 (4.0/4.1)

TASK REFERENCE: 400076004001

TESTING METHOD: Simulate Performance: X Actual Performance: _____
Control Room: _____ Simulator: _____ In-Plant: X

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: No

ALTERNATE PATH (FAULTED): Yes

SAFETY FUNCTION GROUP 6

| | | | |
|------------------------|----------------------|--------------------|--------------------------|
| Prepared by: | <u>Roger Persons</u> | <u>862</u> KCN | <u>12/01/02</u> DATE: |
| Ops Validation: | <u>Robert Peek</u> | <u>0546</u> KCN | <u>12/07/02</u> DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> KCN | <u>12/09/02</u> DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Place Div. 1 Standby Service Water System in service from the Remote Shutdown Panel (with SWP-P2A Pump Trip)

Required Power: N/A

IC No.: N/A

Notes: This JPM is to be performed at the Plant, outside of the protected area (Fire Pump House).

RBS JOB PERFORMANCE MEASURE

DATA SHEET

| | |
|------------------------------------|--|
| References for Development: | AOP-0031, Shutdown From Outside Main Control Room |
| Required Materials: | AOP-0031, Attachment 1, AOP Step Detailed Instructions |
| Required Plant Condition: | Any |
| Applicable Objectives: | STM-200, Objectives H2, H3, H11, H12 HLO-537, Objective 7 |
| Safety Related Task: | (If K/A less than 3.0) |
| Control Manipulations: | NA |

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.

RBS JOB PERFORMANCE MEASURE

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 Control Room has been evacuated. The Reactor is in Hot Shutdown and control has been established at the Remote Shutdown Panel. There has been no fire. Normal Service Water is NOT available.

Initiating Cue: The CRS has directed you to place the Division 1 Standby Service Water System in service by starting SWP-P2A (preferred) or SWP-P2C from the appropriate Remote Shutdown Panel, per AOP-0031, Attachment 1.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--------------------------|-------|---|
| 1. On C61-P001, verify both LOCAL SWP EMERGENCY CONTROL ALIGNED Lights are on. | Verifies both lights on. | _____ | <p>CUE: If operator requests as CRS direct him to begin with procedure step 5.9.4.</p> <p>CUE: Inform operator that both lights are on.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|--|-------|---|
| * 2. On RSS-PNL101,start SWP-P2A | Places SWP-P2A pump control switch to START and verifies tripped (or started and tripped). | _____ | <p>CUE: SWP-P2A Pump Status RED light on, GREEN light off; and immediately, RED light off, GREEN light on.</p> <p>NOTE: <i>ALTERNATE PATH</i></p> |
| * 3. On EGS-PNL4C, start SWP-P2C (Located in Div 3 Swgr Room) | Places SWP-P2C pump control switch to START and verifies pump started. | _____ | <p>CUE: SWP-P2C Pump Status RED light on, GREEN light off</p> |
| 4. Verify SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve opens. | SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve open | _____ | <p>CUE: SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve status RED light on, GREEN light off</p> |
| * 5. Open SWP-MOV55A STBY CLG TOWER 1 INLET | Places SWP-MOV55A STBY CLG TOWER 1 INLET valve control switch momentarily to OPEN (then released). Verifies valve has opened. | _____ | <p>CUE: SWP-MOV55A STBY CLG TOWER 1 INLET Valve status RED light on, GREEN light off.</p> |
| * 6. Close SWP-MOV96A and B NORM SVC WTR RETURN Valves | Places SWP-MOV96A and B NORM SVCE WTR RETURN Valves control switches momentarily to CLOSE (then released). Verifies closed valves have closed. | _____ | <p>CUE: SWP-MOV96A and B NORM SVCE WTR RETURN Valves status RED lights off, GREEN lights on.</p> |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|--|-----------------------------|--|
| <p>7. <u>IF</u> check valve leakage is excessive, <u>THEN</u> locally, close the following valves: SWP-MOV57A and SWP-MOV57B NORMAL SERVICE WATER SUPPLY VALVES.</p> | <p>Reports Div 1 SSW operating with P2C running and requests CRS have Standby Cooling Tower Basin Level monitored for excessive leakage from Standby Service Water to Normal Service Water System.</p> | <p align="center">_____</p> | <p>CUE: As CRS acknowledges Dive 1 SSW in service with P2C running and request for Basin Level monitoring for leakage from SSW.</p> <p>Terminate JPM.</p> |

Terminating Cue: Division 1 Standby Service Water is in service.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

The Control Room has been evacuated.

The Reactor is in Hot Shutdown and control has been established at the Remote Shutdown Panel.

There has been no fire.

Normal Service Water is NOT available.

Initiating Cues:

The CRS has directed you to place the Division 1 Standby Service Water System in service by starting SWP-P2A (preferred) or SWP-P2C from the appropriate Remote Shutdown Panel, per AOP-0031, Attachment 1.

RBS JOB PERFORMANCE MEASURE

ES-301 RO/SRO-I Systems JPM No. B.2.3

JPM NUMBER: 251-01, Rev. 1

TASK DESCRIPTION: Emergency Start of Diesel Fire Pump FPW-P1A

K/A REFERENCE & RATING: 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)
295031 EA1.08 (3.8/3.9)

TASK REFERENCE: 286018001004/286020004004

TESTING METHOD: Simulate Performance: X Actual Performance: _____
Control Room: _____ Simulator: _____ In-Plant: X

COMPLETION TIME: 10 minutes

MAX. TIME: N/A

JOB LEVEL: RO/SRO

TIME CRITICAL: No

EIP CLASSIFICATION REQUIRED: No

PRA RISK DOMINATE: Yes

ALTERNATE PATH (FAULTED): Yes

SAFETY FUNCTION GROUP 8

| | | | |
|------------------------|----------------------|-------------|-----------------|
| Prepared by: | <u>Roger Persons</u> | <u>0862</u> | <u>12/01/02</u> |
| | | KCN | DATE: |
| Ops Validation: | <u>Robert Peek</u> | <u>0546</u> | <u>12/07/02</u> |
| | | KCN | DATE: |
| Approved by: | <u>Mike Wagner</u> | <u>0035</u> | <u>12/09/02</u> |
| | | KCN | DATE: |

RBS JOB PERFORMANCE MEASURE

SIMULATOR SETUP SHEET

Task Description: Emergency Start of Diesel Fire Pump FPW-P1A

Required Power: N/A

IC No.: N/A

Notes: This JPM is to be performed at the Plant, OUTSIDE the Protected Area in the Fire Pump House.

RBS JOB PERFORMANCE MEASURE

DATA SHEET

References for Development: SOP-0037, Fire Protection Water System Operating Procedure

Required Materials: SOP-0037, Cover – Page 6 and Pages 8 – 11

Required Plant Condition: Any

Applicable Objectives: STM-250, Objectives H4 and N7

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

Control Manipulations: NA

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.

RBS JOB PERFORMANCE MEASURE

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 has experienced a Station Blackout with Diesel Fire Pump FPW-P1B tagged out. It is now necessary to inject into the RPV with Fire Water due to a failure of RCIC. Diesel Fire Pump FPW-P1A failed to auto start and attempts to start it from the Auxiliary Control Room have been unsuccessful. The Outside Operator is starting the Diesel Driven Air Compressor.

Initiating Cue: The CRS has directed you to locally start Diesel Fire Pump FPW-P1A using SOP-0037.

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|--|---|-------|--|
| 1. Place the selector switch on controller FPW-MST1A, DIESEL FIRE PUMP 1A CONTROLLER in MANUAL 1 or MANUAL 2. | Locates selector switch and demonstrates placing it in the MANUAL 1 or MANUAL 2 position. | _____ | NOTE: The JPM begins with SOP-0037, Section 4.2.2, Step 3. (Steps 1 and 2 are NA) |
| 2. Depress and hold local START pushbutton for 15 seconds or until engine starts for the following: <ul style="list-style-type: none"> • FPW-P1A, DIESEL DRIVEN FIRE PUMP A | Locates START pushbutton and demonstrates depressing and holding for 15 seconds. | _____ | CUE: No response from FPW-P1A engine starter. NOTE: ALTERNATE PATH |

RBS JOB PERFORMANCE MEASURE

| PERFORMANCE STEP | STANDARD | S/U | COMMENTS |
|---|---|-------|---|
| * 3. Open FPW-SOV19A,FUEL SUPPLY SOLENOID by turning the knurled manual knob clockwise or IN to open the solenoid. (Located on solenoid painted red) | Locates knurled knob for FPW-SOV19A and demonstrates turning knob clockwise until it stops turning. | _____ | CUE: Knurled knob has stopped turning. (No visible indication) |
| 4. Throttle open FPW-V179, FPW-P1A ENGINE COOLING SYSTEM BYPASS VALVE and FPW-V3009, FPW-P1A ENGINE COOLING SYSTEM BYPASS VALVE in the cooling water supply piping. | Demonstrates operation of valve handwheels to throttle open both valves to establish a cooling water supply flowpath. | _____ | CUE: FPW-V179 and FPW-V3009 throttled open. NOTE: CAUTION preceding this step states “Do <u>not</u> exceed 50 psig.” Cooling water is supplied from FPW-P1A discharge. As a result under these conditions, pressure is 0 psig until the pump is started. After pump is running, pressure can be verified <50 psig. |
| * 5. Engage starter per the following: 1) Raise the Lever on either of the two starter contactors. 2) Release the Lever as soon as the engine starts. | Demonstrates raising Lever and releasing Lever when engine has started.. | _____ | CUE: Engine has started. |

Terminating Cue: Diesel Fire Pump FPW-P1A is started.

RBS JOB PERFORMANCE MEASURE

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Evaluator's Signature: _____

Date: _____

RBS JOB PERFORMANCE MEASURE

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions:

The plant has experienced a Station Blackout with Diesel Fire Pump FPW-P1B tagged out.

It is now necessary to inject into the RPV with Fire Water due to a failure of RCIC.

Diesel Fire Pump FPW-P1A failed to auto start and attempts to start it from the Auxiliary Control Room have been unsuccessful.

The Outside Operator is starting Diesel Air Compressor, IAS-C4.

Initiating Cues:

The CRS has directed you to locally start Diesel Fire Pump FPW-P1A using SOP-0037.

RIVER BEND STATION

NUCLEAR TRAINING DEPARTMENT

LICENSE OPERATOR SIMULATOR TRAINING

*TPP-7-009
(CROSS REFERENCE)

EXAM SCENARIO NUMBER

*R-SIS-18.0
(DOC. NO.)

TOPIC

* Loss of RPS A / IAS-MOV106 fails to Open / Steam Leak/Rupture in the Drywell

AVERAGE DURATION

* 1.0 HOUR

| | | | |
|---------------|---|-------|-----------------|
| PREPARED BY: | <u>Roger Persons / 0862</u> INSTRUCTOR / KCN | Date: | <u>11/15/02</u> |
| REVIEWED BY: | <u>Mike Wagner / 0035</u> TECHNICAL REVIEW / KCN | Date | <u>11/22/02</u> |
| VALIDATED BY: | <u>Joseph Kelley / 1410</u> OPERATIONS CRS / KCN | Date | <u>11/25/02</u> |

* Indexing Information

SCENARIO No. 1

I. DESCRIPTION OF SCENARIO

The crew assumes the shift at 28% power. Reactor Feed Pump FWS-P1A Lube System is started by the UO and the ATC raises power with control rods. Reactor pressure transmitter B21-N078A fails high causing a half-scam condition which remains while maintenance works to restore the transmitter. A failure of the C MSL flow instrument causes a low level alarm condition accompanied by a Recirc FCV Runback. Once the ATC recovers from the FCV Runback, a loss of RPS Bus A occurs due to a trip of RPS MG Set A.

After transferring RPS Bus A to its alternate power supply, the UO will reset the Containment Isolation logic and find that the IAS-MOV106 the containment isolation valve for Instrument Air will not open. Prior to the Inboard MSIVs closing the Crew should initiate a manual scram. RPS will fail to scram but the manual initiation of ARI will result in all control rods inserting.

Upon closure of the Inboard MSIVs a small (40 gpm) steam leak is initiated in the Drywell causing an isolation and ECCS initiation on High Drywell Pressure. The crew will enter EOP-1 and EOP-2. After EOP entry, the leak will propagate to a Main Steam Line Rupture. This will require the crew to declare that RPV level cannot be determined and enter contingency procedure EOP-4, RPV Flooding.

II. TERMINAL OBJECTIVES

1. Recognize and respond to a trip of one RPS MG Set in accordance with plant procedures.
2. Recognize and respond to a failure to scram in accordance with plant procedures.
3. Establish safe and stable plant conditions following a steam line break inside the Drywell in accordance with plant procedures.

III. PERFORMANCE OBJECTIVES

A. CRS (SRO)

1. Direct the response to a trip of RPS MG Set A in accordance with AOP-0010, Loss of One RPS Bus.
2. Direct the response to a failure of IAS-MOV106 to re-open in accordance with AOP-0001, Reactor Scram.
3. Direct the response to high Drywell pressure/temperature and coordinate the implementation of EOP-1, RPV Control and EOP-2, Primary Containment Control.
4. Direct the response to loss of RPV level indication in accordance with EOP-1 and EOP-4, RPV Flooding.

B. ATC (RO)

1. Respond to a trip of RPS MG Set A in accordance with AOP-0010, Loss of One RPS Bus.
2. Respond to a reactor scram condition in accordance with AOP-0001, Reactor Scram.
3. Respond to a Main Turbine trip in accordance with AOP-0002, Main Turbine and Generator Trips.
4. Respond to a high Drywell and Containment pressure and temperature as directed.
5. Respond to loss of RPV level indication in accordance with EOP-1 and EOP-4, RPV Flooding as directed.

C. UO (RO)

1. Respond to a trip of RPS MG Set A in accordance with AOP-0010, Loss of One RPS Bus.
2. Respond to a failure of IAS-MOV106 to reopen in accordance with AOP-0001, Reactor Scram
3. Respond to a high Drywell and Containment pressure and temperature as directed.
4. Respond to HPCS failure to auto start and manually start.
5. Respond to a high Drywell pressure isolation in accordance with AOP-0003, Automatic Isolations.
6. Respond to loss of RPV level indication in accordance with EOP-1 and EOP-4, RPV Flooding as directed.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

| INITIAL CONDITION | TRAINING FOCUS | EQUIPMENT STATUS | REQUIRED DOCUMENTS |
|----------------------|--|---|---|
| | <p>GOP-0001, Plant Startup</p> <p>AOP-0006, Condensate / Feedwater Failures</p> <p>AOP-0010, Loss of One RPS Bus</p> <p>EOP-0001, RPV Control</p> <p>EOP-0002, Primary Containment Control</p> <p>EOP-0004, RPV Flooding</p> | <p>Power: 28%</p> <p>Core: MOL, xenon equilibrium</p> <p>Equipment OOS:</p> <ul style="list-style-type: none"> • APRM A – INOP • TPCCW Pump CCS - PIC – Motor replacement • RFP FWS-P1B – Lube oil leak • Three LPRMs Bypassed: 22-31D, 22-47A, 46-15C <p>STPs Due:</p> <ul style="list-style-type: none"> • None <p>LCOs:</p> <ul style="list-style-type: none"> • 3.3.1.1 and TR 3.3.2.1 for APRM A <p>Evolutions in progress:</p> <ul style="list-style-type: none"> • Continue with plant startup • CR 24-49 @ notch 24 | <p>Control Rod Movement Sequence 11-0000-A2-03 STEP 147, CR 24-49</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|----------------------------------|---|--------------------------|
| Simulator Setup Continued | <p><u>MALFUNCTIONS:</u></p> <ul style="list-style-type: none"> • NMS012A, APRM A failed downscale • HPCS003, HPCS Pump Fails to Auto start • B21005 t1, Reactor pressure transmitter B21-N078A fails upscale • FWS014 t2, Steam flow Channel C to FWLC fails downscale • RPS003A t3, RPS MG Set 'A' Output breaker trips • RPS001B, d00:02, t3, Failure to SCRAM Auto • RPS001C, d00:02, t3, Failure to SCRAM Manual • MSS001, 250, r5:00, t5, Drywell Steam Leak • MSS002 d05:00, t5, Steam Line Rupture in Drywell | |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|----------------------------------|--|--------------------------|
| Simulator Setup Continued | <p><u>REMOTE FUNCTIONS:</u></p> <ul style="list-style-type: none"> • NIS001, RESET, t4, NI Cabinet 20 VDC Power Supplies • LPRMRB22-31d, BYPASS • LPRMRB22-47a, BYPASS • LPRMRB46-15c, BYPASS <p><u>LAMP OVERRIDES:</u></p> <ul style="list-style-type: none"> • LO_MSS155-G, OFF, P870-54C Mn Stm Sply to SSE Isol MOV green light • LO_TME-MOV58-R, OFF, P870-54C SSE Press Cont Isol Vlv red light • LO_CCS-P1C-G, OFF, P870-55C CCS Pump P1C green light • LO_CCS-MOV15C-G, OFF, P870-55C CCS Pump P1C Discharge Valve green light | |
| | <p><u>METER OVERRIDES:</u></p> <ul style="list-style-type: none"> • AO_C33-R603, 0, t2, Main Steam Line C Flow Meter | |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|----------------|---|-----------------------------------|
| | <p><u>ANNUNCIATOR OVERRIDES:</u></p> <p>P870_53a:d_5, OFF, LP FW HTR STRING A LOW WATER LEVEL</p> <p><u>SWITCH OVERRIDES:</u></p> <ul style="list-style-type: none"> • DI_IAS-MOV106, d00:10, t3, CLOSE <p>FREEZE</p> | |
| Event 0 | RUN | CREW: Board Walkdown and Turnover |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|--------------|--|
| <p>Event 2 Description: CRS directs ATC to Raise reactor power by control rod withdrawal.</p> | | |
| <p>Event 2</p> | | <p>CRS: Directs ATC to raise power per GOP-0001 to 35% using control rods.</p> <p>ATC: Withdraws Control Rods per approved Rod Movement Sequence Package</p> <p>Monitors RC&IS indications for rod withdrawals</p> <p>Performs coupling checks on rods withdrawn to notch 48</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|---|--|
| <p>Event 3 Description: Reactor Pressure Transmitter B21-N078A fails upscale resulting in a half-scam. With the instrument failed upscale, the half-scam cannot be reset. CRS refers to Tech Specs and determines in LCO 3.3.1.1.</p> | | |
| <p>Event 3 When directed by lead examiner.</p> | <p>t1, Inserts malfunction B21005</p> | <p>ATC: Reports half scam caused by High Reactor Pressure trip in RPS A to CRS Refers to ARP-P680-06A-A05, RPS-A TRIP REACTOR VESSEL HIGH PRESSURE</p> |
| | <p>ROLE PLAY: As Back Panel Operator, if requested, report backpanel RPS pressure instruments all four channels reading 1040 psig.</p> | <p>Diagnoses/recognizes pressure transmitter failure Confirm half scam and no control rods inserted and reports to CRS</p> |
| | <p>ROLE PLAY: As I &C Maintenance/WMC, acknowledge request to investigate failure of B21-N078A.</p> | <p>CRS: Consults Tech Spec Section 3.3.1.1, RPS Instrumentation Determines LCO Action A applies and trip system in trip condition met Directs I & C Maintenance investigate of instrument failure</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|--|---|
| <p>Event 4 Description: Steam Flow Channel C to FWLC fails downscale. The resulting steam flow/feed flow mismatch lowers level rapidly below the low level alarm point but will stabilize well above the low level scram.</p> | | |
| <p>Event 4 When directed by lead examiner.</p> | <p>t2, Inserts malfunction FWS014 and override AO_C33-R603C</p> | <p>ATC:</p> <p>As level lowers, refers to ARP-P680-03A-B08, REACTOR HIGH/LOW WATER LEVEL and/or AOP-0006, Condensate/Feedwater Failures</p> <p>Diagnoses/identifies steam flow channel failure</p> <p>May elect any of the following to restore level to normal band:</p> <ul style="list-style-type: none"> - Adjust Master Level Control setpoint. - Master Level Control to 1 ELEMENT - transfer Master Level Control to MANUAL |
| | <p>ROLE PLAY: As I &C Maintenance/WMC, acknowledge request to investigate failure of Steam Flow Channel C.</p> | <p>Refers to ARP-P680-04A-A03 & A09, FCV A/B RUNBACK RFP TRIP</p> <p>When directed by CRS restores Recirc FCVs from runback</p> <ul style="list-style-type: none"> • Adjusts both LOOP FLOW CONTROL stations to zero limiter error • Resets Cavitation interlocks • Adjusts both LOOP FLOW CONTROL stations to return FCVs to maximum position |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|---|---|
| <p>Event 5 Description:</p> <p>RPS MG Set A output breaker trips. Outboard containment isolation for Instrument Air fails to re-open after RPS bus is re-energized and containment isolations reset.</p> <p>Critical Tasks: 1. Initiate ARI</p> | | |
| <p>Event 5</p> <p>When directed by lead examiner.</p> | <p>t3, Inserts RPS003A trip of RPS A MG set output breaker</p> | <p>ATC/CRS: Recognize loss of RPS bus A</p> <p>CRS: Direct implementation of AOP-0010, Loss of One RPS Bus</p> <p>Direct investigation of the loss of RPS bus A</p> <p>UO: When directed, transfer RPS bus A to alternate power</p> <p>Reset CRVICS depressing both RESET pushbuttons on P601</p> <p>Recognize failure of IAS-MOV106 to open on P870 and report to CRS</p> <p>Continue AOP-0010 actions, as directed by CRS</p> |
| | <p>ROLE PLAY :</p> <p>As Back Panel Operator, when requested, reset the Neutron Monitoring Cabinet power supply.</p> <p>Irf_NIS001 RESET</p> | <p>CRS: Direct implementation of AOP-0001 and AOP-0002 for impending Inboard MSIV closure scram.</p> <p>ATC: When directed, Insert manual scram or insert following auto scram.</p> <p>Initiate ARI to cause control rod insertion and report failure of RPS to CRS</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|--|---|--|
| <p>Event 6 Description: A small leak develops when the Inboard MSIVs close. After entering EOP-1 and EOP-2 for High Drywell temperature and pressure, the will leak propagate to a Main Steam Line rupture in Event 7.</p> | | |
| <p>Event 6 When directed by lead examiner.</p> | <p>t4, Inserts MSS001 Steam Leak in the Drywell</p> | <p>CRS: Enters (or re-enters) EOP-1, Drywell pressure >1.68 psid Enters EOP-2 on Drywell temperature >145°F Directs actions to control RPV level and containment parameters Direct implementation of AOP-0003, Automatic Isolations</p> |
| | <p>ROLE PLAY: If a leakage report is requested give the leakage values that are shown in monitored parameters Leak_report.</p> | <p>UO/ATC: Implement EOP-1 as directed Verify ECCS/ESF automatic actions When directed, inhibit ADS actuation</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|--|---|---|
| <p>Event 7 Description:</p> <p>After entering EOP-1 and EOP-2, the leak propagates into a Main Steam Line rupture inside containment. This results in RPV pressure and Drywell temperature conditions outside the safe zone of the RPV Saturation Curve in EOP Caution 1. RPV level can no longer be determined and EOP-4 RPV Flooding must be entered.</p> <p>Critical Tasks: 1. Recognize loss of level indication and enter EOP-4, RPV Flooding</p> | | |
| <p>Event 7</p> | <p>t5, Inserts MSS002 Steam Line Rupture in the Drywell (After EOP Entry)</p> | <p>CRS: Recognize rapidly rising Drywell temperature/pressure, Suppression Pool temperature/level, and rapidly lowering RPV level from steam line rupture.</p> <p>Recognizes loss of RPV level indication and directs transition to EOP-4, RPV Flooding.</p> |
| | <p>When requested report Drywell Unit Cooler Drain flow is pegged high.</p> | |
| | <p>ROLE PLAY: Acknowledge requests for EOP Enclosure installation.</p> <p>Install EOP Enclosures with Remote Functions as necessary.</p> <p>Report EOP Enclosure installation completed based on appropriate time intervals.</p> | <p>UO/ATC: Implement EOP-4 as directed</p> <p>As directed, lineup systems to establish Minimum RPV Flooding pressure.</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|----------------------|--|
| <p>Event 8 Description: The HPCS Pump fails to auto start on High Drywell pressure. Identifying the failure and attempting manual control will successfully start the pump.</p> <p>Critical Tasks: 1. Recognize HPCS failure to auto start and manually manually for small steam leak in Drywell.</p> | | |
| <p>Event 7</p> | | <p>UO: Verifies ECCS automatic operation following steam leak in Drywell</p> <p> Recognizes failure of HPCS pump to auto start, manually initiates HPCS</p> <p> Reports failure/status to CRS</p> |
| <p>Termination Criteria are met and concurrence of the Lead Examiner</p> | <p>FREEZE</p> | |

VI. TERMINATION CRITERIA:

1. All control rods inserted by ARI.
2. Injecting with all available injection sources to achieve Minimum RPV Flooding pressure.

IX. QUANTITATIVE SUMMARY

| | | |
|------------------------------|------------|--|
| Total Malfunctions | <u>5</u> | Reactor pressure transmitter failure, Steam flow transmitter failure, Loss of RPS Bus, Steam leak in Drywell, Steam line break in Drywell, HPCS Auto Start failure |
| Malfunctions after EOP entry | <u>2</u> | Steam Line Break and HPCS Auto Start failure |
| Abnormal Events | <u>2</u> | FWLC problem (AOP-0006), Loss of RPS Bus (AOP-0010) |
| Major Transients | <u>1</u> | Small break/Large break LOCA |
| EOPs entered | <u>2</u> | EOP-1, EOP-2 |
| EOP Contingencies used | <u>1</u> | EOP-4, Sheet 4, RPV Flooding |
| Simulator Run Time | <u>60</u> | Minutes |
| EOP Run Time | <u>20</u> | Minutes |
| Critical Tasks | <u>3</u> | |
| Tech Specs Exercised | <u>Yes</u> | 3.3.1.1, RPS Instrumentation |

VII. REFERENCES

A. Plant Procedures

1. GOP-0001, Plant Startup
2. SOP-0009, Reactor Feedwater
3. ARP-P680-06A-A05
4. ARP-P680-03A-B08
5. ARP-P680-04A-A03 & A09
6. AOP-0001, Reactor Scram
7. AOP-0002, Main Turbine and Generator Trips
8. AOP-0003, Automatic Isolations
9. AOP-0006, Condensate/Feedwater Failures
10. AOP-0010, Loss of One RPS Bus
11. EOP-1, RPV Control
12. EOP-2, Primary Containment Control
13. EOP-4, Contingencies
14. Technical Specifications

| | | | |
|---------------|---------------|-----------------|---|
| Offgoing OSS: | Oncoming OSS: | Off-Going Shift | |
| _____ | _____ | N | D |
| (Print) | KCN | ? | ? |
| | | Date | |

PART I - TO BE REVIEWED PRIOR TO ASSUMING THE SHIFT

UNIT STATUS MODE 1 RX POWER 28%

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

Completed GOP-0001 through Section G, Step 19. Step 147 of Control Rod Movement Sequence.

A lube oil leak was found on RFP FWS-P1B last shift. FWS-P1B lube oil system has been shutdown. Maintenance and WMC generating MAI and clearance for FWS-P1B lube oil leak.

APRM A has a failed upscale trip unit and is bypassed. Bypassed LPRMs: 22-31D, 22-47A, 46-15C. TPCCW Pump CCS-P1C is tagged out for motor replacement.

RFP FWS-P1A was shutdown earlier last shift to repair CCS leak lube oil cooler. MAI was complete, clearance has been released and tags remove. Turbine Bldg Operator standing by at FWS-P1A for lube oil system startup.

Start RFP FWS-P1A lube oil system. Then raise power to 35% to continue plant startup.

SIGNIFICANT LCO STATUS

Tracking LCO for APRM A

EQUIPMENT STATUS

APRM A Upscale trip unit failed and bypassed.

Condensate Full-Flow Filtration is bypassed.

CCS-P1C tagged out for motor replacement.

?

?

?

?

Night Orders

Standing Orders

Board Walkdown

Temp Alts

(Signature: Oncoming OSS Review Completed)

KCN

RIVER BEND STATION

NUCLEAR TRAINING DEPARTMENT

LICENSE OPERATOR SIMULATOR TRAINING

*TPP-7-009
(CROSS REFERENCE)

EXAM SCENARIO NUMBER

*R-SIS-16.0
(DOC. NO.)

TOPIC

* SORV / Steam Leak in Drywell / Loss of Offsite Power

AVERAGE DURATION

* 1.0 HOUR

| | | | |
|---------------|-----------------------------|-------|-----------------|
| PREPARED BY: | <u>Roger Persons / 0862</u> | Date: | <u>11/15/02</u> |
| | INSTRUCTOR / KCN | | |
| REVIEWED BY: | <u>Mike Wagner / 0035</u> | Date | <u>11/22/02</u> |
| | TECHNICAL REVIEW / KCN | | |
| VALIDATED BY: | <u>Joseph Kelley / 1410</u> | Date | <u>11/25/02</u> |
| | OPERATIONS CRS / KCN | | |

* Indexing Information

SCENARIO No. 2

I. DESCRIPTION OF SCENARIO

The crew assumes the shift at 100% power. The Unit Operator will place RHR A into Suppression Pool Cooling in preparation for RCIC testing. An LPRM Upscale causes APRM F to reach its Upscale Thermal Trip and causes a half-scam. After the half-scam is reset a Heater Drain Pump Overload condition requires shutdown of the pump and start of the alternate pump.

SRV-F047C fails and sticks open. The crew responds by lower power with recirc flow and implementing AOP-0035 to shut the SRV. The SRV closes when control power fuses are removed.

The closure of SRV-F047C will initiate a 100 gpm steam leak in the Drywell. The crew will manually scram and enter EOP-1 and EOP-2 for Drywell conditions. After the scram, when the Generator output breaker opens on reverse power, a Loss of Offsite Power occurs. The crew enters AOP-0004, Loss of Offsite Power. Division 3 Diesel Generator fails to start and must be started locally.

II. TERMINAL OBJECTIVES

1. Recognize and respond to a Stuck Open SRV in accordance with plant procedures.
2. Recognize and respond to a Steam Leak in the Drywell in accordance with plant procedures.
3. Recognize and respond to a Loss of Offsite Power in accordance with plant procedures.
4. Establish safe and stable plant conditions following a steam line break inside the Drywell in accordance with plant procedures.

III. PERFORMANCE OBJECTIVES

A. CRS (SRO)

1. Direct the response to SRV-F047C opening in accordance with AOP-0035, Stuck Open SRV.
2. Direct the response to high Drywell pressure/temperature and coordinate the implementation of EOP-1, RPV Control and EOP-2, Primary Containment Control.
3. Direct the response to Loss of Offsite Power in accordance with AOP-0004, Loss of Offsite Power.

B. ATC (RO)

1. Respond to APRM F Upscale from LPRM Upscale in accordance with P680 ARPs.
2. Respond to a Heater Drain Pump Overload in accordance with ARPs.
3. Respond to SRV-F047C opening in accordance with AOP-0035, Stuck Open SRV
4. Initiate a Manual Scram in accordance with AOP-0001, Reactor Scram.
5. Respond to a Main Turbine trip in accordance with AOP-0002, Main Turbine and Generator Trips.
6. Respond to high Drywell pressure/temperature in accordance with EOP-1, RPV Control and EOP-2, Primary Containment Control, as directed.
7. Respond to Loss of Offsite Power in accordance with AOP-0004, Loss of Offsite Power, as directed.

C. UO (RO)

1. Respond to to SRV-F047C opening in accordance with AOP-0035, Stuck Open SRV.
2. Respond to Manual Scram in accordance with AOP-0001, Reactor Scram
3. Respond to a high Drywell pressure and temperature as directed.
4. Respond to a high Drywell pressure isolation in accordance with AOP-0003, Automatic Isolations.
5. Respond to Loss of Offsite Power in accordance with AOP-0004, Loss of Offsite Power, as directed.

IV. INITIAL CONDITIONS/SHIFT TURNOVER

| INITIAL CONDITION | TRAINING FOCUS | EQUIPMENT STATUS | REQUIRED DOCUMENTS |
|----------------------|--|--|--|
| | <p>GOP-0005, Power Maneuvering</p> <p>AOP-0035, Stuck Open SRV</p> <p>AOP-0007, Loss of Feedwater Heater</p> <p>AOP-0009, Loss of Normal Service Water</p> <p>AOP-0004, Loss of Offsite Power</p> <p>EOP-1, RPV Control</p> <p>EOP-2, Primary Containment Control</p> | <p>Power: 100%</p> <p>Core: MOL, xenon equilibrium</p> <p>Equipment OOS:</p> <ul style="list-style-type: none"> • CCS-P1C • APRM A – INOP <p>STPs Due:</p> <ul style="list-style-type: none"> • None <p>LCOs:</p> <ul style="list-style-type: none"> • 3.3.1.1 and TR 3.3.2.1 for APRM A <p>Evolutions in progress:</p> <ul style="list-style-type: none"> • Operation at rated conditions • At Target Rod Pattern | <p>Shutdown Reactivity Control Plan Step 1</p> |

V. GENERAL INSTRUCTIONS

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|------------------------|---|---|
| Simulator Setup | <p>Snapped to IC# 144</p> <p>PLANT CONFIGURATION:</p> <ul style="list-style-type: none"> • P680, bypass APRM A • P870, CCS-P1C LOCKOUT Pushbutton depressed <p>INSTRUCTOR STATION COMMANDS:</p> <p><u>TRIGGERS:</u> (t1-t7 set to FALSE)</p> <p>t1, LPRM Upscale and rod scram</p> <p>t2, Bypass LPRM 0615D</p> <p>t3, Heater Drain Pump Overload</p> <p>t4, SRV F047C stuck open</p> <p>t5, SRV F047C Div 2 switch OFF</p> <p>t6, SRV F047C A fuses pulled</p> <p>t7, SRV F047C B fuses pulled</p> <p>t8, 0640, Loss of Offsite Power</p> <p>t10, 6131, BAT DELANNUN.BAT</p> | <p>Verify correct Shutdown Reactivity Plan 11-9300-B1-07</p> <p>Place Danger tag switch cover on CCS-P1C RESET/LOCKOUT Pushbutton.</p> <p>Verify all indicating lights for CCS-P1C and its discharge valve CCS-MOV15C are extinguished.</p> <p>t7 also initiates leak in Drywell.</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|----------------------------------|--|--------------------------|
| Simulator Setup Continued | <p><u>MALFUNCTIONS:</u></p> <ul style="list-style-type: none"> • NMS012A, APRM A Fails Downscale • LPRMUP0615D t1, LPRM 0615D fails Upscale • MSS005J t4, SRV F047C Fails Open • MSS006J t4, SRV F047C Sticks Open • MSS001, 100, r5:00, t7, Steam Leak in the Drywell • ED001 t8, Loss of Offsite Power • EDG003, HPCS DG Failure to Start | |
| | <p><u>REMOTE FUNCTIONS:</u></p> <ul style="list-style-type: none"> • LPRMRB0615d, BYPASS, t2, LPRM Bypass, 0615d • MSS012, OFF, t5, Operate SRV B Solenoid Switches • LPRMRB22-31d, BYPASS • LPRMRB22-47a, BYPASS • LPRMRB46-15c, BYPASS | |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|--------------------------------------|---|--------------------------|
| Simulator Setup Continued | <p><u>LAMP OVERRIDES:</u></p> <ul style="list-style-type: none"> • LO_MSS155-G, OFF, P870-54C Mn Stm Sply to SSE Isol MOV green light • LO_TME-MOV58-R, OFF, P870-54C SSE Press Cont Isol Vlv red light • LO_CCS-P1C-G, OFF, P870-55C CCS Pump P1C green light • LO_CCS-MOV15C-G, OFF, P870- 55C CCS Pump P1C Discharge Valve green light • LO_B21-AB1-A601-19B, ON, t6, ADS A Logic Power Failure (Postage Stamp) • LO_B21-F047C-R-601-19C, OFF, t6, SRV F047C Red Light • LO_B21-F047C-G-601-19C, OFF, t6, SRV F047C Green Light • LO_B21-BB1-A601-19B, ON, t7, ADS B Logic Power Failure (Postage Stamp) • LO_B21-ACF047C-R-601-19C, OFF, t7, SRV F047C Accoustic Monitor Red Light | |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|----------------|---|-----------------------------------|
| | <p><u>ANNUNCIATOR OVERRIDES:</u></p> <ul style="list-style-type: none"> • P870_53a:d_5 OFF, LP FW HTR STRING A LOW WATER LEVEL • P680_2a:e_8 ON t3, HTR DR PUMP 1HDL-P1D OVERLOAD • P601_19a:b_8 ON t6, DIV 1 ADS/SRV INOPERATIVE • P601_19a:b_11 ON t7, DIV 2 ADS/SRV INOPERATIVE <p><u>SWITCH OVERRIDES:</u></p> <p>NONE</p> <p>FREEZE</p> | |
| Event 0 | RUN | CREW: Board Walkdown and Turnover |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|--------------|---|
| <p>Event 1 Description: Unit Operator is directed by the CRS to place RHR A into Suppression Pool Cooling.</p> | | |
| <p>Event 1 When the crew has assumed the shift and at the direction of the Lead Examiner</p> | | <p>CRS: Directs UO to place RHR A into Suppression Pool Cooling</p> <p>UO: Using SOP-0031</p> <p>Throttles open SWP-F068 to obtain ~5800 gpm thru RHR A Heat Exchanger (<i>P870</i>)</p> <p>Starts RHR Pump A (<i>P601</i>)</p> <p>Opens RHR Test Return to Suppression Pool (<i>P601</i>)</p> <p>Verifies RHR Pump Min Flow Valve closes (<i>P601</i>)</p> <p>Closes RHR HX Bypass Valve (<i>P601</i>)</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|---|---|
| <p>Event 2 Description: ATC responds APRM F Upscale and half-scrum caused by LPRM 0615D failure upscale.</p> | | |
| <p>Event 2 When directed by Lead Examiner</p> | <p>t1, Inserts malfunction LPRMUP0615D, LPRM 0615D fails Upscale.</p> | <p>ATC: Refers to ARP-680-06A-C03 Diagnoses/recognizes APRM F upscale caused by LPRM upscale. Locates failed LPRM with RCIS (<i>P680</i>) Reports to CRS.</p> <p>CRS: Consults RPS Instrumentation TS</p> |
| | <p>ROLE PLAY : As Reactor Engineer, when requested, report LPRM has failed upscale and request APRM F bypassed. Bypasses LPRM 0615D and reports to CRS.</p> | <p>CRS: Directs ATC to bypass APRM F and reset half-scrum Directs RE to bypass LPRM</p> <p>ATC: When directed, bypasses APRM F and resets half-scrum (<i>P680</i>)</p> |
| | <p>t2, LPRMRB0615d, BYPASS, Bypasses LPRM 0615d</p> | <p>CRS: Directs ATC to place APRM F back in service</p> <p>ATC: When directed, places APRM F back in service (<i>P680</i>)</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|--|--|--|
| Event 3 Description: ATC responds to Heater Drain Pump PID Overload. | | |
| Event 3 When directed by Lead Examiner | t3 , Inserts override P680_2a:e_8 ON , to initiate annunciator HTR DR PUMP 1HDL-PID OVERLOAD t8 will automatically remove P680_2a:e_8 ON when PID is stopped. | ATC: Refers to ARP-680-02A-E08. Starts HDL-P1C and stops HDL-P1D per SOP-0010, 5.1 Starts HDL-P1C (<i>P680</i>) Opens HDL-P1C discharge valve (<i>P680</i>) Closes HDL-P1D discharge valve (<i>P680</i>) Stops HDL-P1D (<i>P680</i>) |
| | ROLE PLAY: As Electrical Maintenance/WMC, acknowledge request to investigate HDL-PID overload condition. | CRS: Directs WMC investigate HDL-P1D overload |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|--|--|---|
| <p>Event 4 Description:</p> <p>SRV F047C fails open and sticks open. Per AOP-0035, ATC lowers power to at least 90%. Attempts to close SRV with control switches are unsuccessful. When both sets of logic power fuses are pulled, the SRV closes. SRV closure initiates a small steam leak in the Drywell.</p> <p>Critical Tasks: 1. Close SRV F047C.</p> | | |
| <p>Event 4 When directed by lead examiner.</p> | <p>t4, Inserts malfunctions MSS005J, SRV F047C Fails Open and MSS006J, SRV F047C Sticks Open</p> | <p>CRS: Directs crew response per AOP-0035</p> <p>UO: Places SRV F051G in OPEN (<i>P601</i>)</p> <p>ATC: Lowers reactor power to <90% with recirc flow (<i>P680</i>)</p> <p>UO: Attempts to close SRV P601 control (<i>P601</i>)</p> |
| | <p>ROLE PLAY : As Backpanel Operator, when requested, places SRV F047C control switches to CLOSE, to OPEN and back to CLOSE.</p> | <p>CRS/UO: Requests closure attempts using back panel control switch</p> |
| | <p>t5, Places backpanel SRV switch to CLOSE</p> | <p>ATC/UO: Monitor indications for SRV closing (<i>P680/P601</i>)</p> |
| | <p>ROLE PLAY : As Backpanel Operator, when requested, removes SRV F047C Div 1 control power fuses 15A and 16A first, then Div 2 control power fuses 15B and 16B.</p> | <p>CRS/UO: Requests closure attempts by fuse removal from back panel</p> <p>ATC/UO: Monitor indications for SRV closing (<i>P680/P601</i>)</p> |
| | <p>t6, Removes SRV Div 1 fuses</p> <p>t7, Removes SRV Div 2 fuses (starts leak)</p> <p>DMF MSS005J and MSS006J along with t7 to close SRV F047</p> | <p>ATC/UO: Monitor indications for SRV closing (<i>P680/P601</i>)</p> <p>Recognize SRV F047C closure</p> <p>CRS: Refers to Technical Specification for SRV operability</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action | |
|--|---|-------------------------------------|--|
| Event 5 Description: Steam leak develops in the Drywell when SRV closes. Reactor is manually scrammed as Drywell pressure approaches scram setpoint. | | | |
| Event 5 | t7, Inserts malfunction MSS001, 100 gpm Steam Leak in the Drywell | CRS: | Directs implementation of AOP-0001 and AOP-0002 before automatic scram on High Drywell Pressure. |
| | ROLE PLAY: If a leakage report is requested give the leakage values that are shown in monitored parameters Leak_report. When requested report Drywell Unit Cooler Drain flow is pegged high. ROLE PLAY: Acknowledge requests for EOP Enclosure installation. Install EOP Enclosures with Remote Functions as necessary. Report EOP Enclosure installation completed based on appropriate time intervals. | CRS: ATC: UO: | Directs manual scram before High Drywell Pressure Auto scram. Directs implementation of EOP-1 RPV Control entered on High Drywell Pressure. Enters EOP-2 on High Drywell Temperature When directed, Inserts manual scram and completes AOP-0001 and AOP-0002 actions. Verifies ECCS automatic operation for High Drywell Pressure. |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|---|--|
| <p>Event 6 Description:</p> <p>Following the scram, when the Generator output breaker opens on reverse power, a Loss of Offsite Power occurs. The crew enters AOP-0004, Loss of Offsite Power.</p> | | |
| <p>Event 6</p> <p>When directed by lead examiner.</p> | <p>ED001 t8, Loss of Offsite Power</p> | <p>CRS: Directs implementation of AOP-0004.</p> <p>UO: Initiates RCIC if directed.</p> <p> Verifies Diesel Generator Auto Starts</p> |

| Event Number | MFS/OR #/CAE | Expected Operator Action |
|---|--|--|
| <p>Event 7 Description: Following the Loss of Offsite Power the HPCS Diesel fails to Auto start. The UO must have building operator start the Diesel.</p> <p>Critical Tasks: 1. Starts HPCS Diesel.</p> | | |
| Event 7 | EDG003, t8, HPCS DG Failure to Start | UO: Recognizes HPCS Diesel failure to start. Reports to CRS DG failed to start. |
| | <p>ROLE PLAY: Acknowledge request to determine status of Div 3 EDG and attempt to start locally.</p> <p>DMF EDG003, HPCS DG Failure to Start.</p> <p>ROLE PLAY: As Control Building Operator, started Div 3 EDG locally and Monitoring operation.</p> | UO: Contacts and directs Building Operator to locally determine EDG status and attempt to start. |
| Termination Criteria are met and concurrence of the Lead Examiner | FREEZE | |

VI. TERMINATION CRITERIA:

1. All Emergency Diesel Generators operating.
2. RPV level maintained by HPCS and or RCIC operation.
3. RPV pressure controlled by manual SRV operation.
4. Containment parameters stabilized.

IX. QUANTITATIVE SUMMARY

| | | |
|------------------------------|------------|--|
| Total Malfunctions | <u>7</u> | LPRM upscale failure, Heater Drain Pump Overload, SRV fails open and sticks open, Steam leak in Drywell, Loss of Offsite Power, Failure of Div 3 EDG to auto start |
| Malfunctions after EOP entry | <u>2</u> | Loss of Offsite Power, Division 3 EDG Start Failure |
| Abnormal Events | <u>2</u> | SORV (AOP-0035) Loss of Offsite Power (AOP-0004) |
| Major Transients | <u>1</u> | Steam Leak in Drywell, Loss of Offsite Power |
| EOPs entered | <u>2</u> | EOP-1, RPV Control; EOP-2, Primary Containment Control |
| EOP Contingencies used | <u>0</u> | |
| Simulator Run Time | <u>60</u> | Minutes |
| EOP Run Time | <u>20</u> | Minutes |
| Critical Tasks | <u>2</u> | |
| Tech Specs Exercised | <u>Yes</u> | 3.3.1.1, RPS Instrumentation, 3.5.1 SRV |

VII. REFERENCES

A. Plant Procedures

- 1.** GOP-0005, Power Maneuvering
- 2.** SOP-0031, Residual Heat Removal
- 3.** SOP-0010, MSR and FW Heater Extraction Steam and Drains
- 4.** ARP-P680-06A-C03
- 5.** ARP-P680-02A-E08
- 6.** AOP-0001, Reactor Scram
- 7.** AOP-0002, Main Turbine and Generator Trips
- 8.** AOP-0003, Automatic Isolations
- 9.** AOP-0004, Loss of Offsite Power
- 10.** AOP-0007, Loss of Feedwater Heater
- 11.** AOP-0035, Stuck Open SRV
- 12.** EOP-1, RPV Control
- 13.** EOP-2, Primary Containment Control
- 14.** Technical Specifications

| | | | |
|---------------|---------------|-----------------|---|
| Offgoing OSS: | Oncoming OSS: | Off-Going Shift | |
| _____ | _____ | N | D |
| (Print) | KCN | ? | ? |
| | | Date | |

PART I - TO BE REVIEWED PRIOR TO ASSUMING THE SHIFT

UNIT STATUS MODE 1

RX POWER 100%

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

Steady state rated power operation per GOP-0005. At target rod pattern. Step 1 of shutdown sequence.

Trip throttle valve maintenance was completed on RCIC on the previous shift.

CCS-PIC tagged out for motor replacement.

APRM A is bypassed with an Upscale trip unit failure. Three LPRMs bypassed.

Preparations are being made for RCIC testing scheduled this shift. Testing to include the trip throttle valve operation and the pump flow test per STP-209-6310.

Place RHR A in Suppression Pool Cooling.

SIGNIFICANT LCO STATUS

Tracking LCO for APRM A

LCO 3.5.1 for RCIC

EQUIPMENT STATUS

APRM A Upscale trip unit failed and bypassed.

Condensate Full-Flow Filtration is bypassed

CCS-PIC tagged out for motor replacement.

?

?

?

?

Night Orders

Standing Orders

Board Walkdown

Temp Alts

(Signature: Oncoming OSS Review Completed)

KCN