

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure.

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- The plant is preparing for startup following a Refueling Outage.
- Shutdown Cooling has been secured.
- Appendix B, Containment Remote Operated Valve Checklist, of OP 2115, Primary Containment, is completed.

Initiating Cues:

The CRS directs you to perform pages 1 and 2 of Appendix A, RHR System Valve Lineup, of OP 2124, Residual Heat Removal System.

Task Standards:

The operator performs the Valve Lineup in accordance with OP 2124, using the guidance provided within AP 0155, Current System Valve and Breaker Lineup and Identification, recording all tracking information on the appropriate documentation, discovering and notifying supervision of the two mispositioned valves, and re-positioning the valves as needed.

Required Materials:

Handout 1 – OP2124, Appendix A (Rev. 113)

Handout 2 - AP 0155, Current System Valve And Breaker Lineup and Identification, (Rev. 78)

A Danger Tag with a Tag Number on it.

Simulator Set-Up:

Reset to IC-106.

Remove SDC from service in accordance with OP 2124.

Open RHR-57.

Throttle RHR-65B so that it is NOT fully OPEN.

Start Recirc Pump A in accordance with OP 2110.

Lined up SBGT on Containment Air Purge in accordance with OP 2115

OR

Reset to IC-824

Place a Danger Tag with a Tag Number on it on RHR-57.

Examiner Notes:

Since the JPM task is focused on the RHR System **Valve/Switch** positions ONLY, the Simulator **does** not reflect the initial conditions specified in the JPM. If the operator questions the Simulator alignment, the Examiner should inform the operator that the Simulator alignment is acceptable for **the** task to be evaluated.

This JPM should be conducted simultaneously with A4 SRO.

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM) and Handout 1.

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

***Step 1: Perform Valve Lineup**

Standard: The operator completes the valve lineup and places their initials in the appropriate space on OP 2124 Appendix A.

The operator discovers RHR-57 OPEN, when it should be CLOSED, with a Danger Tag requiring it to be OPEN.

Interim Cues: If asked, as the Shift Manager, Examiner direct the operator to leave the valve in its present position and annotate this as required by the procedure.

The operator addresses AP 0155, Current System Valve And Breaker Lineup and Identification, (Rev. 75).

Interim Cue: When it is apparent that the operator is seeking to find AP 0155, Examiner provides copy (**Handout 2**).

The operator indicates the tag number (i.e., 1RFO-27-5836) on the lineup form next to its required position, and leaves the "Initials" column blank at this time.

The operator discovers RHR-65B NOT fully OPEN, when it should be fully OPEN, and reports this to the CRS.

Interim Cues: If asked, as the Shift Manager, Examiner direct the operator to place the valve in the position required by the Valve Lineup.

The operator places the RHR-65B control switch to OPEN, and observes Red light ON, Green light OFF.

The operator initials the appropriate space on OP 2124, Appendix A, and places a note at the bottom of the page indicating that RHR-65B was found out of position..

Evaluation

Performance Steps

SAT/UNSAT

***Step 2: Track valve position on OP 2124, Appendix A:**

Standard: The operator completes the valve lineup and places their initials in the appropriate space on OP 2124 Appendix A for the following valves
RHR-20
RHR-66
RHR-57 (indicates the tag number on the lineup form next to its required position, and leaves the "Initials" column blank)
RHR-89B
RHR 89B Test Switch
RHR-65B – Identified as Out-Of-Position (with Note and bottom of Page indicating that Valve was found out of position – the note is NOT a Critical, identification of the wrong valve position is critical)
RHR-65A
RHR-89A
RHR 89A Test Switch
RHR-184
RHR-183

NOTE: The Examiner should review the Valve Lineup paperwork when completed and check to see that the operator has placed their initials, and made one Note, as required on OP 2124, Appendix A.

"Critical Step

TIME FINISH: _____

Terminating Cue: The JPM is complete.

Evaluator Comments: _____

System Generic WA: 2.1.29 (4.114.0)

EXAMINEE HANDOUT

Initial Conditions:

- The plant is preparing for startup following a Refueling Outage.
- Shutdown Cooling has been secured.
- Appendix B, Containment Remote Operated Valve Checklist, of OP 2115, Primary Containment, is completed.

Initiating Cues:

The CRS directs you to perform pages 1 and 2 of .Appendix A, RHR System Valve Lineup, of OP 2124, Residual Heat Removal System.

**VERMONT YANKEE NUCLEAR POWER CORPORATION
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Perform a Drywell Temperature Profile
Failure Mode: High Temperature in the Drywell
Reference: OP 4115, Primary Containment Surveillance, (Rev. 60)
Task Number: 2997170301

Task Performance: AO/RO/SRO ☐ RO/SRO ☒ SRO Only ☐

Sequence Critical: Yes ☐ No ☒

Time Critical: Yes ☐ No ☒

Operator Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ☐ Performance ☒ Discuss ☐

Setting: Classroom ☐ Simulator ☒ Plant ☐

Performance Expected Completion Time: 15 minutes

Evaluation Results:

Performance: PASS ☐ FAIL ☐

Time Required: _____

Prepared by: H. Schulze / J. N. Schulze
Operations Training Instructor

1-27-09
Date

Reviewed by: J. R. Paradis / J. R. Paradis
SRO Licensed/Certified Reviewer

1-27-09
Date

Approved by: J. R. Paradis / J. R. Paradis
Operations Training Manager

2-7-09
Date

Directions:

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After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- The plant is operating at 100% power.
- MCB Annunciator 9-5/F-2, DRYWELL TROUBLE has alarmed.
- RBCCW HX A is in service.

Initiating Cues:

- Another operator has responded to the alarm.
- The CRS directs you to perform the Drywell Temperature Profile in accordance with Section F of CP 4115, Primary Containment Surveillance.

Task Standards:

The Drywell Temperature Check is completed in accordance with OP4115 (Rev 60), Section F, VYOPF 4115.05 is filled in, the operator identifies that the Drywell Temperature for Elevation 250' in vicinity of the Recirculation Pumps, and Drywell Temperature below Elevation 270' do NOT meet the identified acceptance criteria, and the operator identifies that (1) the Duty Officer/Operations manager must be notified, (2) a CR must be written to identify a possible EQ concern, (3) the Drywell Temperature Profile must be performed once per shift, and (4) the completed form VYOPF 4115.05 must be routed to the EQ Coordinator.

Required Materials:

Handout 1 – OP 4115, Primary Containment Surveillance, (Rev. 60)

Simulator Set-Up:

Reset to any 100% power IC

Insert mfMS_06 at .07% and allow to run until the MCB Annunciator 9-5/F-2 alarms.

Remove malfunction and allow plant to stabilize.

Freeze the Simulator

Ensure that the recorders are ON and RUNNING for 2 minutes

OR

Reset to IC# 821

Go to RUN

Remove Malfunction MS_06

Ensure that the recorders are ON and RUNNING for 2 minutes

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/NNSAT

Step 1: Obtain Procedure.

Standard: OP 4115, Rev 60, obtained, prerequisites reviewed.

Place keeps on the procedure during performance of the task

Interim Cue:

When it is apparent that the operator is seeking to find OP 4115, Examiner provide copy (Handout 1).

SAT/UNSAT

Step 2: (CAUTION prior to Step 1) If temperatures below 320 foot **elevation** exceed **215°F**, reactor water level instrumentation errors can **occur**.

Standard: The operator reads the Caution, and proceeds to Step 1.

SAT/UNSAT

Step 3: (Step 1) If necessary, refer to Figure 2 for temperature probe locations.

Standard: The operator may or may not refer to Figure 2, and proceeds to Step 2.

SAT/UNSAT

Step 4: (Steps 2/2.a) If a high Drywell temperature alarm is received: Calculate the average Drywell temperature for the various **elevations** using VYOPF 4115.05.

Standard: The operator recognizes that MCB Annunciator 9-5/F-2, DRYWELL TROUBLE, is LIT, and proceeds to VYOPF.05.

<u>Evaluation</u>	<u>Performance Steps</u>
SAT/NNSAT	<p><u>Step 5:</u> (VYOPF 4115.05/NOTE prior to CRP 9-25 data) Identify any or t of service temperature probe with INOP and ensure a WR is <u>submitted.</u></p> <p>Standard: The operator reads the Note and proceeds to record raw data.</p>
SAT/UNSAT	<p><u>Step 6:</u> (CRP 9-25 Data) CRP 9-25 TR 1-149, Place a √ Mark If RRU In <u>Operation.</u></p> <p>Standard: The operator observes the RRU 1through 4 Return and RRU 1through 4 Disch Temperatures, and records on VYOPF 4115.05.</p> <p>The operator places a √ Mark in space for RRU 1A, 1B, 2A, 2B, 3A and 4A on VYOPF 4115.05.</p> <p>The operator records RBCCW HX in service as A on VYOPF 4115.15 (Initial Conditions).</p> <p>The operator observes M008 and records RBCCW HX Outlet Temperature on VYOPF 4115.05.</p>
SAT/UNSAT	<p><u>*Step 7:</u> (Step A.1) Calculate the average temperature for each Drywell elevation: Drywell Temperature for Elev. 250' in Vicinity of <u>Recirculation Pumps(DBD-OIHVAC-041 01).</u></p> <p>Standard: The operator calls up ERFIS computer points (or a User Defined Grp up) as required and records the data on VYOPF 4115.05.</p> <p>The operator completes the calculation (2 total sensors/2) on VYOPF 4115.05 and determines that the calculated Drywell Temperature does NOT meet the Acceptance Criteria.</p>

Evaluation

Performance Steps

SAT/UNSAT

***Step 8: (Step A.2) Calculate the average temperature for each Drywell elevation: Drywell Temperature for Elev. Below 270'.**

Standard: The operator calls up ERFIS computer points (or a User Defined Group) as required and records the data on VYOPF 4115.05.

The operator observes temperature points on the Steam Leak Detect. on Touchscreen Monitor and records the data on VYOPF 4115.05.

The operator observes TI-16-19-30B (DW) and records the data on VYOPF 4115.05.

The operator observes TR-16-19-45 (DW) and records the data on VYOPF 4115.05.

The operator completes the calculation (11 total sensors/11) on VYOPF 4115.05 and determines that the calculated Drywell Temperature does NOT meet the Acceptance Criteria.

NOTE: The operator may record data required in Steps A.3 and A.4 while performing this Step.

SAT/UNSAT

Step 9: (Step A.3) Calculate the average temperature for each Drywell elevation: Drywell Temperature for Elev. 270' to 315'.

Standard: The operator calls up ERFIS computer points (or a User Defined Group) as required and records the data on VYOPF 4.115.05.

The operator observes temperature points on the Steam Leak Detection Touchscreen Monitor and records the data on VYOPF 4115.05.

The operator completes the calculation (7 total sensors/7) on VYOPF 4.115.05 and determines that the calculated Drywell Temperature met the Acceptance Criteria.

Evaluation

Performance Steps

SATNNSAT

Step 10: (Step A.4) Calculate the average temperature for each **Drywell** elevation: **Drywell** Temperatures Above Elev. 315'.

Standard: The operator calls up ERFIS computer points (or a User Defined Group) as required and records the data on VYOPF 4115.05.

The operator observes temperature points on the Steam leak Detection Touchscreen Monitor and records the data on VYOPF 4115.05.

The operator completes the calculation (5 total sensors/5) on VYOPF 4115.05 and determines that the calculated **Drywell** Temperature meets the Acceptance Criteria.

Interim Cue:

If operator identifies acceptance criteria is not met and takes no further action, ask the operator to state those additional actions.

SAT/UNSAT

*Step 11: (Section F/Steps 2.b.1-4) If the average temperature of an area exceeds the recommended temperature. Notify the **Duty** on Call Officer and the Operations Manager. Generate a Condition Report for possible EQ concern due to exceeding the **average** recommended temperature. Calculate and document the average temperature once per shift while this condition exists or until an evaluation deems this **action** is not needed. Route a **copy** of the completed form to the EQ Coordinator.

Standard: The operator notifies the Duty On call Officer.

The operator notifies the Operations Manager.

The operator identifies that a CR must be written to identify a possible EQ concern.

The operator notifies the CRS that this surveillance must be performed once per shift.

The operator forwards a copy of the completed VYOPF 4115.05 to the EQ Coordinator.

"Critical Step

TIME FINISH: _____

Terminating Cue:
JPM-A2 RO

The JPM is complete.

Evaluator Comments:

System Generic K/A's: 2.2.12 (3.714.1)

EXAMINEE HANDOUT

Initial Conditions:

- The plant is operating at 100% power.
- MCB Annunciator 9-5/F-2, DRYWELL TROUBLE has alarmed.
- RBCCW HX A is in service.

Initiating Cues:

- Another operator has responded to the alarm.
- The CRS directs you to perform the Drywell Temperature Profile in accordance with Section F of NPP 4115, Primary Containment Surveillance.

Directions:

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After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Classroom** and you are to **perform** all actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- You have been requested to verify that the RCU Pump A suction, CU-19A, is open and to observe the pump run.
- You have an accumulated dose (TEDE) of 1920 mr for the year.
- You are the only one available for the job.
- It is expected that you will need to be near the suction valve for approximately 10 minutes, and within the pump room, at low dose areas, for an additional 15 minutes.
- Pre and Post pump run dose rates are not expected to change.

Initiating Cues:

Given the Room Survey Map identify the following:

- The dose rate at the valve.
- The lowest dose rate area.
- The highest dose rate area.
- Your expected dose based on the stated job time estimates.

And, identify whether or not you will need to get a dose extension to perform this job.

Task Standards:

The operator identifies the:

The dose rate at the valve as 240 mr/hr.

The lowest dose rate area as 18 mr/hr.

The highest dose rate area as 250 mr/hr.

- The expected dose as 44.5 mr
- That a dose extension is NOT needed.

Required Materials:

Handout 1 – Book of survey maps containing at least 12 survey maps and as a minimum, the Radiological Survey Map for the RWCU A and RWCU B Pump Room.

Simulator Setup:

N/A

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM), and Handout 1.

Evaluation

Performance Steps

TIME START: _____

SATNNSAT

***Step 1: Obtain and review survey map.**

Standard: The operator reviews the Book of Survey Maps and identifies Map RB280D for the RCWU A Pump Room.

SATNNSAT

***Step 2: Determine the dose rate in the area of CU-19A.**

Standard: The operator reviews the RCWU A Pump Room Survey Map and determines that the dose rate in the vicinity of CU-19A is 240 mr/hr.
NOTE: The operator may use print G191178 to determine which valve on the survey map is the suction valve.

·AT/UNSAT

***Step 3: Determine area with lowest dose rate.**

Standard: The operator reviews the RCWU A Pump Room Survey Map and determines that the area with the lowest dose rate is 18 mr/hr by the Step-Off pad.

SATNNSAT

***Step 4: Determine area with highest dose rate.**

Standard: The operator reviews the RCWU A Pump Room Survey Map and determines that the area with the highest dose rate is 250 mr/hr.

SATNNSAT

***Step 5: Calculate the expected dose.**

Standard: The operator determines that dose expected at the valve by:

$$240 \text{ mr/hr} \times 10 \text{ minutes} \times 1 \text{ hour}/60 \text{ minutes} = 40 \text{ mr}$$

The operator determines the dose expected at the low dose area by:

$$18 \text{ mr/hr} \times 15 \text{ minutes} \times 1 \text{ hour}/60 \text{ minutes} = 4.5 \text{ mr}$$

The operator determines the total expected dose by adding the dose expected at the valve, and the dose expected in the low dose areas as 44.5 mr.

SAT/UNSAT

***Step 6: Identify whether or not a dose extension is needed to perform the job.**

Standard: The operator identifies that the routine admin limit of 2000 mr is imposed, and determines that 80 mr of dose accumulation is allowable for the job.

The operator determines that a dose extension is NOT needed.

* Critical Step

TIME FINISH: _____

Terminating Cue: This JPM is complete.

,valuator Comments: _____

System Generic K/A's: 2.3.4 (3.2/3.7)

EXAMINEE HANDOUT

Initial Conditions:

- You have been requested to verify that the RCU Pump A suction, CU-19A, is open and to observe the pump run.
- You have an accumulated dose (TEDE) of 1920 mr for the year.
- You are the only one available for the job.
- It is expected that you will need to be near the suction valve for approximately 10 minutes, and within the pump room, at low dose areas, for an additional 15 minutes.
- Pre and Post pump run dose rates are not expected to change.

Initiating Cues:

Given the Room Survey Map identify the following:

- The dose rate at the valve.
- The lowest dose rate area.
- The highest dose rate area.
- Your expected dose based on the stated job time estimates.

And identify whether or not you will need to get a dose extension to perform this job.

Key

Task Standards:

The operator identifies the:

- The dose rate at the valve as 240 mr/hr.
- The lowest dose rate area as 18 mr/hr.
- The highest dose rate area as 250 mr/hr.
- The expected dose as 44.5 mr
- That a dose extension is NOT needed.

Required Materials:

Handout 1 – Book of survey maps containing at least 12 survey maps and as a minimum, the Radiological Survey Map for the KWCU A and RWCU B Pump Room.

Simulator Setup:

N/A

$$\frac{240 \text{ mr}}{\text{hr}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times 10 \text{ min} = 40 \text{ mr}$$

$$\frac{18 \text{ mr}}{\text{hr}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times 15 \text{ min} = 4.5 \text{ mr}$$

$$44.5 \text{ mr}$$

$$\begin{array}{r} 1920 \text{ mr} \\ 44.5 \text{ mr} \\ \hline 1964.5 \text{ mr TEDE} \end{array}$$

Fed TEDE
5 REM
max Annual
4.5 REM

**VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Perform Control Room Emergency Communications Checks
 Failure Mode: N/A
 Reference: OP 3506, Emergency Equipment Readiness Check. (Rev. 62)
 Task Number: 2997270301

Task Performance: AO/RO/SRO ___ RO/SRO X SRO Only ___

Sequence Critical: Yes ___ No X

Time Critical: Yes ___ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ___ Performance X Discuss

Setting: Classroom ___ Simulator X Plant

Performance Expected Completion Time: 10 minutes

Evaluation Results:

Performance: PASS ___ FAIL ___ Time Required: _____

Prepared by: W. H. Schulte / J. N. Schulte 1-27-09
 Operations Training Instructor Date

Reviewed by: R. Paradis / J. R. Paradis 1-27-09
 SRO Licensed/Certified Reviewer Date

Approved by: J. R. Paradis / J. R. Paradis 1-27-09
 Operations Training Manager Date

Directions:

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This JPM will be performed in the **Simulator** and you are to **perform** all actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

The plant is operating at 100% power with all systems operable.

Initiating Cues:

The CRS directs you to perform the Monthly Communications Checks in accordance with Section 5.1.1 and 5.1.2 of OP 3506 and to complete any associated paperwork.

Task Standards:

One of the five State Police Agencies, the Group Call, and the ENS phone notification systems are tested in accordance with Section 5.1 of OP 3506, and the results are recorded on Attachment 9.1 of OP 3506.

Required Materials:

Handout 1 - OP 3506, Emergency Equipment Readiness Check (Rev. 62)

Simulator Setup:

Reset to IC -820.

This JPM should be conducted simultaneously with A1a SRO.

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Acquire OP 3506 and review procedure.

Standard: The operator acquires OP 3506 and reviews Section 5.1

Interim Cue:

When it is apparent that the operator is seeking to find OP 3506, Examiner provide:
copy (Handout 1).

SAT/UNSAT

Step 2: (NOTES prior to Step 5.1):
The quantities listed in this procedure are to be considered the minimum required. Quantities above those listed are acceptable, Pens, pencils and scratch paper are readily available and therefore will not be maintained in the EOF and TSC kits
Material location may change as long as the material remains within the facility.

Standard: The operator reads the Notes and proceeds to Step 5.1.

SAT/UNSAT

Step 3: (Step 5.1/5.1.1) Control Room Emergency Communications Check [Operations) (Use Attachment 9.1)
Monthly, the Operations Department shall test the Nuclear Alert System by contacting, and requesting a callback from, each of the three states (Vermont, New Hampshire, Massachusetts) using the following procedure:

Standard: The operator obtains Attachment 9.1 and records date and time.

EvaluationPerformance Steps

SAT/UNSAT

Step 4: (NOTE prior to Step 5.1.1.a) The 3-digit number initiates a point-to-point **call** to each of the five State Police agencies. The 2-digit **alphanumeric** number initiates the **group** call feature.

Standard: The operator reads Note and proceeds to Step 5.1.1.a.

SAT/UNSAT

*Step 5: (Step 5.1.1.a) Lift handset and dial 213 for Waterbury, VT, 317 for Rockingham, VT, 210 for **Northampton**, MA, 318 for **Shelburne**, MA. 212 for Concord, NH.

Standard: The operator lifts the handset and dials 213 for the Waterbury, Vermont Police Station.

NOTE:

The Simulator Instructor will answer as "Vermont State Police, Waterbury" and initiate requested callbacks to the operator by dialing phone extension 126.

SAT/UNSAT

Step 6: (Caution prior to Step 5.1.1.b) Press down and hold the push-to-talk button on the handset prior to speaking. Release after speaking. Refer to OP 3504 for instructions on use of the NAS phone.

Standard: The operator reads Caution and proceeds to Step 5.1.1.b.

Evaluation

Performance Steps

SAT/UNSAT

***Step 7: (Step 5.1.1.b) Advise each State Police agency that answers of the test of the Nuclear Alert System, and record the results on Attachment 9.1.**

Standard: The operator presses the "push to talk" button and indicates that "This is the ENVY Control Room, Vernon;" and that "a test of the NAS Phone" is in progress, request a call back and release the button. Then, after acknowledgement, replace the handset.

NOTE: The Simulator Instructor will answer as "Vermont State Police, Waterbury" and initiate requested callbacks to the operator by dialing phone extension 126.

When the NAS Phone rings back, the operator will pick up the handset, press the "push to talk" button and indicate that "This is the ENVY Control Room, Vernon," releasing the button after speaking.

After hearing of the test in progress from the initiating station, the operator will press the "push to talk" pushbutton, acknowledge the test, release the button, and replace the handset.

The operator records the successful test by checking the YES Box on Attachment 9.1, Section A.1, for Waterbury, Vermont (213), and the associated YES Box for the callback.

NOTE: Only one of the calls to the five State Police Agencies will be performed.

Interim Cue: Examiner inform operator that subsequent NAS Phone Tests to Rockingham, Vermont, Concord, New Hampshire, Northampton, Massachusetts, and Shelburne Falls, Massachusetts, have been completed satisfactorily.

After cue, the operator records the successful tests by checking the YES Boxes on Attachment 9.1, Section A.1, for Rockingham, Vermont, Concord, New Hampshire, Northampton, Massachusetts, and Shelburne Falls, Massachusetts, and the associated YES Boxes for the callback.

Evaluation

Performance Steps

SAT/UNSAT

*Step 8: (Step **5.1.1.c**) Test the Group **Call capability** with the five State **Police Agencies** by lifting **handset** and **dialing A1**. State **Emergency Operations** facilities may also answer, but are not required for the test. After the test is complete disconnect the **group call by dialing A#, then hang up handset.**

Standard: The operator picks up the handset, and recognizes that no one else is on the line.

The operator dials A1 and waits for the five State Police Agencies to respond.

NOTE

The Simulator operator will answer as each state police agency as follows:

- Massachusetts State Police, Troop B – Northampton
- Massachusetts State Police, Shelburne Falls
- New Hampshire State Police, Concord
- Vermont State Police, Waterbury
- Vermont Secondary Warning Point – Rockingham

JOTE

Once made aware of the test, the Simulator operator will acknowledge the test as each state police agency.

After the acknowledgement of all five agencies, the operator disconnects the Group Call by pressing the A#, and replacing the handset.

The operator records the successful test by checking the YES Box on Attachment 9.1, Section **A.6**, for Successful Group Call Test with VT/NH/MA(A1).

SAT/UNSAT

Step 9: (Step 5.1.1.d) If any part of the NAS system fails to operate.... **..**

Standard: The operator recognizes that the NAS did NOT fail to operate, and proceeds to Step 5.1.1.e.

<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<u>Step 10: (Step 5.1.1.e) Notify the affected state Emergency Management office if any part of the system fails to operate.</u> Standard: The operator recognizes that the NAS did NOT fail to operate, and proceeds to Step 5.1.2.
SAT/UNSAT	<u>*Step 11: (Step 5.1.2/5.1.2.a) Monthly the Operations Department shall terminate the NRC FTS ENS phone in the Control Room as follows: Lift the receiver and listen for the dial tone.</u> Standard: The operator lifts the handset and listens for a dial tone.
SAT/UNSAT	<u>*Step 12: (Step 5.1.2.b) After receiving a dial tone, dial the first number listed below (or on the sticker located on the telephone base) using all 11 digits. If the first number is busy, proceed with the second number.</u> 1-301-816-5100 1-301-951-0550
Examiner NOTE:	Examiner ask the operator what the actual phone number to be used would be.
	Standard: The operator indicates that they would dial 1-301-816-5100.
Interim Cue:	Examiner direct the operator to dial 4050.
	Standard: The operator dials 4050.
NOTE:	Simulator Instructor answer as NRC Operations Center.

Evaluation

Performance Steps

HAAT/UNSAT

***Step 13:** **(Step 5.1.2.c) State your name, location, and the fact that you are testing the NRC ENS. Request that the NRC staff member call back at 700-661-4323.**

Standard: Operator informs NRC operator who he is, where he is calling from, that he is testing the ENS, and requests callback at 700-661-4323.

Note: Simulator operator will acknowledge call as NRC operator, and will initiate callback using the "NRC to Control Room" auto dial button.

Standard: When the ENS Phone rings back, the operator will pick up the handset, and indicate that "This is the ENVY Control Room, Vernon."

After hearing of the test in progress from the NRC, the operator will acknowledge the test, and replace the handset.

The operator records the successful test by checking the YES Box on Attachment 9.1, Section B.1 for Successful Test with the NRC, and Section B.2 for Callback from the NRC Successful.

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluator Comments: _____

System Generic K/A's: 2.4.43 (3.2/3.8)

EXAMINEE HANDOUT

Initial Conditions:

The plant is operating at 100% power with all systems operable.

Initiating Cues:

The CRS directs you to perform the Monthly Communications Checks in accordance with Section 5.1.1 and 5.1.2 of OP 3506 and to complete any associated paperwork.

JPM-Ala SRO

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

The plant is preparing to enter the Startup mode.

Appendix B, Containment Remote Operated Valve Checklist, of OP 2115, Primary Containment, is in progress.

Initiating Cues:

The CRS directs you to complete Appendix B, Containment Remote Operated Valve Checklist, of OP 2115, Primary Containment.

Task Standards:

The operator performs the valve lineup in accordance with OP 2115, using the guidance provided within AP 0155, Current System Valve and Breaker Lineup and Identification, recording all tracking information on the appropriate documentation, discovering and determining the final disposition of the two mispositioned valves, and identifying Technical Specification limitations.

Required Materials:

Handout **1** – OP2115, Appendix B (Rev. 75) Pages 3,4 and 5 with all valves initialed except:
Page **3** – CS-7A, CS-5A, and CS-11A
Page 4 – CS-12A and CS-14A
Page **5** – CS-7B, CS-5B, CS-11B, CS-12B, CS-14B, HPCI-25, HPCI-16, HPCI-15, HPCI-58, and HPCI-57
Handout 2 - AP 0155, Current System Valve And Breaker Lineup and Identification, (Rev. 78)

Simulator Set-Up:

Reset to IC-106.
Remove SDC from service in accordance with OP 2124.
CLOSE CS-11A (mispositioned).
CLOSE CS-11B (mispositioned) and use Soft Patch override CSdi0314AS2B to prevent valve from moving.
Start Recirc Pump A in accordance with OP 2110.
Lined up SBGT on Containment Air Purge in accordance with OP 2115

OR

Reset to IC-820

Examiner Notes:

Since the JPM task is focused on the **CS/HPCI System Valve/Switch** positions ONLY, the Simulator does not reflect the initial conditions specified in the JPM. If the operator questions the Simulator alignment, the Examiner should inform the operator that the Simulator alignment is acceptable for the task to be evaluated.

This JPM should be conducted simultaneously with A4 RO.

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM) and Handout 1.

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

***Step 1: Perform Valve Lineup**

Standard: The operator completes the valve lineup and places their initials in the appropriate space on OP 2115 Appendix B.

The operator discovers CS-11A CLOSED, when it should be OPEN

The operator addresses AP 0155, Current System Valve And Breaker Lineup and Identification, (Rev. 75).

Interim Cue: When it is apparent that the operator is seeking to find AP 0155, Examiner provides copy (**Handout 2**).

Interim Cues: If the operator asks for SM assistance, Examiner asks for recommendation.

When asked if there are any Danger tags, Temp Mods or Lineup Deviations associated with the component, state that none of those exist.

IF asked, state that the component is not being controlled as a "No Tag" per EN-OP-102 AND is NOT out of position due to procedural direction.

The operator places the CS-11A control switch to OPEN and observes the Red status light ON and the Green status light OFF.

The operator places their initials in the appropriate space on OP 2115 Appendix B for CS-11A, and places a Note at the bottom of page 3 identifying that CS-11A was discovered to be in the CLOSED position.

The operator discovers CS-11B CLOSED, when it should be OPEN.

Interim Cues: If the operator asks for SM assistance, Examiner asks for recommendation.

 When asked if there are any Danger tags, Temp Mods or Lineup
 Deviations associated with the component, state that none of those exist.

 IF asked, state that the component is not being controlled as a "No Tag" per EN-OP-
 102 AND is NOT out of position due to procedural direction.

 The operator places the CS-11B control switch to OPEN and observes
 the Green status light ON and the Red status light OFF, and identifies
 that CS-11B will NOT Open.

 The operator DOES NOT place their initials in the appropriate space on
 OP 2115 Appendix B for CS-11B, and places a Note at the bottom of
 page 5 identifying that CS-11B was discovered to be in the CLOSED
 position, and will NOT OPEN.

Interim Cues: Once the condition is identified, tell the operator to complete the checklist and address
 the operational implications of CS-11B failing closed once the checklist is completed.

SAT/UNSAT *Step 2: Track valve position on OP 2115, Appendix B:

Standard: The operator completes the valve lineup and places their initials in the
 appropriate space on OP 2115 Appendix B for the following valves:

 CS-7A
 CS-5A
 CS-11A (Identified as Out-Of-Position (with Note and bottom of Page
 indicating that Valve was found out of position – the note is NOT
 Critical, identification of the wrong valve position is critical)
 CS-12A
 CS-14A
 CS-7B
 CS-5B
 CS-11B (Identified as Out-Of-Position (with Note and bottom of Page
 indicating that Valve was found out of position – the note is NOT
 Critical, identification of the wrong valve position is critical)
 CS-12B
 CS-14B
 HPCI-25
 HPCI-16

HPCI-15
HPCI-58
HPCI-57

SAT/UNSAT Step 3: E 1 Te ations

Standard: The operator addresses LCO 3.5.A.1 and determines that the valve must be correctly positioned prior to entering the Startup mode.

NOTE: The Examiner should review the Valve Lineup paperwork when completed and check to see that the operator has placed their initials, and made one Note, as required on OP 2115, Appendix B

TIME FINISH: _____

Terminating Cue: The JPM is complete.

:valuator Comments: _____

System Generic KIA: 2.1.29(4.1/4.0)

EXAMINEE HANDOUT

Initial Conditions:

- The plant is preparing to enter the Startup mode.
- Appendix B, Containment Remote Operated Valve Checklist, of OP 2115, Primary Containment, is in progress.

Initiating Cues:

The CRS directs you to complete pages 3-5 of Appendix B, Containment Remote Operated Valve Checklist, of OP 2115, Primary Containment.

**VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Perform a Core Thermal Hydraulics Limits Evaluation
Failure Mode: One of the Thermal Limits is Out of Spec
Reference: OP 4401. Core Thermal Hydraulics Limits Evaluation, (Rev. 34)
Task Number: _____

Task Performance: AO/RO/SRO ____ RO/SRO ____ SRO Only X

Sequence Critical: Yes X No

Time Critical: Yes ____ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ____ Performance X Discuss ____

Setting: Classroom X Simulator ____ Plant ____

Performance Expected Completion Time: 10 minutes

Evaluation Results:

Performance: PASS ____ FAIL ____ Time Required: _____

Prepared by: W.H. Schutze / W.H. Schutze 1-27-09
Operations Training Instructor Date

Reviewed by: J.R. Paradis / J.R. Paradis 1-27-
SRO Licensed/Certified Reviewer Date

Approved by: J.R. Paradis / J.R. Paradis 1-27-09
Operations Training Supervisor Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the individual has failed the Job Performance Measure.

After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Classroom** and you are to **perform** all actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- The plant is at 100% power.
- A power change from 90% to 100% occurred one hour ago.
- The 3D Monicore case is available.
- Control Rods match the case

Initiating Cues:

- You are required to perform the Daily Core Thermal Hydraulics Limit Evaluation in accordance with OP 4401, Core Thermal Hydraulics Limit Evaluation.
- Identify any notifications and actions required.

Task Standards:

The Daily Core Thermal Hydraulics Limit Evaluation is performed in accordance with OP 4401, MFLCPR is identified as being out of spec above the admin limit but below the LCO 3.11.C limit. Determines that Reactor Engineering must be contacted.

Required Materials:

Handout 1 – 3D Monicore Case # FMLD 1080319125947 (Modified so that MFLCPR is OOS high).

Handout 2 – OP 4401, Core Thermal Hydraulics Limit Evaluation (Rev. 34)

Handout 3 – Thermal Limit Status Board (Copy)

Handout 4 – Printout of the REO computer screen showing control rod positions and APRM GAI's.

Simulator Setup:

NA

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM) and Handout #1.

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtains and reviews procedure OP 4401

Standard: Procedure obtained and reviewed.

Interim Cue:

When it is apparent that the operator is seeking to find OP 4401, Examiner provide: copy (Handout 2).

SAT/UNSAT

Step 2: (NOTE prior to Step 1) The time and date that a thermal limits evaluation is completed to meet a surveillance requirement is the time and date the 3D Monicore case was calculated (i.e., From case ID).

Standard: The operator reads the Note and proceeds to Step 1.

SAT/UNSAT

Step 3: (Step 1) If performing daily surveillance, data from an automatic case may be used.

Standard: The operator recognizes that the daily surveillance is being performed and that the automatic case has been provided.

<u>'valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	*Step 4: (Step 2) Complete 'VYOPF4401.01
	<p>Standard: The operator evaluates 3D Monicore Case # FMLD 1080319125947 and completes steps 1-6 of VYOPF 4401.01 as follows:</p> <p>The operator records 3D Monicore Official Monitoring Case ID FMLD 1080319125947 in Step 1.</p> <p>The operator compares the control rod positions of the Official Monitoring case to the full core display/RWM.</p>
Interim Cues:	<p>When it is apparent that the operator is seeking to locate the full core display or the RWM, provide the operator with the printout of the control rod positions and APRM GAFs (Handout 3).</p>
	<p>After cue, the operator determines that the rod positions are correct and enters their name and date in Step 2.</p> <p>The operator records the core thermal power (in MWth) as 1910.6 in Step 3.</p> <p>The operator records the highest MFLCPR as 0.993, and its core location as 25-26 in Step 4.</p> <p>The operator records the highest MFLPD as 0.798, and its core location as 21-36-4 in Step 5.</p> <p>The operator records the highest MAPRAT as 0.712, and its core location as 21-36-4 in Step 6.</p>

Evaluation**Performance Steps**

SATAJNSAT

Step 5: (NOTE prior to VYOPF 4401.01 Step 7) Any APRM found to be non-conservative shall be corrected as soon as possible. An APRM is considered inoperable if the AGAF is not restored within 6 hours of the time of discovery.

Standard: The operator reads the Note and proceeds to Step 7

SAT/UNSAT

Step 6: (Step 7) Check the APRM **system** gains using the **REO display on ERFIS.**

Standard: The operator calls up the REO display on ERFIS and observes APRM System gains.

After cue, the operator proceeds to Step 8.

Interim Cue:

When asked, Examiner inform operator Item #7, APRM gains, has been verified SAT.

SAT/UNSAT

***Step 7:** (Step 8) Verify MFLCPR, MFLPD and **MAPRAT** from Steps 4 - 6 are less than or equal to Administrative Limits posted on **Thermal Limit Status Board. If not, contact Reactor Engineering.**

Standard: The operator compares the values recorded on VYOPF 4401.01 Step; 4-6 to the associated Administrative Limits listed on the Thermal Limit Status Board, and identifies that the MFLCPR is out of specification.

The operator notifies RE of the out of spec situation.

Interim Cues:

When it is apparent that the operator is seeking the Thermal Limit Status Board, Examiner provide a copy of the Thermal Limit Status Board (Handout 4).

When RE is notified, Examiner acknowledge as RE.

<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p>*Step 8: (Step 9) Verify the Acceptance Criteria below are satisfied. If A, B, C or D below are not satisfied, enter applicable Tech. Spec. LCC.</p> <p>Standard: The operator recognizes that Acceptance Criteria A is satisfied.</p> <p>The operator does sign Step 10 of VYOPF 4401.01 indicating that the surveillance has been performed and that the Acceptance Criteria are satisfied.</p> <p>The operator notifies the SM of the results of the surveillance.</p> <p>TIME FINISH: _____</p> <p>Terminating Cue: This JPM is complete.</p> <p>Evaluator Comments: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

K/A: Generic 2.1.7 (4.4/4.7)

EXAMINEE HANDOUT

Initial Conditions:

- The plant is at 100% power.
- A power change from 90% to 100% occurred one hour ago.
- The 3D Monicore case is available.
- Control Rods match the case

Initiating Cues:

- You are required to perform the Daily Core Thermal Hydraulics Limit Evaluation in accordance with OP 4401, Core Thermal Hydraulics Limit Evaluation.
- Identify any notifications and actions required.

Task Identification:

Task Performance: AO/RO/SRO ___ RO/SRO X SRO Only ___

1-27-09
Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure.

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Classroom** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- The plant is 50% power with Recirc Pump B shutdown for corrective maintenance on its associated MG Set.
- ERFIS is NOT available, and attempts to restore it have been unsuccessful for the last hour.
- The MG Set maintenance has been completed, and Recirc Pump restart is in progress in accordance with OP 2110, Reactor Recirculation System.
- The Reactor Operator has just indicated that while performing the Reactor Coolant Temperature Check Data Sheet of OP 4110, Reactor Recirculation System Surveillance, he has determined that the criteria necessary to start Recirc Pump B is met.

Initiating Cues:

As the CRS, evaluate the surveillance and determine if the RO is correct.

Task Standards:

The operator evaluates the Reactor Coolant Temperature Check Data Sheet and determines that a mistake has been made in evaluating the Steam Tables. The operator will correct the mistake, and then direct that the RO continue the process of starting Recirc Pump B in accordance with OP 2110.

Required Materials:

Handout 1 – VYOPF 4110.05, Reactor Coolant Temperature Check Data Sheet, (Rev. 41), filled in as follows:

Startup of Recirc Pump in Loop	B	
	Before Pump S/U	After Pump S/U
Recirc Loop A Temperature (°F)	510	Blank
Recirc Loop B Temperature (°F)	468	Blank
Reactor Pressure (psig)	947	Blank
Bottom Head Drain Temp (°F) (PLC-2-166, RPV/SV/RV Screen, Ch. 4 (ERFIS Pt S026)	392	Blank
Saturation temperature corresponding to above reactor pressure from saturated steam tables	536 °F (In Error, Should be 540)	
Difference between saturation temperature and bottom head drain temperature	144 °F	

Handout 2 – Steam Tables

Calculator

Simulator Set-Up:

NA

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM) and Handout 1.

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

***Step 1: Review Reactor Coolant Temperature Check Data Sheet already in progress.**

Standard: The operator observes the partially completed VYOPF 4110.05.

The operator calculates the differential temperature between Loop A and B to be 42°F, and determines that this differential temperature will support Recirc Pump B start.

The operator observes that the AT between the saturation temperature and the bottom head drain temperature will NOT support Recirc Pump B start.

SAT/UNSAT

***Step 2: Evaluate Steam Tables for saturation temperature.**

Standard: The operator obtains the Steam Tables.

Interim Cue:

When it is apparent that the operator is seeking the Steam Tables, provide the operator with the Steam Tables (**Handout 2**).

The operator converts Reactor Pressure to absolute pressure by adding 14.7 psia to gage pressure of 947 psig and determines absolute pressure to be 962.7 psia.

The operator determines from Table 1 of the Steam Tables that the saturation temperature is between 540 and 544°F, and determines that the recorded saturation temperature is in error.

The operator calculates the actual saturation temperature to be 540°F.

<u>Valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p>*Step 3: <u>Correct Reactor Coolant Temperature Check Data Sheet already in progress, and determine a course of action</u></p> <p>Standard: The operator places a line through 536°F, initials it, and enters 540°F.</p> <p> The operator places a line through 144°F, initials and calculates a new AT between the saturation temperature and the bottom head drain temperature of 148°F. (540°F – 392°F = 148°F)</p> <p> The operator observes that the AT between the saturation temperature and the bottom head drain temperature will NOT support Recirc Pump B start.</p> <p> TIME FINISH: _____</p> <p>Terminating Cue: The JPM is complete.</p> <p>Evaluator Comments: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

System Generic K/A: 2.2.12 (3.714.1)

EXAMINEE HANDOUT

Initial Conditions:

- The plant is 50% power with Recirc Pump B shutdown for corrective maintenance on its associated MG Set.
- ERFIS is NOT available, and attempts to restore it have been unsuccessful for the last hour.
- The MG Set maintenance has been completed, and Recirc Pump restart is in progress in accordance with OP 2110, Reactor Recirculation System.
- The Reactor Operator has just indicated that while performing the Reactor Coolant Temperature Check Data Sheet of OP 4110, Reactor Recirculation System Surveillance, he has determined that the criteria necessary to start Recirc Pump B is NOT met.

Initiating Cues:

As the CRS, evaluate the surveillance and determine if the RO is correct.

**VERMONT YANKEE NUCLEAR POWER CORPORATION
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Authorize Emergency Exposure Limits
Failure Mode: N/A
Reference: OP 3507, Emergency Radiation Exposure Control, (Rev. 39)
Task Number: 34302903

Task Performance: AO/RO/SRO ☐ RO/SRO ☐ SRO Only ☒

Sequence Critical: Yes ☐ No ☒

Time Critical: Yes ☐ No ☒

Operator Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ☐ Performance ☒ Discuss ☐

Setting: Classroom ☒ Simulator ☐ Plant ☐

Performance Expected Completion Time: 10 minutes

Evaluation Results:

Performance: PASS _____ FAIL _____

Time Required: _____

Prepared by: W. H. Schulze / J. N. Schulp
Operations Training Instructor

1-27-09
Date

Reviewed by: J. R. Paradis / J. R. Paradis
SRO Licensed/Certified Reviewer

1-27-09
Date

Approved by: J. R. Paradis / J. R. Paradis
Operations Training Manager

1-27-09
Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure.

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Classroom** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- With the plant shutting down due to failed fuel causing high Reactor Coolant System Activity, a LOCA Outside of Containment occurred.
- A Site Evacuation is in progress in accordance with Attachment 9.7 of OP 3540 (General Emergency Announcement).
- An RP Technician reports that an operator working with him in the Reactor Building has fallen and is severely injured. He has moved the injured person to an area that is somewhat shielded. Due to rapidly increasing dose rates, the RP Technician leaves to get help. He believes the injuries are life-threatening. He also stated that the individual could be retrieved but it would take two people to do so.
- The RP Technician estimates that it will take at least ten minutes to retrieve the victim.
- Reactor Building Area Radiation Monitors indicate extremely high radiation levels.
- Dose rates at the area needing access are 420 Rem/Hr.
- The Senior Radiation Protection representative has already concurred with the dose exposure authorization.
- The Job Number is 047
- The RWP is 09-003

Initiating Cues:

As the Shift Manager, select two rescuers from those individuals available in accordance with Attachments 9.1 and 9.5 of OP 3507, Emergency Radiation Exposure Control; and then complete the Emergency Dose Commitment portion of Attachment 9.8 to approve the Emergency exposure.

Task Standards:

The operator chooses **Madigan** and Walker as rescuers and completes the Emergency Dose Commitment Authorized portion of Attachment 9.8 of OP 3507.

Required Materials:

Handout 1 – List of Available Rescuers in Control Room (Page 6 of 7 of this JPM).

Handout 2 – OP 3507, Emergency Radiation Exposure Control, (Rev 39)
Calculator

Simulator Set-Up:

NA

Provide Candidate with Initial **Conditions/Cue**, and Handout 1 (Last two Pages of this JPM).

EvaluationPerformance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure and locates Attachments **9.1, 9.5** and 9.8.

Standard: The operator obtains OP 3507 and locates Attachments 9.1, 9.5 and 9.8.

Interim Cue:

When it is apparent that the operator is seeking to find OP 3507, Examiner provide copy (Handout 2).

SAT/UNSAT

***Step 2:** As the Plant Emergency Director, select the two most **appropriate** rescuers from those individuals available in accordance with Attachments 9.1 and 9.5 of OP 3507, Emergency Radiation Exposure Control.

SAT/UNSAT

***Step 3:** State the **reason(s) why** the other individuals are not the most appropriate.

Standard: The operator recognizes from initial conditions that Dose rates at the area needing access is greater than 420 Rem/Hr, and that based on 10 minute rescue time, each individual could receive as much as 70 Rem.

The operator determines that rescuers will need to be authorized to receive Emergency Exposure Dose Limits.

The operator reviews List of Available Rescuers in Control Room and determines qualification of potential rescuers.

The operator determines that Jaffe cannot be dispatched as a rescuer (Declared pregnant).

The operator determines that Gibbs cannot be dispatched as a rescuer (Does NOT Volunteer).

The operator determines that Pearson cannot be dispatched as a rescuer (Has too much Lifetime Exposure).

The operator determines that Fiske cannot be dispatched as a rescuer (Only STA – TRM/OP0894 requires her in Control Room).

The operator determines that Woods cannot be dispatched as a rescuer

(High Lifetime Dose).

The operator selects Madigan and Walker as rescuers.

"Critical Step

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluator Comments: _____

System Generic K/A's: 2.3.4 (3.2/3.7)

Handout 1: List of Available Rescuers in Control Room:

RP Badge #	Name	Gender/ Age	Job Assignment	Employer	Current Exposure (yr) Current Exposure	Lifetime Exposure Lifetime Exposure	Special Status Special Status
12345	Gibbs	Male/ 49	Maintenance	VY	1800 mr	5.2 R	Would prefer not to go/Reports good physical health
12456	Madigan	Female/ 48	Engineer	VY	45 mr	400 mr	Volunteers/Reports good physical health
12567	Pearson	Male /45	AO	VY	125 mr	35.4 R	Volunteers/Reports good physical health
12579	Walker	Male/ 52	Training Supervisor	VY	6 mr	1400 mr	Volunteers/Reports good physical health
12110	Jaffe	Female1 32	Security Supervisor	VY	10 mr	65 mr	Declared Pregnant /Volunteers/ Reports good physical health
12238	Fiske	Female/ 46	STA	VY	4 mr	120 mr	Volunteers/Only STA qualified individual in Control Room.
12198	Woods	Male/ 34	AO	VY	78 mr	1.7 R	Good physical health

EXAMINEE HANDOUT

initial Conditions:

- With the plant shutting down due to failed fuel causing high Reactor Coolant System Activity, a LOCA Outside of Containment occurred.
- A Site Evacuation is in progress in accordance with Attachment 9.7 of OP 3540 (General Emergency Announcement).
- An RP Technician reports that an operator working with him in the Reactor Building has fallen and is severely injured. He has moved the injured person to an area that is somewhat shielded. Due to rapidly increasing dose rates, the RP Technician leaves to get help. He believes the injuries are life-threatening. He also stated that the individual could be retrieved but it would take two people to do so.
- The RP Technician estimates that it will take at least ten minutes to retrieve the victim.
- Reactor Building Area Radiation Monitors indicate extremely high radiation levels.
- Dose rates at the area needing access are 420 Rem/Hr.
- The Senior Radiation Protection representative has already concurred with the dose exposure authorization.
- The Job Number is 047
- The RWP is 09-003

Initiating Cues:

As the Shift Manager, select two rescuers from those individuals available in accordance with Attachments 9.1 and 9.5 of OP 3507, Emergency Radiation Exposure Control; and then complete the Emergency Dose Commitment portion of Attachment 9.8 to approve the Emergency exposure.

**VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Off-Site Protective Action Recommendations (evacuate)
Failure Mode: N/A
Reference: OP 3511 Off-Site Protective Action Recommendations. (Rev. 26)
OP 3513. Evaluation of Offsite Radiological Conditions. (Rev. 33)
Task Number: 2007150501

Task Performance: AO/RO/SRO ___ RO/SRO ___ SRO Only X

Sequence Critical: Yes ___ No X

Time Critical: Yes ___ No X

Operator Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ___ Performance X Discuss ___

Setting: Classroom ___ Simulator X Plant ___

Performance Expected Completion Time: 20 minutes

Evaluation Results:

Performance: PASS ___ FAIL ___ Time Required: _____

Prepared by: W. H. Schultze / M. N. Schultze 1-27-09
Operations Training Instructor Date

Reviewed by: J. R. Paradis / J. R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J. R. Paradis / J. R. Paradis 1-27-09
Operations Training Manager Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure.

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions,

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- A reactor transient has occurred resulting in fuel damage.
- An elevated release through the plant stack has just begun, and a General Emergency EAL has been declared five minutes ago.
- There is no ground release in progress.
- Another SRO has been assigned to Use OP 3511, Off-Site Protective Action Recommendations Section 5.6, Protective Action Recommendation Based on Plant Conditions, Attachment 9.4, General Emergency Protective Action Recommendations (PARs) Flowchart.
- ODPS is operable.
- The EOF is NOT yet manned.

Initiating Cues:

You have been assigned by the PED to implement OP 3513, Evaluation of Off-Site Radiological Conditions, Section 5.9, Initial Evaluation; and prepare a PAR based on Off-Site Radiological Conditions and return it to the PED.

Task Standards:

Operator makes off site Protective Action Recommendations per OP 3511 and OP 3513 and transmits to the PED indicating that Vernon, Hinsdale, Bemardston and Northfield must be evacuated.

Required

Handout 1 - OP 3513, Evaluation of Offsite Radiological Conditions (Rev. 33)

Handout 2 - Source Term Data Screen

Handout 3 - Protective Action Recommendations Screen

Handout 4 - OP 3511, Off-Site Protective Action Recommendations (Rev. 25)

Handout 5 - Completed PAR based on Plant Conditions (Attachment 9.5 of OP 3511) filled out as follows:

Current Date

Current Time

Section I – an "S" is placed in front of Guilford, Vernon, Hinsdale, Winchester, Bernardston, and Northfield.

Approved By and Date/Time (This PAR should be accomplished just a few minutes before the operator needs to use the completed PAR)

Shift Manager Box Checked

This JPM requires the use of a Computer with ODPS capability, and the ERFIS Printer to be available for printing.

Simulator Setup:

Any full power IC.

Insert malfunction RMO1F at .06 (6000 mr/hr).

Ensure all HVAC systems are normal and no Group 3 isolation is present.

Ensure that simulator is in RUN for a minimum of 15 minutes prior to conduct of JPM to allow Moist Data average readings to stabilize.

OR

Reset to IC-820

Examiner Notes:

This JPM should be conducted simultaneously with A1a RO.

Provide Candidate with Initial **Conditions/Cue** (Last **Page** of this **JPM**).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure **OP 3513**.

Standard: The operator obtains OP 3513.

The operator turns to Section 5.9, Initial Evaluation.

Interim Cue:

When it is apparent that the operator is seeking to find OP 3513, Examiner provides copy (Handout 1).

SAT/UNSAT

Step 2: (Steps **5.9.1/5.9.1.a**) Immediate Action by the **SM/PED** or **Designated** Plant Staff Member. Upon receiving an indication of a significant release of radioactivity is occurring and the EOF has not been activated, initiate or assign a qualified individual to perform the appropriate calculations in this procedure to evaluate the off-site radiological conditions.

Standard: The operator recognizes that they have been assigned to evaluate the off-site radiological conditions and proceeds to Step 5.9.1.b.

SAT/UNSAT

Step 3: (NOTE prior to **Step 5.9.1.b**) Attachment 9.11 is a flow chart available to assist in the identification of dose assessment **activities** to be considered and **implemented**.

Standard: The operator reads the Note, refers to Attachment 9.11, and proceeds to Step 5.9.1.b.

valuationPerformance Steps

SAT/UNSAT

Step 4: (Step 5.9.1.b) For an actual ground release..

Standard: The operator recognizes that a ground release is NOT in progress, and proceeds to Step 5.9.1.c.

SAT/UNSAT

*Step 5: (Step **5.9.1.c**) If the Stack High Range Monitor equals or exceeds 20 mR/hr, request the Chemistry Technician to obtain a silver zeolite cartridge air **sample** from the main stack sample point for an **iodine** release rate determination.

Standard: The operator observes the Stack High Range Monitor to be reading 4000 mr/hr.

The operator contact and directs the Chemistry Technician to obtain a silver zeolite cartridge air sample from the main stack sample point for an iodine release rate: determination.

Interim Cue:

When action is taken, Examiner inform operator that the Chemistry Technician acknowledges.

SAT/UNSAT

*Step 6: (Step **5.9.1.d**) If ODPS is operable. then implement Attachment 9.5 to access off-site dose **projection** information from ODPS.

Standard: The operator proceeds to Attachment 9.5.

SAT/UNSAT

Step 7: (Attachment 9.5. **Steps** 1.1.a and NOTE prior top Step **1.a.1**) **Obtain** the necessary off-site dose **projection** information for stack and ground release as follows: **IF A STACK RELEASE IS OCCURRING: Meteorological and source term** data are automatically input to model. Manual input of data is not necessary,

Standard: The operator reads the Note and proceeds top Step 1.a.1.

valuationPerformance Steps**SAT/UNSAT**

Step 8: (Step **1.a.1**) Click the "ODPS" menu item on the RTIME menu bar to access the "ODPS Menu"; OR if the workstation has an ERFIS terminal keyboard, press the "ODPS" key.

Standard: The operator accesses ODPS to "ODPS Menu" screen.

SATAJNSAT

Step 9: (Step 1.a.2) Click on the "SOURCE TERM DATA" box to display screen.

Standard: The operator Clicks on the "SOURCE TERM DATA" box, and observes VYOPF 3513.01 "Source Term Data" screen.

SAT/UNSAT

Step 10: (NOTE prior to Step 1.a.3) ERFIS Printer must be on-line now.

Standard: The operator reads the Note, and proceeds to Step 1.a.3.

SAT/UNSAT

Step 11 (Step 1.a.3) Click on the PRINTER icon to obtain record of stack release projection information (Reactor Trip Status and Stack).

Standard: The operator Clicks on the PRINTER icon, and obtains the printout.

Interim Cues:

When the operator indicates that they will print the screen, provide operator with a laminated copy of the "Source Term Data" screen. (Handout 2)

AT/UNSAT

Step 12: (Step **1.a.4**) Click the "ODPS" menu item on the RTIME menu bar to access the "ODPS Menu"; OR if the workstation has an ERFIS terminal keyboard, press the "ODPS" key.

Standard: The operator clicks the "ODPS" menu item on the RTIME menu bar; OR if the workstation has an ERFIS terminal keyboard, presses the "ODYS" key.

AT/UNSAT	<u>Step 13:</u> (Step 1.a.5) Click on the "PROTECTIVE ACTION RECOMMENDATIONS LIVE STACK MR/HR" box to display screen.
	Standard: The operator clicks on the "PROTECTIVE ACTION RECONIMENDATIONS LIVE STACK MR/HR" box.
SAT/UNSAT	<u>Step 14:</u> (Step 1.a.6) If ODPS aborts due to bad input (as indicated on screen display).....
	Standard: The operator recognizes that ODPS does NOT abort, and proceeds to Step 1.a.7.
<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<u>Step 15:</u> (Step 1.a.7) When "PROTECTIVE ACTION RECOMMENDATION" screen is displayed, click on the PRINTER icon to obtain stack release off-site dose projection information.
	Standard: When the "PROTECTIVE ACTION RECOMMENDATION" screen is displayed, the operator clicks on the PRINTER icon, and obtains the printout.
<hr/>	
Interim Cue:	When the operator indicates that they will print the screen, provide operator with a laminated copy of "Protective Action Recommendations" screen. (Handout 3).
<hr/>	
SAT/UNSAT	<u>Step 16:</u> (Step 1.a.8) Click the "ODPS" menu item on the RTIME menu bar to access the "ODPS Menu"; OR if the workstation has an ERFIS terminal keyboard, press the "ODPS" key.
	Standard: The operator clicks the "ODPS" menu item on the RTIME menu bar; OR if the workstation has an ERFIS terminal keyboard, presses the "ODPS" key.
SAT/UNSAT	<u>Step 17:</u> (Step 1.a.9) If no ground release is occurring, skip Attachment 9.5, Step 1.b for ground release and then continue with Attachment 9.5, Step 2.
	Standard: The operator recognizes that there is no ground release in progress, and proceeds to Step 2 of Attachment 9.5.

SAT/UNSAT	<p><u>Step 18:</u> (Steps 2/2.a) Use printed screen information from above to do <u>the following: If multiple release points exist (stack and ground).....</u></p>
Standard:	<p>The operator recognizes that only one release point exists, and proceeds to Step 2.b.</p>
Interim Cue:	<p>When operator indicates that they will print the screen, provide operator with laminated copy of "Source Term Data"</p>
SAT/UNSAT	<p><u>Step 19:</u> (Steps 2.b/2.b.1) If only one release point exists (stack or ground), <u>then continue with the following actions: Implement OP 3511 Section 5.7 Step 5.7.5 to formulate Protective Action Recommendations for State authorities.</u></p>
Standard:	<p>The operator recognizes that only one release point exists, and seeks to find OP3511.</p> <p>The operator proceeds to Step 5.7.5.</p>
Interim Cue:	<p>When it is apparent that the operator is seeking to find OP 3511, Examiner provides copy (Handout 4).</p>
<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p><u>*Step 20:</u> (Step 5.7.5/5.7.5.a) Determine appropriate Protective Action Recommendations (PAR) as follows: (Use Section II of Attachment 9.5) Compare the calculated dose projection results with EPA Protective Action Guidelines delineated below to determine whether EPA Protective Action Guidelines have been exceeded. If the EPA Protective Action Guidelines have not been exceeded, then complete Attachment 9.5 Section II, indicating that there is no PAR based on radiological conditions.</p>
Standard:	<p>The operator uses information from ODPS or obtained in previous printout and notes that Total Effective Dose is >1 REM between the Site Boundary and 5 miles and recognizes that evacuation is needed.</p>
SAT/UNSAT	<p><u>Step 21:</u> (Step 5.7.5.b) Attachment 9.2 and Attachment 9.3 are conservatively based on METPAC plume trajectories, the river valley effect for stability classes E, F and G, and plume width.</p>
Standard:	<p>The operator reads step and proceeds to Note prior to Step 5.7.5.c.</p>

SAT/UNSAT	<p><u>Step 22:</u> (NOTE prior to Step 5.7.5.c) The Town of Marlboro, VT is not a VY <u>EPZ town.</u></p> <p>Standard: The operator reads Note and proceeds to Step 5.7.5.c.</p>
SAT/UNSAT	<p><u>Step 23:</u> (Step 5.7.5.c) In the EOF, in the initial stages of the event, the plume trajectory is determined by calculating: a "what if" METPAC 10-mile plume projection with a default source term and actual meteorology using the METPAC Batch Mode with 8 time steps per OP 3513, Attachment 9.9</p> <p>Standard: The operator recognizes that the EOF is NOT manned, and proceeds to Step 5.7.5.d.</p>
SAT/UNSAT	<p><u>Step 24:</u> (Step 5.7.5.d) In all cases, use the field team data to verify the actual downwind direction of the plume. Adjust the PAR as appropriate,</p> <p>Standard: The operator recognizes that the Field Team data and the ODPS data are the same, and proceeds to Step 5.7.5.e.1.</p>

Interim Cue: Examiner inform the operator that the Field Team data reflects the ODPS data.

Evaluation

Performance Steps

SAT/UNSAT	<p><u>*Step 25:</u> (Step 5.7.5.e/(3)) Choose the towns affected by the PAR as follows: If ODPS shows that the PAR (evacuation) is exceeded between the site boundary and five miles, then use Attachment 9.3 and appropriate meteorological data (wind direction and stability class) to obtain affected towns out to five miles downwind.</p> <p>Standard: The operator observes that ODPS shows that the PAR is exceeded between five miles and the Site Boundary.</p> <p>The operator observes the previously obtained printout and determine the wind direction to be 3-7°.</p> <p>The operator observes the previously obtained printout and determine the Stability Class to be A.</p> <p>The operator refers to Attachment 9.3, using Sector A (3-7°), with a Stability Class A, and determines that Vernon, Hinsdale, Bernardston and Northfield must be evacuated.</p>
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SAT/UNSAT

Step 26: (Step 5.7.5.f) Any prior protective action recommendations that **are** still in effect should be included with updated information and documentation (Attachment 9.5).

Standard: The operator recognizes that an initial PAR is being prepared by another operator, and proceeds to Step 5.7.5.g.

Interim Cue: When the operator is seeking any previous PARs, Examiner provide the PAR completed minutes earlier based on Plant Conditions (Handout 5).

SATAJNSAT

Step 27: (Step 5.7.5.g) Barring impediments, (e.g., weather or a **competing** disaster) once a town has been recommended to evacuate, the **more** conservative action will be followed even if **updated** analyses or conditions indicate that sheltering in place would be sufficient.

Standard: The operator recognizes that an initial PAR is being prepared by another operator, and proceeds to Step 5.7.5.h.

Interim Cue: If asked, Examiner cue the operator that there is no unusual weather conditions, nor is there a competing disaster.

<u>valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p><u>*Step 28: (Step 5.7.5.h) Record appropriate PAR information in Section II of Attachment 9.5.</u></p> <p>Standard: The operator records the current Date and Time on Attachment 9.5.</p> <p>The operator places an "E" in the Vermont Town of Vernon, and the New Hampshire Towns of Hinsdale, the Massachusetts Towns of Bernardston and Northfield on Section II of Attachment 9.5.</p> <p>The operator places a check in the "ODPS" Box on Section II of Attachment 9.5.</p> <p>The operator places their name in the "Performed By" Box on Section II of Attachment 9.5.</p> <p>The operator seeks an independent verification of the PAR.</p> <hr/> <p>Interim Cue: Examiner as independent verifier, sign Attachment 9.5 independent verification.</p> <hr/>
SAT/UNSAT	<p><u>Step 29: (Step 5.7.6) Forward completed Attachment 9.5 to the Site Recovery Manager or senior manager in charge.</u></p> <p>Standard: The operator presents the completed Attachment 9.5 to the PED, and indicates that the initial PAR either has been recently prepared, or is still in progress.</p> <p>* Critical Step</p> <p>TIME FINISH: _____</p> <p>Terminating Cue: This completes the JPM.</p> <p>Evaluator Comments: _____ _____ _____ _____ _____ _____</p> <p>system Generic K/A's: 2.4.44 (2.4/4.4)</p>

VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009

Task Identification:

Title: Shift Rx Level Control From The Main Feed Reg. Valve To The Auxiliary Feed
Reg Valve
Failure Mode: Aux Feed Reg Valve Controller fails such that valve fully opens
Reference: OP 0105, Reactor Operations, (Rev. 86)
EN-OP-115, Conduct of Operations, (Rev. 6)
Task Number: 2590060101, 2590070101, 2590080101

Task Performance: AO/RO/SRO ☐ RO/SRO ☒ SRO Only ☐

Sequence Critical: Yes ☐ No ☒

Time Critical: Yes ☐ No ☒

Operator Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ☐ Performance ☒ Discuss ☐

Setting: Classroom ☐ Simulator ☒ Plant ☐

Performance Expected Completion Time: 17 minutes

Evaluation Results:

Performance: PASS ☐ FAIL ☐ Time Required: _____

Prepared by: U.H. Schultze / H.W. Schultze 1-27-09
Operations Training Instructor Date

Reviewed by: J.R. Paradis / J.R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J.R. Paradis / J.R. Paradis 1-27-09
Operations Training Superintendent Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- A normal plant shutdown in progress.
- Reactor Power is $\approx 5\%$.
- OP 0105, Reactor Operations Phase 5C, is completed through Step 2.b.6.g.

Initiating Cues:

The CRS directs you to transfer Rx level control from the A FRV to the Auxiliary FRV in accordance with OP 0105, Phase 5C, Step 2.c (Page 136 of 152).

Task Standards:

The operator shifts the Reactor level control in accordance with procedures from the Main Feed Reg Valve to the Aux Feed Reg Valve, and then responds to a failure of the Aux Feed Reg Valve Control by placing the controller in MANUAL, and controlling Reactor level manually.

Required Materials:

Handout 1 - OP 0105, Reactor Operations, (Rev. 86)

Cimulator Setup:

Reset to IC-8

Lower power to - 5% using OP0105.

Ensure "A" FRV in Auto with "V" displayed on Clontroller.

Ensure "B" FRV in Manual and closed.

Ensure FDW-11B is closed.

Insert FDW-13 Controller failure to open valve fully (malf FW_13 to 100% with no ramp) on Key 1

Ensure that RPV level setpoints for the Main and **Aux** controllers are set to 160".

OR

Reset to IC-850

Ensure "A" FRV in Auto with "V" displayed on Clontroller.

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure.

Standard: The operator obtains OP 0105, Rev 86.

Proceeds to Step 2.c of Phase 5C, Page 136 of 152.

Interim Cue:

When it is apparent that the operator is seeking to find OP 0105, Examiner provides copy (Handout 1).

SAT/UNSAT

***Step 2:** (Step 2.c.1/2.c.1.a-b) In manual, slowly open the aux. feed reg. valve as follows:
On AUX FEED REG VLV FDW-13 CONTROLLER use the **display** pushbutton to display **AUXFRV.V**.
Adjust output as required by plant conditions using the **adjustment knob**.

Standard: The operator presses the "D" display button until V is displayed (0.0).

The operator turns the knob on the AUX FRV Controller in the clockwise direction to slowly open the FDW-13 valve.

NOTE: The operator may observe FDW-13 Red status lights are ON (two sets, 9-5 and 9-6) (NOT Critical).

SAT/UNSAT

Step 3: (Step 2.c.2) Check that the main feedwater regulator valve in **service** closes.

Standard: As the operator is adjusting the FDW-13 Controller, the operator observes the valve position indication on FDW-13 to be increasing, and valve position on A FRV controller decreases toward 0.

The operator observes Reactor Water Level on LI-6-94A/B in Green Band.

The operator observes the Red status light OFF on FRV A.

Qualification

Performance Steps

SAT/UNSAT

***Step 4:** (Steps **2.c.3/3.a/3.a.1**) When the main feedwater **regulator** valve indicates **fully** closed perform the followine:

Transfer AUX FEED REG VLV FDW-13 CONTROLLER from manual to **l** as **ill ws**

On AUX FEED REG VLV FDW-13 CONTROLLER use the display pushbutton to observe the value of the followine:

AUXFRV.S
AUXFRV.P

Standard: The operator observes the valve position indication on A FRV controller at 0.

NOTE: The operator may observe A FRV Red status lights are ON (two sets, 9-5 and 9-6) (NOT Critical).

The operator presses the "D" display button to observe the S and P values.

SAT/UNSAT

***Step 5:** (Step **2.c.3.a.2.a-b**) Using one or both of the **following** steps as **plant** conditions dictate, **adjust** the FWLC system so that **AUXFRV.S and AUXFRV.P** indicate the same value.

Adjust AUX FEED REG VLV FDW-13 CONTROLLER to raise/lower reactor water level.

Adjust AUXFRV.S.

Standard: The operator balances S and P by using the controller knob to change RPV level, or by changing the setpoint.

NOTE: To change the setpoint, S is selected. To change RPV level P or V is displayed.

SAT/UNSAT

***Step 6:** (Step **2.c.3.a.3**) WHEN **AUXFRV.S and AUXFRV.P** indicate the same value, on AUX FEED REG VLV FDW-13 CONTROLLER depress the A/M pushbutton.

Standard: The operator observes that P (level) and S (setpoint) are equal by changing the number displayed by using the "D" display pushbutton.

The operator presses the A/M button on the controller.

Evaluation

Performance Steps

SAT/UNSAT

Step 7: (Steps **2.c.3.a.3.a-b**) On AUX FEED REG VLV FDW-13 CONTROLLER verify the green auto LED illuminates.

On AUX FEED REG VLV FDW-13 CONTROLLER verify the **red** manual LED extinguishes.

Standard: The operator observes the Green MIA LED is ON.

The operator observes the Red MIA LED is OFF.

SAT/UNSAT

Step 8: (Steps **2.c.3.a.4/4.a-b**) **To adjust** the AUX FEED REG VLV **FDW-13** CONTROLLER **setpoint** proceed as follows:

On AUX FEED REG VLV FDW-13 CONTROLLER use the **display** pushbutton to display the **AUXFRV.S** value.

Adjust **setpoint** as required by plant conditions using the **adjustment** knob.

Standard: The operator adjusts level as necessary by ensuring **S** is displayed and changing the setpoint using the knob on the FDW-13 controller.

NOTE: The operator may not need to adjust the controller.

SAT/UNSAT

***Step 9:** (Step **2.c.3.b**) Close BLOCKING VALVE **FDW-11A(B)** for the main feedwater **regulating** valve just removed from service.

Standard: The operator places FDW-11A control switch to close, spring return to normal, and observe Green light to ON and Red light to OFF.

SIMULATOR INSTRUCTOR:

When operator starts to close Blocking Valve, insert malfunction on FDW-13 Controller. causing valve to go full open.

NOTE: Use Panel Override for Panel 9-6 to watch Blocking Valve position.

Evaluation

Performance Steps

SAT/UNSAT

Step 10: (Step **2.c.3.c/2.c.3.c.1**) Transfer the RX VESSEL LEVEL MASTER CONTROLLER to manual as follows: Verify **MASTER.S** and **MASTER.P** indicate the same value THEN depress the A/M pushbutton

Verify the Preen auto LED extinguishes
Verify the red manual LED illuminates

Standard: The operator presses the "D" display button to observe the S and P values.

When the Reactor level on the Controller is observed, the operator will note that Reactor water level is higher than expected.

NOTE: If the operator does not notice the unexpectedly high Reactor water level, MCB Annunciator 9-5/E-6, FW CONTROL SYSTEM TROUBLE, will alarm within 1.5- 2 minutes, and 9-YE-1, RX WATER LEVEL HVLO, will alarm shortly thereafter.

SAT/UNSAT

***Step 11:** (EN-OP-115, Step 5.3) If an automatic control malfunctions, immediately place that control in manual.

Standard: The operator presses the A/M button on the AUX FEED REG FDW-13 controller.

The operator observes the Red M/A LED is ON and the Green M/A LED is OFF.

The operator adjusts level as necessary by ensuring V is displayed and using the knob on the FDW-13 controller to control level at 160".

NOTE: Failure criteria is if the feed water pump trips on high reactor level.

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluators Comments: _____

System: 259002 K/A: A4.01 (3.8/3.6)

EXAMINEE HANDOUT

Initial Conditions:

- A normal plant shutdown in progress.
- Reactor Power is \approx 5-10%.
- OP 0105, Reactor Operations Phase 5C, is completed through Step 2.b.6.g.

Initiating Cues:

The CRS directs you to transfer Rx level control from the A FRV to the Auxiliary FRV in accordance with OP 0105, Phase 5C, Step 2.c (Page 136 of 152).

**VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET**

Task Identification:

Title: Advanced Off Gas System, Vacuum Pump Transfer.
Failure Mode:
Reference: OP 2150, Advanced Off Gas System And Air Evacuation Equipment
Task Number: 2717180101

Task Performance: AO/RO/SRO RO/SRO X SRO Only

Sequence Critical: Yes — No X

Time Critical: Yes — No X

Operator Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation Performance X Discuss

Setting: Classroom Simulator X Plant

Performance Expected Completion Time: 15 minutes

Evaluation Results:

Performance: PASS FAIL Time Required:

Prepared by: W.H. Schmitze / J.W. Schmitze 1-27-
Operations Training Instructor Date

Reviewed by: J.R. Paradis / J.R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J.R. Paradis / J.R. Paradis 1-27-09
Operations Training Manager Date

Directions: Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure.

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the Simulator and you are to perform the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions: Reactor is at 100% power

Initiating Cues: The CRS directs you to shift from AOG Vacuum Pump A to AOG Vacuum Pump B per OP 2150 Section S.

Task Standards: Shift from AOG Vacuum Pump A to AOG Vacuum Pump B is complete.

Required Materials:

OP 2150, Advanced Off Gas System And Air Evacuation Equipment

Simulator Setup: Any at power IC with AOG and "A" vacuum pump in service

Evaluation

Performance Steps

TIME START:

Note: All actions are performed on CRP 9-50.

SAT/NNSAT **Step 1: Obtain** Procedure OP 2150 and review admin limits, precautions **and**
prerequisites.

Standard: OP 2150 obtained. Admin limits, precautions and prerequisites reviewed.

Interim Cue: Prerequisites SAT.

Note: All actions are performed on CRP 9-50.

Evaluation

Performance Steps

Verify the following for the oncoming pump

SAT/NNSAT **Step 2: Mode** selector switch for VACUUM PUMP B to AUTO.

Standard: Operator observes Vacuum Pump "B" selector switch is to "AUTO".

SAT/NNSAT **Step 3: VAC/VACSL, P-154/152-1B** pump switch OFF.

Standard: Operator observes Vacuum Pump "B" VAC/VACSL, P-154/152-1B pump switch OFF.

SAT/UNSAT **Step 4: Check MS-102-1B, Separator Trap,** level at approximately 112 to 314 full.

Standard: Operator requests AO to check level.

Interim Cue: As AO report level is ½ full.

Evaluation

Performance Steps

SATNNSAT

Step 5: Check the on-coming pump **PC-OG-1101B**, VLV CONTROLLER FOR **PCV-OG-501B** in MANUAL.

Standard: Operator observes PC-OG-1101B is in MANUAL.

SATNNSAT

*Step 6: START VACUUM PUMP **A(B)** by momentarily **depressing** its **AUTO** pushbutton.

SATNNSAT

Step 7: Verify vacuum pump **"B"** start.

Standard: Operator observes Vacuum Pump "B" red light on and green light off.

SAT/UNSAT

Step 8: Confirm AOV-OG-140B and AOV-OG-144B open.

Standard: Operator observes AOV-OG-140B and 144B red light ON and green light OFF.

SAT/UNSAT

Step 9: Check system flow increase on **FI-2004**, SYSTEM OUTLET, and **differential** pressure increase on PUMP DELTA P on DPI-1606B.

Standard: Operator checks for flow increase on FI-2004 and DP increase on DPI-1606B.

SATAJNSAT

*Step 10: Secure Vacuum Pump "A" by **placing** the selector switch to **"OFF"** and momentarily depressing the "OFF" PB.

Standard: Operator positions Vacuum Pump "A" selector switch to "OFF", depresses OFF push-button.

SATAJNSAT

Step 11: Verify Vacuum Pump "A" is stopped.

Standard: Operator observes Vacuum Pump "A" red light off and green light on

SAT/UNSAT

Step 12: Confirm AOV-OG-140A and AOV-OG-144A close.

Standard: Operator observes AOV-OG-140A and 144A green light ON and red light OFF.

Evaluation

Performance Steps

- SATNNSAT *Step 13: Return Vacuum Pump "A" selector switch to AUTO position.
- Standard: Operator positions Vacuum Pump "A" selector switch to AUTO on CRP 9-6.
-
- SAT/UNSAT *Step 14: Shift **PC-OG-1101B**, VLV CONTROLLER FOR **PCV-OG-501B**, to **AUTO**.
- Standard: Operator positions PC-OG-1101B, VLV CONTROLLER FOR PCV-OG-501B, to AUTO.
-
- SATNNSAT *Step 15: Slowly **adjust** valve flow controller **PC-OG-1101B** to set **OG-501B** to accomplish the following:
- a. Achieve an approximate balance between delay pipe flow (**FI-2002**) and system outlet flow (**FI-2004**).
- b. Achieve desired pressures on system inlet (PI-1301), on **adsorber** "G" outlet (PI-1306), and on system outlet (PI-1307).
- Standard: Operator adjusts PC-OG-1101B as necessary to insure no alarms are sealed in.
-
- SAT/UNSAT *Step 16: Place **PC-OG-1101A**, VLV CONTROLLER FOR **PCV-OG-501A** in **MANUAL** to **prevent** unnecessary valve **cycling**.
- Standard: Operator places valve controller PC-OG-1101A in MANUAL.

TIME FINISH:

Terminating Cue: Shift from AOG Vacuum Pump A to AOG Vacuum Pump B is complete.

Evaluators Comments: _____

System: 271000 KIA's: A4.09

Initial Conditions:

Reactor is at 100% power

Initiating Cues:

The CRS directs you to shift from AOG Vacuum Pump A to AOG Vacuum Pump B, per OP 2150 Section S.

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WORKSHEET
NRC EXAM 2009

Task Identification:

Title: Secure RHR from the Shutdown Cooling Mode
Failure Mode: N/A
Reference: OP 2124, Residual Heat Removal System
Task Number: 2050110101

Task Performance: AO/RO/SRO ___ RO/SRO Only X SE Only ___

Sequence Critical: Yes ___ No X

Time Critical: Yes ___ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ___ Performance X Discuss ___

Setting: Classroom ___ Simulator X Plant ___

Performance Expected Completion Time: 12 minutes

Evaluation Results:

Performance: PASS ___ FAIL ___ Time Required: _____

Prepared by: W. H. Schulze / J. N. Schulze 1-27-09
Operations Training Instructor Date
Reviewed by: J. R. Paradis / J. R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date
Approved by: J. R. Paradis / J. R. Paradis 1-27-09
Operations Training Supervisor Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the individual has failed the Job Performance Measure.

After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial condition!;, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** all actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

initial Conditions:

- The plant is operating with RHR in the Shutdown Cooling Mode in accordance with OP 2124, Residual Heat Removal System, Section G, Normal Shutdown Cooling Operational Sequence.
- The A RHR Pump is in operation.
- The RWCU System is in its normal alignment in accordance with OP 2112, Reactor Water Cleanup System.
- The Condensate System is available.

Initiating Cues:

The CRS has directed you to secure from the Shutdown Cooling Mode in accordance with OP 2124, Section J, Securing the Shutdown Cooling Mode.

Task Standards:

The RHR System has been secured from the Shutdown Cooling Mode in accordance with Steps 1- 2 of Section J of OP 2124, Residual Heat Removal System.

Required Materials:

Handout 1 - OP 2124, Residual Heat Removal System (Rev. 113)

Simulator Setup:

Reset to IC-852

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure and review prerequisites

Standard: The operator obtains OP 2124, Rev 113.

Proceeds to Section J, Securing Shutdown Cooling Mode.

Interim Cue:

When it is apparent that the operator is seeking to find OP 2124, Examiner provide: copy (Handout 1).

SAT/UNSAT

Step 2: (Step 1) If RWCU return to RHR SDC suction line is in service, return RWCU to normal alignment, or secure the RWCU system per **OP 2112**.

Standard: The operator recognizes that the RWCU is NOT aligned with its return to RHR SDC (Initial Conditions), and proceeds to Step 2.

SAT/UNSAT

*Step 3: (Step 2) On **CRP 9-3**, close **OUTBD INJECTION, RHR-27A(B)**.

Standard: The operator takes the RHR-27A control switch to CLOSE, and observes the Green light ON, and the Red light OFF.

The operator observes A RHR Pump amps and flow on FI-10-139A decreases.

SAT/UNSAT

*Step 4: (Step 3) Secure the **running RHR pumps**.

Standard: The operator takes the A RHR Pump control switch to STOP, and observes the Green light ON, and the Red light OFF.

The operator observes A RHR Pump amps decreases to 0.

NOTE:

The operator may make a plant announcement concerning the shutdown of the A RHR Pump (Not Critical).

Evaluation

Performance Steps

SATAJNSAT	<p><u>Step 5:</u> (NOTE prior to Step 4) Reactor recirculation pump startup may be performed in parallel with securing shutdown cooling.</p> <p>Standard: The operator reads the Note and proceeds to Step 4.</p>
SAT/UNSAT	<p><u>Step 6:</u> (Step 4) If possible, start the recirc pump(s) at this time per OP 2110.</p> <p>Standard: The operator seeks direction regarding the operation of the Recirculation Pumps from the CRS.</p> <p>After cue, the operator proceeds to Step 5.</p> <hr/>
Interim Cue:	<p>Examiner cue operator that another operator will be starting the recirculation pumps in accordance with OP 2110, and that the securing of the Shutdown Cooling Mode should continue.</p> <hr/>
SAT/UNSAT	<p><u>Step 7:</u> (Step 5) On CRP 9-3, open HX BYPASS, RHR-65A.</p> <p>Standard: The operator opens RHR-65A by taking the control switch to OPEN and observes the Red light ON and the Green light OFF.</p>
SAT/UNSAT	<p><u>Step 8:</u> (Step 6) On CRP 9-3, open HX BYPASS, RHR-65B.</p> <p>Standard: The operator observes the Red light ON and the Green light OFF for RHR-65B. and determines the valve is OPEN.</p>

Evaluation

Performance Steps

SAT/UNSAT

***Step 9: (Step 7) On CRP 9-3, close the following:**

S/D CLG SUCTION, RHR-17
S/D CLG SUCTION, RHR-18
PUMP SUCTION, RHR-15A
PUMP SUCTION, RHR-15C
PUMP SUCTION, RHR-15B
PUMP SUCTION, RHR-15D

Standard: The operator closes RHR-17 by taking the control switch to CLOSE, and observing the Green light ON and the Red light OFF.

The operator closes RHR-18 by taking the control switch to CLOSE, and observing the Green light ON and the Red light OFF.

The operator closes RHR-15A by taking the control switch to CLOSE, and observing the Green light ON and the Red light OFF.

The operator closes RHR-15C by taking the control switch to CLOSE, and observing the Green light ON and the Red light OFF.

The operator observes the Green light ON and the Red light OFF for RHR-15B, and determines the valve is CLOSED.

The operator observes the Green light ON and the Red light OFF for RHR-15D, and determines the valve is CLOSED.

NOTE: The operator may close another valve before the one presently stroking closed is CLOSED.

SAT/UNSAT

Step 10: (Step 8) Place Isolation switch (Radwaste corridor) for shutdown cooling valves RHR-17/18 in LOCKOUT position.

Standard: The operator contacts the AO and directs that the Isolation Switch for, RHR-17/18 be placed in the LOCKOUT position.

Interim Cue: As the AO, Examiner inform the operator that the Isolation Switch for RHR-17/18 has been placed in the LOCKOUT position.

Evaluation

Performance Steps

SAT/UNSAT

***Step 11: (Step 9) Open:**

PUMP SUCTION, RHR-13A
PUMP SUCTION, RHR-13C
PUMP SUCTION, RHR-13B
PUMP SUCTION, RHR-13D
MINIMUM FLOW, RHR-16A
MINIMUM FLOW, RHR-16B

Standard: The operator opens RHR-13A by taking the Key control switch to OPEN, and observing the Red light ON and the Green light OFF.

The operator opens RHR-13C by taking the Key control switch to OPEN, and observing the Red light ON and the Green light OFF.

NOTE:

MCB Annunciator 9-3/L-3, RHR TORUS SUCT VLV CLOSED, is expected to clear after this action.

The operator observes the Red light ON and the Green light OFF, and determines that RHR-13B is OPEN.

The operator observes the Red light ON and the Green light OFF, and determines that RHR-13D is OPEN.

The operator opens RHR-16A by taking the control switch to OPEN, and observing the Red light ON and the Green light OFF.

The operator observes the Red light ON and the Green light OFF, and determines that RHR-16B is OPEN.

NOTE:

The operator may close another valve before the one presently stroking closed is CLOSED.

<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p><u>Step 12:</u> (Steps 10/10.a) Establish keep fill pressure as follows: If condensate system pressure is available open RHR-30A(B), RHR Loop A(B) Pressurizing Line.</p> <p>Standard: The operator contacts the AO and directs that RHR-30A be opened.</p> <p>The operator contacts the AO and directs that RHR-30B be opened.</p>
Interim Cue:	As the AO, Examiner cue operator that RHR-30A and RHR-30B are OPEN.
SAT/UNSAT	<p><u>Step 13:</u> (CAUTION prior to Step 10.b) Reactor coolant temperature must be <212°F to use this procedure section.</p> <p>Standard: The operator reads the Caution and proceeds to Step 10.b.</p>
SAT/UNSAT	<p><u>Step 14:</u> (Step 10.b) IF condensate transfer system will be used to provide keep fill water</p> <p>Standard: The operator recognizes that the Condensate Transfer System will NOT be used and proceeds to Step 11.</p>
SAT/UNSAT	<p><u>Step 15:</u> (Step 11) Open/check open and lock RHR Hx A(B) Inlet, RHR-23A(B).</p> <p>Standard: The operator directs that RHR-23A be checked open and that the valve be locked in the open position.</p> <p>The operator directs that RHR-23B be checked open and that the valve be locked in the open position.</p>
Interim Cue:	Examiner cue operator that RHR-23A and RHR-23B are OPEN.

Evaluation

Performance Steps

SAT/UNSAT

Step 16: (NOTE prior to Step 12) **Manually** closing **RHR-89A(B)** with an RHRSW pump **running** can result in lifting safety relief valve **SR-10-80A(B)**.

Standard: The operator reads the Note and proceeds to Step 12.

SAT/UNSAT

*Step 17: (Steps **12/12.a**) When the RHRSW **pump** has run at least **10 minutes** after the RHR pump is stopped, then secure the running **RHRSW** pumps. Observe RHRSW DISCHARGE valve, **RHR-89A(B)**, **closes** automatically.

Interim Cue:

Examiner cue operator that the RHRSW Pump has run 10 minutes since the RHR Pump A has been stopped.

Standard: After the cue, the operator takes the A RHRSW Pump to STOP, and observes the Green light ON and the Red light OFF.

After stopping the RHRSW Pump, the operator observes RHR-89A automatically closes by observing the Green light ON and the Red light OFF.

The operator observes flow on FI-10-132A decreases to 0.

NOTE:

MCB Annunciator 9-3/K-4, RHR SW PUMP A/C Running, is expected to clear after this action.

CUE:

Steps 13, 14 and 15 will be completed by another operator.

TIME FINISH: _____

Terminating Cue:

This JPM is complete.

Evaluator Comments:

System: 205000

K/A: A4.01 (3.7/3.7)

EXAMINEE HANDOUT

Initial Conditions:

- The plant is operating with RHR in the Shutdown Cooling Mode in accordance with OP 2124, Residual Heat Removal System, Section **G**, Normal Shutdown Cooling Operational Sequence.
- The **A** RHR Pump is in operation.
- The RWCU System is in its normal alignment in accordance with OP 2112, Reactor Water Cleanup System.
- The Condensate System is available.

Initiating Cues:

The CRS has directed you to secure from the Shutdown Cooling Mode in accordance with OP 2124, Section J, Securing the Shutdown Cooling Mode.

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Task Identification:

Title: Line-up for Primary Containment Spray Using Fire System to RHR Loop "A"
Failure Mode: NA
Reference: OE 3107, OE Appendices, Appendix S. (Rev. 25)
Task Number: 2000070501

Task Performance: AO/RO/SRO RO/SRO X SRO Only

Sequence Critical: Yes No X

Time Critical: Yes No X

Operator Performing Task:

Examiner:

Date of Evaluation:

Activity Code:

Method of Testing: Simulation Performance X Discuss

Setting: Classroom Simulator X Plant

Performance Expected Completion Time: 17 minutes

Evaluation Results:

Performance: PASS FAIL Time Required:

Prepared by: W.H. Schulze / J.N. Schuch 1-27-09
Operations Training Instructor Date

Reviewed by: J.R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J.R. Paradis 1-27-09
Operations Training Supervisor Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure.

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions,, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- Drywell pressure is high and has been high for greater than 5 minutes.
- Torus Spray is required per EOP-3 and RHR and RHRSW Pumps are unavailable for use.
- The Emergency Diesel Generators have been stopped.
- No Service Water Pumps are available.
- Fire Water Pumps are running.

Initiating Cues:

The CRS has directed you to line-up and spray the TORUS using the Fire System to RHR Loop "A" from the Control Room, IAW OE 3107, Appendix S,

Auxiliary Operators have been briefed and are standing by in the field to perform their required actions.

NOTE: All communications with the AO should be made using the plant communications systems and NOT with the Examiner.

Task Standards:

Complete the valve line-up and spray the Torus using the Fire System to RHR from the Control Room.

Required Materials:

JPM-S4

Handout 1 - OE 3107 OE Appendices, Appendix S (Rev. 25)

Simulator Set-Up:

Reset to any IC.
Insert malfunction mfRR_01A at 1%. Delete when drywell pressure is 8 psig.
Stop both EDGs.
Trip all four SW Pumps on overcurrent.
Verify both Fire Pumps are running.
Place all RHR & RHRSW Pumps in PTL.

OR

Reset to IC-853

Note to Simulator Instructor:

An instructor should be available to control plant parameters and silence alarms unrelated to the JPM.

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure

Standard: The operator obtains OE 3107, Appendix S, Rev 25.

Proceeds Primary Containment Spray Using Fire Water.

Interim Cue:

When it is apparent that the operator is seeking to find OE 3117, Examiner provides copy (Handout 1).

SAT/UNSAT

Step 2: (NOTE prior to Step 2.a) **Substep 2.a** may be performed concurrently with the remainder of Step 2.

Standard: The operator reads the Note, and proceeds to Step 2.a

SAT/UNSAT

Step 3: (Steps **2.a/2.a.1**) Isolate unnecessary Service Water loads as **follows:**
Close/Check Closed the **following** RBCCW HX Service Water Outlet valves:

- SW-92A SW discharge from A HX
- SW-92B SW discharge from the B HX

Standard: The operator contacts the AO and directs that SW-92 A and B be closed.

Interim Cue:

Simulator Instructor as the AO reports SW-92A and SW-92B closed (Use rfSW-15)

NOTE:

The operator may assign the AO to perform more than one procedure step during one communication.

valuation

Performance Steps

SAT/UNSAT

Step 4: (Step 2.a.2) **CLOSE/check CLOSED** the followins to isolate **Turbine**
Building loads:
• SW-20 TURB BLDG INLET
OR
• SW-19A SW HEADER CROSS CONNECT and
• SW-19B SW HEADER CROSS CONNECT

Standard: The operator checks SW-20 on CRP 9-6 shut by observing Green light ON and Red light OFF.
OR
The operator checks SW-19A on CRP 9-6 shut by observing Green light ON and Red light OFF.
and
The operator checks SW-19B on CRP 9-6 shut by observing Green light ON and Red light OFF.

NOTE: The operator should perform only one or the other, however performance of both steps is allowed.

SAT/UNSAT

Step 5: (Step 2.a.3) Consider **isolating RRUs** to provide increased flow to the vessel by closing the **following** valves:
• SW-315A RRUS Inlet
• SW-316A RRU-6 Inlet
• SW-317A RRU-7 Inlet
• SW-318A RRU-8 Inlet
• SW-307A RRU-9 Inlet
• SW-308A RRU-17A Inlet
• SW-309A RRU-17B Inlet

Standard: The operator contacts the AO and directs that the RRUs be isolated.

Interim Cue: Simulator Instructor as the AO informs the operator that the RRUs are isolated.

Interim Cue: If the operator asks the CRS, Examiner inform the operator that the RRUs are isolated.

<u>valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p><u>Step 6</u> (NOTE prior to Step 2.a.4) IF a LOCA signal is present, THEN <u>the diesels can be shut down locally using the MANUAL ENG STOP pushbutton with the REMOTE/AT ENGINE control switch in AT ENGINE.</u></p> <p>Standard: The operator reads the Note and proceeds to Step 2.a.4.</p>
SAT/UNSAT	<p><u>Step 7</u> (Step 2.a.4) If a diesel generator is idling with the output breaker open, THEN consider shutting down the diesel to provide increased flow to the vessel.</p> <p>Standard: The operator observes that both Diesel Generators are shutdown.</p>
SAT/UNSAT	<p><u>Step 8:</u> (Steps 2.b/2.b.1/2.b.2) If the Fire Water pumps are running, THEN stop the Fire Water pump(s) as follows: <u>Electric Fire Pump - Open circuit breaker on Bus 9 Cubicle 7D</u> <u>Diesel Fire Pump - Place control switch to OFF.</u></p> <p>Standard: The operator checks status of Fire Pumps by checking alarms on Panel 9-6, J-9, DIESEL FIRE PUMP RUNNING, and L-9, ELEC FIRE PUMP RUNNING, are LIT and determines that both Fire Water pumps are operating.</p> <p>The operator contacts the AO and directs that both Fire Pumps be shutdown.</p>
Interim Cue:	<p>When the operator calls the AO, Simulator Instructor place rfFP_01 to OFF and rfFP_02 to OFF.</p> <p>THEN, call operator as AO and report that both Fire Pumps are OFF.</p>
	<p>The operator checks status of Fire Pumps by checking alarms on Panel 9-6, J-9, DIESEL FIRE PUMP RUNNING, and L-9, ELEC FIRE PUMP RUNNING, are DARK and determines that both Fire Water pumps are shutdown.</p>

<u>valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p>*Step 9: (Step 2.c) OPEN SW-8, Fire Water to Service Water crosstie.</p> <p>Standard: Operator directs AO to open SW-8.</p>
Interim Cue:	<p>When the operator calls the AO, Simulator Instructor insert rf_SWR35.</p> <p>THEN, call operator as AO and report that SW-8 is OPEN.</p>
SAT/UNSAT	<p>Step 10: (Steps 2.d/2.d.1) IF RHR loop A is available, THEN Close/check closed RHR 34A TORUS COOLING.</p> <p>Standard: The operator checks shut RHR-34A by observing Green light ON and Red light OFF.</p>
SAT/UNSAT	<p>Step 11: (Steps 2.d.2/2.d.2.a) If a LPCI initiation signal is or was present THEN: In CRP 9-32, locate 10A-K45A-1, timing device for relay 10A-K45A.</p> <p>Standard: The operator opens cabinet in back of CRP 9-32 and identifies timing device.</p>
SAT/UNSAT	<p>Step 12: (Step 2.d.2.b) Rotate set screw in 10A-K45A-1 fully in the counter-clockwise direction, to disable the time delay logic for RHR-27A.</p> <p>Standard: The operator obtains a screwdriver.</p> <p>The operator uses screwdriver to turn set screw counter clockwise until it stops rotating.</p>
SAT/UNSAT	<p>*Step 13: (Step 2.d.2.c) On CRP 9-32, place switch 10A-S36A UPS FDR TRIP keylock switch to BLOCK.</p> <p>Standard: The operator uses Key #13 and places the keylock switch 10AS36A to BLOCK.</p> <p>The operator observes MCB Annunciator 9-3/C-2, RHR-27A AUTO OPEN/UPS FDR TRIP BLK, is LIT.</p>

valuation

Performance Steps

SATI/UNSAT

*Step 14: (Steps 2.d.3) Close/Check closed one of the following:

- RHR-25A INBD INJECTION
- RHR 27A. OUBD INJECTION

Standard: The operator places the RHR-27A control switch in CLOSE, and observes Green light ON and Red light OFF, and determines that RHR-27A is CLOSED.

SAT/UNSAT

Step 15: (Steps **2.d.4**) Go to Step 2.f.

Standard: The operator proceeds to Step 2.f.

SATI/UNSAT

Step 16: (Steps **2.f/2.f.1**) Start available Fire Pumps **by performing the following:**

Electric Fire Pump

Close circuit Breaker on Bus 9 Cubicle 7D

Press control START **pushbutton**

Standard: The operator contacts the AO and directs that the Electric Fire Pump be started.

Interim Cue:

When the operator calls the AO, Simulator Instructor place rfFP_01 to HAND.

THEN, call operator as AO and report that the Electric Fire Pump is Running.

SAT/UNSAT

Step 16a: (Step **2.f.2**) Diesel Fire Pump Place Control Switch to TEST

Standard: The operator contacts the AO and directs that the Diesel Fire Pump be started.

Interim Cue:

When the operator calls the AO, Simulator Instructor place rfFP_02 to HAND.

THEN, call operator as AO and report that the Diesel Fire Pump is Running.

valuation

Performance Steps

SAT/NNSAT

***Step 17: Verify both Fire Pumps are running**

Standard: The operator checks status of Fire Pumps by checking alarms on Panel 9-6, J-9, DIESEL FIRE PUMP RUNNING, and L-9, ELEC FIRE PUMP RUNNING, are LIT and determines that both Fire Water pumps are operating.

SAT/UNSAT

***Step 18: (Step 2.g/2.g.1) OPEN RHR-89A RHR SW DISCHARGE as follows: Place RHR-89A TEST keylock switch 10AS89A1 to TEST**

Standard: The operator uses the 89A/B Test Switch Key and places the switch to TEST.

The operator observes MCB Annunciator 9-3/M-2, RHR KEYLOCK SW TO MAN OVRD, is LIT.

SAT/UNSAT

***Step 19: (Step 2.g.2) Throttle open RHR-89A to 40% (white light is lit)**

Standard: The operator places the control switch for RHR-89A to OPEN, and observes the Red light ON, and THEN the White Light is ON.

When the White light is ON, the operator allows the control switch for RHR-89A to return to AUTO.

SAT/UNSAT

***Step 20: (Step 2.h) OPEN RHR SW/RHR emergency inter-tie keylock valves: RHR-184 EMERGENCY FILL RHR-183 EMERGENCY FILL**

Standard: The operator uses Key #13 places the Key Lock switch for RHR-184 to OPEN and observes the Red light ON and Green light OFF.

The operator uses Key #13 places the Key Lock switch for RHR-183 to OPEN and observes the Red light ON and Green light OFF.

SAT/UNSAT

Step 21: (CAUTION prior to Step 2.i) It may be necessary to throttle spray flow using SW-8 to prevent overloading the Fire Water system pump(s).

Standard: The operator reads the Caution and proceeds to Step 2.i.

<u>valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p><u>Step 22: (Step 2.i/2.i.1) When Spray is required THEN: Place RHR A/C LOGIC CTMT SPRAY VLV SHROUD LVL OVRD Keylock Switch to MANUAL OVRD.</u></p> <p>Standard: The operator uses Key #13 and places the RHR A/C LOGIC CTMT SPRAY VLV SHROUD LVL OVRD Keylock Switch to MANUAL OVRD.</p>
SATLJNSAT	<p><u>*Step 23: (Step 2.i.2) Place RHR A/C LOGIC CTMT SPRAY VLV LPCI SIG BYPASS (pistol grip) to MAN.</u></p> <p>Standard: The operator momentarily places the RHR A/C LOGIC CTMT SPRAY VLV LPCI SIG BYPASS Pistol grip switch to MAN and releases the switch (spring returns to OFF).</p>
SAT/UNSAT	<p><u>Step 24: (NOTE prior to Step 2.i.3) Torus and Drywell sprays may be operated concurrently.</u></p> <p>Standard: The operator reads the Note and proceeds to Step 2.i.3.</p>
SAT/UNSAT	<p><u>*Step 25: (Step 2.i.3/2.i.3.a) For Torus Spray: OPEN RHR-39A TORUS SPRAY/CLG</u></p> <p>Standard: The operator places the control switch for RHR-39A to OPEN and observes Red light ON and Green light OFF.</p>
SATLJNSAT	<p><u>*Step 26: (Step 2.i.3.b) OPEN RHR-38A TORUS SPRAY</u></p> <p>Standard: The operator places the control switch for RHR-38A to OPEN and observes Red light ON and Green light OFF.</p> <p>The operator observes flow increases on FI-10-139A and FI-10-132A.</p>
SATLJNSAT	<p><u>*Step 27: (Step 2.i.3.c) CLOSE/check CLOSED RHR 89A. RHRSW DISCHARGE</u></p> <p>Standard: The operator places the control switch to CLOSE and observes the Green light is ON and the Red and White light is OFF.</p>
SATLJNSAT	<p><u>*Step 28: (Step 2.i.3.d) Place RHR 89A TEST keylock Switch 10AS89A-1 to AUTO and remove key.</u></p> <p>Standard: The operator uses Key #13 and places the RHR 89A TEST keylock</p>

switch to AUTO and removes the key from keylock switch.

TIME FINISH: _____

Terminating Cue: This JPM is complete.

'valuators Comments:

System: 226001 **K/A:** A4.02 (3.1/3.1)

EXAMINEE HANDOUT

Initial Conditions:

- Drywell pressure is high.
- Torus Spray is required per EOP-3 and RHR and RHRSW Pumps are unavailable for use.
- The Emergency Diesel Generators have been stopped.
- No Service Water Pumps are available.
- Fire Water Pumps are running.

Initiating Cues:

The CRS has directed you to line-up and spray the TORUS using the Fire System to RHR Loop "A" from the Control Room, IAW OE 3107, Appendix S.

Auxiliary Operators have been briefed and are standing by in the field to perform their required actions.

NOTE: All communications with the AO should be made using the plant communications systems and NOT with the Examiner.

VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009

Task Identification:

Title: Swap RBCCW & TBCCW Pumps
Failure Mode: Complete Loss of RBCCW
Reference: OP 2182. Reactor Building Closed Cooling Water. (Rev. 34)
RP 2183. Turbine Building Closed Cooling Water. (Rev. 28)
ARS 21004. CRP 9-6 Alarm Response Sheets (Rev. 3)
EN-OP-115. Conduct of Operations, (Rev. 6)
Task Number: 2087170401

Task Performance: AO/RO/SRO ___ RO/SRO Only X SE Only ___

Sequence Critical: Yes ___ No X

Time Critical: Yes ___ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ___ Performance X Discuss

Setting: Classroom ___ Simulator X Plant

Performance Expected Completion Time: 8 minutes

Evaluation Results:

Performance: PASS ___ FAIL ___ Time Required: _____

Prepared by: W.H. Schulze / J.H. Schulze 1-27-09
Operations Training Instructor Date

Reviewed by: J.R. Paradis / J.R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J.R. Paradis / J.R. Paradis 1-27-09
Operations Training Supervisor Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the individual has failed the Job Performance Measure.

After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** all actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- The plant is operating at power.
- Scaffolding is being erected around RBCCW Pump A and TBCCW Pump A to support work scheduled during an upcoming Outage.

Initiating Cues:

The CRS has directed you to swap the RBCCW Pumps in accordance with Section D of OP 2182, Reactor Building Component Cooling Water.

THEN, swap of the TBCCW Pumps in accordance with Section H of RP 2183, Turbine Building Component Cooling Water.

Auxiliary Operators have been briefed and are standing by in the field to perform their required actions.

Task Standards:

The operator starts RBCCW Pump B and places RBCCW Pump A in standby, starts the TBCCW Pump B and places TBCCW Pump A in standby, and then re-starts RBCCW Pump A on a failure of the RBCCW Pump B.

Required Materials:

Handout 1 - OP 2182, Reactor Building Component Cooling Water (Rev. 34)

Handout 2 - RP 2183, Turbine Building Component Cooling Water (Rev. 28)

Simulator Setup:

Reset to any 100% power IC.

Ensure RBCCW Pump A and TBCCW Pump A are running.

Enter mfSW_23A, RBCCW A PMP AUTO START FAILURE.

Key 1 malfunction mfSW_01B, RBCCW PUMP B TRIP

OR

Reset to IC-854

Note to Simulator Instructor:

An instructor should be available to control plant parameters and silence alarms unrelated to the JPM.

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SATNNSAT

Step 1: Obtain Procedure.

Standard: The operator obtains OP 2182, Rev 34.

Proceeds to Section D, Transfer of RBCCW Pumps.

Interim Cue:

When it is apparent that the operator is seeking to find OP 2182, Examiner provides copy (**Handout 1**).

SATNNSAT

***Step 2: (Step 1) Start the standby pump from CRP 9-6.**

Standard: The operator places RBCCW Pump B control switch to START, and releases to AUTO, and then observes the Red light ON and the Green light OFF.

The operator observes increasing pressure on PI-104-19.

SAT/UNSAT

***Step 3: (Step 2) Allow system pressure to stabilize. then secure the first pump and place its control switch in AUTO.**

Standard: The operator observes PI-104-19 stabilizes at ≈ 105 psig, and determines that RBCCW pressure has stabilized.

The operator places KBCCW Pump A control switch in STOP, and releases to AUTO, and then observes the Green light ON and the Red light OFF.

The operator observes PI-104-19 stabilizes at ≈ 77 psig, and determines that RBCCW pressure has stabilized.

Evaluation

Performance Steps

SAT/UNSAT

Step 4: Obtain Procedure.

Standard: The operator obtains RP 2183, Rev 28.

Proceeds to Section H, Transfer of TBCCW Pumps.

Interim Cue:

When it is apparent that the operator is seeking to find RP 2183, Examiner provides copy (**Handout 2**).

SAT/UNSAT

***Step 5: (Step 1) On CRP 9-6, start the standby TBCCW PUMP A(B) P-58-1A(B).**

Standard: The operator places TBCCW Pump B control switch to START, and releases to AUTO, and then observes the Red light ON and the Green light OFF.

The operator observes increasing pressure on PI-104-52.

SAT/UNSAT

Step 6: (NOTE prior to Step 2) Annunciator 6-J-8, TBCCW HDR PRESS LO may come in while performing the next step.

Standard: The operator reads the Note and proceeds to Step 2.

Evaluation

Performance Steps

SATNNSAT

***Step 7: (Step 2) Allow system pressure to stabilize, then secure the previously running pump and place its control switch in AUTO.**

Standard: The operator observes PI-104-52 stabilizes at ≈ 110 psig, and determines that TBCCW pressure has stabilized.

The operator places TBCCW Pump A control switch in STOP, and releases to AUTO, and then observes the Green light ON and the Red light OFF.

The operator observes PI-104-52 stabilizes at ≈ 65 psig, and determines that TBCCW pressure has stabilized.

Simulator Instructor: When the operator stops TBCCW Pump A, operate Key 1, which will cause RBCCW Pump B to trip, and RBCCW Pump A to fail to start.

The operator observes MCB Annunciators 9-6/L-7, RBCCW PUMP A/B TRIP, and L-8, RBCCW HDR PRESS LO, as well as the Red light off and Green/Yellow lights ON for RBCCW Pump B, and determines that the running RBCCW Pump B has tripped and that RBCCW Pump A has failed to start.

SATNNSAT

***Step 8: (EN-OP-115, Step 5.3 or ARS 21004 for L7 or L8, Operator Action 1) If an automatic control malfunctions, immediately place that control in manual.**
OR
Ensure that the standby RBCCW pump is running.

Standard: The operator places RBCCW Pump A control switch in START, and releases to AUTO, and then observes the Green and Amber lights ON and the Red light OFF.

The operator observes PI-104-19 stabilizes at ≈ 77 psig, and determines that RBCCW pressure has stabilized.

NOTE: MCB Annunciator 9-6L-8 will clear when RBCCW Pump A is restarted.

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluator Comments:

System: 400000 **K/A:** A2.01 (3.3/3.4)

EXA 11NEE T

initial Conditions:

- The plant is operating at power.
- Scaffolding is being erected around RBCCW Pump A and TBCCW Pump A to support work scheduled during an upcoming Outage.

Initiating Cues:

The CRS has directed you to swap the RBCCW Pumps in accordance with Section D of OP 2182, Reactor Building Component Cooling Water.

THEN, swap of the TBCCW Pumps in accordance with Section H of RP 2183, Turbine Building Component Cooling Water.

Auxiliary Operators have been briefed and are standing by in the field to perform their required actions.

VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009

Task Identification:

Title: Initiate SLC to the Vessel
Failure Mode: RWCU Fails to Isolate
Reference: OP 2114, Operation of the Standby Liquid Control System
Task Number: 2110050101

Task Performance: AO/RO/SRO ___ RO/SRO Only X SE Only ___

Sequence Critical: Yes ___ No X

Time Critical: Yes ___ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ___ Performance X Discuss ___

Setting: Classroom ___ Simulator X Plant

Performance Expected Completion Time: 5 minutes

Evaluation Results:

Performance: PASS ___ FAIL ___ Time Required: _____

Prepared by: W.H. Schulze / J.H. Schulze 1-27-09
Operations Training Instructor Date
Reviewed by: J.R. Paradis / J.R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date
Approved by: J.R. Paradis / J.R. Paradis 1-27-09
Operations Training Superintendent Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the individual has failed the Job Performance Measure.

After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you **are to perform** all actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

The plant is experiencing an ATWS.

Initiating Cues:

The CRS has directed you to initiate SLC injection to the reactor vessel in accordance with Appendix B, Injecting SLC Into the Reactor Vessel, of OP 2114, Operation of the Standby Liquid Control System.

Task Standards:

Boron is injected to the reactor vessel in accordance with Appendix B of OP 2114.

Required Materials:

Handout 1 - OP 2114, Operation of the Standby Liquid Control System (Rev. 33)

Simulator Setup:

Reset to any 100% power IC.

Set up the simulator for ATWS conditions:

Any malfunctions to cause an ATWS (e.g. mfRP_01A, Failure to Auto Scram, mfRP_01B, Failure to Manual Scram, mfRP_01C, Failure of ARI/RPT)

Insert mfRP_09A (Group V failure to isolate)

Insert mfRP_09B (Group V failure to isolate)

Insert mfNM_05A, (APRM A Failure) 100% Severity

Insert mfNM_05B (APRM B Failure) 100% Severity

OR

Reset to IC-855

AND

Activate Scenario 2009 NRC JPM S6

OR

Fail both SL Squib Valves to fire in SLC System.

Insert mfSL_02A, SL Squib Valve A Fails to Fire

Insert mfSL_02B, SL Squib Valve B Fails to Fire

Will need to remove one of the two malfunctions during the performance of the JPM.

Provide Candidate with Initial **Conditions/Cue** (Last **Page** of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure.

Standard: The operator obtains OP 2114, Rev 33.

Proceeds to Appendix B, Injecting SLC Into the Reactor Vessel.

Interim Cue:

When it is apparent that the operator is seeking to find OP 2114, Examiner provides copy (Handout 1).

SAT/UNSAT

Step 2: (NOTE prior to Step 1) Unless specified otherwise, all controls and indications are on CRP 9-5.

Standard: The operator reads the Note, and proceeds to Step 1.

SAT/UNSAT

*Step 3: (Step 1) Unlock SLC Switch by positioning the key to the two o'clock position.

Standard: The operator places Key in the SLC Switch to the two o'clock (right hand) position.

SAT/UNSAT

*Step 4: (Step 2) Turn SLC switch to SYS 1 or SYS 2.

Standard: The operator places the SLC Switch to the SYS 1 or SYS 2 position.

The operator observes the yellow light for the SLC System selected is OFF.

SAT/UNSAT

Step 5: (Steps 3/3.a) Verify the following events occur: SLC PUMP A(B) P-45-1A(B) starts.

Standard: The operator observes that SLC Pump A is running by observing the Red light ON and Green light OFF.

<u>{valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p><u>Step 6:</u> (Step 3.b) SLC discharge pressure increases as indicated on PI-11-65.</p> <p>Standard: The operator observes rising pressure indicated on PI 11-65, stabilizing at –1500 psig.</p>
SAT/UNSAT	<p><u>*Step 7:</u> (Step 3.c) On CRP 9-4, RWCU system isolation valves automatically close:</p> <ul style="list-style-type: none"> • CU-15 (Outlet Isolation) • CU-18 (Inlet Isolation) • CU-68 (Return Isolation) <p>Standard: The operator observes valve position for CU valves and recognizes that the RWCU System did NOT isolate.</p> <p>The operator places the CU-15 control switch to CLOSE, and releases to NORM, and observes Green light ON and red light OFF.</p> <p>The operator places the CU-18 control switch to CLOSE, and releases to NORM, and observes Green light ON and red light OFF.</p> <p>The operator places the CU-68 control switch to CLOSE, and releases to NORM, and observes Green light ON and red light OFF.</p>
NOTE:	To successfully complete the Critical nature of this step either CU-15 or CU-18 must be closed.
NOTE:	The operator may elect to take SLC switch to the other position (per step 4 of Appendix B) before manually closing the RWCU valves. If so, continue on with JPM Steps 8-10, and then return to Step 7.
SAT/UNSAT	<p><u>Step 8:</u> (NOTE prior to Step 3.d) SLC discharge pressure cycling at relief valve setpoint (1400-1490 psig) may indicate failure of squib valve to fire.</p> <p>Standard: The operator reads the Note and proceeds to Step 3.d.</p>

Evaluation

Performance Steps

SATAJNSAT

Step 9: (Step **3.d**) Squib valve **SLC-14A(B)** fires, as indicated by:

- Red flow indicator light on (flow greater than 30 gpm).
- SLC tank level decreases as indicated on **LI-11-66**.

Standard: The operator observes the Red light OFF.

SAT/UNSAT

*Step 10: (Step 4) If the above actions did not result in SLC injection, then turn the SLC switch to the other position (**SYS 2** or **SYS 1**), and repeat verifications of Step 3

Standard: The operator places the SLC Switch to the SYS 1 or SYS 2 position.

The operator observes Red Flow Indicator light is ON.

The operator observes rising pressure indicated on PI 11-65, stabilizing at \approx Reactor Pressure.

The operator observes SLC Tank Level indicator (LI 11-66) and that level indication is lowering.

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluator Comments: _____

System: 211000 **K/A:** A4.02 4.2/4.2

EXAMINEE HANDOUT

Initial Conditions:

The plant is experiencing an ATWS.

Initiating Cues:

The CRS has directed you to initiate SLC injection to the reactor vessel in accordance with Appendix B, Injecting SLC Into the Reactor Vessel, of OP 2114, Operation of the Standby Liquid Control System.

**VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Transfer Station Load from the Auxiliary Transformer to the Startup Transformer
Failure Mode: NA
Reference: OP 2142, 4 KV Electrical System
Task Number: 2620010101

Task Performance: AO/RO/SRO RO/SRO X SRO Only

Sequence Critical: Yes No X

Time Critical: Yes No X

Operator Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation Performance X Discuss

Setting: Classroom Simulator X Plant

Performance Expected Completion Time: 5 minutes

Evaluation Results:

Performance: PASS FAIL Time Required: _____

Prepared by: W. H. Schulte / J. N. Schulte 1-27-09
Operations Training Instructor Date

Reviewed by: J. R. Paradis / J. R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: Paradis / J. R. Paradis 1-27-09
Operations Training Superintendent Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure.

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

A normal plant shutdown is in progress in accordance OP 0105, Reactor Operations, to support an upcoming Refueling Outage.

Initiating Cues:

The CRS directs you to transfer station load from the auxiliary transformer to the Startup Transformer per Section D of OP 2142, 4 KV Electrical System.

Task Standards:

Station loads are transferred from the Auxiliary to Startup Transformer.

Required Materials:

Handout 1 - OP 2142, 4 KV Electrical System

Simulator Set-Up:

Reset to IC-856

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure

Standard: The operator obtains OP 2142.

Proceeds to Section D, Transfer of Station Load from Auxiliary Transformer to Startup Transformer.

Interim Cue:

When it is apparent that the operator is seeking to find OP 2142, Examiner provides copy (**Handout 1**).

NOTE:

The operator may believe that Appendix D, rather than Section D, of OP 2142 is the appropriate proceed section to use. Appendix D would be used in an Emergency, rather than in a normal situation, and is kept in a side pocket on the MCB so that it is readily available in an emergency. If the operator uses Appendix D rather than Section D of OP 2142, the same steps will be accomplished however, the JPM Script will NOT flow precisely with the actions on Appendix D. If the operator attempts to use Appendix D, rather than Section D of OP 2142, the Examiner should direct the operator to use Section D of the procedure rather than Appendix D.

SAT/UNSAT

Step 2: (Step 1) Verify that startup transformers are powered from 115k V yard.

Standard: The operator observes that power indicated on 115 KV meter on CRF 9-8.
The operator checks 115 KV line-up to the S/Up transformers.

SAT/UNSAT

Step 3: (Step 1.a) If auto transformer is not supplying the 115 KV yard, ...

Standard: The operator observes that the Auto Transformer is supplying the 115 KV Yard, and proceeds to Note prior to Step 2.

SAT/UNSAT

Step 4: (NOTE prior to Step 2) Steps 2 through 7 only apply if Bus 1 is available and is to be place in service.

Standard: The operator reads the Note, and proceeds to Step 2.

valuation

Performance Steps

SAT/UNSAT

*Step 5: (Step 2) Insert svnc check handle in BKR 13 socket and turn sync switch on.

Standard: The operator inserts the 4KV sync check handle into breaker 13 switch on CRP 9-8 and turns sync check switch to ON.

SAT/UNSAT

Step 6: (Step 3) Verify bus 1 in phase with startup transformer (synchroscope at 12 o'clock position).

Standard: The operator observes that the synchroscope is at 12:00 position, White lights OUT, Red lights ON.

SAT/UNSAT

Step 7: (CAUTION prior to Step 4) If they are not In Phase, do not transfer.

Standard: The operator reads the Caution, and proceeds to Step 4.

SAT/UNSAT

*Step 8: (Step 4) Close BKR 13.

Standard: The operator places the switch for breaker 13 on CRP 9-8 to CLOSE and then releases.
The operator observes the Red light ON above breaker control switch on CRP 9-8.

NOTE:

The operator may make a plant announcement concerning the transfer of electrical loads to the Startup Transformer (Not Critical).

SAT/UNSAT

Step 9: (Step 5) Check that BKR 12 trips open when BKR 13 switch is released

Standard: The operator verifies Breaker 12 open by observing Green and Amber lights ON above breaker 12 control switch on CRP 9-8.

SAT/UNSAT

Step 10: (Step 6) Reset BKR 12 amber light.

Standard: The operator places the switch for breaker 12 on CRP 9-8 to TRIP and then releases.
The operator observes the Amber light OFF above breaker 12 switch on CRP 9-8.

Evaluation

Performance Steps

SAT/UNSAT

***Step 11: (Step 7) Turn sync check handle to OFF and remove it from the socket.**

Standard: The operator turns the Sync check handle at breaker 13 on CRP 9-8 positioned to OFF, and removes the handle from the breaker 13 socket.

SAT/UNSAT

Step 12: (NOTE prior to Step 8) Steps 8 through 13 only **apply if Bus 2 is available and is to be place in service.**

Standard: The operator reads the Note and proceeds to Step 8.

SAT/UNSAT

***Step 13: (Step 8) Insert sync check handle in BKR 23 socket and turn **sync** switch on.**

Standard: The operator inserts the 4KV sync check handle into breaker 23 switch on CRP 9-8 and turns sync check switch to ON.

SAT/UNSAT

Step 14: (Step 9) Verify bus 2 in phase with **startup transformer {synchroscope at 12 o'clock position}.**

Standard: The operator observes that the synchroscope is at 12:00 position, White lights OUT, Red lights ON.

SAT/UNSAT

Step 15: (CAUTION prior to Step 10) If they are not In Phase, do not transfer.

Standard: The operator reads the Caution, and proceeds to Step 10.

SAT/UNSAT

***Step 16: (Step 10) Close BKR 23.**

Standard: The operator places the switch for breaker 23 on CRP 9-8 to CLOSE and then releases.
The operator observes the Red light ON above breaker control switch on CRP 9-8.

SAT/UNSAT

Step 17: (Step 11) Check that BKR 22 trips open when BKR 23 switch is released.

Standard: The operator verifies Breaker 22 open by observing Green and Amber lights ON above breaker 22 control switch on CRP 9-8.

Evaluation

Performance Steps

SAT/UNSAT

Step 18: (Step 12) Reset BKR No 22 amber light.

Standard: The operator places the switch for breaker 22 on CRP 9-8 to TRIP and then releases.

The operator observes the Amber light OFF above breaker 22 switch on CRP 9-8.

SAT/UNSAT

Step 19: (Step 13/13.a) Turn sync check handle OFF and remove from socket, Place sync check handle on CRP 9-8.

Standard: The operator turns the Sync check handle at breaker 23 on CRP 9-8 positioned to OFF, and removes the handle from the breaker 23 socket.

The operator places the synch handle on CRP 9-8

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluators Comments:

System: 262001 **K/A:** A4.04 (3.6/3.7)

EXAMINEE HANDOUT

Initial Conditions:

A normal plant shutdown is in progress in accordance OP 0105, Reactor Operations, to support an upcoming Refueling Outage.

Initiating Cues:

The CRS directs you to transfer station load from the auxiliary transformer to the Startup Transformer per Section D of OP 2142, 4 KV Electrical System.

**VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Rx Startup to Criticality
Failure Mode: Short period during startup
Reference: OP 0105, Reactor Operations. (Rev. 86)
Task Number: 2987240201

Task Performance: AO/RO/SRO ___ RO/SRO Only X SE Only ___

Sequence Critical: Yes ___ No X

Time Critical: Yes ___ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation ___ Performance X Discuss ___

Setting: Classroom ___ Simulator X Plant ___

Performance Expected Completion Time: 8 minute~

Evaluation Results:

Performance: PASS ___ FAIL ___ Time Required: _____

Prepared by: W.H. Schultze / J.H. Schultze
Operations Training Instructor

1-27-09
Date

Reviewed by: J.R. Paradis / J.R. Paradis
SRO Licensed/Certified Reviewer

1-27-09
Date

Approved by: J.R. Paradis / J.R. Paradis
Operations Training Superintendent

1-27-09
Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the individual has failed the Job Performance Measure.

After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Simulator** and you are to **perform** the actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

- A plant startup is in progress in accordance with Phase 1A of OP **0105**, Reactor Operations.
- The procedure is complete through step A.26 (Page 21 of **152**).
- The control rods have been withdrawn in the specified sequence of OP **2404**.
- There have been two (2) doublings, and these are recorded on VYOPF **0105.03**.
- The next control rod to be withdrawn is Rod **10-39**.

Initiating Cues:

The CRS directs you to continue the startup and take the reactor critical starting with Phase 1A Step 27 of OP **0105**, Reactor Operations (Page **20** of **152**).

Task Standards:

While pulling control rods to take the reactor critical, a high worth rod takes reactor period to shorter than **30** seconds. The operator takes action to take the reactor subcritical per OP **0105**.

Required Materials:

Handout 1 - VYOPF 0105.03 with doubling count rates filled in as follows:

Reactor Startup:		X	In-Sequence:		Initial
SRM A	SRM C	SRM B	SRM D	Time	
13	12	13	14	0800	initialed
Average Count Rate	13				
				TIME	INITIAL
Average Count Rate	13	X2	26	0824	Initialed
		X4	52	0843	Initialed
		X8	104		
		X16	208		
		X32	416		
		X64	932		
		X128	1864		

Handout 2 - VYOPF 2404.01 (Page 1) filled in as follows:

Group	Array	Insert Limit	Withdraw Limit	Rods	Out	In
1	1	0	48			
				2623	Initialed	
				1807	Initialed	
				0223	Initialed	
				1839	Initialed	
				3431	Initialed	
				3415	Initialed	
				1015	Initialed	
				1031	Initialed	
				2639	Initialed	
				4223	Initialed	
				2607	Initialed	
				1823	Initialed	
2	2	0	48			
				3439	Initialed	
				3407	Initialed	
				1007	Initialed	
				1039		

Handout 3 - OP 0105, Reactor Operations, (Rev 86.)

Simulator Setup:

1. Reset to IC 857 (just before critical).
2. Set up mfNM_01D, SRM D failing high at 100% with ramp of 100 seconds on Key 1.
3. Set up mfNM_01D, SRM D failing low at **41%** with ramp of 5 seconds on Key 2.
4. Ensure:
 - C120 is on the CRP 9-3 Digital Display.
 - B023 is on the CRP 9-4 Digital Display.
 - C121 is on the CRP 9-7 Digital Display
5. Initialize the Rod Worth Minimizer

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM) along with Handouts 1 and 2.

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

***Step 1: (Step 27) Continue to withdraw control rods in such a manner as to avoid having a sustained period shorter than 30 seconds (desired 100 to 200 seconds).**

Standard: The operator places the Rod Select Power Switch to ON.

The operator depresses the 10-39 Select Pushbutton, and observes the White Pushbutton light is ON, and the White Rod Out Permit light ON above the Rod Movement control switch.

The operator places the Notch Out Ovrdr Emergency In Switch in NOTCH OVERRIDE and observes the yellow light ON.

The operator simultaneously places the Rod Movement Control Switch to NOTCH OUT and observes the Red Rod Out light ON.

The operator observes the SRM level indications (7-43A through D) for increasing count level.

The operator observes the SRM period indications (7-44A through D) for changing Reactor period.

The operator observes SRM for count rate increasing and reactor period.

Examiner NOTE: Just prior to critically the short period alarm will come in. (about 24 Notches on control rod)

Note: Simulator Instructor upon operator placing rod 10-39 20 notches, INSERT KEY 1.

SAT/UNSAT ***Step 2:** (Step 28/28.a) If the sustained period becomes shorter than 30 seconds: Use the EMERGENCY IN switch to turn the period.

Standard: The operator observes MCB Annunciator 9-5/P-5, SRM PERIOD SHORT.

The operator observes that SRM Period indicator 7-44D indicates a short period, and that the yellow Period light is ON.

The operator observes that SRM Level indicator 7-43D is increasing

The operator places the Notch Out Ovrdr Emergency In Switch the EMERGENCY IN position to reduce the reactor period.

Note: Upon observing the operator using the Notch Out Ovrdr Emergency In Switch the EMERGENCY IN position after 2 notches, INSERT KEY 2.

SAT/UNSAT ***Step 3:** (Step 28.b) Insert control rods until the reactor is subcritical.

Standard: The operator continues to insert control rods with EMERGENCY IN switch until the reactor is subcritical as indicated by infinite period on SRM Period indication 7-44A through D, and stable SRM level indications (7-43A through D).

SAT/UNSAT **Step 4:** (Step 28.c) Notify the Shift **Manager**, Operations Manager, and Superintendent Reactor **Engineering**.

*** Critical Step** Standard: The operator notifies the CRS of the situations and actions taken.

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluator Comments: _____

System: 215004 K/A: A4.01 (3.9/3.8)

EXAMINEE HANDOUT

Initial Conditions:

- **A** plant startup is in progress in accordance with Phase 1A of OP 0105, Reactor Operations.
- The procedure is complete through step A.26 (Page **21** of 152).
- The control rods have been withdrawn in the specified sequence of OP 2404.
- There have been two (2) doublings, and these are recorded on VYOPF 0105.03.
- The next control rod to be withdrawn is Rod **10-39**.

Initiating Cues:

The CRS directs you to continue the startup and take the reactor critical starting with Phase 1A Step 22 of OP 0105, Reactor Operations (Page 20 of 152).

**VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009**

Task Identification:

Title: Place Charger BC-1-1B in Service
Failure Mode: N/A
Reference: OP 2146, Operation of Station and Alternate Shutdown System 125-Volt Battery Chargers. (Rev. 21)
Task Number: 2630070104

Task Performance: AO/RO/SRO X RO/SRO Only ____ SE Only ____

Sequence Critical: Yes X No

Time Critical: Yes ____ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation X Performance ____ Discuss

Setting: Classroom ____ Simulator ____ Plant X

Performance Expected Completion Time: 10 minutes

Evaluation Results:

Performance: PASS ____ FAIL ____ Time Required: _____

Prepared by: W. H. Schulte / J. H. Schulte 1-27-09
Operations Training Instructor Date

Reviewed by: J. R. Paradis / J. R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J. R. Paradis / J. R. Paradis 1-27-09
Operations Training Superintendent Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the individual has failed the Job Performance Measure.

After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Plant** and you are to **simulate** all actions.

You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

There is currently no battery charger supplying power to DC Bus 2. Electrical Maintenance personnel are available for support if needed.

Initiating Cues:

The CRS has directed you to place the BC-1-1B Battery Charger in service in accordance with Section B of OP 2146.

Task Standards:

Battery Charger BC-1-1B is placed in service.

Required Materials:

Handout 1 - OP 2146, Operation of Station and Alternate Shutdown System 125-Volt Battery Chargers (Rev. 21)

Setup:

Provide examiner with pictures of DC-1 & DC-2

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SATAJNSAT

Step 1: Obtain Procedure.

Standard: The operator obtains OP 2146, Rev 21.

Proceeds to Section B, Placing Charger BC-1-1B (BC-1-1D) in Service.

Interim Cue:

When it is apparent that the operator is seeking to find OP 2146, Examiner provides copy (Handout 1).

SATLTNSAT

Step 2: (NOTES prior to Step 1) This procedure section assumes that no chargers are in service. Use Section D for transfer.

These instructions are for BC-1-1B. Use the description in parentheses for **BC-1-1D**.

Standard: The operator reads the Notes and proceeds to the Caution prior to Step 1.

SATLTNSAT

Step 3: (CAUTION prior to Step 1) Tripping and damage of DC components **may occur if the battery is not tied to its respective bus.**

Standard: The operator reads the Caution and proceeds to Step 1.

SATAJNSAT

+Step 4: (Step 1) Close/check closed DC-2 125 VDC MAIN BREAKER.

Standard: The operator verifies that the DC-2 125 VDC Main Breaker is shut by observing the breaker position indicating flag in the CLOSED (Red) condition.

Interim Cue:

After checking, Examiner inform Operator that the breaker position indicating flag is Red.

Evaluation

Performance Steps

SAT/UNSAT

+Step 5: (Steps **2.a-d**) At MAIN STATION BATTERY CHARGER **BC-1-1B (BC-1-1D)**, perform the **following**:
Open/check open the AC BREAKER (Input).
Open/check open the DC BREAKER (Output).
Check or set the EQUALIZE timer to minimum.
Adjust the FLOAT Adjustment Pot counterclockwise 10 Turns.

Standard: The operator verifies that the **BC-1-1B** AC Breaker is OPEN by observing the breaker switch in the OFF (Down) position.

Interim Cue: After checking, Examiner inform Operator that breaker switch is in the Down position.

Standard: The operator verifies that the **BC-1-1B** DC Breaker is OPEN by observing the breaker switch in the OFF (Down) position.

Interim Cue: After checking, Examiner inform Operator that breaker switch is in the Down position.

Standard: The operator observes that the **BC-1-1B** Equalize timer is set to zero (0).

Interim Cue: After checking, Examiner inform Operator that the timer is set to zero (0).

Standard: Using a screwdriver (simulated) the operator turns the FLOAT adjustment pot 10 turns in the counter-clockwise direction.

Interim Cue: After checking, Examiner inform Operator that the FLOAT Adjustment Pot has been turned 10 turns in the Counter-Clockwise direction.

SAT/UNSAT

+*Step 6: (Step 3) Closelcheck closed Ckt. **6, BATTERY CHARGER BC-1-1B on DC-2 (Ckt. 5, BATTERY CHARGER BC-1-1D on DC-2)**.

Standard: The operator closes/checks closed the Ckt. 6 breaker on DC-2 by positioning the breaker handle to the ON (Left) position.

Interim Cue: After checking, Examiner inform Operator that breaker handle is in the Left position.

<u>valuation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p>+<u>Step 7:</u> (Step 4) Ensure DC-1 TIE TO DC-2 and DC-2 TIE TO DC-1 breakers are both open.</p> <p>Standard: The operator verifies that the DC-1 TIE TO DC-2 Breaker is OPEN by observing the DC-1 Tie DC-2 breaker position indicating flag on DC 1 is in the OPEN (Green) condition.</p>
Interim Cue:	After checking, Examiner inform Operator that the breaker position indicating flag is Green.
	<p>Standard: The operator verifies; that the DC-2 TIE TO DC-1 Breaker is OPEN by observing the DC-2 Tie DC-1 breaker position indicating flag on DC-2 is in the OPEN (Green) condition.</p>
Interim Cue:	After checking, Examiner inform Operator that the breaker position indicating flag is Green.
SATAJNSAT	<p>+<u>*Step 8:</u> (Step 5) At MCC-9A (9B), close/check closed the 125 VDC BATTERY CHARGER BC-1-1B (BC-1-1D) breaker.</p> <p>Standard: The operator closes/checks closed the 125VDC Battery Charger breaker by observing the breaker handle in the ON (UP) position.</p>
Interim Cue:	After checking, Examiner inform Operator that the breaker handle in the UP position.
SAT/UNSAT	<p>+<u>*Step 9:</u> (Step 6/6.a) At MAIN STATION BATTERY CHARGER BC-1-12 (BC-1-1D): Close the DC output breaker.</p> <p>Standard: The operator closes the DC output breaker by positioning the breaker handle to the ON (Up) position.</p>
Interim Cue:	After action, Examiner inform Operator that the breaker handle in the UP position.

Evaluation

Performance Steps

SAT/UNSAT

+***Step 10:** (Step **6/6.b**) At MAIN STATION BATTERY CHARGER BC-1- **B**
(BC-1-1D):

Close the AC input breaker.

Standard: The operator closes the AC input breaker by positioning the breaker handle to the ON (up) position.

Interim Cue:

After action, Examiner inform Operator that the breaker handle in the UP position.

SAT/UNSAT

+***Step 11:** (Step **6.c**) Increase **voltage** by turning the Float Adjust Pot **clockwise**
slowly enough to limit the voltage to 132 V or until the charger
current is about 100 amps.

Standard: The operator rotates the Float Adjust Pot clockwise slowly enough to limit the DC voltage to 132 V or until charger DC current is about 100 amps

Interim Cue:

When Operator indicates that he is rotating the potentiometer slowly clockwise, Examiner inform Operator that voltage is approximately 132 volts and that current is approaching 100 amps.

SAT/UNSAT

Step 12: (Step 7) Request assistance from Electrical Maintenance for final
calibration of the charger

Standard: The operator requests that Electrical Maintenance perform final calibration of the battery charger.

Interim Cue:

When Electrical Maintenance is contacted, Examiner inform Operator that Electricians are on their way to perform final calibration.

Note: (+) JPM Steps 4 through 11 are Sequence Critical

TIME FINISH: _____

Terminating Cue:

This JPM is completed.

Evaluator Comments:

System: 263000 **K/A's:** A3.01 (3.213.3)

EXAMINEE HANDOUT

Initial Conditions:

There is currently no battery charger supplying power to DC Bus 2. Electrical Maintenance personnel are available for support if needed.

Initiating Cues:

The CRS has directed you to place the BC-1-1B Battery Charger in service in accordance with Section B of OP 2146.

NOTE: All actions must be simulated. At NO time shall any plant equipment be operated.

VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009

Task Identification:

Title: Boron Injection from the SLC Tank Using the CRD System
Failure Mode: N/A
Reference: OE 3107, Appendix K, Boron Injection Using CRD System from the SLC Tank, (Rev. 25).
Task Number: 2007600501

Task Performance: AO/RO/SRO X RO/SRO Only ____ SE Only ____

Sequence Critical: Yes X No ____

Time Critical: Yes ____ No X

Individual Performing Task: _____

Examiner: _____

Date of Evaluation: _____

Activity Code: _____

Method of Testing: Simulation X Performance ____ Discuss ____

Setting: Classroom ____ Simulator ____ Plant X

Performance Expected Completion Time: 20 minutes

Evaluation Results:

Performance: PASS ____ FAIL ____ Time Required: _____

Prepared by: W. H. Schulze / W. H. Schulze 1-27-09
Operations Training Instructor Date

Reviewed by: J. R. Paradis / J. R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J. R. Paradis / J. R. Paradis 1-27-09
Superintendent Operations Training Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the individual has failed the Job Performance Measure.

After providing the initiating cue, ask the individual "Do you understand the task?"

Read to the person being evaluated:

- Before starting, I will explain the initial conditions,, provide the initiating cues and answer any questions you have.
- This JPM will be performed in the **Plant** and you are to **simulate** all actions.
- You are requested to **"talk-through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.
- Inform me upon completion of this task.

Initial Conditions:

- An ATWS has occurred.
- The EOPs have been entered.
- The SLC Tank is available.
- CRD Pump B is in service and CRD Pump A is in Standby.

Initiating Cues:

The CRS directs you to line up the CRD System for boron injection from the SLC Tank in accordance with OE 3107, Appendix K, to CRD Pump B. Inform the Control Room when the CRD Pumps can be started.

Task Standards:

The SLC tank and CRD System are lined up to inject into the reactor vessel using CRD Pump B in accordance with Procedure OE 3107, Appendix K

Required Materials:

Handout 1 - OE 3107, Appendix K, (Rev. 25)

Pictures of:

- 1. Fitting on SLC Tank Drain**
- 2. Fitting going into check valve**
- 3. Ends of hoses**

Simulator Setup: N/A

Provide Candidate with Initial **Conditions/Cue** (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SAT/UNSAT

Step 1: Obtain Procedure.

Standard: The operator obtains OE 3107, Appendix K, Rev 25.

Proceeds to Procedure Step 1.

Interim Cue:

When it is apparent that the operator is seeking to find OE 3107, Appendix K, Examiner provides copy (Handout 1).

SAT/UNSAT

Step 2: Acquire Necessary Tools and Equipment

Standard: Tools, fittings, and hose acquired from EOP Toolbox located in the Reactor Building (318' elevation)

Interim Cue:

Inform Operator that necessary tools, fittings, and hose have been acquired.

SAT/UNSAT

*Step 3: (Steps 1.a-d) Establish a **flowpath** from the SLC tank to the CRD pumps using the following hose route: From the SLC tank on the 318' elevation down the pipe chase on West wall labeled EOP SLC Pipe Chase, Down the pipe chase on 303' elevation labeled EOP SLC Pipe Chase, Down the pipe chase on the 280' elevation labeled EOP SLC Pipe Chase, Down the HPCI hatch on the 252' elevation to the CRD pumps.

Standard: The operator locates the hoses to be used in the SLC Hallway.

The operator routes the hose from the SLC Tanks, down the EOP SLC pipe chase on RB 318' elevation west, down through the EOP pipe chase on RB 303' and 280' elevations, and down through the equipment hatch on the 252' elevation to the CRD Pumps.

Interim Cue:

As each step of hose routing is simulated, Examiner inform Operator that hose has been routed and connected.

<u>valuation</u>	<u>Performance Steps</u>
SAT/NTNSAT	<p>*Step 4: (Step 2/2.a) At the SLC tank: CLOSE/confirm CLOSED SLC-23 Standby Liquid Control Tank Drain.</p> <p>Standard: The operator verifies that SLC-23 closed by rotating the valve operating handle in the clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the valve operating does not move.
SAT/NTNSAT	<p>*Step 5: (Step 2.b) Remove Pipe Cap from the 1 ½ inch tank drain.</p> <p>Standard: The operator removes the pipe cap from the 1 1/2-inch tank drain.</p>
Interim Cue:	After the simulated action, Examiner inform Operator that the pipe cap is OFF.
SAT/UNSAT	<p>*Step 6: (Step 2.c) Connect hose adaptor to the tank drain.</p> <p>Standard: The operator connects a hose adaptor to the drain tank.</p>
Interim Cue:	After the simulated action, Examiner inform Operator that the hose adaptor is installed.
SAT/UNSAT	<p>*Step 7: (Step 2.d) Connect Hose</p> <p>Standard: The operator connects the CRD Pump suction hose to the SLC Tank drain line.</p>
Interim Cue:	After the simulated action, Examiner inform Operator that the hose is connected.
SAT/UNSAT	<p>Step 8: (Step 2.e) Place the SLC tank heater control switch to ON(located on side of large junction box, Rack 25-19, Rx Bldg. elevation 318').</p> <p>Standard: The operator rotates the SLC tank heater control switch to the ON position.</p>
Interim Cue:	After the simulated action, Examiner inform Operator that the switch is in the ON position, and the heaters are energized.

Evaluation

Performance Steps

SAT/UNSAT

Step 9: (Steps 3/3.a) In the CRD pump room: CLOSE/confirm CLOSED the following valves:

DW-65 CST Header Demin Water Isol

DW-66 CST Header Demin Water Isol

Standard: The operator checks DW-65 Closed by rotating the handwheel in the clockwise direction.

Interim Cue: After the simulated action, Examiner inform the operator that the handwheel does not move.

Standard: The operator checks DW-66 Closed by rotating the handwheel in the clockwise direction.

Interim Cue: After the simulated action, Examiner inform the operator that the handwheel does not move.

SAT/UNSAT

***Step 10: (Step 3.b) Remove top flange from check valve DW-67 (located between DW-66 and DW-65) and replace with mechanical bypass flange with hose connection.**

Standard: The operator removes the top flange from check valve DW-67, and attaches the hose connection flange.

Interim Cue: After the simulated action, Examiner inform the operator that the flange is removed. and the hose connection flange is installed.

SAT/UNSAT

***Step 11: (Step 3.c) Connect hose to bypass flange**

Standard: The operator connects the SLC suction hose to the mechanical bypass flange.

Interim Cue: After the simulated action, Examiner inform the operator that the SLC suction hose is connected to the mechanical bypass flange.

<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p>*Step 12: (Step 3.d) Request the Control Room to secure both CRD pumps, and verify neither are running to continuing with this procedure.</p> <p>Standard: The operator contacts the Control Room and requests both CRD Pumps be secured.</p>
Interim Cue:	When requested, Examiner inform Operator that both CRD Pumps are secured.
	Standard: The operator enters the CRD Pump Room and determines that both pumps are secured.
Interim Cue:	After action, Examiner inform Operator neither CRD Pump is running.
SAT/UNSAT	<p>*Step 13: (Step 3.e) CLOSE CST-63C, CRD Sys CST Suction Isol.</p> <p>Standard: The operator closes CST-63C by rotating handwheel in the clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the handwheel rotated clockwise, and has now stopped.
SAT/UNSAT	<p>*Step 14: (Step 3.f) OPEN DW-66, CST Header Demin Water Isol.</p> <p>Standard: The operator opens DW-66 by rotating handwheel in the counter-clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the handwheel rotated counter-clockwise, and has now stopped.
SAT/UNSAT	<p>*Step 15: (Step 3.g) OPEN CRD-158A (B), CRD Pump A (B) Suction Filter Bypass.</p> <p>Standard: The operator opens DW-158B by rotating handwheel in the counter-clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the handwheel rotated counter-clockwise, and has now stopped.

<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<p>*Step 16: <u>(Step 3.h) CLOSE CRD-35A (B), CRD Pump A (B) Suction Filter Inlet.</u></p> <p>Standard: The operator closes CRD-35B by rotating handwheel in the clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the handwheel rotated clockwise, and has now stopped.
SATAJNSAT	<p>*Step 17: <u>(Step 3.i) CLOSE CRD-37A (B), CRD Pump A (B) Main Flow Stop Check, to maximize CRD flow to the reactor vessel.</u></p> <p>Standard: The operator closes CRD-37B by rotating handwheel in the clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the handwheel rotated clockwise, and has now stopped.
SAT/UNSAT	<p>*Step 18: <u>(Step 3.i) CLOSE/confirm CLOSED CRD-34A (B), CRD Pump A (B) min flow stop check, to maximize CRD flow to reactor vessel.</u></p> <p>Standard: The operator closes CRD-34B by rotating handwheel in the clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the handwheel rotated clockwise, and has now stopped.
SAT/UNSAT	<p>*Step 19: <u>(Step 4) At the SLC tank, OPEN SLC-23, Standby Liquid Control Tank Drain.</u></p> <p>Standard: The operator opens SLC-23 by rotating the valve operating handle in the counter-clockwise direction.</p>
Interim Cue:	After the simulated action, Examiner inform the operator that the valve operating handle rotated counter-clockwise, and has now stopped.

Evaluation

Performance Steps

SAT/UNSAT

***Step 20:** (Steps **5/5.a-b**) In the CRD pump room, ensure hose is filled by **performing the following: OPEN CRD-151A(B) CRD Pump Suction Strainer Drain, to vent any entrapped air within the hose connected to the SLC tank, and CLOSE CRD-151A(B) when venting is complete.**

Standard: The operator opens CRD-151B by rotating the handwheel in the counterclockwise direction.

Interim Cue: After the simulated action, Examiner inform the operator that the handwheel is rotated counter-clockwise, and the effluent is an air/water mixture.

Then, Examiner inform Operator that effluent is water only.

The operator closes CRD-151B by rotating the handwheel in the clockwise direction.

Interim Cue: After the simulated action, Examiner inform the operator that the handwheel rotated clockwise, and has now stopped.

SAT/UNSAT

***Step 21:** (Steps **6/6.a**) At the CRD Flow Control Station: **OPEN CRD-40, CRD Pump Test Bypass Line.**

Standard: The operator opens CRD-40 by rotating the valve operating handle in the counterclockwise direction.

Interim Cue: After the simulated action, Examiner inform the operator that the valve operating handle rotated counter-clockwise, and has now stopped.

SAT/UNSAT

***Step 22:** (Step **6.b**) **OPEN CRD-40A, CRD Pump Test Bypass Line.**

Standard: The operator opens CRD-40A by rotating the valve operating handle in the counterclockwise direction.

Interim Cue: After the simulated action, Examiner inform the operator that the valve operating handle rotated counter-clockwise, and has now stopped.

Evaluation

Performance Steps

SAT/UNSAT

***Step 23: (Step 6.c) CLOSE CRD-42A (B), Drive Water Filter F-16-1A (B) Inlet.**

Standard: The operator closes CRD-42A or CRD-42B (Whichever is OPEN) by rotating the valve operating handle in the clockwise direction.

Interim Cue:

After the simulated action, Examiner inform the operator that the valve operating handle rotated clockwise, and has now stopped.

SAT/UNSAT

***Step 24: (Step 6.d) CLOSE CRD-94 Flow Control Station Disch to Rx Valve sel.**

Standard: The operator closes CRD-94 by rotating the handwheel in the clockwise direction.

Interim Cue:

After the simulated action, Examiner inform the operator that the handwheel rotated clockwise, and has now stopped.

SAT/UNSAT

Step 25: (Step 7) Confirm either: RWCU System is isolated or RWCU demins are isolated.

Standard: The operator contacts the Control Room and confirms that the RWCU System or the Demins are isolated.

Interim Cue:

Examiner report as the ACRO that the RCWU System is isolated.

SAT/UNSAT

Step 26: (Step 8/8.a) At CRP 9-5: START the CRD pump(s) and verify flow by observing decreasing SLC tank level.

Standard: The operator contacts the Control Room and reports that the CRD System for boron injection from the SLC Tank has been aligned to CRD Pump B in accordance with OE 3107, Appendix K; and that CRD Pump B can now be started.

TIME FINISH: _____

Terminating Cue:

This JPM is complete.

Evaluators Comments:

System: 295037 **K/A's:** EA1.10 (3.7/3.9)

EXAMINEE HANDOUT

Initial Conditions:

- An ATWS has occurred.
- The EOPs have been entered.
- The SLC Tank is available.
- CRD Pump B is in service and CRD Pump A is in Standby.

Initiating Cues:

The CRS directs you to line up the CRD System for boron injection from the SLC Tank in accordance with OE 3107, Appendix K, to CRD Pump B. Inform the Control Room when the CRD Pumps can be started.

NOTE: All actions must be simulated. At NO time shall any plant equipment be operated.

VERMONT YANKEE
JOB PERFORMANCE MEASURE
WORKSHEET
NRC EXAM 2009

Task Identification:

Title: Line-up for Alternate Vessel Injection Using SLC Test Tank
Failure Mode: N/A
Reference: OE 3107, OE Appendices, Appendix O (Rev. 25)
Task Number: 2000310501

Task Performance: AO/RO/SRO X RO/SRO SRO Only

Sequence Critical: Yes No X

Time Critical: Yes No X

Operator Performing Task:

Examiner:

Date of Evaluation:

Activity Code:

Method of Testing: Simulation X Performance Discuss

Setting: Classroom Simulator Plant X

Performance Expected Completion Time: 10 minutes

Evaluation Results:

Performance: PASS FAIL Time Required:

Prepared by: W. H. Schulte / J. N. Schulte 1-27-09
Operations Training Instructor Date

Reviewed by: J. R. Paradis / J. R. Paradis 1-27-09
SRO Licensed/Certified Reviewer Date

Approved by: J. Paradis / J. R. Paradis 1-27-09
Operations Training Superintendent Date

Directions:

Discuss the information given on this page with the operator being evaluated. Allow time for him to ask questions before beginning performance of the task. As each performance step is performed, evaluate the performance of that step by circling either "Sat" or "Unsat". Comments are required for any "Unsat" classification. If a step is preceded by an asterisk (*), it is a critical step. If a critical step is skipped or performed unsatisfactorily, then the operator has failed the Job Performance Measure

After providing the initiating cue, ask the operator "Do you understand the task?"

Read to the person being evaluated

Before starting, I will explain the initial conditions, provide the initiating cues and answer any questions you have.

This JPM will be performed in the **Plant** and you are to **simulate** all actions.

You are requested to **"talk through"** the procedure, stating the parameters you are verifying or checking and the steps you are performing.

Inform me upon completion of this task.

Initial Conditions:

Actions are being carried out IAW EOP-1 and reactor water level cannot be maintained above 127".

Initiating Cues:

The CRS directs you to line-up for alternate vessel injection using the SLC Test Tank per OE 3107 Appendix O.

Task Standards:

The SLC Test Tank is lined-up for injection per OE 3107 Appendix O, steps 1-6.

Required Materials:

Handout 1 - OE 3107 OE Appendices, Appendix O, (Rev 25)

Provide Candidate with Initial Conditions/Cue (Last Page of this JPM).

Evaluation

Performance Steps

TIME START: _____

SATNNSAT

Step 1: Obtain Procedure.

Standard: The operator obtains OE 3107, Appendix O, Rev 25.

Proceeds to Procedure Step 1.

Interim Cue:

When it is apparent that the operator is seeking to find OE 3107, Appendix O, Examiner provides copy (**Handout 1**).

SATNNSAT

Step 2: (Step 1) Station an Operator at the SLC Skid

Standard: The operator goes to SLC skid, Reactor Building 318'.

SAT/UNSAT

***Step 3: (Step 2) Fill the SLC test tank using demineralized water by OPENING:**

- **DW-41 SLC Sys Demin Water Supply Isol**
- **SLC-29 SLC Test Tank Demin Water Isol**

Standard: The operator observes tank level on SLC test tank sightglass.

Interim Cue:

Examiner point to a sightglass level below the Red Minimum Required Level, and indicate that the level is at that point.

The operator rotates the DW-41 handwheel in the counter-clockwise direction.

Interim Cue:

Examiner inform operator that the DW-41 valve handwheel rotates freely counter clockwise and the valve stem rises until resistance is felt and stops moving.

The operator rotates the SLC-29 handwheel in the counter-clockwise direction.

Interim Cue:

Examiner inform operator that the SLC-29 valve handwheel rotates freely counter clockwise and the valve stem rises until resistance is felt and stops moving.

Examiner point to a sightglass level near the top, and indicate that the level is at that point.

Evaluation

Performance Steps

SAT/UNSAT

Step 4: **(Step 3) WHEN filling is complete, THEN CLOSE:**

- **DW-41 SLC Sys Demin Water Supply Isol**
- **SLC-29 SLC Test Tank Demin Water Isol**

Standard: The operator rotates the DW-41 handwheel in the clockwise direction.

Interim Cue:

Examiner inform operator that the DW-41 valve handwheel rotates freely clockwise and the valve stem lowers until resistance is felt and stops moving.

The operator rotates the SLC-29 handwheel in the clockwise direction.

Interim Cue:

Examiner inform operator that the SLC-29 valve handwheel rotates freely clockwise and the valve stem lowers until resistance is felt and stops moving.

SAT/UNSAT

Step 5: **(NOTE prior to Step 4) The test tank will require constant demineralized water make-up to ensure a suction volume for the operating SLC pump.**

Standard: The operator reads the Note, and proceeds to Step 4.

SAT/UNSAT

***Step 6:** **(Step 4) Unlock and CLOSE SLC-11 Standby Liquid Control Tank Outlet.**

Standard: The operator removes the lock from SLC-11.

The operator rotates the SLC-11 handwheel in the clockwise direction.

Interim Cue:

Examiner inform operator that the SLC-11 valve handwheel rotates freely clockwise and the valve stem lowers until resistance is felt and stops moving.

SAT/UNSAT

***Step 7:** **(Step 5) Unlock and OPEN SLC-41 SLC Test Tank Outlet Isol.**

Standard: The operator removes the lock from SLC-41.

The operator rotates the SLC-41 handwheel in the counter-clockwise direction.

Interim Cue:

Examiner inform operator that the SLC-41 valve handwheel rotates freely counter-clockwise and the valve stem rises until resistance is felt and stops moving.

<u>Evaluation</u>	<u>Performance Steps</u>
SAT/UNSAT	<u>Step 8: (Step 6) Notify the control room that the SLC Test Tank is now lined up for injection.</u>

Standard: The operator calls the control room on the Gaitronics and informs them that the SLC test tank is lined up for injection.

Interim Cue: Examiner, as the Control Room operator, acknowledge the report. Inform applicant that the Control Room Operator has started an SLC Pump and that a squib valve has fired.

NOTE: Applicant should observe Test Tank Level and when they do, indicate that tank level is three (3) inches below the red minimum tank level line.

SATKJNSAT	<u>*Step 9: (Step 11) Operator opens DW-41 and throttles open SLC-29 to maintain tank full.</u>
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Standard: The operator opens valves DW-41 and SLC-29 to maintain Test Tank Level.

Interim Cue: Examiner, when the applicant states that they will adjust the valve to maintain tank level, inform them that tank level is steady.

* Critical Step

TIME FINISH: _____

Terminating Cue: This JPM is complete.

Evaluators Comments: _____

System: 295031 KA: EA1.08 (3.8/3.9)

JPM-P3

EXAMINEE HANDOUT

Initial Conditions:

Actions are being carried out IAW EOP-1 and reactor water level cannot be maintained above 127' .

Initiating Cues:

The CRS directs you to line-up for alternate vessel injection using the SLC Test Tank per OE 3107 Appendix O.

NOTE: All actions must be simulated. At NO time shall any plant equipment be operated.

SIMULATOR EVALUATION GUIDE

Evaluators:

Senior Management Observer

Crew: _____

SM _____
SRO _____
RO _____
BOP _____
STA _____

Critical Task Performance:

SAT **UNSAT**
(Circle One)

Lead Evaluator:

Signature

Date Administered:

Activity Code:

Prepared by: W.H. Schulze/M.N. Schulte Date: 1-27-09

Reviewed by: J.R. Paradis/J.R. Paradis Date: 1-27-09

Approved by: J.R. Paradis/J.R. Paradis Date: 2-7-09

CREW BRIEF:

-Power level: 100%

-Rod Sequence: Rapid Shutdown Sequence Latched (EOC) **-Rod Group:** 22

-Equipment out of service and/or tagged or abnormalities:

1. RHR Pump B **OOS**, tagged out for Maintenance investigation yesterday at 1600.

-Reason For Equipment out of Service or tagged:

1. RHR Pump B OOS for severe vibrations during surveillance testing.

-Applicable Tech Spec LCOs:

1. Seven (7) day LCO, TS 3.5.A.3
2. Seven (7) day LCO, TS 3.10.B.1

EOOS Color:

Green **3.10** E-6

-Plant evolutions in progress/Scheduled Shift Evolutions:

1. DG A operating for 30 minutes for Monthly Diesel Generator Slow Start Operability Test (Tech Spec) per OP 4126, Sect B.

SCENARIO SUMMARY:

TERMINATING CONDITION(S):

1. Once all control rods are inserted and EOP-2 is exited to EOP-1, the scenario may be terminated at the discretion of the Lead Evaluator.

REFERENCES:

1. OP 2140, Main Generator
2. ARS CRP 9-7 Alarm Response Sheets (F-2)
3. ARS CRP 9-8 Alarm Response Sheets (F-2)
4. OP 2126, Diesel Generators
5. OP 4126, Diesel Generators Surveillance Testing
6. OP 0105, Reactor Operations
7. OT 3110, Positive Reactivity Insertion
8. OP 2110, Reactor Recirculation System
9. AP 0156, Notification of Significant Events
10. ON 2143 480 VAC
11. ON 3174, Loss of Instrument AC
12. OT 3122, Loss of Normal Power
13. OT 3100, Reactor Scram
14. EOP-1
15. EOP-2
16. EOP-3
17. OE 3107
18. Technical Specifications

SIMULATOR OPERATOR INSTRUCTIONS

Simulator Set Up: 100% Power

1. IC-805
2. CRD Pump B in service
3. Adjust Kvars to slightly negative
4. Place HU barrier on Main Voltage Regulator Auto Adjust

Discretionary Distracter Malfunctions/RFs/IOs:

1. rfNM_71-76 All APRM Gain adjusts made to get APRM GAFs in spec (modeled to the plant at 100%): 71 (1.385), 72 (1.448), 73 (1.378), 74 (1.383), 75 (1.287), 76 (1.375)

No.	MF/RF/IO #	Severity	Ramp	REM #	Act. Time	Description
1.	mfPC_1SB06B			Pre-insert		Failure of AC-6B to close on a Group 3 isol (SB-06B Closure Failure)
2.	AETAC-6B			Pre-insert		Event Trigger for deleting AC-6B Closure Failure
3.	mfRD_12A	20%		Pre-insert		Partial Scram 'A'
4.	mfRD_12B	20%		Pre-insert		Partial Scram 'B'
5.	mfSL_02A			Pre-insert		SLC Squib Valve 'A' fails to fire
6.	rfRH_12	Open		Pre-insert		RHR B ACB
7.	mfTU_03A	~60%	300	1		Turbine Vibration
8.	mfAN08G5	2 (Spurious)		2		DG Annunciator 8-G-5
9.	mfRR_11B	100%	600	3		Recirc loop "B" controller failure
10.	mfED_05Da			4		Loss of 480V MCC-9A
11.	mfED_05Cb			5		Trip MCC-8B Supply Bkr
11.	mfRP_02A			6		Loss of RPS MG Set A

SIMULATOR OPERATOR INSTRUCTIONS (Continued)

Additional Instructions:

1. RHR Pump B is in PTL and Danger Tagged
2. Begin the ramp up in turbine vibration after the crew has raised Generator output voltage and maximized the VAR load. The turbine high vibration alarm (Annunciator 7-F-2) should be received immediately after the voltage and VAR is increased. The increase in turbine vibration should stop at -7.5 mils, and will NOT cause a turbine trip.
3. When the crew starts power reduction, modify mFTU_03A to -28 to ramp turbine vibration back (over a two minute ramp) to the pre-transient level, then delete the malfunction.
4. The Recirc controller failure will be investigated, with no cause being found for the duration of the scenario.
5. If directed to adjust Alterex Cooling, respond as directed.
6. Transfer APRMs back to RPS B via rfRP_11.

OPERATOR ACTIONS EVENT NUMBER 1

Crew Task Description:

Place Main Generator in the Heavy Load Schedule with Maximum VARs IAW OP 2140, Sect. h.

1.	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
2.	RO	Adjusts voltage to the Heavy Load Schedule with Maximum VARs IAW OP 2140, Sect. H. Informs SRO/SRO				
3.	SRO	Directs Crew to go to the Heavy Load Schedule with Maximum VARs IAW OP 2140, Sect. H.				
4.	SRO	Briefs crew				
5.	BOP	Obtains and reviews procedure OP 2140 Section H and checks prereqs.				
ROLE PLAY: When/If notified of the VY Generator status respond as VELCO acknowledging the communication.						
6.	BOP	Determines Main Generator parameters <ul style="list-style-type: none"> Generator MWe from ERFIS point G002, or on panel 9-7, EI 9-7-7. Circle instrument used. 345 KV System Voltage Generator VARS from ERFIS point G009, or on panel 9-7 EI 9-7-6. Circle instrument used. 				NOTE: SRO may designate RO and BOP to coordinate the voltage adjustments between the Main Generator and the DG.

- NOTES:**
- 1) **S** = Satisfactory; **U** - Unsatisfactory; **N/O** = Not Observed
All Unsatisfactory ratings require comments; a comment sheet is attached.
 - 2) * = Critical Task/Step

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
7.	BOP	On panel 9-7, raise main generator VARS using VOLTAGE ADJUST AC until system voltage reaches 358 K V and the maximum MVARs lagging (out) allowed per the generator 45 pound capability curve of OP 2140, Figure 1, for the gross MWe output is achieved				NOTE: The crew may receive the Alterex temperature alarm. If so, respond as directed.
8.	SRO	Monitors Crew and plant performance. May direct BOP to monitor the output of the A DG per OP 4126				
9.	BOP	Monitor the output of DG A per OP 4126 and adjust as necessary				

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OPERATOR ACTIONS EVENT NUMBER 2

Crew Task Description:

High Main Turbine Vibration Requires Power Reduction IAW OP 0105

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize/Announce Annunciator 7-F-2 (Turbine Excessive Vibration)				NOTE: It takes about 2 minutes for the vibration alarm to occur following initiating the malfunction.
2.	SRO	<p>Determines turbine bearings vibrations on ERFIS.</p> <p>Direct power reduction IAW OP-0105 if vibrations approach 10 mils.</p> <p>May direct reducing VARs back to the normal VAR load.</p> <p>Notifies or directs notifying ISO New England and VELCO.</p> <p>Notifies Maintenance.</p>				
3.	BOP	If not already performed, Notify VELCO and ISO-NE that raising VY voltage and VARS will be terminated due to high turbine vibration.				
4.	RO	<p>Reduce load as directed using Recirc flow.</p> <p>May shift to coarse control to quickly lower recirc flow</p>				

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 - 2) * = Critical Task/Step

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
5.	BOP	Monitors Turbine Vibration and other plant parameters and reports to crew Responds to Annunciators 9-4 B-3 and F-3 and sends an AO up to adjust Recirculation MG Set oil temperatures.				
ROLE PLAY: As AO respond as directed. In the booth rfSW_58 adjusts Recirc MG Set oil temps. Responds as directed if asked to walk down the turbine/generator						
EVALUATOR'S CUE: OP 0105 allows power reduction at 10% per minute						
6.	SRO	When Turbine vibrations lower directs stop lowering power				
EVALUATOR'S NOTE: May receive alarm 5-E-6 "FW Control System trouble". Due to mismatch of level and setpoint during power reduction. The alarm is expected and will clear.						
7.	RO	Stops lowering power and determines position on the P/F Operating Map				
EVALUATORS CUE: Go to next event at the Examiners discretion.						

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OPERATOR ACTIONS EVENT NUMBER 3

Crew Task Description:

DG A High Jacket water temperature requires removing DG from service

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
BOOTH ROLE PLAY: Report as AO that an unisolable leak is occurring on DG A jacket water and local temperature is 186 degrees and rising slowly.						
1.	CREW	Responds to report from field operator that there is a Jacket Water Leak on the A DG				
2.	SRO	Direct the following <ul style="list-style-type: none"> Dispatch Maintenance to investigate Enters OP 2126 – Diesel Generators When DG inoperability is determined, consult TS and enter an additional 7-day LCO (TS 3.10.B.1) 				

- NOTES:**
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All Unsatisfactory ratings require comments; a comment sheet is attached.
 - 2) * = Critical Task/Step

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
3.	CREW	Responds to Annunciator 8-G-5, DG-A JKT CLG TEMP HI/LO				
4.	SRO	Refers to alarm response and directs unloading DG				
5.	BOP	Reduce load using the DIESEL GEN SPEED GOVERNOR control switch Using the DIESEL GEN SPEED GOVERNOR control switch, unload unit to < 200 KW. Open BKR NO. DG-A, diesel generator output breaker. May Run unloaded for approximately 1 minute. May Reset the SPEED DROOP to "Zero". May make plant announcement that the A DG is being shutdown Take the DIESEL GEN STOP-START switch to STOP Contact VELCO and inform them that the DG is no longer paralleled to the grid and that normal VY capacitor bank operation may be resumed.				
ROLE PLAY: Respond as VELCO and acknowledge report.						
6.	SRO	Provide a crew brief				

- NOTES:**
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All Unsatisfactory ratings require comments; a comment sheet is attached.
 - 2) • = Critical Task/Step

OPERATOR ACTIONS EVENT NUMBER 4

Crew Task Description:

Respond to positive reactivity addition caused by failure of the "B" Recirc loop controller

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize Power/Recirc flow increasing Identify the Loop "B" controller ramping upward; inform SRO Notify SRO				OT 3110 Immediate Actions
2.	SRO	Enter/direct actions IAW OT 3110 <ul style="list-style-type: none"> Transfer the loop "B" controller to individual manual control Attempt to lower Recirc flow at < 10% RTP/min to reduce power to pre-transient level 				
3.	RO	<ul style="list-style-type: none"> Transfer the loop "B" controller to individual manual control 				
		<ul style="list-style-type: none"> Lower Recirc flow at < 10% RTP/min to reduce power to pre-transient level 				
4.	RO	Verifies position on P/F Operating Map MAY determine that MELLLA has been exceeded and have to insert Rapid Shutdown Sequence rods.				

- NOTES:**
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All Unsatisfactory ratings require comments; a comment sheet is attached.
 - 2) * = Critical Task/Step

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
5.	BOP	Responds to or anticipates Annunciators 9-4 B-3 and F-3 and sends an AO up to adjust Recirculation MG Set oil temperatures.				
ROLE PLAY: As AO respond as directed. In the booth rfSW_58 adjusts Recirc MG Set oil temps.						
6.	SRO	Notifies Workweek Manager/Maintenance/I&C Notifies RE				
7.	RO	Determines current control rod positions Determines next control rod to be inserted Inserts control rods IAW Rapid Shutdown Sequence Monitors P/F Map Secures from inserting control rods when directed or within MELLA limits Notifies SRO/Crew				
8.	SRO	Conducts Crew Brief				
Booth Operator: When directed, move to Event 5						

- NOTES:
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OPERATOR ACTIONS EVENT NUMBER 5

Crew Task Description:

Loss of 480 Volt Bus 9A, Failure of Group 3 Isolation Valve.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Acknowledge and Recognize: Annunciator 8-P-2, BATT CHRG FAIL/DC-2 GRD Annunciator 5-E-2, FW VLV LOCKUP SIGNAL/AIR FAIL Half Scram Notify SRO/Crew of a loss of 480 volt MCC-9A. Diagnose loss of Instrument A.C. (will auto shift to alternate but may be restored)				
2.	RO	Inform SRO of half scram. Report power, pressure, level				
3.	BOP	Recognize/respond to a Group 3 isolation and bus loss. Board walkdown to recognize equipment affected <ul style="list-style-type: none"> • Loss of RWCU • Diagnose loss of SGT Fan A • Diagnose failure of AC-6B to close 				

- NOTES:**
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All Unsatisfactory ratings require comments; a comment sheet is attached.
 - 2) * = Critical Task/Step

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
4.	SRO	Direct the following actions: <ul style="list-style-type: none"> • Close AC-6B • Backup Group III isolation • May direct crew to enter OP 2143, 480 VAC Buses to diagnose the loss of power • Direct call to chemistry for sampling per T.S. 4.6.B.3.b • Direct crew to initiate an investigation into bus loss. • Direct restoring the B FRV to auto IAW ARS for 5-E-2 • May direct restoring RPS power by shifting to the Alternate Supply MCC-8B per OT 3122, Step 10 or may use OP 2143 (not a priority) • May direct resetting the ½ scram. • Enters ON 3174, Loss of Instrument AC 				

- NOTES:**
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All Unsatisfactory ratings require comments; a comment sheet is attached.
 - 2) * = Critical Task/Step

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
5.	RO	<ul style="list-style-type: none"> Restore FRV B to auto IAW ARS for 5-E-2 by resetting the lockup as follows. <p>(Guidance is also contained in ON 3174, step B.3)</p> <p>Verify FRVB.P and FRVB.V indicate the same value</p> <p>FRVB.P and FRVB.V do not indicate the same value, then adjust FRVB.P using the adjustment knob</p> <p>RESET FRV.B by depressing the lockup pushbutton</p> <ul style="list-style-type: none"> Restore RPS power by shifting to the Alternate Supply MCC 8B IAW OT 3122, Step 10 or may use OP 2143 (not a priority) Reset the scram Notify the crew 				
6.	BOP	<p>When directed, backup Group 3 isolation</p> <ul style="list-style-type: none"> Close AC-6B Inform SRO 				
EVALUATOR'S NOTE: If requested to investigate MCC 9A state that the bus tripped because of an apparent fault but that nothing specific is evident and request that the bus is not re-energized while you continue looking.						

- NOTES:**
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 - 2) * = Critical Task/Step

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
7.	SRO	Consult Tech Specs and identify 7 day LCO - 3.7.B.3 (Group III) 7 day LCO - 3.7.3 b (SGT Fan A) 24 hour LCO for 3.6.C.2 (CAMs) until group 2 is reset Notifies Workweek Manager/Maintenance/I&C May Notify RE				
	BOP	Isolates RWCU (The system may be re-started).				
Booth Operator: ½ Scram must be reset before moving on the event 6. When directed, move to event 6						

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OPERATOR ACTIONS EVENT NUMBER 6

Crew Task Description:

Respond to a loss of 480 Volt MCC-8B

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	BOP	Recognize and inform the SRO that 480V MCC-8B has tripped. Diagnose loss of Alternate RPS Supply and ½ scram on RPS Bus B.				NOTE: ½ scram only if RPS B was swapped to alternate power supply
2.	SRO	May direct crew to enter OP 2143, 480 VAC Buses, to diagnose the loss of power				
3.	BOP	Diagnose loss of SLC Pump B May Respond to Seismic Monitor alarm Diagnose Loss of RRUs 1A & 1B Loss of power to RCIC RHR and Core Spray Valves V13-15, V10-66 V10-31B V10-65B V10-89B V14-11B V10-183 V10-38B V10-39B V14-12B V14-5B V10-16B V14-7B V10-34B V14-26B V10-15B V10-15D V10-13B V10-13D V10-18 V10-26B				

- NOTES:**
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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
		CRD Cooling Water Valve PCV-22				
	SRO	<p>Direct crew member and maintenance to investigate reason for loss of 480V MCC-8B.</p> <p>Direct starting additional RRUs to control DW Pressure.</p> <p>Determine that the Vital AC is running on the Batteries and that alternate power is NOT available.</p>				
EVALUATOR'S NOTE: If requested to investigate MCC-8B state that the bus tripped because of an apparent fault but that nothing specific is evident and request that the bus is not re-energized for at least another hour while you continue looking.						
5.	BOP	Starts monitors DW Pressure and starts additional RRUs				
6.	SRO	<p>May start to enter TS for the inoperable RPS Power Supplies, ECCS Valves and B SLC</p> <p>Combined with the loss of the A DG earlier and the ECCS systems the plant is in a 24 hours LCO. Per TS 3.5 ECCS and 3.10 DGs.</p> <p>However the Vital Bus running on the Battery may require a shutdown earlier.</p> <p>May direct preparations to for a normal shutdown per OP 0105</p> <p>May provide a crew brief on conditions</p>				<p>NOTE: Sufficient TS should have been observed at this time.</p>
EXAMINERS CUE: When SRO enters T.S., go to Event 7.						

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OPERATOR ACTIONS EVENT NUMBER 7 and 8

Crew Task Description:

Loss of RPS MG Set A, ATWS (45%/55%) and failure of A SLC Squib Valve.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize failure to scram and MSIV closure Diagnose SRV lifting				
2.	RO	Report Partial Rod Insertion. place Mode Switch in SHUTDOWN Initiate ARI				
3.	SRO	Direct RO to maintain level from 127" - 177".				
4.	RO/BO P	Maintain reactor level as directed. <ul style="list-style-type: none">• Determine HPCI not required for level control• HPCI tripped and inhibited				
5.	SRO	Direct RO/BOP to maintain reactor pressure 800 - 1000 psig using SRVs.				
6.	RO / BOP	Maintain reactor pressure as directed.				
7.	SRO	Direct crew to monitor the plant cooldown.				
8.	BOP	When directed, monitor cooldown.				

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 - 2) * = Critical Task/Step

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
9.	SRO	When informed of the failure to scram enter and direct crew actions IAW EOP-1 and EOP-2				
10.	SRO	When directed, verify EOP-1 Table A automatic actions				
11.	CREW	Recognize/respond to high Drywell temperature and pressure, entry into EOP-3; inform SRO				
12.	SRO	Enter/direct actions per EOP-3 • Restart Drywell RRUs.				
13.	BOP	When directed: • Restart Drywell RRUs.				
14.	*CREW EOP-2 CT-1	With a reactor scram required and the reactor not shutdown, INHIBIT ADS to prevent an uncontrolled RPV depressurization to prevent causing a significant power excursion. Standard: Inhibit ADS prior to automatic initiation.				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
15.	SRO	Direct per EOP-2: <ul style="list-style-type: none"> Inhibit ADS 				
EVALUATOR'S NOTE: This step is an Immediate Action, and may be performed without direction.						
		<ul style="list-style-type: none"> Verify ARI/RPT initiated Insert control rods with one or more appropriate appendices May direct AO to manually operate CRD-v-22 				
EVALUATOR'S NOTE: Implement appendix F, BB or H of OE 3107.						
		<ul style="list-style-type: none"> Stabilize pressure RPV pressure 800-1,000 psig with BPVs. 				
16.	BOP	When directed: <ul style="list-style-type: none"> Inhibit ADS. Stabilize pressure 800-1000 psig with SRVs. 				
17.	SRO	Direct terminate/prevent injection per Appendix GG.				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
18.	*CREW EOP-2 CT-2	During an ATWS with conditions met to perform power/level control TERMINATE AND PREVENT INJECTION into the RPV using appendix GG, until conditions are met to re-establish injection. Standard: Completion of Terminate and prevent injection IAW OE 3107 Appendix GG within 5 minutes of loss of forced circulation.				
19.	SRO	Direct SLC injection with A SLC pump				
20.	*CREW EOP-2 CT-3	With a reactor scram required and the reactor not shutdown, TAKE ACTION TO REDUCE POWER by injecting boron and/or inserting control rods, to prevent exceeding the primary containment design limits. Standard: Actions taken within 10 minutes of the scram failure to implement appropriate appendices and/or inject SLC. Initially SLC will be NOT be available, OE 3107, App I, Alternate SLC injection, firing the squib valves with the local battery.				NOTE: Must use local battery to fire Squib Valve B
EVALUATOR'S NOTE: This step is an Immediate Action, and may be performed without direction. SLC Pump " A will run however its Squib Valve will fail to fire.						
21.	RO	Notify SRO/Crew of failure of the A Squib Valve to fire				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
22.	SRO	Direct sending an AO to the Squib Valve RB 318' level (3 rd floor) and firing the squib using App I of OE 3107, Alternate SLC injection.				NOTE: 1.5 VDC Squib valve firing battery available with an alligator clip on each end. (Located in EOP toolbox, 318' elevation, Reactor Building.)
23.	RO	Direct AO to go the Squib Valves on the RB 318' level (3 rd floor) and fire the squib valves using the battery per App I of OE 3107, Alternate SLC injection Turn SLC switch (keylock) to OFF				
ROLE PLAY: Wait one minute and notify the control room that the squib valves have been fired.						
24.	RO	When notified of successful local firing of a squib valve, start SLC Pump B.				
25.	RO	Insert control rods using directed appendices.				
BOOTH NOTE: Ensure the examiners have seen Terminate & Prevent then level restoration before rod insertion is available						
26.	BOP	When directed, terminate/prevent injection per Appendix GG.				
EVALUATOR NOTE: Torus temperature will reach 110 degrees before power drops to < 2%. This along with an SRV open and level > TAF will satisfy override to terminate and prevent / enter -19" to 9 0 level control leg.						
27.	RO	Recognize when power drops below 2 %; inform SRO				
28.	SRO	Direct RPV level maintained between -19 and 90 inches				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
29.	RO	Maintain RPV level between -19 and 90 inches				
30.	*CREW EOP-2 CT-3	<p>With a reactor scram required and the reactor not shutdown, TAKE ACTION TO REDUCE POWER by inserting control rods, to prevent exceeding the primary containment design limits.</p> <p>Standard:</p> <p>Actions taken within 10 minutes of the scram</p> <p>Recognize all rods inserted; inform SRO</p>				
31.	SRO	<p>When all control rods inserted, exit EOP-2 and enter/direct actions IAW EOP-1:</p> <ul style="list-style-type: none"> • Verify Table A automatic actions • Restore / maintain RPV level 127-177 inches. <p>Commence cooldown at less than 100 degrees F per hour.</p>				
32.	BOP	When directed, commence cooldown at less than 100 degrees F per hour.				
33.	SRO	When all rods inserted, exit EOP-2, enter EOP-1, and direct RPV level restored and maintained 127-177 inches.				
Scenario may be terminated, once EOP-2 has been exited at the discretion of the Lead Evaluator.						

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OPERATOR ACTIONS

ADDITIONAL COMMENTS:

[illegible]

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SIMULATOR EVALUATION GUIDE

Evaluators:

Senior Management Observer

Crew: _____

SM

SRO

RO

BOP

STA

Critical Task Performance:

SAT

UNSAT

(Circle One)

Lead Evaluator:

Signature

Date Administered:

Activity Code:

Prepared by: W.H. Schulte / M.N. Schulte

Date: 1-27-09

Reviewed by: J.R. Paradis / J.R. Paradis

Date: 1-27-09

Approved by: J.R. Paradis / J.R. Paradis

Date: 1-27-09

CREW BRIEF:

-Power level: -1.9%

-Rod Sequence: **Rod Sequence:** A2 **-Rod Group:** 22

-Equipment out of service and/or tagged or abnormalities:

1. "C" RHR Pump OOS, tagged out for Maintenance investigation yesterday at 1600.
2. "A" IRM failed upscale during the startup and is bypassed, I & C investigating.

-Reason For Equipment out of Service or tagged:

1. "C" RHR Pump OOS for severe vibrations during surveillance testing.

-Applicable Tech Spec LCOs:

1. Seven (7) day LCO, TS 3.5.A.3

EOOS Color:

Green 3.12 E-6

-Plant evolutions in progress/Scheduled Shift Evolutions:

1. Withdraw control rods to continue the startup continuing in OP 0105, Phase 2.D, Step 10.
2. Place reactor mode switch in RUN and continue the startup.
3. MSIV Isolation Testing is NOT required
4. Drywell air-purge is in progress purging with RTF-5.
5. Another operator will perform OP 0105, Phase 2.D, Step 10.e to ensure actions to inert the containment and establish Drywell to Torus AP per OP 2115 are initiated.

Plant evolutions in progress/Scheduled Shift Evolutions:

A plant S/U is in progress, OP 0105, Phase 2D, Step 9 is complete. The following is a list of equipment status:

1. Reactor Level Control - one condensate pump, one feed pump, the Aux FRV in Auto.
2. AOG is on-line. The Hogger is secured with the SJAEs in-service.
3. The EPR is controlling pressure.
4. Currently in OP 0105, Phase 2D, Step 10, withdrawing control rods in preparation to shifting to the Mode Switch to RUN.
5. The Drywell is being air-purged with RTF-5 and is ready to be inerted.
6. Another operator will perform OP 0105, Phase 2.D, Step 10.e to ensure actions to inert the containment and establish Drywell to Torus ΔP per OP 2115 are initiated.

SCENARIO SUMMARY:

PROVIDE OP 2124 APP.C to Examiners for description of Torus Spray steps

TERMINATING CONDITION(S):

1. RPV water level under control

REFERENCES:

1. OP 0105, Reactor Operations
2. OT 3110, Positive Reactivity Insertion
3. OP 2131, IRM
4. EN-OP-115, Manual Control of Automatic Systems
5. Technical Specifications
6. **OT** 3110, Positive Reactivity Insertion
7. OE 3107, EOP/SAG Appendices
8. OP 2117, SBGT
9. OT 3122, Loss of Normal Power
10. ON 3150, Loss of S/U Transformers
11. EOP-1
12. EOP-3
13. EOP-5
14. OT 3100, Scram
15. OP 2124, Appendix C

SIMULATOR OPERATOR INSTRUCTIONS

Simulator Set Up: -1.9% Power

1. IC-806
2. Ensure as close to rolling Mode Switch as possible with rods (limit control rod operation before going to run)

Discretionary Distracter Malfunctions/RFs/IOs:

No.	MF/RF/IO #	Severity	Ramp	REM #	Act. Time	Description
1.	ET_CS_Break			Pre-insert		Event Trigger to Support Core Spray Break (Key 4)
2.	mfCS_03B			Pre-insert		CS Inject Vlv12B Fails to Auto Open
3.	mfNM_03A	100%		Pre-insert		IRM A Failure
4.	mfDG_05A mfDG_08B			Pre-insert Pre-insert		DG "A" Fails to Start DG "B" failure to Auto Start
5.	MF_ED18			Pre-insert		BKR 3V4 Switch Failure
6.	mfNM_03C	100%		1		IRM "C" INOP Failure
7.	MfRD_15	100%		2		Failure of CRD Flow Controller
8.	mfHP03 mfHP04	10%	5	3 3		HPCI inadvertently injects HPCI Flow controller failure
9.	mfED_02A mfED_02B			4 4		Loss of Startup Transformers Loss of Startup Transformers
10.	mfRR_01A mfAN03Q3	1% Spurious		5 5		Core Spray line B break in the Drywell between the RPV and testable check valve. Core Spray B D/P Header HI
11.	mfRC_03	0%		6		RCIC flow controller failure
12.	mfRC_05			7		RCIC isolation

SIMULATOR OPERATOR INSTRUCTIONS (Continued)

Additional Instructions:

1. "A" IRM should be bypassed.
2. Ensure the following: one condensate pump, one feed pump, aux FRV in auto, 55% FRVs blocking valves closed and all feed pump discharge valves open.
3. Roll the key-locks in panel 9-41, 9-42 to Bypass to allow the 18-inch containment purge valves open when in run.
4. Fill out a current revision of VYOPF 0105.05
5. Update the Condensate Demineralizer status sheet on the 9-7 Panel to reflect the startup status; two demineralizers in service and three on the hold pumps.
6. **Verify RWM initialized.**
7. After IRM "C" fails and when contacted by the crew acknowledge the request then allow time for Technical Specifications entry and as I & C report that IRM "A" can be returned to service and that you will begin trouble-shooting the "C" IRM.
8. If asked, the cause of the startup transformer loss was due to a direct lightning strike. Maintenance is investigating to determine if any damage was done, they should know within a couple of hours.
9. If no attempts are made to cool/spray the drywell the leak may cause the crew to emergency depressurize to prevent exceeding PSP. This will not affect the outcome of the scenario and this would serve as a substitute critical task to emergency depressurizing on inability to maintain RPV water level >-19".
10. After the "D" RHR Pump trip respond as the AO when called to investigate the pump motor trip. Then after a realistic time report the breaker cubicle appears normal with only and over-current flag showing.
11. If the crew has sent AO/Maintenance to the 'A' DG wait until RPV water level is 6 inches and lowering and then remove the trip and reset the lockout and notify the Control Room that 'A' DG is available (the 100 second timer will prevent immediately starting the DG).
12. After HPCI is secured following the spurious injection use soft panel override to place the HPCI INHIBIT switch into INHIBIT.

OPERATOR ACTIONS EVENT NUMBER 1

Crew Task Description:

Withdraw control rods to continue the startup

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	SRO	Directs performance of OP 0105, PHASE 2D, Step 10 Briefs crew on the startup				
EXAMINERS NOTE: Insert IRM malfunction prior to APRM downscale clearing. Coming into IC, only two rods away from clearing the APRM Downscale Alarms						
2.	RO	Verifies correct rod selected for the sequence. Withdraws control rods IAW the sequence instructions until all APRMs are indicating on-scale. Check that the APRMs are reading above 2% power by shifting the recorder select switches one at a time to APRM and returning them to the IRM positions. Check that all APRM downscale alarms are clear.				
3.	BOP	May obtain and review procedure OP 0105, PHASE 2. Verifies reactor vessel level between 155 and 165 inches. Will serve as verifier for rod selection and movement and IRM range switching.				

- NOTES:**
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OPERATOR ACTIONS EVENT NUMBER 2

Crew Task Description:

IRM "C" Inop Failure, Requires T.S. entry and insertion of manual half scam.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	<p>Recognize/Acknowledge Annunciators:</p> <p>5-D-3, Rod Withdraw Block</p> <p>5-N-1, IRM Ch A Hi-Hi/INOP</p> <p>5-K-1, Auto Scram Ch A</p> <p>5-L-2, Neutron Mon Power Hi</p> <p>Diagnoses IRM " C failed INOP</p> <p>Diagnoses ½ scam</p>				
2.	SRO	<p>Acknowledges report</p> <p>Diagnoses IRM "C" INOP, references OP 2131, Section C.</p> <p>Directs confirmation of IRM "C" INOP.</p> <p>Directs I & C to investigate.</p> <p>Consults Tech Specs – Table 3.1 – Ifor two IRMs Inop.</p> <p>(May enter TRM 3.2.5 which is a 7 day LCO.)</p> <p>Determines the inoperable instrument channels trip system must be placed in the tripped condition within 12 hours.</p> <p>When I & C investigates and determines that IRM " A can be returned to service directs un-bypassing IRM " A then direct bypassing IRM "C".</p>				

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EVALUATOR'S NOTE: If contacted as I & C report that IRM " A can be returned to service and that you will begin trouble-shooting the "C" IRM. If NOT contacted, call the Control Room and notify them that IRM " A can be returned to service.						
3.	RO	Places IRM A Range switch to the correct range Then un-bypasses IRM " A then bypass IRM "C". Resets the half scram				
BOOTH NOTE: before IRM A can be un-bypassed, the malfunction must be deleted.						
4.	SRO	Exits Tech Specs – Table 3.1.1. for two IRMs Inop. Crew Brief				

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OPERATOR ACTIONS EVENT NUMBER 3

Crew Task Description:

Transfer Reactor Mode Switch to RUN and continue the startup.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	SRO	Enter/direct placing the Reactor Mode Switch in RUN				NOTE: Proper IRM withdrawal may be determined by selecting each IRM channel for recording as its respective chamber is withdrawn and verify that indicated level is decreasing.
2.	RO	Check that the APRMs are reading above 2% power by shifting the recorder select switches one at a time to APRM and returning them to the IRM positions. Check that all APRM downscale alarms are clear. Smartly transfer Reactor Mode Switch to RUN. Transfer recorder switches to APRM channels.				
3.	RO	Fully withdraw all IRM detectors.				
4.	SRO	Request Reactor Engineering to initiate APRM GAF per OP 4400. Request RP perform high rad door checks and TB Heater Bay surveillance per OP 0532.				
EVALUATORS CUE: When sufficient operator actions are observed, insert Event 4, CRD Flow Controller Failure.						

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
5.	SRO	May direct: Close main steam line drain valves: MS-74 MS-77 MS-78 In the Torus Room, MS-23				
6.	BOP	If directed by SRO Close main steam line drain valves: MS-74 MS-77 MS-78 Direct AO to close (in the Torus Room) MS-23				
7.	SRO	Directs power ascension per OP 0105 until 1 ½ bypass valves open				

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OPERATOR ACTIONS EVENT NUMBER 4

Crew Task Description:

Failure of CRD Flow Controller Automatic Output Signal

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	RO	Recognize Faster control rod speeds CRD system pressures rising Flow Controller output rising Diagnose CRD Flow Controller Failure Announce to SRO/Crew				
2.	SRO	Direct entry into ON 3145, Loss of CRD Regulating Function Direct placing the Flow Controller (FIC-3-301) in MANUAL Directs contacting Work Week Manager and/or I & C to troubleshoot CRD FCV.				
3.	RO	Places the Flow Controller (FIC-3-301) in MANUAL Verifies proper operation Adjusts Drive Control and Cooling Control Valves as necessary to restore CRD System parameters				
4.	BOP	Contacts Work Week Manager and/or I & C to troubleshoot CRD FCV.				

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2) * = Critical Task/Step

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
ROLE PLAY: If contacted as I & C report that you had just worked on the controller and will send a Tech to the Control Room after their break.						
5.	SRO	May direct shifting CRD FCVs				
	RO/ BOP	May contacts AO to coordinate shifting FCVs				NOTE: If the crew starts to shift CRD FCVs go to the next malfunction
EVALUATORS CUE: When CRD Parameters are restored, insert Event 5, Inadvertent HPCI initiation						

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OPERATOR ACTIONS EVENT NUMBER 5

Crew Task Description:

HPCI inadvertently injects to the vessel with a controller failure. Requires T.S. 3.5.E entry

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize and inform the SRO of indications of a HPCI system initiation and injection.				
2.	SRO	When informed of the HPCI system start, verify adequate level IAW OT 3110. May enter OT 3110 – Positive Reactivity Insertion, Step 2.5. after actions are taken IAW IAW EN-OP-115, Manual Control of Automatic Systems				
3.	BOP	Confirm no initiation signals present. Using two indications Verifies Feedwater control system maintaining RPV water level. Diagnoses HPCI Controller failure Notifies Crew				
4.	SRO	When adequate level has been verified, direct the BOP to inhibit the HPCI system				
5.	BOP	When directed, inhibit the HPCI system IAW EN-OP-115, Manual Control of Automatic Systems				
						NOTE: The shutdown section of OP 2120 will NOT work in this situation because the faulty initiation signal will continue to start HPCI.
BOOTH NOTE: After HPCI is secured following the spurious injection, use soft panel override to place the HPCI INHIBIT switch into INHIBIT.						

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
6.	SRO	Direct SBTG aligned for an Auto Start per OP 2117				
7.	BOP	When directed, align SBTG per SRO direction				
8.	SRO	Direct crew to contact I&C and/or maintenance to investigate the HPCI initiation and controller problems.				
9.	CREW	When directed, contact I&C and maintenance and request they investigate the HPCI problem.				

ROLE PLAY: When contacted as I&C and/or maintenance and requested to investigate the HPCI problem respond that you will send a technician to the Control Room shortly and then delay.

10.	SRO	Recognize and enter T.S. 24 hr LCO IAW T.S. 3.5.E.3.				NOTE: T.S. Bases states that an RHR Subsystem consists of 2 pumps, since RHR Pump C is INOP, the subsystem is NOT operable.
11.	SRO	Direct the crew to confirm operability of RCIC. Conduct a Crew brief				

EVALUATORS CUE: When ready, advance to Events 5 and 6

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OPERATOR ACTIONS EVENT NUMBERS 6 and 7

Crew Task Description:

Loss of the startup transformers which will result in a LNP and reactor scram and both DGs fail to auto start, DG "A" cannot be started, DG "B" can be manually started.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize/Acknowledge Annunciators: S/U XFMR T3 BKR 13 TRIP (8-L-2) S/U XFMR T3 BKR 23 TRIP (8-M-2) SAFETY BUS VOLTAGE LO alarm, (8-J-9) Diagnose/Report <ul style="list-style-type: none"> • Reactor Scram • LNP • Failure of DGs to start and supply Buses 				
2.	SRO	Direct crew to implement OT 3122, Loss of Normal Power (May at some time enter ON 3150, Loss of S/U Transformers)				
3.	BOP CT-1	Diagnose failure of the DGs to automatically start. Notify the SRO May immediately attempt to start the B DG IAW EN OP 115, Manual Control of Automatic Systems Diagnoses "B" DG failed to auto-start and manually starts "B" DG and places on 4KV Bus 4. Notifies Crew "B" DG in service				

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2) * = Critical Task/Step

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
4.	SRO	When notified the DGs failed to automatically start transition to App A of ON 3122, Station Blackout.				NOTE: Because the A DG has a Failure to Start Annunciator Maintenance must be contacted before attempting to start the A DG.
	CT-1	<p>Directs:</p> <p>Attempt to start the B DG IAW EN-OP-115, Manual Control of Automatic Systems</p> <p>Placing the service water pump control switches to STOP, then NORMAL.</p> <p>Placing all ECCS pumps in PULL-TO-LOCK.</p> <p>Energizing Bus 4 from Vernon tie</p>				
5.	BOP	<p>Attempts to energize Bus 3 or Bus 4 from Vernon tie by closing 3V4 and a feeder breaker to 4KV Bus 3 or 4.</p> <p>Acknowledges/diagnoses failure of breaker 3V4 to close</p> <p>Reports failure of cross-tying to Vernon.</p>				
6.	SRO	<p>Directs operator to contact AO/Maintenance to investigate DG A failure to start</p> <p>May direct additional attempts to start the DGs per App A of OT 3122.</p>				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
7.	BOP	If not previously done acknowledge/respond to DG A Lockout Trip Annunciator (8-F-2) Contact AO/Maintenance and directs them to investigate DG A failure to start Diagnoses " B DG failed to auto- start and manually starts "B" DG and places on 4KV Bus 3. Notifies Crew "B" DG in service				
ROLE PLAY: When directed as the AO/Maintenance to investigate the failure to start of the 'A' DG, respond as directed. Then wait until RPV water level is 6 inches and lowering and then remove the trip and reset the lockout and notify the Control Room that 'A' DG is available (the 100 second timer will prevent immediately starting the DG).						
8.	SRO	When notified Bus 4 available directs cross-tying buses 8 and 9.				
ROLE PLAY: If contacted as maintenance and directed to verify that Buses 8 and 9 may be cross- tied, reply that you have checked the buses and that they may be cross-tied. If the Control Room does NOT contact Work Control or Maintenance then call the Control Room as Maintenance and notify them that the buses may be cross-tied. (This will re-establish Control Room Lighting.)						
9.	BOP	Cross-ties buses 8 and 9.				
10.	RO	Carries out scram action IAW ON 3100 Verifies RCIC operation when needed.				
11.	SRO	Directs work week manager to check DG A and/or Back-feeding through the Auxiliary Transformer.				
ROLE PLAY: If requested as work week manager to investigate DG A and/or Back-feeding through the Auxiliary Transformer respond as directed but delay.						
EVALUATORS CUE: When ready, advance to Events 8 and 9						

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OPERATOR ACTIONS EVENT NUMBERS 8 and 9

Crew Task Description:

Core spray line break in the Drywell between the RPV and testable check valve resulting in a LOCA and loss of the remaining Core Spray system and failure of the "D" RHR Pump.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize/Acknowledge rising drywell pressure Notify SRO Diagnose and Report the " A CS and " A RHR Pumps have no power.				NOTE: Core Spray Injection valve 12B is failed closed but the open indication is over-ridden to indicate the valve is open.
2.	SRO	Enter / Direct actions IAW EOP-1 AND EOP-3: <ul style="list-style-type: none">Re-start all available drywell RRUsBEFORE torus pressure reaches 10 psig, spray the torus				
3.	BOP	When directed: <ul style="list-style-type: none">Re-start all available drywell RRUsSpray the torus using only those pumps not required for adequate core cooling				
EXAMINER: Refer to attached OP 2124, Appendix C.						
4.	SRO	Direct RPV level maintained between 6 and 177 inches by maximizing CRD and injecting SLC and RCIC				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
5.	BOP	While attempting to inject with RCIC, recognizes that the flow controller has failed in AUTO and takes manual control Then recognizes isolation and Trip. EXAMINER NOTE: RCIC will run for a short time in Manual but then an isolation signal will occur causing a RCIC trip.				
BOOTH NOTE: Insert RCIC Isolation Malfunction after RCIC has run in Manual for about 1 minute.						
6.	SRO	WHEN torus pressure exceeds 10 psig, direct the following: <ul style="list-style-type: none"> • Verify drywell RRUs secured • Directs spraying the Drywell 				(RHR Pump "D" is available and RPV pressure is too high to inject.)
7.	BOP	When directed: <ul style="list-style-type: none"> • Verify drywell RRUs secured • Spray the drywell 				NOTE: As the crew is spraying the drywell with the "D" RHR Pump the pump will trip on overload.
8.	CREW	Recognize HPCI unavailable				
9.	SRO	Direct RPV level maintained between 6 and 177 inches by maximizing CRD and injecting SLC and RCIC If not previously directed; directs lining up all available Alternate Injection Subsystems (EOP-1, Table D)				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
10.	RO	When directed: <ul style="list-style-type: none"> Maximize CRD (if available) Inject SLC 				
11.	SRO	When RPV level cannot be maintained above 6" direct/verify at least 2 injection subsystems lined up for injection.				
EVALUATORS NOTE: When RPV water level reaches 6", contact the Control Room as the AO/Maintenance at DG A and report that starting problem has been corrected and the Lockout and Shutdown Relay have just been reset. (Note the 100 sec timer must time out before the DG A can be started.)						
12.	SRO	Direct starting DG A and placing Bus 4 on DG A Directs ADS inhibited				
13.	BOP	After the 100 second timer has timed out start DG A and place it on 4KV Bus 4				
14.	RO/ BOP	Inhibits ADS Lineup ECCS systems and Alternate Injection Subsystems as directed.				
15.	*CREW EOP-1 EOP-5 CT-2	With the reactor shutdown and reactor pressure greater than the shutoff head of the low pressure systems, initiate RPV-ED BEFORE RPV level reaches -19 inches Standard: Enter EOP-5 and initiate RPV-ED (begin opening valves) BEFORE RPV level reaches -48 inches				Success path is restore RPV water level using RHR SW Send someone to locally start the "A DG.

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
16.	SRO	BEFORE RPV level reaches (-19"), enter / direct actions IAW EOP-5: <ul style="list-style-type: none"> Prevent injection from those CS and RHR Pumps not required to ensure adequate core cooling Open all SRVs 				
17.	BOP/ RO	When directed: <ul style="list-style-type: none"> Prevent injection from those CS and RHR Pumps not required to ensure adequate core cooling Open all SRVs 				
18.	SRO	Direct lining up Alternate Injection Systems per EOP-1, App D				
19.	RO/ BOP	Line up Fire System and/or RHRSW system				
20.	SRO	When RPV pressure drops below shutoff head of low pressure pumps, direct level restored and maintained 127 to 177 inches.				
21.	BOP	Observe/Recognize Core Spray "B" low discharge pressure and high flow. Diagnose failure of "B" Core Spray Pump to inject and Core Spray line as the potential source of the break.				NOTE: Core Spray Pump "B" starts and appears to be OK. But when the injection valves opens the discharge pressure goes low and the flow high indicating runout and that the pump is discharging into the break.
22.	SRO	Direct securing the B Core Spray Pump				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
23.	RO/ BOP	Secure the B Core Spray Pump				
24.	SRO	If not previously lined up directs lining up all available Alternate Injection Subsystems (EOP-1, Table D)				Success path is restore RPV water level using RHR SW Starting the "A" DG and supplying power to 4KV Bus 4. Investigate the trip of the " D RHR Pump and restore the pump.
25.	SRO	Direct: Directs starting and injecting with available pumps				
26.	BOP/ RO	Starts and Inject with available pumps				
27.	CREW EOP-1 CT-3	Restores RPV water level above TAF (+6")				
28.	SRO	Conducts Crew Brief				
TERMINATING CUE: RPV water level above TAF (+6 inches) and under control						

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OPERATOR ACTIONS

ADDITIONAL COMMENTS:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

2) * = Critical Task/Step

SIMULATOR EVALUATION GUIDE

Evaluators:

Senior Management Observer

Crew: _____

SM _____
SRO _____
RO _____
BOP _____
STA _____

Critical Task Performance:

SAT UNSAT
(Circle One)

Lead Evaluator:

Signature

Date Administered:

Activity Code:

Prepared by: W.H. Schulte / M.N. Schulte Date: 1-27-09
Reviewed by: J.R. Paradis / J. Paradis Date: 1-27-09
Approved by: J.R. Paradis / J.R. Paradis Date: 1-27-09

CREW BRIEF:

-Power level: 85%

In OP 0105, Phase **4B**, Step 23 is completed

-Rod Sequence: Rapid Shutdown

-Rod Group: 20

-Equipment out of service and/or tagged or abnormalities:

1. A RHR Pump OOS, tagged out for Maintenance investigation yesterday at 1600. The plant entered a 7-day LCO (TS 3.5.A.3).

-Reason For Equipment out of Service or tagged:

1. A RHR Pump OOS for severe vibrations during surveillance testing.

-Applicable Tech Spec LCOs:

1. Seven (7) day LCO, TS 3.5.A.3

EOOS Color:

Yellow 1.47 E-5

-Plant evolutions in progress/Scheduled Shift Evolutions:

1. Perform OP 4160 Once/Week Pump Performance Test Section 1.a and b.
2. Continue power ascension to 100% power, during this shift raise power to 92% using recirculation flow then allow 12 hour soak while RE determines if a rod pattern adjustment is necessary.

SCENARIO SUMMARY:

TERMINATING CONDITION(S):

1. RPV flooded and/or RPV Water Level and Primary Containment parameters under control.

REFERENCES:

1. OP 2111, CRD System
2. OP 0105, Reactor Operations
3. OT 3115, Reactor Pressure Transients
4. OT 3110, positive Reactivity Insertion
5. OT 3113 Reactor Low Level
6. OT 3176, Recirculation Pump Runback Due to Low Feedwater Flow or Discharge Valve Not Full Open
7. ON 3159, Loss of DC-1
8. ON 3145, Loss of CRD Regulating Function
9. OT 3100, Reactor Scram
10. Technical Specifications
11. EOP-1, RPV Control
12. EOP-3, Primary Containment Control
13. EOP-5 Emergency Depressurization
14. Possibly EOP-6, RPV Flooding
15. OE 3107, EOP Appendices
16. RP 2170, Condensate System
17. OP 2172, Feedwater System

SIMULATOR OPERATOR INSTRUCTIONS

Simulator Set Up: 85% Power

1. IC-807

D **Malfunctions/RFs/IOs:**

No.	MF/RF/IO #	Severity	Ramp	REM #	Act. Time	Description
1.	IOR RHdi0310AS27			Pre-insert		Override RHR-184 CLOSEC
2.	IOR CSdi0314AS1A			Pre-insert		Override the A Core Spray Injection Valve CLOSED
3.	mfCS_03A			Pre-insert		CS-12A Fails to Auto Open
4.	rfRH_11	Open		Pre-insert		RHR Pump A ACB
5.	mfFW_28A	50%	60	1		"A" Feedwater transmitter fails to a higher indicated flow
6.	IOR RRlo042AS7B_1 IOR RRdi042AS7B IOR RRlo042AS7B IRF rfRR_12			2		Recirc "B" Runback, RV-538 Recirc Discharge Valve, drift; off open seat
7.	mfRD_01B			3		CRD Pump B Trip
8.	mfED_06A			3		Loss of 125 VDC Bus 1
9.	mfTC_04A	75%		4		Pressure Reg Oscillations (EPR)
10.	mfMS_06	0.5	120	5		Main Steam Line Break in the Drywell
11.	mfMS_06	3	120	6	After scram actions carried out	Main Steam Line Break in the Drywell
12.	mfFW_08A mfFW_08B mfFW_08C			7		Trip of all RFPs

SIMULATOR OPERATOR INSTRUCTIONS (Continued)

Additional Instructions:

1. Place a Danger Tag on RHR Pump A control switch
2. If contacted as Work Week Manager / I&C concerning the Feedwater flow transmitter failure, delay determining the cause; no reason will be given before the scenario terminates.
3. If AO is directed to trip "A" Recirc MG locally, insert Remote **rfRR_15**.
4. If AO is directed to trip "A" Recirc MG Field Bkr, insert Remote **rfRR_17**.
5. When electrical maintenance is sent to investigate the loss of DC-1, report that the A charger and the battery breakers have tripped. Maintenance will work with the AO to determine when it is possible to transfer bus control power to alternate sources.
6. If an AO or maintenance is directed to strip DC-1 wait a few minutes and report that the bus has been stripped.
7. An AO may be directed to shift control power for Buses 1, 3 & 8 to alternate. This action should be delayed for buses 3 & 8 until RPV-ED. Maintenance troubleshooting is NOT complete on Buses 3 and 8.
8. When repowering Bus 1, use **rfRR_21A** relay reset and **rfED_01** for Bus 1 control power to prevent tripping the Recirc Pump.
9. If directed to secure Recirc Pump Seal Purge, use **rfRD_11** and **rfRD_12**.
10. If contacted as Work Week Manager / I&C concerning the pressure regulator failure, delay determining the cause; no reason will be given before the scenario terminates.
11. Attach a copy of ON 3159 actions to transfer control power Bus 1, 3, 8 and DG B

OPERATOR ACTIONS EVENT NUMBER 1

Crew Task Description:

Perform OP 4160 Once/Week Pump Performance Test Section 1.a and b.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	SRO	Briefs Crew Directs performance OP 4160 Once/Week Pump Performance Test Section 1.a and b.				
ROLE PLAY: Role play as AO for pumps checks required below						

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2.	BOP	<p>To test the Auxiliary Oil Pump, perform the following:</p> <ul style="list-style-type: none"> • ON CRP 9-7 take Aux Oil Pump Test switch to the TEST • Contacts AO to Check that the auxiliary oil pump starts and is operating satisfactorily • Place the test switch to NORM • Verify the auxiliary oil pump does not automatically stop • Stop the auxiliary oil pump • Verify the control switch returns to normal after stop (green flag). <p>To test the Turning Gear Oil Pump, perform the following:</p> <ul style="list-style-type: none"> • On CRP 9-23 take Turn Gear L.O. Pump Test switch to the TEST position. • Contacts AO to check that the turning gear oil pump starts and is operating satisfactorily • Allow the test switch to return to mid-position • Verify the turning gear oil pump does not automatically stop • Stop the turning gear oil pump • Verify the control switch returns to AUTO 				
Once the test is complete, continue with EVENT 2						

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OPERATOR ACTIONS EVENT NUMBER 2

Crew Task Description:

Feedwater flow transmitter slow failure upscale will occur, causing the crew to take manual control of feedwater in order to recover and stabilize RPV level.

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize/Acknowledge Annunciator: 5-E-1, RX LEVEL HI/LO Diagnose lowering reactor water level; inform SRO				NOTE: Crew may notice level failure from instruments on the 9-5 Panel prior to the annunciator.
2.	RO	Determine that lowering level is a result of a failure of the Feedwater Controller and shift the controller to MANUAL; inform SRO				
3.	SRO	Enter and direct actions IAW OT 3113 (Reactor Low Level): • Shift the FW Master Level Controller to MANUAL • Restore water level to pre-transient level				
4.	RO	When directed: Observe Steam Flow and Feed Flow indications for mismatch Restore water level to pre-transient level Gives RPV water level updates				
5.	RO	Identify/Report the cause of the problem as the Feedwater Flow Transmitter A failing upscale				

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	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
6.	SRO	Request Work Week Manager/Maintenance/I&C investigate problems with Feedwater Flow Summer				
ROLE PLAY: If contacted as Work Week Manager / I&C concerning the Feedwater flow transmitter failure, delay determining the cause; no reason will be given before the scenario terminates.						
7.	SRO	Direct the RO to switch to single element and restore the controller to automatic				
8.	RO	Transfer control to single element Transfer the controller to automatic				
9.	SRO	Conduct a crew brief				
EVALUATORS CUE: When Feedwater is returned to automatic and crew briefed or when directed go to Event 3.						

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OPERATOR ACTIONS EVENT NUMBER 3

Crew Task Description:

Oil Leak on RHR Pump B

	POS.	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
ROLE PLAY: As an AO contact the Control Room on the Gai-tronics and notify them the 'B' RHR Pump lower bearing oil sight glass is empty and there is oil on the bottom of the motor and the floor around the motor.						
1.	CREW	Repeat back the communication and inform SRO				
2.	SRO	May direct the AO to post the area with a slip sign and wipe up the oil. actions Contact the Work Week Manager/Maintenance/I&C to investigate the loss of oil on the B RHR Pump Enter T.S. 3.5.A.6 which requires initiating a reactor shutdown and being in cold shutdown in 24 hours. Directs BOP to place the B RHR Pump in PTL				
Role Play: As Maintenance contact the Control Room or answer if contacted that you will investigate the leak. Then within two minutes report that the RHR B Pump can be repaired within an hour.						
3.	BOP	Places the B RHR Pump in PTL				
4.	SRO	Conduct a crew brief				
EVALUATORS CUE: When TS is entered or when directed, go to Event 4.						

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OPERATOR ACTIONS EVENT NUMBER 4

Crew Task Description:

"B" Recirc Pump discharge valve full open indication fails causing the "B" Recirc Pump to runback to minimum flow.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize/Acknowledge Annunciators Diagnose Runback of the "B" Recirc Pump Diagnose that the "B" Recirc Pump Discharge Valve RV-53B Does NOT indicate full open.				
2.	SRO	Direct entry into OT 3176 Direct pushing PB-2 to lower RPV level setpoint Direct Tripping the "B" Recirc Pump. Directs NOT to close RV-53B Directs closing RV-43B to prevent reverse rotation. May enter OT 3118, Recirculation Pump Trip				
3.	BOP	IAW OT 3176 Immediate Actions Pushes PB-2 to lower RPV level setpoint to 155 inches Trips the "B" Recirc Pump MG Set Drive Motor Breaker. Verifies Recirc Pump Disc Bypass Valve RV-54B is open Closes Recirc Pump Suction Valve RV-43B				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
4.	RO	Determines if plant operation is above the MELLLA boundary on the power to flow map per Figure 2.4-1 and outside the Exclusion and Buffer Regions Notifies SRO				
5.	SRO	Directs using the Rapid Shutdown Sequence to insert control rods until operation is below the MELLLA boundary and/or outside the Buffer Region and to lower power to less than 45%.				
6.	RO	Starting with the last rod in the last group of the Rapid Shutdown Sequence, insert control rods in reverse order.				
7.	SRO	Notifies Reactor Engineering. May direct removing the third reactor feed pump from service per the guidance in OP 0105, Reactor Operations, Section 5.A.				
8.	BOP	Verifies the "A" Recirc Pump is operating $\leq 70\%$ rated speed.				
9.	BOP	Monitors Recirc Pump and Motor Currents Recirc Pump Motor (max 333 amps). Recirc MG Set Motor (max 450 amps). Dispatch the RBAO to monitor and adjust MG Lube Oil cooling				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
10.	SRO	Conduct Crew Brief				
EXAMINERS CUE: Insert Event 6, Loss of DC Bus 1						

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OPERATOR ACTIONS EVENT NUMBER 5

Crew Task Description:

Loss of CRD Pump B and 125V Bus DC-1.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	<p>Recognize/Acknowledge Annunciators:</p> <p>CRD PUMP B TRIP (9-C-1)</p> <p>DC-1/DC-2 BKR TRIP (8-N-1)</p> <p>BATT VOLTAGE LO (8-P-1)</p> <p>GEN LOSS OF FIELD TRIP (7-C-4)</p> <p>MG SET A SCP TUBE LOCK (4-B-1)</p> <p>86 GP DC LOSS (7-A-6)</p> <p>BUS 3 CTRL PWR LOSS (8-J-7)</p> <p>Diagnose and report the loss of CRD Pump B</p> <p>Diagnose and report the loss of 125 VDC DC-1</p>				
2.	SRO	<p>Direct entry into ON 3145, Loss of CRD Regulating Function</p> <p>Direct entry into ON 3159.</p> <p>Direct tripping the RWCU Pump</p>				
3.	BOP	Trip the RWCU Pump				
4.	SRO	Direct starting CRD Pump A.				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
5.	RO	<ul style="list-style-type: none">Place CRD SYSTEM FLOW CONTROL station in MANUAL.Adjust the flow controller to zeroStart CRD pump AAdjust the CRD flow controller to establish 48-52 gpmBalance the CRD flow controller, and then place in BAL or AUTO.If required, throttle CRD-36A to maintain charging header pressure at 1420-1470 psigRestore recirc pump seal purge to service.				NOTE: IF CRD pumps are out of service for > 2 minutes, secure recirc pump seal purge
6.	SRO	Dispatch operators to manually trip/check open all breakers on DC-1 per ON 3159.				
7.	SRO	Request Work Week Manager/Electrical Maintenance concurrence on transferring control power. Notify Chemistry that RWCU is secured and the need for sampling.				
ROLE PLAY: Respond as personnel contacted. When electrical maintenance is sent to investigate the loss of DC-1, report that the Charger A and the battery breakers have tripped. Maintenance will work with the AO to determine when it is possible to transfer bus control power to alternate sources.						

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
8.	BOP	Contact AO and direct them to check the RWCU Demineralizers and Holding Pumps				
ROLE PLAY: As AO respond as directed but delay reporting back to the Control Room on the RWCU Demineralizers.						
9.	SRO	Direct BOP to transfer control power for Busses 1, 3, 8 and the DG.				Add steps from ON 3159, Rev 15
10.	BOP	Direct the AO to transfer DC control power for the Buses 1, 3 and 8 to Alternate.				
ROLE PLAY: As the AO acknowledge direction.						
11.	RO	Dispatch an AO to monitor and adjust MG Lube Oil cooling				
ROLE PLAY: Respond as AO when directed to monitor and/or adjust Recirc MG Set oil temperatures.						
12.	SRO	Brief the crew and direct the crew to manually trip the Turbine per ON 3159 if a turbine trip is required.				
BOOTH OPERATOR: Shift 4KV Bus 1 Control Power to Alternate (See Additional Instructions)						
ROLE PLAY: As the AO report that you have shifted control power for Bus 1 to alternate. Maintenance troubleshooting is NOT complete on Buses 3 and 8.						
ROLE PLAY: As Electrical Maintenance report that Bus 1 control power can be restored, but that you are still working on Buses 3 and 8.						
EXAMINERS CUE: When ready, insert Event 6, EPR Oscillations						

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OPERATOR ACTIONS EVENT NUMBER 6

Crew Task Description:

EPR Oscillations

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize oscillating reactor pressure Enters OT 3115. Diagnose/Announce EPR failure				
2.	SRO	Enter and direct actions IAW OT 3115 (Reactor Pressure Transients): <ul style="list-style-type: none">Place the EPR in CUTOOUTVerify that the MPR has controlLower MPR setpoint as necessary				
3.	BOP	When directed: Place the EPR in CUTOOUT at peak pressure <ul style="list-style-type: none">Verify that the MPR has controlLower MPR setpoint as necessary.				
4.	SRO	Direct BOP to restore pressure to the pre-transient pressure.				
5.	BOP	When directed, adjust MPR to adjust pressure to pre-transient level.				
6.	SRO	Direct crew member to contact I&C to check and repair EPR. May enter OT 3110, positive Reactivity Insertion Notifies RE				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
7.	CREW	When directed, contract Work Week Manager / I&C, inform them of EPR problem and request repair efforts begin.				
ROLE PLAY: As Work Week Manager / I&C when contacted concerning the pressure regulator failure, delay determining the cause; no reason will be given before the scenario terminates.						
8.	SRO	Brief the Crew.				

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OPERATOR ACTIONS EVENT NUMBER 7

Crew Task Description:

Main Steam Line Break in the Drywell.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	Recognize and inform the SRO of rising Drywell Pressure and reactor scram				
2.	SRO	Enter and direct crew actions IAW OT 3100. May enter OT 3110 If scoop tube was not reset previously, directs recirc to minimum				
3.	CREW	Report All Rods inserted				
4.	SRO	Enter EOP-1 and EOP-3 and direct actions to control RPV level and pressure and containment				
5.	SRO	Direct the RO to maintain level 127" to 177".				
6.	RO	When directed, maintain level between 127" and 177".				
7.	SRO	Direct pressure stabilized between 800-1000 using Bypass Valves.				
8.	SRO	Direct the BOP to maximize drywell cooling.				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
9.	BOP	When directed, attempt to start/restart all available drywell RRUs.				
10.	SRO	Direct the RO/BOP to backup all appropriate PCIS group isolations.				
11.	RO/ BOP	When directed, backup appropriate PCIS group isolations.				
12.	SRO	Direct the BOP to spray the torus				
13.	BOP	Attempt to spray the Torus, report the there are no RHR Pumps available				
Examiner Note: See attached Appendix S for description of steps to spray torus and drywell						
Booth Note: If App. S is being used to spray the drywell, insert soft panel override to prevent the RHR-184 valve from opening. Additionally, if the crew attempts to use Condensate Transfer to spray the Drywell, report that valves RHR-70A, 71A, 70B and 70B are mechanically bound.						
14.	CREW EOP-3 EOP-5 CCT-1	When Drywell temperature cannot be restored or maintained below 280°F, initiate RPV-ED (or anticipate ED and use bypass valves) Standard: RPV-ED initiated prior to exceeding 280°F. May use bypass valves in anticipation of ED.				

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	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
15.	SRO	May anticipate emergency depressurization and direct use of Bypass Valves Directs defeating PCIS Group I isolation interlocks (Main Steam high steam flow not in RUN)				
16.	BOP	Defeats PCIS Group I isolation interlocks (Main Steam high steam flow not in RUN) OE-3107, Section CC				
17.	SRO	Direct the RO/BOP to terminate and prevent injection from CS and RHR pumps.				
18.	BOP	May OPEN bypass valves as necessary to depressurize the RPV using the Bypass Valve Opening Jack.				
19.	SRO	Enter and direct crew actions IAW EOP-5, RPV-ED.				
20.	SRO	Direct the RO/BOP to terminate and prevent injection from CS and RHR pumps.				
21.	RO/BOP	When directed, place CS and RHR pumps in PTL.				
22.	SRO	Direct RO/BOP to open all SRVs.				
23.	RO/BOP	When directed, opens all SRVs.				
EVALUATORS CUE: Transition to Event 8 after Alternate Emergency Depressurization or EOP-5 Emergency Depressurization is initiated.						

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OPERATOR ACTIONS EVENT NUMBER 8

Crew Task Description:

Failure of the Reactor Feedwater Pumps and Core Spray Pump A Injection Valve require lining up Condensate Pumps to restore RPV water level.

	POS	CANDIDATE ACTIONS/BEHAVIOR	S	U	N/O	COMMENTS
1.	CREW	<p>IF the RPV was depressurized using BPVs</p> <p>Drywell temperature may be above saturation temperature for reactor pressure. RPV Level indication is not reliable</p> <p>Enters EOP-6 RPV Flooding</p> <p>IF NOT PROCEED TO STEP 7.</p>				
2.	SRO	Direct BOP to close or check closed MSIVs, main steam line drains, RCIC isolation valves.				
3.	BOP	Closes or checks closed MSIVs, main steam line drains, RCIC isolation valves.				
4.	CREW CT-2 EOP-6	IF Reactor water level cannot be determined, Enters EOP-6, opens all SRVs and refloods the RPV to the Main Steam Lines				

NOTES: 1) S = Satisfactory; U - Unsatisfactory; N/O = Not Observed
All Unsatisfactory ratings require comments; a comment sheet is attached.

2) * = Critical Task/Step

5.	SRO	Direct RO to commence and increase injection into the RPV to establish the Main Steam Lines Flooded as indicated by 1. SRV Tailpipe Temperatures decreasing 2. Increasing RPV pressure 3. SRV Tailpipe Temperature Pressure Switches.				
6.	RO and/or BOP	When directed, commence and increase injection into the RPV with Shutdown RPV Flooding Systems - EOP-6 Table T (Includes - Core Spray, Cond/Feedwater, CRD, and RHR).				
EVALUATORS CUE: If RPV Water level instrument were determined to be inoperable the scenario may be terminated once EOP-6 has been exited at the discretion of the lead evaluator.						
7.	CREW	IF the RPV was depressurized using SRVs or EOP-6 was not required continue HERE. Diagnose trip of operating Feedwater Pumps Notify SRO/CREW				
8.	SRO	Direct AO, Work Week Manager, Maintenance to investigate the loss of Feedwater Pumps. Direct injection with the A Core Spray System				
9.	BOP	Lineup Core Spray System A for injection Report failure of CS Injection Valve to open				

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10.	RO/ BOP	Request AO, Work Week Manager, and/or Maintenance to investigate the loss of Feedwater Pumps and/or Core Spray Injection Valve failure to open.				
ROLE PLAY: As AO, Work Week Manager, Maintenance to investigate the loss of Feedwater Pumps and/or Core Spray Injection Valve failure to open respond that you will investigate but that you are short on time/personnel and it may take a while.						
11.	SRO	Directs crew to line up as many Alternate Injection Subsystems as possible EOP-1, Table D.				
12.	RO	Lines up Condensate IAW RP 2170 and/or OP 2172 May also initiate lineups on other Alternate Injection Systems.				
13.	CREW CT-3 EOP-1	Restores RPV water level with Condensate injecting directly into the RPV OR aligns alternate injection systems.				
ROLE PLAY: As Maintenance, report that RHR Pump B has been returned to service and may be used.						
14.	SRO	Direct securing <ul style="list-style-type: none"> • RRUs • Recirc Pumps • Placing RHR Pump B in Containment Spray. 				
15.	RO/ BOP	Verifies shutdown <ul style="list-style-type: none"> • RRUs • Recirc Pumps Places RHR Pump B in Containment Spray and manually opens spray valves.				

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16.	CREW CT-3 EOP-3	Restores Containment parameters using the Alternate Systems and manually opens the RHR-RHRSW Valve 183 or RHR Pump B and manually opens the injection valves.				
TERMINATING CUE: RPV flooded and/or RPV Water Level and Primary Containment parameters under control.						

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OPERATOR ACTIONS

ADDITIONAL COMMENTS:

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

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