

**System:** ADMIN A.1

**JTA Task #:**

**Task Title:** Complete Operating Logs and Determine If Acceptance Criteria Satisfied

**KSA Ref:** GK/A 2.1.18

**RO:** 2.9

**SRO:**

Admin A.1 - RO only

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 15 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:  
OPT-102A-1

Tools, Equipment, Job Aids, etc:  
OPT-102A-1  
Plant Computer

## EXAMINER COPY

### Safety Considerations:

None - classroom only

### Comments:

**Need filled out copy of OPT-102A-1 with errors as indicated in “Standard” column for the candidate. Also need a correctly filled out OPT-102A-1 for the examiners.** Give realistic readings for 100% power.

**Use colored paper for ALL candidate handouts.**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

You are the extra RO on shift. The on-duty RO was in the process of completing OPT-102B-1, “Mode 1 and 2 Shiftly Surveillances,” but became ill and was unable to finish. The Unit Supervisor has directed you to complete OPT-102B-1 and check to make sure the “Acceptance Criteria” were satisfied.

### Terminating Conditions:

Candidate completes OPT-102B-1 and gives it to Examiner for review.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with material and allow him to review work to be performed.  <b>STEPS MAY BE PERFORMED IN ANY ORDER</b>	Candidate should review JPM initiating cues	Candidate should circle readings that do not meet acceptance criteria and make a note	
2*	Determines that Containment Average Temp <b>does not meet Acceptance Criteria</b>  <b>CUE:</b> If candidate asks about the plant computer point, tell him Containment Computer Point temp = 111.5°F	Candidate identifies that Temp = 112°F and verifies Computer PT: CNTMTTMP <116°F	Note candidate must identify that Acc Criteria not met	
3*	Determines that Containment Pressure <b>does not meet Acceptance Criteria</b>	Candidate identifies that 1-PI-5470A is reading 1.5 psig		
4*	Determines average of all operable loop flow indicators. <b>Meets Acc. Criteria</b>  Note: 1-FI-446 is out of service. Avg calculated using 11 operable channels	Candidate calculates average as 98.64%.		
5*	Determines average pressurizer pressure <b>meets Acc. Criteria.</b> 1-PI-458 reading 45 psig lower than highest channel, <b>does not meet Acc. Criteria.</b>	Candidate calculates average press pressure of 2221 psig. Also identifies max dev between operable channels >40 psig.	Candidate must correctly calculate average and identify "Max dev" exceeded	
6*	Determines average of RCS temp channels. RCS temp channels read normal values for 100% power. <b>Meets Acc. Criteria.</b>	Candidate calculates RCS Avg Temp = 590°F		
7*	Determines that PR flux <b>does not meet Acc. Criteria</b>	Candidate identifies that NI-43 and NI-41 deviation is 4.5%		
	JPM Complete - To Pass must complete 5 of 6 Critical steps			

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

You are the extra RO on shift. The on-duty RO was in the process of completing OPT-102B-1, “Mode 1 and 2 Shiftly Surveillances,” but became ill and was unable to finish. The Unit Supervisor has directed you to complete OPT-102B-1 and check to make sure the “Acceptance Criteria” were satisfied.

**System:** Control Rod Drive System

**JTA Task #:** RO\*1010

**Task Title:** Perform Shutdown Margin Calculations

**KSA Ref:** 001.A4.11

**RO:** 3.5

**SRO:** 4.1

Admin A.1 - RO only

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 30 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

OPT-301, "Reactor Shutdown Margin  
Verification"  
Technical Specifications  
Startup and Operation Report  
Core Operating Limits Report

Tools, Equipment, Job Aids, etc:

OPT-301  
OPT-301-9  
SOR  
COLR

## EXAMINER COPY

### Safety Considerations:

None - classroom only

### Comments:

1. **Provide candidate a copy of Startup and Operations Report (SOR) for Unit 2, Cycle 6**
2. **Candidate needs calculator, blank OPT-301-9 form, and access to Unit 2 COLR**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Use of the plant computer is PROHIBITED.

### Initiating Cue:

The unit tripped from 85% power, equilibrium conditions 4 hours ago. All rods are fully inserted, RCS Tave is 385°F, and the boron concentration is 1105 ppm from a sample taken 3 hours after the trip. Core burnup is 9000 MWD/MTU. The computer program is unavailable and you are to perform a manual Shutdown Margin Verification per OPT-301, "Reactor Shutdown Margin Verification".

### Terminating Conditions:

Shutdown Margin Verification has been completed per OPT-301 and OPT-301-9 filled out.

## EXAMINER COPY

**NEED values for all the standard items as well as a completed OPT-301-9**

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	Obtains OPT-301 and a working copy of form OPT-301-9	OPT-301 open for reference	For grading, there is a completed form to reference	
2	Completes top portion of OPT-301-9	Unit NO.; Cycle No: use current cycle; Mode: 3; Current date and time.		
3	Enters the RCS boron concentration on line A.1 and sample time.	Enters <b>1105</b> ppm on line A.1		
4	Enters RCS Tave on line A.2	Enters <b>385°F</b> on line A.2		
5	Enters core burnup on line A.3 and checks the appropriate box.	Enters <b>9000</b> and check MOL box.		
6	Enters number of stuck RCCAs on line A.4.	Enters <b>0</b> on line A.4 for no stuck RCCAs.		
7	Refers to COLR and determines SDM reactivity requirement for present MODE. Enters value in line A.5.	Enters <b>1300</b> on line A.5.	Candidate may know from memory the requirement of 1.3%ΔK/K which is 1300 pcm.	
8	Determines the uncorrected minimum boron concentration from SOR table 5.13 and enters on line B.1.	Refers to SOR table 5.13 and enters a value of <b>1377</b>		
*9	Determines $A.1 \leq B.1$ and credit must be taken for Xe and Sm.	$A.1 \leq B.1$ . Must take credit for Xe and Sm by performing section 8.1.4 and 8.1.5.		
10	Enters data for C.1 and C.2.	Data given in initiating cue. <b>C.1 = 4 hrs</b> <b>C.2 = 85%</b>		

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
11	Determine Xe worth using SOR, table 5.21 and enters on line C.3 and checks box to indicate from SOR.	Enters value for <b>C.3 = 3736</b>		
12	Determines Sm worth using SOR, table 5.24 and enters on line C.4 and checks box to indicate from SOR.	Enters value for <b>C.4 = 927</b>		
13	Determines the IBW using table 5.8 from SOR and enters value on line D.1.	Enters IBW from table 5.8 of SOR on line <b>D.1 = 13211</b>		
14	Determines value for most reactive RCCA from table 5.16 of SOR and enters value on line D.2.	Enters value of most reactive RCCA from table 5.16 of SOR and enters on line <b>D.2 = 962</b>		
15	Performs calculation of OPT-301-9, line D.3 to determine worth correction and enters value on line D.3.	Performs calculation of OPT-301-9, line D.3, using 0 for RCCAs and enters value on line <b>D.3 = 4663</b>		
16	Determines boron correction factor from Figure 5.36 of SOR and enters on line D.4.	Enters value for boron correction factor from Figure 5.36 of SOR on line <b>D.4 = 0.976</b>		
17	Performs calculation of OPT-301-9, line D.5, to determine the IBW for minimum SDM and enters results on line D.5.	Performs calculation of line D.5 to determine IBW for minimum SDM and enters on line <b>D.5 = 8756</b>	Section E is optional, not required to be completed.	
18*	Interpolates shutdown margin (SDM) from Table 5.8	Obtains a value of <b>901 ppm +/-100 ppm</b>		
19*	Determine if SDM requirements are met and completes line F.1.  JPM COMPLETE	Verifies boron concentration entered on line A.1 $\geq$ line D.6 and circles <b>YES</b> on line F.1.		



# CANDIDATE HANDOUT

## INITIATING CUE:

The unit tripped from 85% power, equilibrium conditions 4 hours ago. All rods are fully inserted, RCS Tave is 385°F, and the boron concentration is 1105 ppm from a sample taken 3 hours after the trip. Core burnup is 9000 MWD/MTU. The computer program is unavailable and you are to perform a manual Shutdown Margin Verification per OPT-301, “Reactor Shutdown Margin Verification”.

**System:**

**JTA Task #:**

**Task Title:** Clearance Review

**KSA Ref: GKA 2.2.13**

**RO:** 3.6

**SRO:** 3.8

Admin A.2 - Tagging and Clearance - RO

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 25 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

**References:**

STA-605, "Clearance and Safety Tagging,"  
Revision 14  
OWI-110, "Operations Department Work  
Control and Clearance Guideline," Revision 11  
Dwg M1-206, Sheet 1

**Tools, Equipment, Job Aids, etc:**

Anything needed

## EXAMINER COPY

### Safety Considerations:

None - classroom only

### Comments:

Will need complete set of prints for candidates to reference. In the JPM package have DWG M1-206, Sheet 1, so the candidate can mark clearance boundary

**Use colored paper for all candidate handouts.**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

The clearance was prepared by an "trainee" and you have been asked by the Work Control Supervisor to review the prepared clearance as a qualified clearance preparer. Identify the three substantive errors associated with **the clearance boundaries**.

### Terminating Conditions:

Finishes review of the clearance.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2*	Identifies 3 errors	<p>Candidate identifies the following 3 errors:</p> <ol style="list-style-type: none"> <li>1. AFW Pump 1-02 motor breaker is REQUIRED to be tagged - not tagged</li> <li>2. CST Suction Supply Valve - tag number incorrect (1AF-0013) Train A instead of Train B. Correct Tag Number is 1AF-0023</li> <li>3. 1AF-0055-RO is NOT isolated (part of "minimum" clearance boundary)</li> </ol>	<p>Errors can be found in ANY order.</p> <p><b>3 of 3 errors must be identified for the JPM to be sat.</b></p>	
	TASK COMPLETE			

# CANDIDATE HANDOUT

## INITIATING CUE:

The clearance was prepared by an “trainee” and you have been asked by the Work Control Supervisor to review the prepared clearance as a qualified clearance preparer. Identify the three substantive errors associated with **the clearance boundaries**.

**System:** ADMIN A.3

**JTA Task #:** \_\_\_\_\_

**Task Title:** Radiation Work Permits

**KSA Ref:** GK/A 2.3.1

**RO:** 2.6

**SRO:** \_\_\_\_\_

Admin A.3 - RO only

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 15 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

Tools, Equipment, Job Aids, etc:

Survey Map of FGD 810 Elev North Penetration Room

## EXAMINER COPY

Safety Considerations:

None - classroom only

Comments:

**DO THIS JPM IN CONJUNCTION WITH B.2.a, "Isolate RCP Seals."**

**Valves 2CS-8369A and 2CS-8369B are located in a posted high radiation area in Room 2-077B. DO NOT enter this area - discuss valve manipulation.**

**Use colored paper for ALL candidate handouts.**

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

Enters Room 2-077B and determines valves are located in a posted high radiation area. - NO INITIATING CUE IS HANDED TO THE CANDIDATE

Terminating Conditions:

Discusses what is required to enter a high radiation area.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1*	Candidate identifies that Valves 2CS-8369A and 2CS-8369B are located in a high radiation area.	Candidate should identify that a high radiation area exists and he must contact RP prior to entry.	<b>DO NOT ENTER THE HIGH RADIATION AREA AT ANY TIME DURING THE JPMs</b>	
2*	<b>Cue:</b> ask Candidate what is required to enter the high radiation area.	Candidate should: 1) Indicate that he/she would contact RP to review current radiological conditions prior to entry 2) Go back to RCA access and check General Access Permit (GAP) - allow candidate to go back and review GAP	Note: Candidate should know the requirements of the GAP; however, I believe Standard 2 response would be adequate.	
3	Candidate contacts RP  Cue: RP indicates that radiological conditions are as indicated on the survey map. Radiological survey was completed yesterday with no changes in radiation levels.	Candidate states he/she would contact RP for current radiological conditions		
4	Candidate “simulates” entering area to manipulate the valves	Candidate indicates he would now enter the high radiation area		
	JPM Complete		Continue on with B.2 JPM, “Isolate RCP Seals” → discuss how you would close the valve and determine it was shut.	



# **EXAMINER COPY**

**System:** Emergency Procedures/Plan **JTA Task #:**

**Task Title:** Emergency Classification - site evacuation

**KSA Ref:** GKA 2.4.29 **RO:** 2.6 **SRO:**

Admin A.4 - RO only Question 1

**Candidate's Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 5 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:  
Procedure EPP-314, "Evacuation and Accountability," Revision 7, Step 4.1.1.3.1  
Lesson Plan EP21.EVA.EA1

Tools, Equipment, Job Aids, etc:  
Closed Reference

## EXAMINER COPY

Safety Considerations:

None - classroom only

Comments:

**Closed reference**

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Use of the plant computer is PROHIBITED.

Initiating Cue:

A site evacuation should always be ordered upon declaration of what class of emergency or classes of emergencies (list ALL applicable answers)?

Terminating Conditions:

Provides written answer for emergency classifications that should require site evacuation.

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2*	Provide the two classes of emergencies that should require site evacuation.	Candidate response - Site Area Emergency and General Emergency	<p>Candidate may use a qualifier - "An evacuation would be ordered unless this would pose a greater threat to site personnel." This is qualifier is NOT required to be SAT.</p> <p>Both Site Area and General Emergency answers to be SAT</p>	
	TASK COMPLETE			

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

A site evacuation should always be ordered upon declaration of what class of emergency or classes of emergencies (list ALL applicable answers)?

**System:** Emergency Procedures/Plan **JTA Task #:**

**Task Title:** Emergency Classification - offsite notification

**KSA Ref:** GKA 2.4.29 **RO:** 2.6 **SRO:**

Admin A.4 - RO only Question 2

**Candidate's Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 5 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:  
EPP-203, "Notification," Revision 13

Tools, Equipment, Job Aids, etc:  
Closed reference

## EXAMINER COPY

Safety Considerations:

None - classroom only

Comments:

**Closed reference**

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Use of the plant computer is PROHIBITED.

Initiating Cue:

After an emergency classification (NOUE, Alert, Site Area, or General Emergency) has been made, what is the maximum time allowed to notify Somervell and Hood Counties?

Terminating Conditions:

Provides written answer for time for announcement to evacuate the site.

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2*	Provide the time after emergency classification to notify offsite agencies.	Candidate response - 15 minutes		
	TASK COMPLETE			



# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

After an emergency classification (NOUE, Alert, Site Area, or General Emergency) has been made, what is the maximum time allowed to notify Somervell and Hood Counties?

**System:** Nuclear Instrumentation System

**JTA Task #:** New

**Task Title:** Dropped rod during startup.

**KSA Ref:** 001.A2.03

**PEO:** \_\_\_\_\_

**RO:** \_\_\_\_\_

**3.5**

**SRO:** \_\_\_\_\_

**4.2**

Safety Function 1 - Reactivity Control

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:**

SIMULATOR

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 10 minutes Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

**References:**

ABN-712, "Rod Control System Malfunction"  
Rev. 7  
IPO-002A, "Plant Startup from Hot Standby,"  
Revision 14

**Tools, Equipment, Job Aids, etc:**

Simulator Set-up:  
10E-8, IPO-002A  
Trigger E1 - F10 - Drop rod  
Trigger E2 - H8 - Drop rod

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments: This JPM will be performed in the simulator

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of IPO-002A, Section 5.4 to give to candidate. Use colored paper for ALL candidate hand-outs (cues and procedures).**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

Reactor is critical and power is  $1 \times 10^{-8}$  amps. You are directed to continue with the reactor startup and increase reactor power until power is approximately 2%. The MSIV's are open. You are currently in IPO-002A, Step 5.4.1.

### Terminating Conditions:

Reactor tripped and entry into EOP-0.0 A/B, Step 1 - verify reactor subcritical

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Increase Rx Power to approx 2%	References Procedure IPO-002A	<b>Give candidate copy of IPO-002A, Section 5.4</b>	
2	Establish a startup rate of approx 0.5 dpm	Pull Control Bank ? to attain startup rate		
3*	Notifies dropped rod and enters ABN procedure  <b>CUE:</b> Once RO/SRO identifies dropped rod -> inform him/her to perform actions of ABN-712	Enters ABN-712, "Rod Control System Malfunction" and begins to insert all Control Banks to Control Bank Offset Position	<b>After a constant 0.5 dpm SUR is obtained, insert a dropped rod</b>	
4*	Notifies additional dropped rod and scrams the reactor	Trips the reactor and go to EOP-0.0 A/B	<b>Approx 2 minutes after beginning rod insertion, drop another rod.</b>  Simulator Operator - do <b>NOT</b> drop another rod, unless the candidate begins to insert the rods.	
5*	Perform Step 1 of EOP-0.0 A/B          Task Complete	Verifies: <b>!</b> All rod bottom lights on <b>!</b> Rx trip and bypass brks open <b>!</b> Neutron flux decreasing		

# CANDIDATE HANDOUT

**INITIATING CUE:**

Reactor is critical and power is  $1 \times 10^{-8}$  amps. You are directed to continue with the reactor startup and increase reactor power until power is approximately 2%. The MSIV's are open. You are currently in IPO-002A, Step 5.4.1.

**System:** Nuclear Instrumentation System

**JTA Task #:** New

**Task Title:** Dropped rod during startup.

**KSA Ref:** 001.A2.03

**PEO:** \_\_\_\_\_

**RO:** \_\_\_\_\_

3.5

**SRO:** \_\_\_\_\_

4.2

Safety Function 1 - Reactivity Control

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:**

SIMULATOR

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 10 minutes Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

ABN-712, "Rod Control System Malfunction"  
Rev. 7  
IPO-002A, "Plant Startup from Hot Standby,"  
Revision 14

Tools, Equipment, Job Aids, etc:

Simulator Set-up:  
1.?????

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments: This JPM will be performed in the simulator

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of IPO-002A, Section 5.4 to give to candidate. Use colored paper for ALL candidate hand-outs (cues and procedures).**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

Reactor is critical and power is  $1 \times 10^{-8}$  amps. You are directed to continue with the reactor startup and increase reactor power until power is approximately 2%. The MSIV's are open.

### Terminating Conditions:

Reactor tripped and entry into EOP-0.0 A/B, Step 1 - verify reactor subcritical

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Increase Rx Power to approx 2%	References Procedure IPO-002A	<b>Give candidate copy of IPO-002A, Section 5.4</b>	
2	Establish a startup rate of approx 0.5 dpm	Pull Control Bank ? to attain startup rate		
3*	Notices dropped rod and enters ABN procedure	Enters ABN-712, "Rod Control System Malfunction" and begins to insert all Control Banks to Control Bank Offset Position	<b>After approx 2 minutes with 0.5 dpm SUR, insert a dropped rod</b>  <span style="color: red;">??Begins to insert rods within 2 minutes of dropped rod?? Does RO do this with direction from US or is it considered an immediate action?</span>	
4*	Notices additional dropped rod and scrams the reactor	Trips the reactor and go to EOP-0.0 A/B	<b>Approx 2 minutes after beginning rod insertion, drop another rod.</b>  Simulator Operator - do <b>NOT</b> drop another rod, unless the candidate begins to insert the rods.  <span style="color: red;">??Candidate trips the reactor, within 1 minute of additional dropped rod,</span>	



**EXAMINER COPY**

[illegible]

## CANDIDATE HANDOUT

### **INITIATING CUE:**

Reactor is critical and power is  $1 \times 10^{-8}$  amps. You are directed to continue with the reactor startup and increase reactor power until power is approximately 2%. The MSIV's are open.

**System:** Chemical And Volume Control  
System

**JTA Task #:** RO\*1333

**Task Title:** Respond To Chemical And Volume Control System Malfunction - Start the PDP

**KSA Ref:** 004.A4.08

**PEO:** \_\_\_\_\_

**RO:** \_\_\_\_\_

3.8

**SRO:** \_\_\_\_\_

3.4

Safety Function 2 - Reactor Coolant System Inventory Control (Faulted)

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** PLANT CONTROL ROOM SIMULATOR

**Performance Method:** PERFORMED SIMULATED DISCUSSED

**Time to complete JPM:** Estimated 20 min Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

ABN-501

SOP-103A(B), sections 5.3.3 & 5.3.4

Tools, Equipment, Job Aids, etc:

Update OP aide for PDP run for TODAYs date

ABN-501, SOP-103A(B)

Load Hot Standby or at Power IC

Place 75 gpm orifice inservice

Place Simulator in RUN, Activate Malfunction

SW01A, ensure auto actions, FREEZE the Simulator.

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of Procedure SOP-103A(B). Use colored paper for ALL candidate hand-outs (cues and procedures)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

Initial conditions: Train A equipment is in service.

Annunciator “SSWP 1/2 OVRLOAD/TRIP (1-1.8)” is alarming.

### Terminating Conditions:

CCP u-02 trips when started and PDP charging pump is started

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	<p>Responds to annunciator “SSWP 1/2 OVRLOAD/TRIP (1-1.8)” and enters ABN-501</p> <p><b>CUE:</b> SSW Pump u-01 has tripped - no flow and no amps. Unit Supervisor directs you to Perform ABN-501</p>	Candidate acknowledges alarm, determines SSW Pump <u>u</u> -01 has tripped, and references ABN-501		
2	<p>Verifies unaffected train SSW and CCW pumps running</p> <p><b>CUE:</b> Amps, current, and flows normal for Train B SSW and CCW pumps</p>	Candidate checks pumps running - amps and current		
3	<p>Verifies equipment in affected train - NOT required for operation</p> <p><b>CUE:</b> Unit Supervisor directs candidate to start CCP <u>u</u>-02</p>	Candidate checks equipment running in affected train (CCP, DG, CCW Pump, SI Pump, and CS Pumps)		
4	<p>Verify SSW flow to CCP 2</p> <p><b>CUE:</b> FLOW is 38 gpm on <u>u</u>-FI-4355</p> <p>Section 5.1.1 is complete</p>	<u>u</u> -FI-4355, CCP-2 SSW minimum FLOW 35 GPM		
5	<p>Ensure CCP breaker is racked in.</p> <p><b>CUE:</b> 1/<u>u</u>-APCH2 green lights lit</p>	1/ <u>u</u> -APCH2 green lights are lit		

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
6	<p>Verify open:</p> <p>CCP 1 &amp; 2 MINIFLO VLV's 1/1-8110 and 1/1-8111</p> <p>VCT to CHRG PMP SUCT VLVs 1/1-LCV-112B &amp; C</p> <p>CHRG PMP SUCT HI POINT VENT VLV's 1-ZL-8220 and 1-ZL-8221</p> <p>Verify Closed:</p> <p>RWST to CHRG PMP SUCT VLV 1/1-LCV-112D &amp; E</p> <p><b>CUE:</b></p> <p>Indicating lights are red for:</p> <p>1/1-8110, 8111</p> <p>1-ZL-8220, 8221</p> <p>1/1LCV-112B &amp; C</p> <p>Indicating lights are green for:</p> <p>1/1-LCV-112D &amp; E</p>	<p>Indicating lights are red for:</p> <p>1/1-8110, 8111</p> <p>1-ZL-8220, 8221</p> <p>1/1LCV-112B &amp; C</p> <p>Indicating lights are green for:</p> <p>1/1-LCV-112D &amp; E</p>		
7	<p>Locally start aux lube oil pump.</p> <p><b>CUE:</b> PEO reports aux lube oil pump running and ZL- APCH2-LP light is red</p>	<p>Dispatch PEO to locally place the handswitch for the aux lube oil pump for the selected CCP in AUTO and verify it starts</p>	<p>CCP may be started without starting the aux lube oil pump in an emergency. Should be logged in the unit log.</p>	
8	<p>Verify the train associated station service water pump in operation prior to starting a CCP.</p> <p><b>CUE:</b> SSWP 2 red light lit</p>	<p>SSWP 2 handswitch red light lit</p>	<p>This is a CAUTION</p>	

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
9	Start CCP 2 <b>CUE:</b> CCP 2 Green LIGHT LIGHT LIT - CCP 2 trips	1/ <u>u</u> -APCH2 handswitch to START	CCP 2 trips - Annunciator Alarms and Handswitch has trip light lit.	
10	Candidate reports that CCP 2 tripped  <b>CUE:</b> Unit Supervisor directs candidate to start the PDP per SOP-103A.	References SOP-103A and determines Section 5.3 is applicable	Give copy of Section 5.3 to candidate	
11	Ensures prerequisites of Section 2.5 are met  <b>CUE:</b> Section 2.5 (including Section 5.1.1) was completed - the pump was run today on an earlier shift as part of slave relay testing. PDP Stuffing Box level is OK.	Verifies Section 2.5 completed		
12	Ensure <u>u</u> -8388-RO, “PDP <u>u</u> -01 Disc Vlv Rmt Candidate”  <b>CUE:</b> PEO reports that <u>u</u> - 8388-RO is open	Has PEO verify <u>u</u> - 8388-RO is open		
13	Open vent valves 1/ <u>u</u> -8202A and 1/ <u>u</u> -8202B  <b>CUE:</b> 1/ <u>u</u> -8202A and 1/ <u>u</u> - 8202B Red Light lit	1/ <u>u</u> -8202A and 1/ <u>u</u> - 8202B handswitches to OPEN		
14	Place PDP speed controller in manual  <b>CUE:</b> <u>u</u> -SK-459A is in manual and setpoint is at 55% demand	<u>u</u> -SK-459A in manual and run setpoint to 55% demand		

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
15*	Open PDP recirc valve  <b>CUE:</b> 1/ <u>u</u> -8109 Red Light lit	1/ <u>u</u> -8109 handswitch to open		
16*	Start PDP  <b>CUE:</b> PDP Red Light lit	1/ <u>u</u> -APPD PDP handswitch to START		
17	Candidate checks 1/1-8109 valve is closed.	1/1-8109 is closed  Green light lit	Valve 1/1-8109 will auto close 2 minutes after PDP breaker is closed.	
18*	Increase PDP speed and decrease CCP flow  <b>CUE:</b> <u>u</u> -FK-121 is at a minimum	Alternately increase PDP speed <u>u</u> -SK-459A and decrease flow <u>u</u> -FK-121, until <u>u</u> -FK-121 is at a minimum		
19*	CCP 1 handswitch 1/ <u>u</u> -APCH1 TO STOP  <b>CUE:</b> 1/ <u>u</u> -APCH1 green light lit  Once candidate has stopped CCP 1, Examiner should cue that TASK COMPLETE	1/ <u>u</u> -APCH1 handswitch to STOP	NOTE: CCP 1 handswitch may be placed in Pull-Out	
	<b>TASK COMPLETE</b>			



# CANDIDATE HANDOUT

## INITIATING CUE:

Initial conditions: Train A equipment is in service.

Annunciator “SSWP 1/2 OVRLOAD/TRIP (1-1.8)” is alarming.

**System:** Reactor Coolant Pumps

**JTA Task #:** AO\*6521

**Task Title:** Isolate RCP Seals

**KSA Ref:** 002.K6.02

**PEO:**   X  

**RO:**   3.1  

**SRO:**   3.6  

Safety Function 2 - Reactor Coolant System Inventory Control

**Candidate's**

**Name:** \_\_\_\_\_

**Performance Environment:** PLANT

**Performance Method:** SIMULATED

**Time to complete JPM:** Estimated   10 minutes   Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

ECA-0.0B

Tools, Equipment, Job Aids, etc:

ECA-0.0B

Communications with the Control Room

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

For JPM's which are to be "PERFORMED", cues for indications and controls need not be given.

HIGH RAD AREA. CAUTION: High Rad Area NOT to be entered.

Perform on Unit 2 ONLY!!!!

**Need Copy of Procedure ECA-0.0A, Step 10. Use colored paper for ALL candidate handouts (cues and procedures).**

**Perform Admin RP JPM with this task.**

### Instructions:

You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use

### Initiating Cue:

The Unit Supervisor has directed you to isolate Unit 2 RCP seals in accordance with Step 10 of Procedure ECA-0.0B, "Loss of All AC Power," Revision 1

### Terminating Conditions:

The RCP seals have been isolated per ECA-0.0A

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	<p>Close RCP seal water return isolation valve 1/2-8100.</p> <p>CUE: 1/2-8100 handwheel will not rotate further and Stem is down</p>	Rotates handwheel in CLOSED direction	<p>SFGD 810 elevation Room 2-077B.</p> <p><b>Penetration Room may be high rad area if failed fuel present.</b></p> <p><b>Give candidate copy of procedure</b></p>	
*2	<p>CLOSE RCP seal injection throttle valves.</p> <p>2CS-8369A 2CS-8369B 2CS-8369B 2CS-8369D</p> <p>CUE: Valve handwheel will NOT rotate further and stem indicated down</p> <p>CUE: The candidate MUST identify the HRA first and indicate he/she would not enter prior to contacting RP. For 2CS-8369A and B - You have been given permission to enter the HRA -discuss ask how you would close valve and what indications.</p>	Rotates handwheel for individual valves in CLOSED direction	<p>2CS-8369A (SFGD 810 elev. Room 2-077B), 2CS-8369B (SFGD 810 elev. Room 2-077B) → are beyond a HIGH RAD Boundary</p> <p>2CS-8369C (SFGD 810 elev. Room 2-077A), 2CS-8369D (SFGD 810 elev. Room 2-077A).</p> <p><b>DO NOT ENTER THE HRA</b></p>	
*3	<p>Close 2-HV-4709</p> <p>CUE: 2-HV-4709 handwheel will not rotate further and Stem is down</p>	Rotates handwheel in CLOSED direction	<p>Unit 2 - THBR CLR CCW Return ORC Isol Vlv is in 832 SFGD Pen North Rm</p>	
	<b>TASK COMPLETE</b>			

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

The Unit Supervisor has directed you to isolate Unit 2 RCP seals in accordance with Step 10 of Procedure ECA-0.0B, "Loss of All AC Power," Revision 1

**System:** Reactor Coolant Pumps

**JTA Task #:** AO\*6521

**Task Title:** Isolate RCP Seals

**KSA Ref:** 002.K6.02

**PEO:**   X  

**RO:**   3.1  

**SRO:**   3.6  

Safety Function 2 - Reactor Coolant System Inventory Control

**Candidate's**

**Name:** \_\_\_\_\_

**Performance Environment:** PLANT

**Performance Method:** SIMULATED

**Time to complete JPM:** Estimated   10 minutes   Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

ECA-0.0B

Tools, Equipment, Job Aids, etc:

ECA-0.0B

Communications with the Control Room

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

For JPM's which are to be "PERFORMED", cues for indications and controls need not be given.

HIGH RAD AREA. CAUTION: High Rad Area NOT to be entered.

Perform on Unit 2 ONLY!!!!

**Need Copy of Procedure ECA-0.0A, Step 10. Use colored paper for ALL candidate handouts (cues and procedures).**

**Perform Admin RP JPM with this task.**

### Instructions:

You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use

### Initiating Cue:

The Unit Supervisor has directed you to isolate Unit 2 RCP seals in accordance with Step 10 of Procedure ECA-0.0B, "Loss of All AC Power," Revision 1

### Terminating Conditions:

The RCP seals have been isolated per ECA-0.0A

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	<p>Close RCP seal water return isolation valve 1/2-8100.</p> <p>CUE: 1/2-8100 handwheel will not rotate further and Stem is down</p>	Rotates handwheel in CLOSED direction	<p>SFGD 810 elevation Room 2-077B.</p> <p><b>Penetration Room may be high rad area if failed fuel present.</b></p> <p><b>Give candidate copy of procedure</b></p>	
*2	<p>CLOSE RCP seal injection throttle valves.</p> <p>2CS-8369A 2CS-8369B 2CS-8369c 2CS-8369D</p> <p>CUE: Valve handwheel will NOT rotate further and stem indicated down</p> <p>CUE: The candidate MUST identify the HRA first and indicate he/she would not enter prior to contacting RP. For 2CS-8369A and B - You have been given permission to enter the HRA -discuss ask how you would close valve and what indications.</p>	<p>Rotates handwheel for individual valves in CLOSED direction.</p> <p>Valves CAN be closed in any order.</p>	<p>2CS-8369A (SFGD 810 elev. Room 2-077B), 2CS-8369B (SFGD 810 elev. Room 2-077B) → are beyond a HIGH RAD Boundary</p> <p>2CS-8369C (SFGD 810 elev. Room 2-077A), 2CS-8369D (SFGD 810 elev. Room 2-077A).</p> <p><b>DO NOT ENTER THE HRA</b></p>	
*3	<p>Close 2-HV-4709</p> <p>CUE: 2-HV-4709 handwheel will not rotate further and Stem is down</p>	Rotates handwheel in CLOSED direction	Unit 2 - THBR CLR CCW Return ORC Isol Vlv is in 832 SFGD Pen North Rm	
	<b>TASK COMPLETE</b>			



# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

The Unit Supervisor has directed you to isolate Unit 2 RCP seals in accordance with Step 10 of Procedure ECA-0.0B, "Loss of All AC Power," Revision 1

**System:** Reactor Coolant Pumps

**JTA Task #:** AO\*6521

**Task Title:** Isolate RCP Seals

**KSA Ref:** 002.K6.02

**PEO:**   X  

**RO:**   3.1  

**SRO:**   3.6  

Safety Function 2 - Reactor Coolant System Inventory Control

**Candidate's**

**Name:** \_\_\_\_\_

**Performance Environment:** PLANT

**Performance Method:** SIMULATED

**Time to complete JPM:** Estimated   10 minutes   Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

ECA-0.0B

Tools, Equipment, Job Aids, etc:

ECA-0.0B

Communications with the Control Room

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

For JPM's which are to be "PERFORMED", cues for indications and controls need not be given.

HIGH RAD AREA. CAUTION: High Rad Area NOT to be entered.

Perform on Unit 2 ONLY!!!!

**Need Copy of Procedure ECA-0.0A, Step 10. Use colored paper for ALL candidate handouts (cues and procedures).**

**Perform Admin RP JPM with this task.**

### Instructions:

You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use

### Initiating Cue:

The Unit Supervisor has directed you to isolate Unit 2 RCP seals in accordance with Step 10 of Procedure ECA-0.0B, "Loss of All AC Power," Revision 1

### Terminating Conditions:

The RCP seals have been isolated per ECA-0.0A

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	<p>Close RCP seal water return isolation valve 1/2-8100.</p> <p>CUE: 1/2-8100 handwheel will not rotate further and Stem is down</p>	Rotates handwheel in CLOSED direction	<p>SFGD 810 elevation Room 2-077B.</p> <p><b>Penetration Room may be high rad area if failed fuel present.</b></p> <p><b>Give candidate copy of procedure</b></p>	
*2	<p>CLOSE RCP seal injection throttle valves.</p> <p>2CS-8369A 2CS-8369B 2CS-8369c 2CS-8369D</p> <p>CUE: Valve handwheel will NOT rotate further and stem indicated down</p> <p>CUE: The candidate MUST identify the HRA first and indicate he/she would not enter prior to contacting RP. For 2CS-8369A and B - You have been given permission to enter the HRA -discuss ask how you would close valve and what indications.</p>	<p>Rotates handwheel for individual valves in CLOSED direction.</p> <p>Valves CAN be closed in any order.</p>	<p>2CS-8369A (SFGD 810 elev. Room 2-077B), 2CS-8369B (SFGD 810 elev. Room 2-077B) → are beyond a HIGH RAD Boundary</p> <p>2CS-8369C (SFGD 810 elev. Room 2-077A), 2CS-8369D (SFGD 810 elev. Room 2-077A).</p> <p><b>DO NOT ENTER THE HRA</b></p>	
*3	<p>Close 2-HV-4709</p> <p>CUE: 2-HV-4709 handwheel will not rotate further and Stem is down</p>	Rotates handwheel in CLOSED direction	Unit 2 - THBR CLR CCW Return ORC Isol Vlv is in 832 SFGD Pen North Rm	
	<b>TASK COMPLETE</b>			

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

The Unit Supervisor has directed you to isolate Unit 2 RCP seals in accordance with Step 10 of Procedure ECA-0.0B, "Loss of All AC Power," Revision 1

**System:** Pressurizer Pressure Control System

**JTA Task #:** RO\*1209

**Task Title:** Control Pressurizer Pressure

**KSA Ref:** 010.A1.07

**PEO:** \_\_\_\_\_

**RO:** \_\_\_\_\_

3.7

**SRO:** \_\_\_\_\_

3.7

Safety Function 3 - Reactor Pressure Control

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:**

SIMULATOR

**Performance Method:**

PERFORMED

**Time to complete JPM:** Estimated 10 min. Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:  
IPO-005A,  
8758D39

Tools, Equipment, Job Aids, etc:

Load the Simulator to an IC with Tave appx. 543<sup>B</sup> F,  
RCS Pressure appx. 2235 psig, and a 50<sup>B</sup> F/Hr  
cooldown in progress. (IC29)

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of IPO-005A, Steps 5.1.26 and 5.1.27. Use colored paper for ALL candidate handouts (cues and procedures)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

A plant shutdown and cooldown for refueling is in progress. The RCS is currently at appx. 543<sup>b</sup>F and 2235 psig. You are currently in IPO-005A, at step 5.1.26 with a 50<sup>b</sup>F/Hr cooldown in progress. The US has instructed you to initiate a reduction of RCS Pressure per step 5.1.26 while the RCS Cooldown is continuing. **Stop the depressurization at 2100 psig.** The BOP is controlling the cooldown

### Terminating Conditions:

Przr Spray Valve Controllers in MANUAL (AMBER & GREEN) Lights with zero (0) output, ZL Lights GREEN, and RCS Pressure at **2100 psig**

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Initiates monitoring of RCP parameters  <b>CUE:</b> Extra RO is monitoring RCP Parameters	Displays RCP parameters on PCS Group Display		
*2	Place Pressurizer Spray Valve Controller in MANUAL  <b>CUE:</b> Przr Spray Valve Controllers <u>u</u> -PK-455B and <u>u</u> -PK-455C indicate zero (0) output with AMBER and GREEN Lights ON.	Depress "AMBER" P/B on PK-455B and PK-455C and verify controllers are in MANUAL by observing the AMBER Light ON and the WHITE (Auto) Light OFF.	PK-455B and PK-455C are located on CB-05 (VERTICAL BOARD)  Controller output should be zero (0) with GREEN Light ON.	
*3	<u>Slowly</u> THROTTLE OPEN one or both pressurizer spray valve to begin a slow RCS Pressure reduction.  <b>CUE:</b> one Przr Spray Valve ZL lights are RED and GREEN. The other Spray Valve ZL light is GREEN.	Depress the RED P/B on <u>either</u> PK-455B <u>and/or</u> PK-455C and verify controller response by observing the controller output and indicating lights (ZL-455B or ZL-455C) on Control Board (Vertical Board Section).	When the RED P/B is depressed the GREEN P/B Light should go OUT and the output meter should begin to increase (from 9% toward 100%). As the valve begins to throttle the ZL LIGHTS (ZL-455A or ZL-455B) will indicate THROTTLED by having both RED and GREEN LIGHTS <u>ON</u>	



## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
4	Monitor RCS Pressure for DECREASE  <b>CUE:</b> RCS pressure is decreasing and ALARMS 1.6 and 2.6 on ALB-5B have annunciated.	Verify RCS Pressure decrease using Narrow Range Pressure Instruments or Recorder. <ul style="list-style-type: none"> <li>• <u>u</u>-PI-455A</li> <li>• <u>u</u>-PI-456</li> <li>• <u>u</u>-PI-457</li> <li>• <u>u</u>-PI-458</li> <li>• <u>u</u>-PI-455</li> </ul>	RCS Press (NR) instruments <u>u</u> -PI-455A, <u>u</u> -PI-456, <u>u</u> -PI-457, and/or <u>u</u> -PI-458 located on CB-05 <u>OR</u> RCS Press Recorder <u>u</u> -PR-455 located on CB-05  NOTE: ALB-5B 1.6 & 2.6 annunciate at 2185 psig	
5	ACKNOWLEDGE Annunciators 1.6 and 2.6 on ALB-5B.	Depress the ACKNOWLEDGE P/B at the Annunciator Controls on CB-05	NOTE: Pressure reduction may be terminated before alarms are received	
6	Monitor RCS Pressure for DECREASE.  <b>CUE:</b> RCS Pressure indicates 2140 psig on <u>u</u> -PI-455A, <u>u</u> -PI-456, 457, 458, and recorder <u>u</u> -PR-455 and the US DIRECTS you to STOP the pressure decrease	Verify RCS Pressure decrease using Narrow Range Pressure Instruments or Recorder. <ul style="list-style-type: none"> <li>• <u>u</u>-PI-455A</li> <li>• <u>u</u>-PI-456</li> <li>• <u>u</u>-PI-457</li> <li>• <u>u</u>-PI-458</li> <li>• <u>u</u>-PI-455</li> </ul>	RCS Press (NR) instruments <u>u</u> -PI-455A, <u>u</u> -PI-456, <u>u</u> -PI-457, and/or <u>u</u> -PI-458 located on CB-05 (Vertical Board) <u>OR</u> RCS Press Recorder <u>u</u> -PR-455 located on CB-05 (Vertical Board).	

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
7	<p>STOP RCS Pressure reduction at 2100 psig</p> <p><b>CUE:</b> SPRAY Valve Controller at 0 (zero) output with GREEN and AMBER Lights ON. The ZL Lights for the SPRAY Valves (ZL-455B &amp; ZL-455C) are GREEN.</p> <p><b>TASK COMPLETE</b></p>	Depress the GREEN P/B on either PK-455B <u>or</u> PK-455C until controller output indicates zero (0) with GREEN Light ON <u>and/or</u> the indicating lights (ZL-455B or ZL-455C) on Control Board (Vertical Board Section) indicates SPRAY Valve CLOSED.	<p>Controller PK-455B and PK-455C are located on CB -05 (Beveled Section).</p> <p>When the output meter indicates zero (0) the GREEN Light (for Controller) should be ON and ZL Indicating Lights (ZL-455B and ZL-455C) should be GREEN (RED Light OFF).</p>	

## CANDIDATE HANDOUT

**INITIATING CUE:** A plant shutdown and cooldown for refueling is in progress. The RCS is currently at appx. 543<sup>B</sup> F and 2235 psig. You are currently in IPO-005A, at step 5.1.26 with a 50<sup>B</sup> F/Hr cooldown in progress. The US has instructed you to initiate a reduction of RCS Pressure per step 5.1.26 while the RCS Cooldown is continuing. **Stop the depressurization at 2100 psig.** The BOP is controlling the cooldown

**System:** Pressurizer Pressure Control System

**JTA Task #:** RO\*1209

**Task Title:** Control Pressurizer Pressure

**KSA Ref:** 010.A1.07

**PEO:** \_\_\_\_\_

**RO:** \_\_\_\_\_

3.7

**SRO:** \_\_\_\_\_

3.7

Safety Function 3 - Reactor Pressure Control

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:**

SIMULATOR

**Performance Method:**

PERFORMED

**Time to complete JPM:** Estimated 10 min. Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:  
IPO-005A,  
8758D39

Tools, Equipment, Job Aids, etc:

Load the Simulator to an IC with Tave appx. 543<sup>B</sup> F,  
RCS Pressure appx. 2235 psig, and a 50<sup>B</sup> F/Hr  
cooldown in progress. (IC29)

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of IPO-005A, Steps 5.1.26 and 5.1.27. Use colored paper for ALL candidate handouts (cues and procedures)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

A plant shutdown and cooldown for refueling is in progress. The RCS is currently at appx. 543<sup>b</sup>F and 2235 psig. You are currently in IPO-005A, at step 5.1.26 with a 50<sup>b</sup>F/Hr cooldown in progress. The US has instructed you to initiate a reduction of RCS Pressure per step 5.1.26 while the RCS Cooldown is continuing. Stop the depressurization at 2100 psig +/- 50 psig. The BOP is controlling the cooldown

### Terminating Conditions:

Przr Spray Valve Controllers in MANUAL (AMBER & GREEN) Lights with zero (0) output, ZL Lights GREEN, and RCS Pressure at **2100 psig**

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Initiates monitoring of RCP parameters  <b>CUE:</b> Extra RO is monitoring RCP Parameters	Displays RCP parameters on PCS Group Display		
*2	Candidate places Pressurizer Spray Valve Controller in MANUAL by depressing "AMBER" push button on controllers	Depress "AMBER" P/B on PK-455B and PK-455C and verify controllers are in MANUAL by observing the AMBER Light ON and the WHITE (Auto) Light OFF.  Output of controllers indicate zero (0)	PK-455B and PK-455C are located on CB-05 (VERTICAL BOARD)  Controller output should be zero (0) with GREEN Light ON.	
*3	Candidate <u>Slowly</u> THROTTLE OPENS one or both pressurizer spray valve to begin a slow RCS Pressure reduction.	Depress the RED P/B on <u>either</u> PK-455B <u>and/or</u> PK-455C and verify controller response by observing the controller output and indicating lights (ZL-455B or ZL-455C) on Control Board (Vertical Board Section).  Przr Spray Valve ZL lights are RED and GREEN. The other Spray Valve ZL light is GREEN.	When the RED P/B is depressed the GREEN P/B Light should go OUT and the output meter should begin to increase (from 9% toward 100%). As the valve begins to throttle the ZL LIGHTS (ZL-455A or ZL-455B) will indicate THROTTLED by having both RED and GREEN LIGHTS <u>ON</u>	

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
4	Candidate monitors RCS Pressure for DECREASE	Verify RCS Pressure decrease using Narrow Range Pressure Instruments or Recorder. ! 1-PI-455A ! 1-PI-456 ! 1-PI-457 ! 1-PI-458 ! 1-PR-455  ALARMS 1.6 and 2.6 on ALB-5B have annunciated.	RCS Press (NR) instruments 1-PI-455A, 1-PI-456, 1-PI-457, and/or 1-PI-458 located on CB-05 (Vertical Board) OR RCS Press Recorder 1-PR-455 located on CB-05 (Vertical Board).  NOTE: ALB-5B 1.6 & 2.6 annunciate at 2185 psig	
5	Candidate ACKNOWLEDGES Annunciators 1.6 and 2.6 on ALB-5B.  Candidate may check ALM Procedures - expected alarms	Depress the ACKNOWLEDGE P/B at the Annunciator Controls on CB-05	NOTE: Pressure reduction may be terminated before alarms are received	
6	Candidate continues to monitor RCS Pressure for DECREASE	Verify RCS Pressure decrease using Narrow Range Pressure Instruments or Recorder. ! 1-PI-455A ! 1-PI-456 ! 1-PI-457 ! 1-PI-458 ! 1-PR-455	RCS Press (NR) instruments 1-PI-455A, 1-PI-456, 1-PI-457, and/or 1-PI-458 located on CB-05 (Vertical Board) OR RCS Press Recorder 1-PR-455 located on CB-05 (Vertical Board).	

## CANDIDATE HANDOUT

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
7	Candidate STOPS the RCS Pressure reduction when RCS pressure is between 2050 - 2150 psig	Depress the GREEN P/B on either PK-455B <u>or</u> PK-455C until controller output indicates zero (0) with GREEN Light ON <u>and/or</u> the indicating lights (ZL-455B or ZL-455C) on Control Board (Vertical Board Section) indicates SPRAY Valve CLOSED.	Controller PK-455B and PK-455C are located on CB -05 (Beveled Section).  When the output meter indicates zero (0) the GREEN Light (for Controller) should be ON and ZL Indicating Lights (ZL-455B and ZL-455C) should be GREEN (RED Light OFF).	
	<b>TASK COMPLETE</b>			



# CANDIDATE HANDOUT

## INITIATING CUE:

A plant shutdown and cooldown for refueling is in progress. The RCS is currently at appx. 543<sup>b</sup>F and 2235 psig. You are currently in IPO-005A, at step 5.1.26 with a 50<sup>b</sup>F/Hr cooldown in progress. The US has instructed you to initiate a reduction of RCS Pressure per step 5.1.26 while the RCS Cooldown is continuing. Stop the depressurization at 2100 psig +/- 50 psig. The BOP is controlling the cooldown

**System:** Inadequate Core Cooling

**JTA Task #:** AO\*6415

**Task Title:** Shift Auxiliary Feed Pump Suction (Faulted)

**KSA Ref:** E06.EA1.1

**PEO:** X

**RO:** 3.8

**SRO:** 3.8

Safety Function 4 - Heat Removal from Reactor Core (Secondary)

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** PLANT

**Performance Method:** SIMULATED

**Time to complete JPM:** Estimated 25 min. Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

FRC-0.1A(B), "Response to Inadequate Core Cooling,"  
ABN-305, "Auxiliary Feedwater System Malfunction"

Tools, Equipment, Job Aids, etc:

None

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

For JPM's which are to be "PERFORMED", cues for indications and controls need not be given.

**Need copy of Procedure ABN-305, Section 5.3, Step 11 and Attachment 4. Use colored paper for ALL candidate handouts (cues and procedures).**

### Instructions:

You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use.

### Initiating Cue:

During performance of FRC-0.1A(B), "Response to Inadequate Core Cooling," the CST decreased to less than 10%. The RO has switched the AFW suction to the A train of SSW. You are directed to CLOSE the following valves:

- AF-0020, SSW TO U1(U2) AFW PMP DRN VLV
- AF-0120, SSW TO U1(U2) AFW PMP HI PNT VNT VLV

### Terminating Conditions:

Fire protection water aligned to CST

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1*	CLOSE <u>u</u> -AF-020, SSW to AFW Suctions Drain Valve  <b>CUE:</b> <u>u</u> -AF-020, SSW AFW SUCT DRN Valve handwheel is stuck open - will not shut	<u>U</u> AF-020, SSW to AFW Suction Drain Valve, valve handwheel will not shut		
2	Inform the control room that <u>u</u> -AF-020, SSW to AFW Suctions Drain Valve will not shut  <b>CUE:</b> Unit Supervisor directs the operator to lineup firemain to the CST per ABN-305, Attachment 4, Steps 1-5	Informs Unit Supervisor that <u>u</u> -AF-020, SSW to AFW Suctions Drain Valve will not shut	<b>Give copy of ABN-305, Attachment 4</b>	
3	Ensure the following valves are closed: <u>u</u> -AF-0108 <u>u</u> -AF-0109 <u>u</u> -AF-0200 <u>u</u> -AF-0110 <u>u</u> -AF-0111 <u>u</u> -AF-0156 <u>u</u> -AF-0113 <u>u</u> -AF-0112	Check the valves closed by rotating valve in the clockwise position. No further movement. Also verify by valve stem position.		
4*	Connect selected fire protection supply lines (see NOTES for list of valves) to one or more of the following AFW valves: <u>u</u> -AF-0156 <u>u</u> -AF-0112 <u>u</u> -AF-0113	Point out at least 1 AFW valve and one fire protection supply valve.	Fire protection supply line valves: <u>Unit 1</u> 1FP-0317, 0627, 0626, 0625, 0221, 0557, 0593, 0597 <u>Unit 2</u> 2FP-0468, 0564, 0563, 0562, 0221, 0504, 0505, 0506	
5*	Open valves <u>u</u> -AF-0110, CST TO CT PMP <u>u</u> -01 SUCT UPSTREAM ISOL VLV AND <u>u</u> -AF-0111, CST TO CT PMP <u>u</u> -01SUCT DNSTRM ISOL VLV	Open <u>u</u> -AF-0110 and <u>u</u> -AF-0111 valves, valve handwheel rotated COUNTER CLOCKWISE		

**EXAMINER COPY**

[illegible]

# CANDIDATE HANDOUT

## **INITIATING CUE:**

During performance of FRC-0.1A(B), "Response to Inadequate Core Cooling," the CST decreased to less than 10%. The RO has switched the AFW suction to the A train of SSW. You are directed to CLOSE the following valves:

- uAF-0020, SSW TO U1(U2) AFW PMP DRN VLV
- uAF-0120, SSW TO U1(U2) AFW PMP HI PNT VNT VLV

**System:** Inadequate Core Cooling

**JTA Task #:** AO\*6415

**Task Title:** Shift Auxiliary Feed Pump Suction (Faulted)

**KSA Ref:** E06.EA1.1

**PEO:** X

**RO:** 3.8

**SRO:** 3.8

Safety Function 4 - Heat Removal from Reactor Core (Secondary)

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** PLANT

**Performance Method:** SIMULATED

**Time to complete JPM:** Estimated 25 min. Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

FRC-0.1A(B), "Response to Inadequate Core Cooling,"  
ABN-305, "Auxiliary Feedwater System Malfunction"

Tools, Equipment, Job Aids, etc:

None

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

For JPM's which are to be "PERFORMED", cues for indications and controls need not be given.

**Need copy of Procedure ABN-305, Section 5.3, Step 11 and Attachment 4. Use colored paper for ALL candidate handouts (cues and procedures).**

### Instructions:

You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use.

### Initiating Cue:

During performance of FRC-0.1A(B), "Response to Inadequate Core Cooling," the CST decreased to less than 10%. The RO has switched the AFW suction to the A train of SSW. You are directed to CLOSE the following valves:

- uAF-0020, SSW TO U1(U2) AFW PMP DRN VLV
- uAF-0120, SSW TO U1(U2) AFW PMP HI PNT VNT VLV

### Terminating Conditions:

Fire protection water aligned to CST



## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1*	<p>CLOSE <u>u</u>-AF-020, SSW to AFW Suctions Drain Valve</p> <p><b>CUE:</b> <u>u</u>-AF-020, SSW AFW SUCT DRN Valve handwheel is stuck open - will not shut</p>	<p><u>U</u>AF-020, SSW to AFW Suction Drain Valve, valve handwheel will not shut</p>		
2	<p>Inform the control room that <u>u</u>-AF-020, SSW to AFW Suctions Drain Valve will not shut</p> <p><b>CUE:</b> Unit Supervisor directs the operator to lineup <b>ONE firemain source</b> to the CST per ABN-305, Attachment 4, Steps 1-5</p>	<p>Informs Unit Supervisor that <u>u</u>-AF-020, SSW to AFW Suctions Drain Valve will not shut</p>	<p><b>Give copy of ABN-305, Attachment 4</b></p>	
3	<p>Ensure the following valves are closed:</p> <p><u>u</u>-AF-0108  <u>u</u>-AF-0109  <u>u</u>-AF-0200  <u>u</u>-AF-0110  <u>u</u>-AF-0111  <u>u</u>-AF-0156  <u>u</u>-AF-0113  <u>u</u>-AF-0112</p> <p><b>CUE:</b>  No further valve movement</p>	<p>Check the valves closed by rotating valve in the clockwise position. No further movement. Also verify by valve stem position.</p>		

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
4*	<p>Connect selected fire protection supply lines (see NOTES for list of valves) to one or more of the following AFW valves:  <u>u</u>-AF-0156  <u>u</u>-AF-0112  <u>u</u>-AF-0113            Note: The fittings used to connect the the fire hoses are not staged in a specific locker. Discuss where the hoses are hooked up and where fittings are located (not in ABN-501 locker - would have to contact maint. for fittings or locate in another ops locker.</p> <p><b>CUE:</b>            Hose is connected between valve(s)? And valve(s) ?</p>	Point out at least 1 AFW valve and one fire protection supply valve.	Fire protection supply line valves: <u>Unit 1</u> 1FP-0317, 0627, 0626, 0625, 0221, 0557, 0593, 0597 <u>Unit 2</u> 2FP-0468, 0564, 0563, 0562, 0221, 0504, 0505, 0506	
5*	<p>Open valves <u>u</u>-AF-0110, CST TO CT PMP <u>u</u>-01 SUCT UPSTREAM ISOL VLV AND <u>u</u>-AF-0111, CST TO CT PMP <u>u</u>-01SUCT DNSTRM ISOL VLV</p> <p><b>CUE:</b>            Valves are open</p>	Open <u>u</u> -AF-0110 and <u>u</u> -AF-0111 valves, valve handwheel rotated COUNTER CLOCKWISE		
6*	<p>Open the AFW valves that had fire protection water hooked up in accordance with Step 4:  <u>u</u>-AF-0156  <u>u</u>-AF-0112  <u>u</u>-AF-0113</p> <p><b>CUE:</b>            Valves are open</p>	Open the selected valves: <u>u</u> -AF-0156, and/or <u>u</u> -AF-0112, and/or <u>u</u> -AF-0113, valve handwheel rotated COUNTER CLOCKWISE		

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
7*	<p>Open the fire protection valve header fill valves used to connect to AFW in Step 4:</p> <p><u>Unit 1</u> 1FP-0317, 0627, 0626, 0625, 0221, 0557, 0593, 0597</p> <p><u>Unit 2</u> 2FP-0468, 0564, 0563, 0562, 0221, 0504, 0505, 0506</p> <p>CUE: Valve(s) is open</p>	<p>Open the selected valves, valve handwheel rotated COUNTER CLOCKWISE</p>		
8	<p>Notify the Control Room that fire protection water is filling the CST</p> <p>TASK COMPLETE</p>	<p>Candidate notifies Control Room that fire protection water is filling the CST</p>		

# CANDIDATE HANDOUT

## **INITIATING CUE:**

During performance of FRC-0.1A(B), "Response to Inadequate Core Cooling," the CST decreased to less than 10%. The RO has switched the AFW suction to the A train of SSW. You are directed to CLOSE the following valves:

- uAF-0020, SSW TO U1(U2) AFW PMP DRN VLV
- uAF-0120, SSW TO U1(U2) AFW PMP HI PNT VNT VLV

**System:** Reactor Coolant Pump System

**JTA Task #:** RO\*1102

**Task Title:** Start/Stop RCP

**KSA Ref:** 003.A4.06

**PEO:** \_\_\_\_\_

**RO:** 2.9

**SRO:** 2.9

Safety Function 4 - Heat Removal from Core (Primary)

**Candidate's**

**Name:** \_\_\_\_\_

**Performance Environment:** PLANT CONTROL ROOM SIMULATOR

**Performance Method:** PERFORMED SIMULATED

**Time to complete JPM:** Estimated 20 min Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

SOP-108A, "Reactor Coolant Pump"

SOP-108B, "Reactor Coolant Pump"

Tools, Equipment, Job Aids, etc:

SOP-108A/B (Working Copy)

Reset to IC. Rackin #3 RCP breaker using Remote Function RCR14.

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

IPO-001, "Plant Heatup From Cold shutdown to Hot Standby", has progressed to the point of starting the third Reactor Coolant Pump per SOP-108. All prerequisites have been met and all steps have been completed through step 5.1.G in SOP-108. All seal flows are within limits. You are directed to start #3 RCP continuing with step 5.1.H of SOP-108.

### Terminating Conditions:

The #3 RCP secured and the oil lift pump secured.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	<p>Verify the alarms on ALB-5A are clear</p> <p><b>CUE:</b> Alarms clear.</p>	<p>The following alarms are checked clear:</p> <ul style="list-style-type: none"> <li>• 1.2 “Any RCP Seal 1 Lkoff Flo Hi”</li> <li>• 1.6 “Any RCP Seal Wtr Inj Flow Lo”</li> <li>• 2.2 “Any RCP Seal 1 ΔP Lo”</li> <li>• 3.1 “Any RPC Seal Wtr Standpipe Lvl Hi”</li> <li>• 3.2 “Any RCP Seal 2 Lkoff Flo Hi”</li> <li>• 4.1 “Any RCP Seal Wtr Standpipe Lvl Lo”</li> <li>• 3.4 “RCP 3 UP Brg L/O Resvr Lvl Hi/Lo”</li> <li>• 3.5 “RCP 3 Low Brg L/O Resvr Lvl Hi/Lo”</li> </ul>		
2	<p>Verify proper cooling water flows.</p> <p><b>CUE:</b> <u>u</u>-FI-4683 indicates 175 gpm.</p> <p><b>CUE:</b> <u>u</u>-FI-4685 indicates 6 gpm.</p> <p><b>CUE:</b> <u>u</u>-FI-4684 indicates 355 gpm.</p>	<p>The following parameters are checked within the specified limits:</p> <ul style="list-style-type: none"> <li>• “RCP 3 UP Brg L/O CLR CCW RET FLO” <u>u</u>-FI-4683 indicates 150-190 gpm</li> </ul>	(CB-03)	

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	CUE: <u>u</u> -FI-4686 indicates 40 gpm	<p>! "RCP 3 LOW Brg L/O CLR CCW RET FLO" <u>u</u>-FI-4685 indicates 5 to 6 gpm</p> <p>! "RCP 3 MOTOR AIR CLR CCW RET FLO" <u>u</u>-fi-4684 indicates 340 to 380 gpm</p> <p>! "RCP 3 THBR CLR CCW RET FLO" <u>u</u>-FI-4686 indicates 35 to 55 gpm</p>		
3	<p>Initiate trending of data for the affected RCP if not previously done.</p> <p>CUE: The Relief R.O. has initiated trending as required.</p>	The plant computer is trending the points specified per SOP-108 Attachment 2	SOP-108A, Step 5.1.10 still uses P-2500	
4	<p>Ensure the breaker for the #3 RCP is racked in.</p> <p>CUE: The breaker was previously racked in.</p>	The #3 RCP breaker is racked in (Verified by dispatching an PEO to check RCP #3 breaker on <u>u</u> A3 LOCALLY).		
5	<p>Ensure the overcurrent trip selector switch is in the "COLD LOOP" position</p> <p>CUE: The selector switch was previously placed in this condition.</p>	The #3 RCP Overcurrent Trip Selector switch is placed in the "COLD LOOP" position (verified by dispatching an PEO to check the switch is in the proper position at the RCP #3 Breaker on <u>u</u> A3 LOCALLY).		
6	Station personnel at #3 RCP to observe the pump.	Candidate asks if the RCP is accessible.		



## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	<b>CUE:</b> The RCP is not accessible			
*7	Start the #3 RCP oil lift pump  <b>CUE:</b> Green light OFF Red light ON.	1/ <u>u</u> -PCPX3-LP, RCP 3 OIL LIFT PMP, switch taken to the “START” position – Candidate verifies green light off and red light on and should mark time to verify pump runs for 2 minutes prior to starting #3 RCP.		
8	Check OIL PRESS permissive interlock lit.  <b>CUE:</b> Blue light ON.	Candidate verifies Blue “OIL PRESS” light lit.		
*9	Start the #3 RCP  <b>CUE:</b> Green light OFF Red light ON.	1/ <u>u</u> -PCPX3 taken to the “Start” position $\geq 2$ minutes after the oil lift pump start. Candidate verifies Green light off and Red light on.		
10	Verify Alarm 2.1 on ALB-5B clear.  <b>CUE:</b> Window 2.1 is DARK	Alarm 2.1 and ALB-5B “Any RCP Fail to Start” is clear.		
11	VERIFY #3 RCP undervoltage TSLB goes out.  <b>CUE:</b> White light not lit.	Candidate verifies TSLB-4, 3.2, RCP 3 BUS UNDERVOLT NOT lit.		
12	Verify #3 Loop flow increases within 10 seconds.  <b>CUE:</b> Loop flow is increasing	Candidate checks #3 loop flow on <u>u</u> -FI-434/35/36, RC LOOP 3 FLO	#3 RCP should be stopped if flow does not increase within 10 sec.	
13	Verify #3 RCP motor amps have decreased to less than or equal to 750 amp within one minute  <b>CUE:</b> Motor amps have decreased to 800 amps.	Candidate checks #3 motor current on <u>u</u> -11-RCP3, RCP3 MOTOR CURRENT, motor amps = 800 amps.		

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
14	Inform SRO of problem with motor amps  <b>CUE:</b> SRO acknowledges report	SRO informed of problem		
15*	Stop #3 RCP  <b>CUE:</b> Green light on Red light off	Candidate momentarily places 1/U-PCPX3, #3 RCP to STOP	Must trip the RCP within 2 minutes after start.	
16	Stop the #3 RCP oil lift pump  <b>CUE:</b> Blue and Red lights off. Green light on.  <b>TASK COMPLETE</b>	After RCP #3 has operated greater than 1 min. <u>OR</u> if #3 RCP has been stopped. Candidate should take switch 1/ <u>u</u> -PCPX3-LP. RCP 3 OIL LIFT PUMP, to the stop position.		

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

IPO-001, "Plant Heatup From Cold shutdown to Hot Standby", has progressed to the point of starting the third Reactor Coolant Pump per SOP-108. All prerequisites have been met and all steps completed through 5.1.7 in SOP-108. All seal flows are within limits. You are directed to start #3 RCP continuing with step 5.1.8 of SOP-108.

**System:** Reactor Coolant Pump System

**JTA Task #:** RO\*1102

**Task Title:** Start/Stop RCP

**KSA Ref:** 003.A4.06

**PEO:** \_\_\_\_\_

**RO:** 2.9

**SRO:** 2.9

Safety Function 4 - Heat Removal from Core (Primary)

**Candidate's**

**Name:** \_\_\_\_\_

**Performance Environment:**

PLANT

CONTROL ROOM

SIMULATOR

**Performance Method:**

PERFORMED

SIMULATED

**Time to complete JPM:**

Estimated

10 min

Actual

\_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Date: \_\_\_\_\_

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

SOP-108A, "Reactor Coolant Pump"

SOP-108B, "Reactor Coolant Pump"

Tools, Equipment, Job Aids, etc:

SOP-108A/B (Working Copy)

Reset to IC. Rack-in #2 RCP breaker using Remote Function RCR13.

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need Copy of SOP-108A, Section 5. Use colored paper for ALL candidate handouts (cues and procedure)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

IPO-001, "Plant Heatup From Cold shutdown to Hot Standby", has progressed to the point of starting the third Reactor Coolant Pump per SOP-108. All prerequisites have been met and all steps have been completed through step 5.1.G in SOP-108. All seal flows are within limits. You are directed to start RCP 1-02 continuing with step 5.1.H of SOP-108.

### Terminating Conditions:

The #2 RCP secured and the oil lift pump secured.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Candidate verifies the alarms on ALB-5A are clear	<p>The following alarms are checked clear:</p> <ul style="list-style-type: none"> <li>• 1.2 “Any RCP Seal 1 Lkoff Flo Hi”</li> <li>• 1.6 “Any RCP Seal Wtr Inj Flow Lo”</li> <li>• 2.2 “Any RCP Seal 1 ΔP Lo”</li> <li>• 3.1 “Any RPC Seal Wtr Standpipe Lvl Hi”</li> <li>• 3.2 “Any RCP Seal 2 Lkoff Flo Hi”</li> <li>• 4.1 “Any RCP Seal Wtr Standpipe Lvl Lo”</li> <li>• 2.4 “RCP 2 UP Brg L/O Resvr Lvl Hi/Lo”</li> <li>• 2.5 “RCP 2 Low Brg L/O Resvr Lvl Hi/Lo”</li> </ul>		

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
2	Candidate verifies proper cooling water flows.	<p>The following parameters are checked within the specified limits:</p> <ul style="list-style-type: none"> <li>• “RCP 2 UP Brg L/O CLR CCW RET FLO” 1-FI-4679 indicates 150-190 gpm</li> <li>! "RCP 2 LOW Brg L/O CLR CCW RET FLO” 1-FI-4681 indicates 5 to 6 gpm</li> <li>! “RCP 2 MOTOR AIR CLR CCW RET FLO” 1-FI-4680 indicates 340 to 380 gpm</li> <li>! "RCP 2 THBR CLR CCW RET FLO” 1-FI-4682 indicates 35 to 55 gpm</li> </ul>	(CB-03)	
3	<p>Candidate initiates trending of data for the affected RCP if not previously done.</p> <p><b>CUE:</b> The Relief R.O. has initiated trending as required.</p>	The plant computer is trending the points specified per SOP-108 Attachment 2		
4	<p>Candidate ensures the breaker for the #2 RCP is racked in.</p> <p><b>CUE:</b> If asked, the PEO reports the breaker racked in.</p>	The #2 RCP breaker is racked in (Verified by dispatching an PEO to check RCP #2 breaker on <u>u</u> A2 LOCALLY or.	Candidate may verify by indicating lights on breaker "ON" or may call and have PEO verify	

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
5	Ensure the overcurrent trip selector switch is in the "COLD LOOP" position  <b>CUE:</b> PEO reports that the selector switch is in the "COLD LOOP" position..	The #2 RCP Overcurrent Trip Selector switch is placed in the "COLD LOOP" position (verified by dispatching an PEO to check the switch is in the proper position at the RCP #2 Breaker on <u>u</u> A2 LOCALLY).		
6	Station personnel at #2 RCP to observe the pump.  <b>CUE:</b> The RCP is not accessible	Candidate asks if the RCP is accessible.		
*7	Candidate starts the #2 RCP oil lift pump	1/1-PCPX2-LP, RCP 2 OIL LIFT PMP, switch taken to the "START" position – Candidate verifies green light off and red light on and should mark time to verify pump runs for 2 minutes prior to starting #2 RCP.		
8	Checks OIL PRESS permissive interlock lit.	Candidate verifies Blue "OIL PRESS" light lit.		
*9	Starts the #2 RCP	1/1-PCPX2 taken to the "Start" position $\geq 2$ minutes after the oil lift pump start. Candidate verifies Green light off and Red light on.	<b>NOTE: TO SIMULATOR OPERATOR</b> Override RCP#2 motor current meter to high scale (1-II-RCP2)	
10	Verifies Alarm 2.1 on ALB-5B window is dark - no annunciator	Alarm 2.1 and ALB-5B "Any RCP Fail to Start" is clear.		



## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
11	Verifies #2 RCP undervoltage TSLB goes out.	Candidate verifies TSLB-4, 2.2, RCP 2 BUS UNDERVOLT White light NOT lit.		
12	Verifies #2 Loop flow increases within 10 seconds.	Candidate checks #2 loop flow on 1-FI- 424/25/26, RC LOOP 2 FLO	#2 RCP should be stopped if flow does not increase within 10 sec.	
13	Identifies that #2 RCP motor amps has NOT decreased to less than or equal to 750 amp within one minute. Motor Current = 800 amps .	Candidate checks #2 motor current on 1-11- RCP2, RCP2 MOTOR CURRENT, motor amps = 800 amps.		
14	Inform SRO of problem with motor amps  <b>CUE:</b> SRO acknowledges report	SRO informed of problem		
15*	Candidate takes the 1/1- PCPX2 to STOP to stop #2 RCP within 2 minutes	Candidate momentarily places 1/1-PCPX2, #2 RCP to STOP  Pump#2 Green light lit and Red light off	Must trip the RCP within 2 minutes after start.	
16	Candidate takes 1/1-PCPX2- LP to STOP -stops the #2 RCP oil lift pump  <b>TASK COMPLETE</b>	Candidate should take switch 1/1-PCPX2-LP. RCP 2 OIL LIFT PUMP, to the stop position.  Green light lit and Blue and Red lights off		

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

IPO-001, "Plant Heatup From Cold shutdown to Hot Standby", has progressed to the point of starting the third Reactor Coolant Pump per SOP-108. All prerequisites have been met and all steps have been completed through step 5.1.G in SOP-108. All seal flows are within limits. You are directed to start RCP 1-02 continuing with step 5.1.H of SOP-108.

**System:** Emergency Plant Evolutions

**JTA Task #:** RO\*2002

**Task Title:** Transfer Containment Spray From Injection to Recirculation

**KSA Ref:** 026.A4.01

**AO:** \_\_\_\_\_ **RO:** 4.5 **SRO:** 4.3

Safety Function 4 - Containment Integrity

**Candidate-s Name:** \_\_\_\_\_

**Performance Environment:** CONTROL ROOM SIMULATOR

**Performance Method:** SIMULATED PERFORMED

**Time to complete JPM:** Estimated 5 minutes Actual \_\_\_\_\_

The candidate-s performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Evaluator-s Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**References:**

EOS-1.3

**Tools, Equipment, Job Aids, etc:**

Simulator - Reset to an at power IC, insert malfunction RC09A2 (or equivalent LB LOCA malfunction). Place simulator in run. Reduce AFW Flow to all S/Gs. Reset SI, SIS, Phase A, B and Containment Spray. Stop the EDGs. Stop RCPs. Perform Steps 1-3 of EOS 1.3. When RWST level reaches lo-lo level, transfer ECCS to CL recirc. FREEZE simulator when RWST level #24%. Setup time ~30 minutes.

## EXAMINER COPY

### **Safety Considerations:**

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

### **Comments:**

Cues for indications and controls need not be given if this JPM is performed on an operating simulator. Dual unit.

**Need copy of Procedure EOS-1.3, Step 4. Use colored paper for ALL candidate handouts (cues and procedures).**

### **Instructions:**

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### **Initiating Cue:**

A Large Break LOCA has occurred. Transfer to Cold Leg Recirculation has been performed through step 3. The Unit Supervisor has directed you to transfer Containment Spray to the Containment Sumps per EOS-1.3, Step 4.

### **Terminating Conditions:**

Terminate when valve alignment is complete and spray flow is verified.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Check RWST level less than 24%.  <b>CUE:</b> RWST level 23%.	Candidate visually determines RWST level to be less than 24% on <u>LI-930</u> , <u>LI-931</u> , <u>LI-932</u> OR <u>LI-933</u> .	Any RWST level channel may be used to determine level.  <b>Give candidate copy of procedure</b>	
*2	Open <u>HS-4782</u> , CNTMT SMP TO CSP 1 AND 3 SUCT ISOL VLV.  <b>CUE:</b> <u>HS-4782</u> handswitch indication red light lit. Green light is DARK, Red light LIT.	Take handswitch <u>HS-4782</u> to the open position and verify red light handswitch indication.	Step 2 and 3 may be done in any order.	
*3	Open <u>HS-4783</u> , CNTMT SMP TO CSP 2 and 4 SUCT ISOL Valve.  <b>CUE:</b> <u>HS-4783</u> handswitch indication Red light LIT, Green light DARK.	Take handswitch <u>HS-4783</u> to the open position and verify red light handswitch indication.		
*4	Close <u>HS-4758</u> , RWST TO CSP 1 and 3 SUCT Valve.  <b>CUE:</b> <u>HS-4758</u> handswitch indication is Green light LIT.	Obtain key, insert it into handswitch <u>HS-4758</u> and take handswitch to the closed position and verify green light handswitch indication.	Step 4 and 5 may be done in any order.	

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*5	<p>Close <u>u</u>-HS-4759, RWST TO CSP 2 and 4 SUCT VLV.</p> <p><b>CUE:</b> <u>u</u>-HS-4759 handswitch indication is Green light LIT.</p>	Obtain key, insert it into handswitch <u>u</u> -HS-4759 and take handswitch to the closed position and verify green light handswitch indication.		
6	<p>Verify containment spray flows.</p> <p><b>CUE:</b> <u>u</u>-FI-4772-1, <u>u</u>-FI-4773-1, <u>u</u>-FI-4772-2, &amp; <u>u</u>-FI-4773-2 indicate 3000 gpm flow each.</p> <p><b>TASK COMPLETE</b></p>	<p>Candidate visually verifies containment spray flows on:</p> <p><u>u</u>-FI-4772-1 (CSP 1)  <u>u</u>-FI-4773-1 (CSP 2)  <u>u</u>-FI-4772-2 (CSP 3)  <u>u</u>-FI-4773-2 (CSP 4)</p>		

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

A Large Break LOCA has occurred. Transfer to Cold Leg Recirculation has been performed through step 3. The Unit Supervisor has directed you to transfer Containment Spray to the Containment Sumps per EOS-1.3, Step 4.

**System:** Emergency Plant Evolutions

**JTA Task #:** RO\*2002

**Task Title:** Transfer Containment Spray From Injection to Recirculation

**KSA Ref:** 026.A4.01

**AO:** \_\_\_\_\_ **RO:** 4.5 **SRO:** 4.3

Safety Function 5 - Containment Integrity

**Candidate-s Name:** \_\_\_\_\_

**Performance Environment:** CONTROL ROOM SIMULATOR

**Performance Method:** SIMULATED PERFORMED

**Time to complete JPM:** Estimated 5 minutes Actual \_\_\_\_\_

The candidate-s performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Evaluator-s Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**References:**

EOS-1.3

**Tools, Equipment, Job Aids, etc:**

Simulator - Reset to an at power IC, insert malfunction RC09A2 (or equivalent LB LOCA malfunction). Place simulator in run. Reduce AFW Flow to all S/Gs. Reset SI, SIS, Phase A, B and Containment Spray. Stop the EDGs. Stop RCPs. Perform Steps 1-3 and 5 of EOS 1.3. When RWST level reaches lo-lo level, transfer ECCS to CL recirc. FREEZE simulator when RWST level #24%. Setup time ~30 minutes.



## EXAMINER COPY

### **Safety Considerations:**

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

### **Comments:**

Cues for indications and controls need not be given if this JPM is performed on an operating simulator. Dual unit.

**Need copy of Procedure EOS-1.3, Step 4. Use colored paper for ALL candidate handouts (cues and procedures).**

### **Instructions:**

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### **Initiating Cue:**

A Large Break LOCA has occurred. Transfer to Cold Leg Recirculation (EOS-1.3A) Steps 1 through 3 and Step 5 have been completed. The RWST level is currently at 24%. The Unit Supervisor has directed you to transfer containment spray to the containment sumps per EOS-1.3A, Step 4.

### **Terminating Conditions:**

Terminate when valve alignment is complete and spray flow is verified.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Check RWST level less than 24%.	<p>Candidate visually determines RWST level to be less than 24% on 1-LI-930, 1-LI-931, 1-LI-932 OR 1-LI-933.</p> <p>RWST level <math>\leq</math> 24%</p>	<p>Any RWST level channel may be used to determine level.</p> <p><b>Give candidate copy of procedure</b></p>	
*2	Open 1-HS-4782, CNTMT SMP TO CSP 1 AND 3 SUCT ISOL VLV.	<p>Take handswitch 1-HS-4782 to the open position.</p> <p>1-HS-4782 handswitch indication red light lit. Red light LIT, Green light DARK.</p>	Step 2 and 3 may be done in any order.	
*3	Open 1-HS-4783, CNTMT SMP TO CSP 2 and 4 SUCT ISOL Valve.	<p>Take handswitch 1-HS-4783 to the open position.</p> <p>1-HS-4783 handswitch indication Red light LIT, Green light DARK.</p>		
*4	Close 1-HS-4758, RWST TO CSP 1 and 3 SUCT Valve.	<p>Obtain key, insert it into handswitch 1-HS-4758 and take handswitch to the closed position.</p> <p>1-HS-4758 handswitch indication is Green light LIT, Red light DARK</p>	Step 4 and 5 may be done in any order.	

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
*5	Close 1-HS-4759, RWST TO CSP 2 and 4 SUCT VLV.	Obtain key, insert it into handswitch 1-HS-4759 and take handswitch to the closed position.  1-HS-4759 handswitch indication is Green light LIT, Red light DARK		
6	Verify containment spray flows indicate approximately 3000 gpm each.  <b>TASK COMPLETE</b>	Candidate visually verifies containment spray flows on:  1-FI-4772-1 (CSP 1) 1-FI-4773-1 (CSP 2) 1-FI-4772-2 (CSP 3) 1-FI-4773-2 (CSP 4)		

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

A Large Break LOCA has occurred. Transfer to Cold Leg Recirculation (EOS-1.3A) Steps 1 through 3 and Step 5 have been completed. The RWST level is currently at 24%. The Unit Supervisor has directed you to transfer containment spray to the containment sumps per EOS-1.3A, Step 4.

**System:** Emergency Diesel Generator

**JTA Task #:** AO\*6311

**Task Title:** Perform a Local Emergency Start of a DG

**KSA Ref:** 064.A4.01

**PEO:** \_\_\_\_\_

**RO:** \_\_\_\_\_

4.0

**SRO:** \_\_\_\_\_

4.3

Safety Function 6 - Electrical

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** PLANT

**Performance Method:** SIMULATED

**Time to complete JPM:** Estimated 15 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

SOP-609A(B), Diesel Generator System

Tools, Equipment, Job Aids, etc:

SOP-609A(B), Section 1 through 4 and Section 5.3 of SOP-609A(B).

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**NEED TO VERIFY STEPS 11-13. Modified the JPM to be alternate path.**

**Need copy of Procedure SOP-609A(B) Sections 1-4 and Section 5.2. Use colored paper for ALL candidate handouts (cues and procedures)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

You have been directed to perform a Local Emergency Start of Train A(B) DG for testing. An Engine Water Roll Check, all prerequisites and all Maintenance Department pre-start activities have been performed. The DG is in auto-start status. This test does not meet the Surveillance Test requirements.

### Terminating Conditions:

Train A(B) DG is secured.

## EXAMINER COPY

<b>STEP#</b> <b>*Critical</b>	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	Inspect temperature sensitive labels on the bridge rectifier diodes.  <b>CUE:</b> Diode windows NOT black.	300°F windows not black for CR1, CR2, CR3, CR4, CR5 and CR6.	Should be simulated due to restrictions on opening cabinets.  Mirrors should be in ALARM response box.	
2	Ensure starting air manifold vents are unobstructed by observing during engine startup.	Ensure starting air manifold vents are unobstructed by observing during engine startup.	NOTE 1: “Vents” are pipe plugs with holes drilled in them on underside of starting air manifold, on governor end of engine.  NOTE 2: This step may be done any time during DG RUN.	
*3	Take local control of DG by placing the Master Switch ( <u>u</u> -HS-3413-3B, RLMS Train A or <u>u</u> -HS-3415-3B, RLMS Train B) in LOCAL.  <b>CUE:</b> The Master Switch is in the LOCAL position.	The Master Switch in LOCAL position.	Master Switch is located on Local Generator Control Panel.	
4	Verify SSII red light for Train A(B) DG PWR-LIT, and <u>u</u> -ALB-10B, 1.8 (1.7 for Unit 2), DG 1(2) DISABLED-LIT.  <b>CUE:</b> Requested SSII light and annunciator-LIT>	Verify SSII and Annunciator lights are LIT.		

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*5	<p>Start auxiliary lube oil pump by placing handswitch (<u>u</u>-HS-3411-1 Train A or <u>u</u>-HS-3412-1 Train B) in HAND.</p> <p><b>CUE:</b> Auxiliary lube oil pump RED (ON) light is LIT and GREEN (OFF and AUTO) lights are DARK. Pressure on lube oil pressure gauge (<u>u</u>-PI-3411B-1B Train A or <u>u</u>-PI-3412B Train B) is 56 psig.</p>	<p>Handswitch in HAND position and the lube oil pump running. Lube oil pressure should be 40-60 psig.</p>	<p>Do not run auxiliary lube oil pump in HAND for more than 2 minutes without running the DG.</p> <p>Auxiliary lube oil pump handswitch is located on the Local Engine Control Panel.</p>	
*6	<p>Stop auxiliary lube oil pump by placing handswitch (<u>u</u>-HS-3411-1 Train A or <u>u</u>-HS-3412-1 Train B) in OFF then AUTO.</p> <p><b>CUE:</b> Auxiliary lube oil pump RED (ON) light is DARK and GREEN (OFF and AUTO) lights are LIT.</p>	<p>Auxiliary lube oil pump NOT running and handswitch in AUTO position.</p>	<p>Diesel must be started within sixty seconds of stopping Aux lube oil pump.</p> <p>If not started within sixty seconds must repeat above step of JPM.</p>	
*7	<p>Start the DG by placing the local emergency Stop-Start handswitch (<u>u</u>-HS-3413-4B, LOC/EMER/MAN/START Train A or <u>u</u>-HS-3414-4B LOC/EMER/MAN/START Train B) in START.</p> <p><b>CUE:</b> Engine rpm is increasing.</p>	<p>Local emergency Stop-Start handswitch in START position and engine running.</p>	<p>Local emergency Stop-Start handswitch is located on the Local Generator Control Panel.</p>	
8	<p>Verify auxiliary lube oil pump handswitch (<u>u</u>-HS-3411-1 Train A or <u>u</u>-HS-3412-1 Train B) in AUTO and pump not running.</p> <p><b>CUE:</b> Auxiliary lube oil pump RED (ON) light DARK and GREEN (OFF and AUTO) lights are LIT. Pump handswitch is in AUTO.</p>	<p>Auxiliary lube oil pump handswitch in AUTO position and pump NOT running.</p>		



## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*9	<p>Stop Auxiliary jacket water pump by placing handswitch (<u>u</u>-HS-3415-1 Train A or <u>u</u>-HS-3416-1 Train B) in OFF and then AUTO.</p> <p><b>CUE:</b> Auxiliary jacket water pump RED (ON) light DARK and GREEN (OFF and AUTO) lights are LIT. Pump handswitch is in AUTO.</p>	Auxiliary jacket water pump handswitch in AUTO position and pump NOT running.	Auxiliary jacket water pump handswitch is located on the Local Engine Control Panel.	
10	<p>Verify DG voltage is building and engine speed is normal.</p> <p><b>CUE:</b> DG voltage is increasing and engine speed is 450 rpm. If Candidate asks, voltage is 7,000V.</p>	DG voltage increasing and engine speed is between 440 and 475 RPM.	<p>DG voltage is read on the Local Generator Control Panel.</p> <p>Engine speed is read on the Local Engine Control Panel.</p>	
11*	<p>Check operating parameters;</p> <ul style="list-style-type: none"> <li>• Lube oil pressure</li> <li>• Turbo oil pressure, left front</li> <li>• Turbo oil pressure, right front</li> <li>• Jacket water pressure</li> <li>• Fuel oil pressure, black-engine driven pump</li> <li>• Engine speed</li> </ul> <p><b>CUE:</b> L/O press = 53 psig T/O LF press = <b>19 psig</b> T/O RF press = 27 psig JW press = 23 psig FO black press = 42 psig Engine speed = 450 rpm</p>	<ul style="list-style-type: none"> <li>•Lube oil pressure</li> <li>•<b>Turbo oil pressure, left front - out of spec low</b></li> <li>•Turbo oil pressure, right front</li> <li>•Jacket water pressure</li> <li>•Fuel oil pressure, black-engine driven pump</li> <li>•Engine speed</li> </ul>	<p><b>LF turbo oil pressure out of spec - low. Need to see what is required → most likely requires EDG to be secured.</b></p> <p><b>Should there be some time critical aspect to stopping the diesel????</b></p>	
12	<p>Reports EDG LF turbo oil pressure - low</p> <p><b>CUE:</b> Unit Supervisor directs that EDG be secured????</p>	Candidate reports EDG turbo oil pressure low		

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
13*	Stops the DG by placing the local emergency Stop-Start handswitch (u-HS-3413-4B, LOC/EMER/MAN/START Train A or u-HS-3414-4B LOC/EMER/MAN/START Train B) in STOP.	Local emergency Stop-Start handswitch in STOP position and engine stops.	Local emergency Stop-Start handswitch is located on the Local Generator Control Panel.	
	<b>TASK COMPLETE</b>			

## **CANDIDATE HANDOUT**

**INITIATING CUE:** You have been directed to perform a Local Emergency Start of Train A(B) DG for testing. An Engine Water Roll Check, all prerequisites and all Maintenance Department pre-start activities have been performed. The DG is an auto-start status. This test does not meet the Surveillance Test requirements.

**System:** Emergency Diesel Generator

**JTA Task #:** AO\*6311

**Task Title:** Perform a Local Emergency Start of a DG

**KSA Ref:** 064.A4.01

**PEO:** \_\_\_\_\_

**RO:** \_\_\_\_\_

4.0

**SRO:** \_\_\_\_\_

4.3

Safety Function 6 - Electrical

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** PLANT

**Performance Method:** SIMULATED

**Time to complete JPM:** Estimated 15 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

SOP-609A(B), Diesel Generator System

Tools, Equipment, Job Aids, etc:

SOP-609A(B), Section 1 through 4 and Section 5.2 of SOP-609A(B).

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of Procedure SOP-609A(B) Sections 1-4 and Section 5.2. Use colored paper for ALL candidate handouts (cues and procedures)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

You have been directed to perform a Local Emergency Start of Train A DG for testing, per SOP-609A(B), Section 5.2. An Engine Water Roll Check, all prerequisites and all Maintenance Department pre-start activities have been performed. The DG is in auto-start status. This test does not meet the Surveillance Test requirements.

### Terminating Conditions:

Train A DG is secured.

## EXAMINER COPY

<b>STEP#</b> <b>*Critical</b>	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	Ensure starting air manifold vents are unobstructed by observing during engine startup.	Ensure starting air manifold vents are unobstructed by observing during engine startup.	NOTE 1: “Vents” are pipe plugs with holes drilled in them on underside of starting air manifold, on governor end of engine.  NOTE 2: This step may be done any time during DG RUN.	
2	Start auxiliary lube oil pump by placing handswitch ( <u>u</u> -HS-3411-1 Train A) in HAND.  <b>CUE:</b> Auxiliary lube oil pump RED (ON) light is LIT and GREEN (OFF and AUTO) lights are DARK. Pressure on lube oil pressure gauge ( <u>u</u> -PI-3411B-1B Train A) is 56 psig.	Handswitch in HAND position and the lube oil pump running. Lube oil pressure should be 40-60 psig.	Do not run auxiliary lube oil pump in HAND for more than 1 minute without running the DG.  Auxiliary lube oil pump handswitch is located on the Local Engine Control Panel.	
3	Stop auxiliary lube oil pump by placing handswitch ( <u>u</u> -HS-3411-1 Train A) in OFF then AUTO.  <b>CUE:</b> Auxiliary lube oil pump RED (ON) light is DARK and GREEN (OFF and AUTO) lights are LIT.	Auxiliary lube oil pump NOT running and handswitch in AUTO position.	Diesel must be started within sixty seconds of stopping Aux lube oil pump.  If not started within sixty seconds must repeat above step of JPM.	

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
4	Verify SSII red light for Train A DG PWR-LIT, and <u>u</u> -ALB-10B, 1.8 (1.7 for Unit 2), DG 1 DISABLED-LIT.  <b>CUE:</b> Requested SSII light and annunciator-LIT>	Verify SSII and Annunciator lights are LIT.	CAUTION Statement in procedure - operator may or may not perform this step	
5*	Take local control of DG by placing the Master Switch ( <u>u</u> -HS-3413-3B, RLMS Train A) in LOCAL.  <b>CUE:</b> The Master Switch is in the LOCAL position.	The Master Switch in LOCAL position.	Master Switch is located on Local Generator Control Panel.	
6*	Start the DG by placing the local emergency Stop-Start handswitch ( <u>u</u> -HS-3413-4B, LOC/EMER/MAN/START Train A) in START.  <b>CUE:</b> Stop-Start handswitch is in START and Engine rpm is increasing.	Local emergency Stop-Start handswitch in START position and engine running.	Local emergency Stop-Start handswitch is located on the Local Generator Control Panel.	
7	Verify auxiliary lube oil pump handswitch ( <u>u</u> -HS-3411-1 Train A) in AUTO and pump not running.  <b>CUE:</b> Auxiliary lube oil pump RED (ON) light DARK and GREEN (OFF and AUTO) lights are LIT. Pump handswitch is in AUTO.	Auxiliary lube oil pump handswitch in AUTO position and pump NOT running.		
8	Stop Auxiliary jacket water pump by placing handswitch ( <u>u</u> -HS-3415-1 Train A) in OFF and then AUTO.  <b>CUE:</b> Auxiliary jacket water pump RED (ON) light DARK and GREEN (OFF and AUTO) lights are LIT. Pump handswitch is in AUTO.	Auxiliary jacket water pump handswitch in AUTO position and pump NOT running.	Auxiliary jacket water pump handswitch is located on the Local Engine Control Panel.	

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
9	<p>Verify DG voltage is building and engine speed is normal.</p> <p><b>CUE:</b> DG voltage is increasing and engine speed is 450 rpm. If Candidate asks, voltage is 7,000V.</p>	DG voltage increasing and engine speed is between 440 and 475 RPM.	<p>DG voltage is read on the Local Generator Control Panel.</p> <p>Engine speed is read on the Local Engine Control Panel.</p>	
10*	<p>Check operating parameters;</p> <ul style="list-style-type: none"> <li>• Lube oil pressure</li> <li>• Turbo oil pressure, left front</li> <li>• Turbo oil pressure, right front</li> <li>• Jacket water pressure</li> <li>• Fuel oil pressure, black-engine driven pump</li> <li>• Engine speed</li> </ul> <p><b>CUE:</b> L/O press = 53 psig <b>T/O LF press = 19 psig</b> T/O RF press = 27 psig JW press = 23 psig FO black press = 42 psig Engine speed = 450 rpm</p> <p>DG Panel Alarm Window 1.3 alarming, "LOW PRESS TURBO OIL LEFT BANK"</p>	<ul style="list-style-type: none"> <li>•Lube oil pressure</li> <li>•<b>Turbo oil pressure, left front - out of spec low</b></li> <li>•Turbo oil pressure, right front</li> <li>•Jacket water pressure</li> <li>•Fuel oil pressure, black-engine driven pump</li> <li>•Engine speed</li> </ul>	<p>Note to EXAMINERS:</p> <p>Candidate may reference ALM Procedure or call the Unit Supervisor</p>	
11	<p>Reports to Unit Sup EDG LF turbo oil pressure - low</p> <p><b>CUE:</b> Unit Supervisor directs that candidate to place the Stop-Start Handswitch in STOP to stop the DG</p>	Candidate reports EDG turbo oil pressure low		
12*	<p>Stops the DG by placing the local emergency Stop-Start handswitch (<u>u</u>-HS-3413-4B, LOC/EMER/MAN/START Train A) in STOP.</p>	Local emergency Stop-Start handswitch in STOP position and engine stops.	Local emergency Stop-Start handswitch is located on the Local Generator Control Panel.	
	END OF JPM			



# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

You have been directed to perform a Local Emergency Start of Train A DG for testing, per SOP-609A(B), Section 5.2. An Engine Water Roll Check, all prerequisites and all Maintenance Department pre-start activities have been performed. The DG is in auto-start status. This test does not meet the Surveillance Test requirements.

**System:** Loss of Offsite and Onsite Power (Station Blackout)

**JTA Task #:** RO\*4215

**Task Title:** Restore 1EA1 to Offsite Power

**KSA Ref:** EPE.055.EA1.07

**AO:** \_\_\_\_\_ **RO:** 4.3 **SRO:** 4.5

Safety Function 6 - Electrical

**Candidate=s Name:** \_\_\_\_\_

**Performance Environment:** PLANT CONTROL ROOM SIMULATOR

**Performance Method:** SIMULATED DISCUSSED

**Time to complete JPM:** Estimated 15 minutes Actual \_\_\_\_\_

The candidate=s performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Evaluator=s Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

References:  
ABN-602, “Response to a  
6900/480V System Malfunction”

Tools, Equipment, Job Aids, etc:  
See Attachment 1 for Simulator setup.  
ABN-602, Attachment 7

## EXAMINER COPY

**Safety Considerations:**

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

**Comments:**

Cues for indications and controls need not be given if this JPM is performed on an operating simulator. Dual unit JPM.

**Need copy of Procedure ABN-602, Step 8.3.10.b. Use colored paper for ALL candidate handouts (cues and procedures).**

**Instructions:**

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

**Initiating Cue:**

Bus EA1 is being supplied from the diesel generator following a loss of offsite power. The preferred and alternate incoming breakers are open. All relays have been reset. Power has been restored to XST2(1) and is now available to supply EA1. You have been directed to restore power to EA1 from XST2(1) per ABN-602, step 8.3.10.b.

**Terminating Conditions:**

EA1-1 breaker is closed and DG1 is still running.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*1	Turn the appropriate synchroscope ON.  <b>CUE:</b> Synchroscope is on.	Synchroscope control switch for breaker <u>EA</u> 1-1 rotated to ON position on CB-11.	Indications of synchroscope on are given in Steps 2, 3, & 4. Also, the synchroscope will go from off to dim to bright and back to off as the meter rotates.	
2	Check running voltage matched to incoming voltage.  <b>CUE:</b> V-IN reads 118 volts and V-RUN reads 123 volts.	Incoming voltage, V-IN, checked to see if matched or running voltage, V-RUN, on CB11.		
3*	Adjust running voltage to match incoming voltage.  <b>CUE:</b> V-RUN reads 118 volts.	90-1EG1, DG 1 VOLT CTRL, rotated to LOWER direction until running voltage, V-RUN, on CB-11, reads 118 volts (or if V-RUN is below V-IN, then switch rotated to RAISE).	Should this be a critical task? What problems can occur if voltages are not matched?	
4	Check synchroscope for proper direction and speed.  <b>CUE:</b> Synchroscope rotating slowly in fast direction.	Synchroscope on CB-11 checked to see if rotating slowly in slow direction.	Slowly considered to be approx 10 RPM.	
*5	Adjust diesel generator speed until synchroscope rotating slowly in slow direction  <b>CUE:</b> Synchroscope rotating in slow direction at approx 10 RPM	65- <u>EG</u> 1, DG 1 SPD CTRL, on CB-11, rotated to raise position until synchroscope rotating slowly in slow direction	Candidate may need to go slower in order to meet interlock. Will be noticed after 1 <sup>st</sup> attempt to close breaker.	

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*6	<p>Close appropriate feeder breaker.</p> <p><b>CUE:</b> ALB-10B alarm has annunciated window 3.5 is flashing fast and window 3.6 is flashing slow.</p>	<p><u>EA1</u>-1 rotated to CLOSE position when synchroscope at 12 oclock position</p>	<p>Window 3.5 is 6.9 KV Bus <u>EA1</u>/<u>EA2</u> PARALLELED and 3.6 is 6.9 KV BUS <u>EA1</u>/<u>EA2</u> NOT PWRD FROM PREF OFFSITE PWR.</p>	
7	<p>Verify appropriate feeder breaker closed.</p> <p><b>CUE:</b> <u>EA1</u>-1 green light DARK, amber light DARK, red light LIT.</p>	<p>Position indicating lights on <u>EA1</u>-1 indicate breaker closed (red light LIT).</p>	<p>Alarms may be addressed either before or after steps 7-9.</p>	
8	<p>Check DG1 load.</p> <p><b>CUE:</b> Meters indicate &lt;0 MW and ~0KVARs.</p>	<p>~0.5 MW (W-1EG1) and ~0 KVARs (VAR-1EG1)</p>		
9	<p>Adjust Diesel Generator load, if required, to prevent a reverse power trip.</p> <p><b>TASK COMPLETE</b></p>	<p>65-<u>EG1</u>, DG 1 SPD CTRL rotated to raise position until load indicates approximately 0.3 MW on W-<u>EG1</u>, DG1 Megawatts meter.</p>	<p>This step may not need to be performed if done on a dynamic simulator.</p>	

# CANDIDATE HANDOUT

## INITIATING CUE:

Bus EA1 is being supplied from the diesel generator following a loss of offsite power. The preferred and alternate incoming breakers are open. All relays have been reset. Power has been restored to XST2(1) and is now available to supply EA1. You have been directed to restore power to EA1 from XST2(1) per ABN-602, step 8.3.10.b.

# **SIMULATOR COPY**

## **Attachment 1**

### Simulator Setup

1. Initialize to IC-33
2. Go to RUN
3. Place MDAFWP 1 in Pullout and AFWPT STM SPLY VLV - MSL 1 in Pullout
4. Place breakers 1EA1-1 and 1EA1-2 in Pullout
5. Return breakers 1EA1-1 and 1EA1-2 to Auto
6. When alarm window ALB-1, 2.5 RMUW HDR PRESS LO, clears, then reset BOS
7. Return MDAFWP 1 to Auto and AFWPT STM SPLY VLV - MSL 1 to Auto
8. Acknowledge all alarms and stop CCWP 1-02
9. Ensure DG 1 supplying 1EA1
10. Go to FREEZE

**System:** Reactor Protection System

**JTA Task #:** RO\*1828

**Task Title:** Place failed steam line pressure channel in trip condition.

**KSA Ref:** 012.A4.04

**PEO:** \_\_\_\_\_

**RO:** 3.3

**SRO:** 3.3

Safety Function 7 - Instrumentation

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:**

CONTROL ROOM

SIMULATOR

**Performance Method:**

SIMULATED

PERFORMED

**Time to complete JPM:** Estimated 15 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

ABN-709, Steam Line, Steam Header, Turbine  
1<sup>st</sup> Stage Pressure, & Feed Header Pressure  
Instrumental Malfunction, Rev. 4

Tools, Equipment, Job Aids, etc:

Copy of ABN-709, pp. 1, 21, 23 & 31.



## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of Procedure ABN-709, Section 2.0 and Attachments 1, 2 and 4. Use colored paper for ALL candidate handouts (cues and procedures)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

Annunciator "MSL 3 1 of 3 PRESS LO" (Window 8A-3.7) alarms

### Terminating Conditions:

The appropriate bistables have been placed in the tripped condition and verified utilizing appropriate annunciator alarms and trip status lights.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Determine that only one channel is >60 psig difference between remaining channels	Candidate identifies failed Channel <u>PI</u> -534A, "MSL 3 PRESS CHAN 3"	Cues do NOT need to be given for Steps 1 - 8 when done in the simulator	
2	Verifies S/G ARVs closed and MSL pressures normal	Green light on, Red light off for all ARVs: <u>ZL</u> -2325, SG 1 ARV <u>ZL</u> -2326, SG 2 ARV <u>ZL</u> -2327, SG 3 ARV <u>ZL</u> -2328, SG 4 ARV  MSL pressures are approx <b>xxxx psig</b> (normal) <u>PI</u> -2325, MSL1 Press <u>PI</u> -2326, MSL2 Press <u>PI</u> -2327, MSL3 Press <u>PI</u> -2328, MSL4 Press		
3*	Places Main FW Control Valves in manual and control S/G levels in normal range	Shift Main FW Control Valves to manual: <u>FK</u> -510, SG1 CTRL <u>FK</u> -520, SG2 CTRL <u>FK</u> -530, SG3 CTRL <u>FK</u> -540, SG4 CTRL		
4*	Manually control <u>SK</u> -509A, "FWPT MASTER SPD CTRL"	Place controller in manual and control FW pump speed to maintain FW press approx 80 - 170 psig > steam hdr press.		
5*	Select alternate steam flow channel	Select proper channel <b>??? Need help ????</b>		
6	Verify S/G level within normal range	<b>S/G levels 60 - 75%</b>		
7	Return FW Control Valves to automatic operation	Place FW Control Valve controllers in AUTO		
8	Return FWPT speed controller to automatic operation	Place <u>SK</u> -509A, "FWPT MASTER SPD CTRL" in AUTO		

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
9	Place failed channel in trip  <b>CUE:</b> Unit Supervisor directs you to place the failed channel bistables test switches in CLOSE per Attachments 1 and 2	References Attachments 1 and 2		
10	Locate the appropriate Bistable Test Switches	Protection Set I, frame 8, Card 48, top two bistables.	Give candidate copy of applicable procedure	
11*	Place SW6 on card 74 in “CLOSED” position.  <b>CUE:</b> SW6 is in “CLOSED” position.			
12	Ensure BS-1 and BS-2 on card 48 in the “NORMAL”.  <b>CUE:</b> The bistable switches are UP (If checked, the Red lights for BS-1 and BS-2 are LIT)	Top two bistables on card 48 (2 <sup>nd</sup> row and 8 <sup>th</sup> column from right on frame 8) in “NORMAL”.		
13	Verify appropriate annunciator alarms ON.  <b>CUE:</b> Annunciator windows ALB-8A, 3.7 and 3.16, LIT.	The following annunciator windows checked: ALB-8A, 3.7, MSL 3 1 OF 3 PRESS LO ALB-8A, 3.16 SG 3 1 OF 3 PRESS RATE HI		
14	Verify appropriate trip status lights ON.  <b>CUE:</b> Trip status lights TSLB-1, 1.4, and TSLB-2, 1.3 are LIT.  <b>TASK COMPLETE</b>	The following trip status lights checked: TSLB-1, 1.4, MSL 3 PRESS LO PB-534A, TSLB-2, 1.3, MSL 3 PRESS RATE HI PB-534B		

# CANDIDATE HANDOUT

## INITIATING CUE:

Annunciator “MSL 3 1 of 3 PRESS LO” (Window 8A-3.7) alarms

**System:** Reactor Protection System

**JTA Task #:** RO\*1828

**Task Title:** Place failed steam line pressure channel in trip condition.

**KSA Ref:** 012.A4.04

**PEO:** \_\_\_\_\_

**RO:** 3.3

**SRO:** 3.3

Safety Function 7 - Instrumentation

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:**

CONTROL ROOM

**Performance Method:**

SIMULATED

**Time to complete JPM:** Estimated 15 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

ABN-709, Steam Line, Steam Header, Turbine  
1<sup>st</sup> Stage Pressure, & Feed Header Pressure  
Instrumental Malfunction, Rev. 4

Tools, Equipment, Job Aids, etc:

Copy of ABN-709, pp. 1, 21, 23 & 31.

## EXAMINER COPY

### Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

### Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

**Need copy of Procedure ABN-709, Section 2.0 and Attachments 1, 2 and 4. Use colored paper for ALL candidate handouts (cues and procedures)**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

Unit 1 is at 100% power, you are the BOP Operator and the following Alarms come in:  
“MSL 3 1 of 3 PRESS LO” (Window 8A-3.7) alarms  
“SG 3 1 of 3 PRESS RATE HI” (Window 8A-3.16) alarms

### Terminating Conditions:

The appropriate bistables have been placed in the tripped condition and verified utilizing appropriate annunciator alarms and trip status lights.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	<p>Determine that only one channel is &gt;60 psig difference between remaining channels</p> <p><b>CUE:</b> u-PI-534A "MSL 3 PRESS CHAN 3" indicates 0 psig</p>	Candidate identifies failed Channel u-PI-534A, "MSL 3 PRESS CHAN 3"		
2	<p>Verifies S/G ARVs closed and MSL pressures normal</p> <p><b>CUE:</b> u-ZL-2327, "SG3 Atmos Rlf Vlv," Green light lit and Red light dark</p> <p>u-PI-2327, "MSL 3 PRESS," indicates NORMAL</p>	<p>Green light on, Red light off for all ARVs: u-ZL-2325, SG 1 ARV u-ZL-2326, SG 2 ARV u-ZL-2327, SG 3 ARV u-ZL-2328, SG 4 ARV</p> <p>MSL pressures are approx 970 psig (normal) u-PI-2325, MSL1 Press u-PI-2326, MSL2 Press u-PI-2327, MSL3 Press u-PI-2328, MSL4 Press</p>		
3*	<p>Places Main FW Control Valves in manual and control S/G levels in normal range. Candidate simulates pushing AMBER push button.</p> <p><b>CUE:</b> u-FK-530 Amber light lit and White light dark</p> <p>SG 3 Level stable at 67%</p>	<p>Shift Main FW Control Valves to manual: u-FK-510, SG1 CTRL u-FK-520, SG2 CTRL u-FK-530, SG3 CTRL u-FK-540, SG4 CTRL</p> <p>Adjust to maintain SG level 60-75%</p>		
4	<p>Manually control u-SK-509A, "FWPT MASTER SPD CTRL" as necessary</p> <p><b>CUE:</b> Control of FWPT speed is NOT required</p>	Place controller in manual and control FW pump speed to maintain FW press approx 80 - 170 psig > steam hdr press.		

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
5*	Candidate identifies u-FS-532C, “SG 3 STM FLO CHAN SELECT,” switch and simulates selecting Flow Channel FY-533B  <b>CUE:</b> FY-533B selected	Select proper channel		
6	Verify S/G level within normal range  <b>CUE:</b> SG 3 level stable at 67%	S/G levels 60 - 75%		
7	Return FW Control Valve <u>F</u> -FK-530 to automatic operation. Candidate simulates pushing AMBER push button.  <b>CUE:</b> White light lit and Amber light dark	Place FW Control Valve Controller <u>F</u> -FK-530 in AUTO		
8	Return FWPT speed controller to automatic operation  <b>CUE:</b> <u>F</u> -SK-509A - white light lit	Place <u>F</u> -SK-509A, “FWPT MASTER SPD CTRL” in AUTO		
9	Obtains copies of Attachments 1 & 2  <b>CUE:</b> Unit Supervisor directs you to place the failed channel bistables test switches in CLOSE per Att. 1 and 2. Give candidate copies of attachments	References Attachments 1 and 2		
10	Locate the appropriate Bistable Test Switches for failed Channel <u>F</u> -PI-534A	Protection Set I, frame 8, Card 74 and 48		



## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
11*	SIMULATE placing Switch SW6 on card 74 in “CLOSED” position.  <b>CUE:</b> SW6 is in “CLOSED” position.	Place SW6 in Closed position		
12	Ensure BS-1 and BS-2 on card 48 in the “NORMAL”.  <b>CUE:</b> The bistable switches are UP (If checked, the Red lights for BS-1 and BS-2 are LIT)	Top two bistables on card 48 (2 <sup>nd</sup> row and 8 <sup>th</sup> column from right on frame 8) in “NORMAL”.		
13	Verify appropriate annunciator alarms ON.  <b>CUE:</b> Annunciator windows ALB-8A, 3.7 and 3.16, LIT.	The following annunciator windows checked: ALB-8A, 3.7, MSL 3 1 OF 3 PRESS LO ALB-8A, 3.16 SG 3 1 OF 3 PRESS RATE HI		
14	Verify appropriate trip status lights ON.  <b>CUE:</b> Trip status lights TSLB-1, 1.4, and TSLB-2, 1.3 are LIT.  <b>TASK COMPLETE</b>	The following trip status lights checked: TSLB-1, 1.4, MSL 3 PRESS LO PB-534A, TSLB-2, 1.3, MSL 3 PRESS RATE HI PB-534B		

# **CANDIDATE COPY**

## **INITIATING CUE:**

Unit 1 is at 100% power, you are the BOP Operator and the following Alarms come in:

“MSL 3 1 of 3 PRESS LO” (Window 8A-3.7) alarms

“SG 3 1 of 3 PRESS RATE HI” (Window 8A-3.16) alarms

**System:** Shift Staffing

**JTA Task #:**

**Task Title:** Acceptable Staff Work Hours

**KSA Ref:** GKA 2.1.4

**RO:** 2.3

**SRO:** 3.4

Admin A.1 - SRO only

**Candidate's**

**Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 15 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

Technical Specifications  
STA-615, "Staff Work Hours"

Tools, Equipment, Job Aids, etc:

Technical Specifications  
STA-615, "Staff Work Hours"

## EXAMINER COPY

Safety Considerations:

None - classroom only

Comments:

**Open reference**

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Use of the plant computer is PROHIBITED.

Initiating Cue:

You are the Unit Supervisor and one of the assigned ROs called in sick. You need to find a replacement RO. Assuming today is May 23 (0630), based on the work hour history, determine which of the following 5 ROs could perform safety-related functions until 1830 without advanced approval.

1. RO1 has been on-shift since 0200 (May 23).
2. On May 22, RO2 worked from 0630 until 1900 (includes a 1/2 hour shift turnover).
3. RO3 worked from 1430 on May 22 to 0030 on May 23.
4. RO4 has been on vacation for the past two days (May 21 and 22), but worked 12 hours on May 17, 16 hours on May 18, 16 hours on May 19, and 14 hours on May 20.
5. On May 22, RO5 worked from 0630 until 1930 (includes a 1/2 hour shift turnover).

Terminating Conditions:

Determine that 2 out of the 5 ROs available meet the work hour requirement to relieve the shift.

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2*	Review work hour history and determine that only 2 of the 5 ROs could work without advanced approval.	RO1 - no, would work 16.5 hrs straight  RO2 - Yes, would work 24 hrs in 48 hrs  RO3 - No, less than 8 hours between work periods  RO4 - Yes, would work 70 hrs in 7 days  RO5 - No, would work 24.5 hrs in 48 hrs.	Pass criteria is 4 of the 5 ROs work hour status being correctly determined  No - cannot work  Yes - can work	
	TASK COMPLETE			

# CANDIDATE HANDOUT

## INITIATING CUE:

You are the Unit Supervisor and one of the assigned ROs called in sick. You need to find a replacement RO. Assuming today is May 23 (0630), based on the work hour history, determine which of the following 5 ROs could perform safety-related functions until 1830 without advanced approval.

1. RO1 has been on-shift since 0200 (May 23).
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3. RO3 worked from 1430 on May 22 to 0030 on May 23.
4. RO4 has been on vacation for the past two days (May 21 and 22), but worked 12 hours on May 17, 16 hours on May 18, 16 hours on May 19, and 14 hours on May 20.
5. On May 22, RO5 worked from 0630 until 1930 (includes a 1/2 hour shift turnover).

**System:** Control Rod Drive System

**JTA Task #:** RO\*1010

**Task Title:** Perform Shutdown Margin Calculation Review

**KSA Ref:** 001.A4.11

**RO:** 3.5

**SRO:** 4.1

Admin A.1 - SRO only

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 30 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

OPT-301, "Reactor Shutdown Margin  
Verification"  
Technical Specifications  
Startup and Operation Report  
Core Operating Limits Report

Tools, Equipment, Job Aids, etc:

OPT-301  
OPT-301-9  
SOR  
COLR

## EXAMINER COPY

### Safety Considerations:

None - classroom only

### Comments:

1. **Provide candidate a copy of Startup and Operations Report (SOR) for Unit 2, Cycle 6**
2. **Candidate needs calculator**
3. **Give SRO candidate a completed OPT-301-9, with errors.**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Use of the plant computer is PROHIBITED.

### Initiating Cue:

Assume today is May 21. The plant computer is out-of-service and a Reactor Operator manually completed OPT-301-9, "Shutdown Margin." The Shift Manager directs you to verify the data; check the calculations; and, determine if acceptance criteria is satisfied and if not, take actions to satisfy the applicable Technical Specification.

### Terminating Conditions:

Review of OPT-301-9 identified errors and determined that shutdown margin is NOT adequate and requires entry into T/S 3.1.1.



## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of OPT-301-9 and initiating cue	Candidate should review Admin JPM and initiating cue		
2	Review shutdown margin calculation	Candidate should review shutdown margin calc & verify in accordance with OPT-309.		
3*	Identifies error in on Line C.3	Candidate identifies error on Line C.3 and enters the correct value = <b>66</b>	Critical Task is identifying the error. The value does NOT need to be exact.	
4*	Identifies error on Line C.4	Candidate identifies error on Line C.4 and enters the correct value = <b>927</b>	Critical Task is identifying the error. The value does NOT need to be exact.	
5*	Corrects Section D and identifies changes that have to be made	Candidate identifies changes and enters the corrected values: 1. Line D.3 = <b>993</b> 2. Line D.4 = <b>0.9949</b> 3. Line D.5 = <b>12281</b> 4. Line D.6 = <b>1277</b> <b>+/- 100 ppm</b>	Note - Line D.6 is the only critical value for this step.	
6*	Determine if SDM requirements are met and completes line F.1.	Verifies boron conc. entered on line A.1 < line D.6 and circles <b>NO</b> on line F.1.		
7*	Review T/S for applicability	Candidate should determine that shutdown margin requirements are not met and applies T/S 3.1.1 <b>Initiate boration to restore SDM to within limits within 15 minutes</b>		
	TASK COMPLETE			
Sat Criteria → is 4 of 5 critical steps must be correct				

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

Assume today is May 21. The plant computer is out-of-service and a Reactor Operator manually completed OPT-301-9, "Shutdown Margin." The Shift Manager directs you to verify the data; check the calculations; and, determine if acceptance criteria is satisfied and if not, take actions to satisfy the applicable Technical Specification.

**System:** \_\_\_\_\_

**JTA Task #:** \_\_\_\_\_

**Task Title:** Clearance Review

**KSA Ref: GKA 2.2.13**

**RO:** 3.6

**SRO:** 3.8

Admin A.2 - Tagging and Clearance - SRO

**Candidate's  
Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 30 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

STA-605, "Clearance and Safety Tagging,"  
Revision 14  
OWI-110, "Operations Department Work  
Control and Clearance Guideline," Revision 11  
Dwg M1-206, Sheet 1

Tools, Equipment, Job Aids, etc:

Anything needed

## EXAMINER COPY

### Safety Considerations:

None - classroom only

### Comments:

Will need complete set of prints for candidates to reference. In the JPM package have DWG M1-206, Sheet 1, so the candidate can mark clearance boundary

**Use colored paper for all candidate handouts.**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

You have been asked to approve the clearance. Review the clearance and identify the five substantive errors contained in the clearance.

### Terminating Conditions:

Candidate finishes review of clearance.

## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2*	Identifies 5 errors	Candidate identifies the following 5 errors: 1. Work Description, Repack 1AF-0208 - part of clearance boundary (SRO only) 2. T/S reference incorrect. Should be T/S 3.7.5 (SRO only) 3. AFW Pump 1-02 motor breaker is REQUIRED to be tagged - not tagged 4. CST Suction Supply Valve - tag number incorrect Train A instead of Train B. Correct Tag Number is 1AF-0023 5. 1AF-0055-RO is NOT isolated (part of “minimum” clearance boundary)	Errors can be found in ANY order.  <b>4 of 5 errors must be identified for the JPM to be sat.</b>	
	TASK COMPLETE			

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

You have been asked to approve the clearance. Review the clearance and identify the five substantive errors contained in the clearance.

**System:** \_\_\_\_\_

**JTA Task #:** \_\_\_\_\_

**Task Title:** Radiation Release - Containment Vent (Pressure Relief Operation)

**KSA Ref:** GKA 2.3.8

**RO:** \_\_\_\_\_

**SRO:** 3.2

Admin A.3 - Radiation Control - SRO only

**Candidate's**

**Name:** \_\_\_\_\_

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 30 MINUTES Actual \_\_\_\_\_

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

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

Comments (list all steps not satisfactorily completed): \_\_\_\_\_

References:

Procedures SOP-801A, "Containment Ventilation System" and STA-603, "Control of Radioactive Effluents"

Tools, Equipment, Job Aids, etc:

Any desired

## EXAMINER COPY

### Safety Considerations:

None - classroom only

### Comments:

Need to have procedures available for the candidates to review - in particular STA-603, "Control of Station Radioactive Effluents," Revision 17

**Use colored paper for all candidate handouts.**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

Assume today is April 15, 2001. The Shift Manager requests that you perform a containment vent to reduce pressure in Unit 2 Containment. The Shift Manager has authorized you to review the applicable information and authorize the release, using Form STA-603-15. Form STA-603-15 was completed by Chemistry 24 hours earlier. The plant conditions are as follows:

Unit 2 is at 100% Rx power, with the following equipment out of service:  
TDAFW Pump 2-01, Containment PIG Detector 2RE-5503, Circ Water Pump 2-01, and Radiation Monitor XRE-5570A.

Currently, there is an ongoing release from the Gas Decay Tanks and a release from the LVW pond to Outfall 004.

### Terminating Conditions:

SRO candidate finishes review of the release form and has identified two errors with the release. After errors are identified and corrected, SRO candidate authorizes the release.



## EXAMINER COPY

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue and partially completed Form STA-603-15.	Candidate should review Admin JPM and initiating cue	Candidate should find 2 errors associated with the release - <b>errors can be found in ANY order.</b>	
2*	<p>Determines item, “Pre-release Data complete” has one error</p> <p><b>CUE:</b> AFTER the candidate indicates unable to vent containment →</p> <p>1) I&amp;C reported that the calibration was just completed and XRE-5570A is back in service.</p>	<p>SRO candidate should review the form and determine that:</p> <p>1) BOTH CAG-297 (2RE-5503 - containment PIG) and XRE-5570A (noble gas monitor on the stack - inoperable due to calibration) are inoperable and unable to perform containment vent. (The requirement was signed 24 hrs earlier and XRE-5570A was inservice).</p>	For the JPM to be satisfactory - BOTH ERRORS must be identified.	
3	Determines CAG-297 has not increased by more than a factor of 2	SRO candidate should “N/A” the step since the initial conditions indicated that CAG-297 was out of service.		
4	<p>Determines that “All applicable radiation monitor setpoint adjustments verified”</p> <p><b>CUE:</b> All setpoints properly adjusted, with the exception of CAG-297 which is out-of-service.</p> <p><b>IF SRO has NOT identified XRE-5570A as inoperable,</b> then inform him/her that XRE-5570A is out-of-service</p>	SRO candidate should ask about setpoint adjustments	<b>IF SRO has NOT identified XRE-5570A as inoperable</b> and after informing SRO that it is OOS, the SRO determines that containment vent can’t be done, then go to Step 2 and give cue	

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSAT</b>
5	Determines that “All applicable source checks performed”  <b>CUE:</b> All source checks performed	SRO candidate checks on source checks		
6*	Determines that containment vent CANNOT be done due to Waste Gas Decay Tank release  <b>CUE:</b> Waste Gas Decay Tank release was secured 15 minutes earlier.	SRO candidate determines that containment vent CANNOT be done in conjunction with Waste Gas Decay Tank release		
7	Authorizes release	SRO candidate will authorize the release after finding the two errors.	SRO candidate, may indicate that he would not authorize the release and send it back to Chemistry for a recheck	
	TASK COMPLETE			

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

Assume today is April 15, 2001. The Shift Manager requests that you perform a containment vent to reduce pressure in Unit 2 Containment. The Shift Manager has authorized you to review the applicable information and authorize the release, using Form STA-603-15. Form STA-603-15 was completed by Chemistry 24 hours earlier. The plant conditions are as follows:

Unit 2 is at 100% Rx power, with the following equipment out of service:  
TDAFW Pump 2-01, Containment PIG Detector 2RE-5503, Circ Water Pump 2-01, and Radiation Monitor XRE-5570A.

Currently, there is an ongoing release from the Gas Decay Tanks and a release from the LVW pond to Outfall 004.

**System:**

**JTA Task #:**

**Task Title:** Emergency Classification

**KSA Ref:** GKA 2.4.29

**RO:**

**SRO:**

4.0

Admin A.4 - Emergency Plan - SRO only

**Candidate's**

**Name:**

**Performance Environment:** CLASSROOM

**Performance Method:** PERFORMED

**Time to complete JPM:** Estimated 10 MINUTES Actual

The candidate's performance was evaluated against the standards contained in this JPM and was determined to be:

**SATISFACTORY**

**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: Date:

Comments (list all steps not satisfactorily completed):

**References:**

Procedure EPP-201, "Assessment of Emergency Action Levels, Emergency Classification and Plan Activation"

**Tools, Equipment, Job Aids, etc:**

Static simulator - following Scenario Run Day 1 (the scenario is actually Scenario 1)

## EXAMINER COPY

### Safety Considerations:

None - simulator only

### Comments:

**THIS NEEDS TO BE COMPLETED IN CONJUNCTION WITH SCENARIO 1. Scenario 1 should be run on Day 1 of simulator runs (the only scenario for the day - run 4 times). Do this JPM after the scenario is completed with the simulator in “freeze.”**

**If RO5 and RO6 are present on Day 1, then you could give RO topic Admin A.4 to all the ROs at the same time the SROs are classifying the event. RO5 and RO6 could be done together with any of the other applicants. If possible, keep the same examiner for RO5 and RO6 as would normally be scheduled.**

**Use colored paper for all candidate handouts.**

### Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

### Initiating Cue:

The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.

### Terminating Conditions:

Event is classified.

## EXAMINER COPY

<b>STEP#</b> *Critical	<b>ELEMENT</b>	<b>STANDARD</b>	<b>NOTES</b>	<b>SAT/ UNSA</b>
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2	Candidate determines emergency classification for high winds (Natural Phenomena)  CUE: When asked by candidate or looks at MET tower wind speed - winds 105 mph and sustained	Candidate determines that the classification for "Natural Phenomena" would be an ALERT (EPP-201, Chart 8)	Candidate should evaluate both events and then based on the individual classifications determine the "overall" classification	
3	Candidate determines emergency classification for loss of electrical power  CUE: When asked by candidate, indicated how long both EDGs were lost and no power to 1E buses.	Candidate determines that loss of electrical power would be classified as an: 1) If loss of both EDGs > 15 min, then SITE AREA EMERG. or 2) If loss of both EDGs < 15min, then ALERT		
4*	Candidate determines the overall classification  CUE: If the candidate request Wind Direction - 180° Pasquill Stability Class - E	Candidate determines that the overall classification would be: 1) SITE AREA EMERG (if EDGs lost >15 min) or 2) ALERT (if EDGs lost < 15 min) or an Alert based on the sustained high winds	No PARs required	
	<b>TASK COMPLETE</b>			

# **CANDIDATE HANDOUT**

## **INITIATING CUE:**

The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.