INITIAL SUBMITTAL

HARRIS EXAM
50-400/2004-301

FEBRUARY 23 - 27,2004
& MARCH 4,2004 (WRITTEN)

INITIAL SUBMITTAL JPMS

ADMINISTRATIVE JPMs/QUESTIONS
SIMULATOR JPMs,
IN-PLANT JPMs, AND
INITIAL ADMIN TOPICS OUTLINE
(ES-301-1),
CONTROL ROOM SYSTEMS &
FACILITY WALK-THROUGH OUTLINE
(ES-301-2)

Facility: HARRIS	Date of Examination: 2/23-2/27/2004
Examination Level: RO	Operating Test Number: 1

Administrative Topic (see Note)	Describe Activity to be Performed (KA # - RO Imp / SRO Imp)
Conduct of Operations	Determine Reactor Vessel Head venting time per EOP-EPP-FRP-13 (2.1.25 - 2.8 INA)
Conduct of Operations	Determine Average RCS Boron Concentration per EOP-EPP-002 (2.1.20 - 4.3/ 4.2)
Equipment Control	Determine clearance requirements for a CSIP per OPS-NGGC-1302 (2.2.13 - 3.6/3.8)
Radiation Control	Determine entry conditions for a High Radiation Area per AP-504 (2.3.10 - 2.9/3.3)
Emergency Plan	NOT APPLICABLE FOR RO

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

Facility:	HARRIS	Date of Examination:	2/23 - 2/27/2004
Examination Level:	SRO	Operating Test Number:	I

Administrative Topic (see Note)	Describe Activity to be Performed (KA # - RO Imp / SRO Imp)
Conduct of Operations	Perform a manual Shutdown Margin Calculation per OST-1036 (2.1.25 - NA / 3.1)
Conduct of Operations	Determine Average RCS Boron Concentration per EOP-EPP-002 (2.1.20 - 4.3 / 4.2)
Equipment Control	Determine clearance requirements for a CSIP per OPS-NGGC-2301 (2.2.13 - 3.6/ 3.8)
Radiation Control	Determine entry conditions for a High Radiation Area per AQ-504 (2.3.10 2.9/ 3.3)
Emergency Plan	Determine Protective Action Recommendations per PEP-110 (2.4.44 - NA / 4.0)

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

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ABMIN SRO-1A

Perform a Manual Shutdown Margin Calculation

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK Perform a Manual Shutdown Margin Calculation

ALTERNATE PATH: None

FACILITY JPM NUMBER: CR-016 (M)

KA: 2.1.25 IMPORTANCE: SRO 3.1 RO NA

KA STATEMENT: Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data

TASK STANDARD: OST-1036, Attachment **3,** Manual SDM Calculation (Modes 1 and 2), completed with SDM of 3818 ± 75 pcm

PREFERRED EVALUATION LOCATION: SIMULATOR ___ IN PLANT ___

PREFERRED EVALUATION METHOD: PFRFORM ✔ SIMULATE ___

REFERENCES: OST-1046, Shutdown Margin Calculation Modes 1-5
Curve Book

VALIDATION TIME: 15 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE 'TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- JPM can be performed in any location where the identified references are available

- OST-1036, Shutdown Margin Calculation Modes 1-5
- Curve Book (Cycle 12)

NOTE: COMPLETED COPY OF ATTACHMENT 3 INCLUDED AT END OF JPM TO BE USED AS EXAMINER KEY.

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance ofthis JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action *is* required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-kecping, **ALARA** and use of personal protective equipment. **All** actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may **ask** for clarification **if** needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking and the indications you are looking at during the perfonnance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task us you would in the plant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

- The plant has been operating at 75% power for *6* weeks.
- Core burnup is 350 EFPD.
- RCS boron concentration is 300 ppm.
- **NO** rods are believed to be immovable / untrippable.
- POWERTRAX is **NOT** available.

INITIATING CUE(S):

Complete OST-1036, Shutdown Margin Calculation Modes 1-5, Section 7.3, "Manual SDM Calculation (Modes 1 and 2)" for current plant conditions.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PKOC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1		Locate OST-1036, Section 7.3, Attnchment 3, and Curve Book	Locates OST-1036, Section 7.3, Attachment 3, and Curve Hook		
2	Att. 3, Step 1	Enters Reactor Power Level	Refers to given conditions and enters 75%		
*3	**Att. 3, Step 2**	**Determine Rod Insertion Limit for power level**	**Refers to Curve F-12-1 and determines TS limit for RIP. to be 140 _ 2 steps**	**CRITICAL TO — ALLOW DETERMINING INTEGRAL ROB WORTH.**	
4	Att. 3, Step 3	Enters core Burn Up	Refers to given conditions and enters 350 EFPD		
5	Att. 3, Step 4	Enters RCS Boron Concentration	Refers to initial conditions and enters 300 ppm		
	NOTE: ATT 3, STEP 5 NOT PERFORMED SINCE VALUE IS INCLUDED AS PART OF ATTACHMENT.				
*6	**Att. 3, Step 6**	**Determines Power Defect for current power level**	**Refers to Curve C-12-3 and determines power defect to be 2258 ± 50 pcm**	**CRITICAL TO ENSURE PROPER POWER DEFECT INCLUDED IN CALCULATION.** *NOTE: CURVE C-12-3 USED DUE TU CORE BURN UP.*	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*7	**Att. 3, Step 7**	**Determines Rod Worth for RIL position determined above**	**Refers to Curve A-12-11 and determines rod worth to be 615 + 25 pcm**	**CRITICAL TO ENSURE PROPER ROD WORTH INCLUDED IN CALCULATION.** *NOTE: CURVE A-10-11 USED DUE TO CORE BURN UP, EQUILIBRIUM XENON CONDITIONS, AND POWER > **10%.***	
8	Att. 3, Step 8	Enters worth of any additional immovable or untrippable rods	Refers to given conditions and enters 0		
*9	**Att. 3, Step 9**	**Determines Total Shutdown Margin**	**Determines Total Shutdown Margin to be 3818 ± 75 pcm**	**CRITICAL TO CORRECTLY DETERMINE TOTAL SHUTDOWN MARGIN.** *NOTE: TOLERANCE DETERMINED USING PREVIOUSLY ALLOWED TOLERANCES IN READING GRAPHS.*	
10	Section 7.3	Signs off Section 7.3 steps	Signs off steps as complete		
	CUE: INDEPENDENT VERIFICATION IS NOT REQUIRED FOR PURPOSES OF THIS JPM ONLY.				
	TASK COMPLETE				

STOP TIME: _____

EXAMINER KEY

(SHADED AREA BELOW INDICATES DATA ALREADY PROVIDED)

Manual SDM Calculation (Modes 1 and 2)

1. Reactor power level. **75** %

2. Rod insertion limit for the above power level

140 ± 2 stepson bank **D**

3. Burn up (POWERTRAX/MCR Status Board). **350** EFPD

4. Present RCS Boron Concentration *300* ppm

NOTE: Use absolute values of numbers obtained from curves.

5. Total worth of all control and shutdown banks, minus the worth of the most reactive rod for **Fuel** Cycle 12.

6683 pcm
(a)

6. Cycle 12 Power defect for the power level recorded in Step 1. (Refer to Curves C-X-1 to C-X-3).

Curve used **C-12-3** **2250 + 50** pcm
(b)

NOTE: HFP curves are used for power levels of 10% or greater

7. Inserted control rod worth at the **rod** insertion limit recorded in Step 2. (Refer to Curves A-X-6 to A-X-11)

Curve used **A-12-1** **615 ± 25** pcm
(c)

8. Worth of any additional immovable or untrippable rods (for each stuck rod, use the most reactive single rod worth (1524 pcm) or obtain individual withdrawn rod worth from the reactor engineer).

0 pcm
(d)

9. Determine the Total Shutdown Margin using the following formula:

Total SDM C_B = **6683** - **2250 ± 50** - **615 ± 25** - **0**
(e) (a) (b) (c) (d)

3818 ± 75 pcm
(e)

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF **TASK)**

INITIAL CONDITIONS:

- The plant has been operating at 75% power for 6 **weeks.**
- Core burnup is 350 EFPD.
- RCS boron concentration is 300 ppm.
- **NO** rods are believed to be immovabie / untrippable.
- POWERTRAX is **NOT** avaiiable.

INITIATING CUE(S):

Complete OST-1036, Shutdown Margin Calculation Modes 1-5, Section **7.3.** "Manual SDM Calculation (Modes 1 and 2)" for current plant conditions.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN RO- 1A

Determine Reactor Vessel Head Venting Time

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Determine Reactor Vessel Head Venting *Time*

ALTERNATE PATH: None

FACILITY JPM NUMBER: New

KA: 2.1.25 IMPORTANCE: SRO NA RO **2.8**

KA STATEMENT? Ability to obtain and interpret station reference *materials* such as graphs, monographs, and tables which contain performance data.

TASK STANDARD: Maximum venting time calculated as **17.7** $\pm$ 1.0 minutes.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ IN PLANT ___

PREFERRED EVALUATION METHOD: PERFORM ✔ SIMULATE ___

REFERENCES: EOP- FRP-1.3, Response to Voids in Reactor Vessel

VALIDATION TIME: **15** MMUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES WEEDED:

- JPM can be performed in any location where EOP- FRP-I.3 is available
- EOP- FRP-1.3, Response to Voids in Reactor Vessel

NOTE: AN EXAMINER KEY IS ATTACHED TO JPM.

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance ofthis JPM. If performed on the simulator, then take ail actions as you normally wouid in the Control Room. You should silence all annunciators **and** determine if they are associated with the task you are performing. No further action **is** required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating **cues** will be described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise availahle. ***Report completion of the bask as you would in the plant.***

During the course of the walk-through examination, there map he some tasks you will be asked to perform that map require you to implement **an** alternate method directed by plant procedures in order to complete the assigned task. ***You*** are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

Following a small break loss of coolant accident, Safety Injection has been terminated. The crew is currently responding to voiding in the Reactor Vessel per EOP-FRP-I.3, "Response to Voids in Reactor Vessel."

Containment Hydrogen concentration is 1%. Containment temperature is 112°F. RCS pressure is 680 psig.

INITIATING CUE(S):

Determine the maximum allowable Reactor Vessel Head venting time for these conditions per Attachment 1 of EOP-FRP-I.3.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1		Obtain copy of EOP-EPP-FRP-1.3	Obtains copy of EOP-EPP-FRP-1.3, Attachment 1 and Figure 2		
"2	Att. 1 Step 1	Determine CNMT Volume at SIP 'A'	Based on Containment temperature of 112°F, calculates that Containment Volume is 1.9536 ± 1E4 ft^3	CRITICAL TO ALLOW DETERMINING CORRECT VENT TIME. *NOTE. TOLERANCE BASED ON ROUNDING*	
*3	Att. 1 Step 2	Determine Maximum Hydrogen volume that can be vented 'B'	Based on Containment Volume of 1.9536 ± 1E4 ft^3 and Containment Hydrogen concentration of 1%, calculates that maximum hydrogen volume to be vented is 39,000 ± 200 ft^3	CRITICAL TO ALLOW DETERMINING CORRECT VENT TIME. *MOTE: TOLERANCE BASED ON PREVIOUS TOLERANCE IN JPM STEP 2.*	
"4	Att. 1 Step 3	Determine Hydrogen flow rate as a function of RCS pressure 'C': a. Check RCS pressure and mark on Figure 2. b. Using Figure 2, read hydrogen flow rate 'C'.	• Determines RCS pressure (given in initial conditions) to be 680 psig • Determines hydrogen flow rate to be 2200 ± 100 scfm	CRITICAL TO ALLOW DETERMINING CORRECT VENT TIME. *NOTE: TOLERANCE BASED ON READABILITY OF CURVE.*	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*5	**Att. 1 Step 4**	**Calculate maximum venting time 'D':**	**Calculates maximum venting time to be 11.7 ± 1.0 minutes**	**CRITICAL TO DETERMINE CORRECT VENT TIME.** ***NOTE: TOLERANCE BASED ON PREVIOUS TOLERANCES ALLOWED.***	
TASK COMPLETE					

STOP TIME: _____

htrachmcnt 1
Sheet 1 of 1

INSTRUCTIONS FOR DETERMINING VENTING TIME

1. Determine CNMT Volume at STP 'A"

$$A = (2.266 \times 10^6\ FT^3) \times \frac{492°R}{(\text{CNMT temperature } °F + 460°R)}$$

A = 1.95E6 ± 1E4 (FT^3)

2 Determine Maximum Hydrogen volume that can be vented 'E':

$$B = \frac{(3.0\% - \text{CNMT Hydrogen Concentration}) \times \text{'A'}}{100\%}$$

B = 39,000 ± 200 (FT^3)

3. Determine Hydrogen flow rate as a function of RCS pressure 'C':

a. Check RCS pressure and mark on Figure 2.

b. Using Figure 2, read hydrogen flow rate 'C'.

C = 2200 ± 100 (FT^3/MIN)

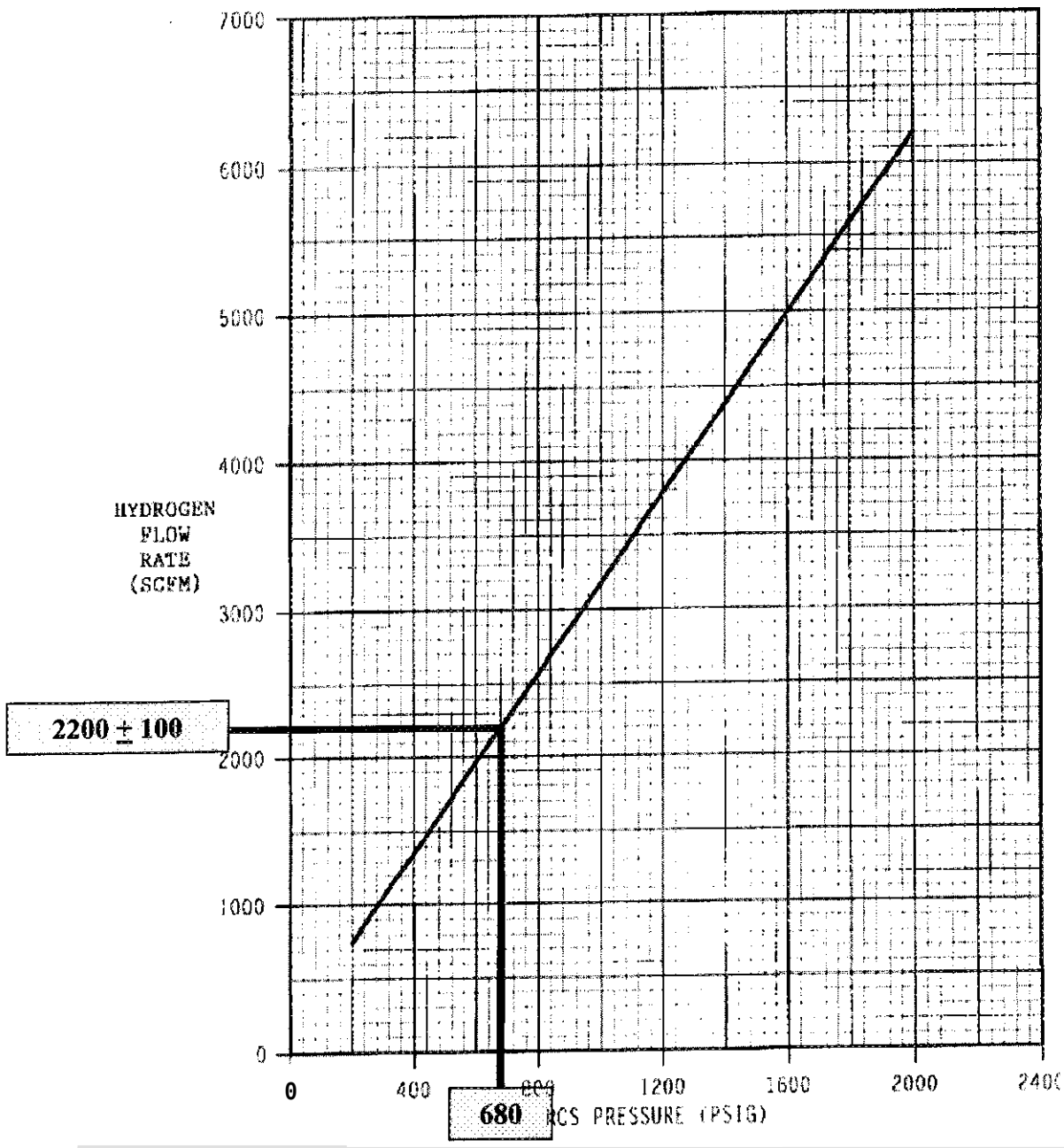
4. Calculate maximum venting time 'D':

$$\text{Maximum venting time} = \frac{B}{C} = \_\_\_\_$$

D = 17.7 ± 1.0 (MINUTES)

EXAMINER KEY

FIGURE 2: HYDROGEN FLOW RATE VERSUS RCS PRESSURE



EXAMINER KEY

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Following a small break loss of coolant accident, Safety Injection has been terminated. The crew is currently responding to voiding in the Reactor Vessel per EOP-FRP-1.3, "Response to Voids in Reactor Vessel."

Containment Hydrogen concentration is 1%. Containment temperature is 112°F. RCS pressure is *680* psig.

INITIATING CUE(S):

Determine the maximum allowable Reactor Vessel Head venting time for these conditions per Attachment 1 of EOP-FRP-1.3.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN COM-IB

Determine Average RCS Boron Concentration

APPLICANT: _____

EXAMINER: _____

REGION 11
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Determine Average RCS Boron Concentration

ALTERNATE PATH: None

FACILITY JPM NUMBER: CR-055

KA: 2.1.20 IMPORTANCE: SRO **4.3** RO **4.2**

KA STATEMENT: Ability to perform procedural steps.

TASK STANDARD: Average RCS boron calculation determined to **be** 951.9 ± 0.5 ppm.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ IN PLANT ___

PREFERRED EVALUATION METHOD: PERFORM ✓ SIMULATE ___

REFERENCES: EPP-002, Loss of All AC Power Recovery Without SI Required
Curve D-X-40, Pressurizer Volume

VALIDATION TIME: 15 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINEK: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- JPM can be performed in any location

- EPP-002, Loss of All AC Power Recovery Without SI Required
- Curve Book

NOTE: COMPLETED COPY OF ATTACHMENT 1 INCLUDED AT END OF JPM TO RE USED AS EXAMINER KEY.

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls **or** equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you nornially would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, hut not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will he described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not othenvise available. ***Report completion of the task as you would in the plant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

Following a loss of offsitc power. recovery actions are being taken in accordance with EOP-EPP-002, "Loss of All AC Power Recovery Without SI Required."

Plant conditions are as follows:

- PRZ pressure 2230 psig
- RCS Hot Leg temperatures **555** °F
- Core **Exit** thermocouples 560 °F
- PRZ Liquid space temperature 650 "F
- PRZ Steam space temperature 650 °F
- PRZ level 45 %
- Charging and letdown arc: in service, with letdown flow at 45 gpm.

Chemistry has just taken RCS boron samples and reports the following results:

- Loop 'B' Hot Leg 930 ppm
- Loop 'C' Hot Leg 940 ppm
- PRZ Liquid Space 961 ppm

INITIATING CUE(S):

Calculate the average RCS boron concentration **for** these conditions per EOP-EPP-002, Attachment 1.

STAR?' TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	[mateEPP-002, Attachment 1, and **Curve** Book	Locates EPP-002. Attachment 1, and Curve Book		
2	Att. 1, Step 1	Cecord PRZ level at the time of PRZ sample	Records PRZ level as 15%		
***3**	**An. 1, Step 2**	**Determine PRZ volume (V_{PRZ}) based on PRZ level and curve D-X-40**	• **References curve D-X-40** • **Determines intersection of "653 °F PRZ LIQUID SPACE TEMP LINE" and 45% on "INDICATED PRESSURIZER LEVEL" axis (X) to correspond to 2900 ± 100 gallons on "VOLUME"**	**CRITICAL TO ACCURATELY DETERMINE EFFECT OF PRZ ON BORON CONC.**	
***4**	**An. I? Step 3**	**Determine CVCS volume (V_{CVCS}) based on letdown status:** • **If letdown in service = 2136 gal ÷ 2 = 1068 gal** • **If letdown isolated = 0**	**Determines letdown volume of 1068 gallons due to letdown being in service**	**CRITICAL TO ACCURATELY DETERMINE EFFECT OF CVCS ON BORON CONC.**	
5	Att. 1, Step 4	Record RCS loop B boron concentration C_2	Records RCS loop B troron concentration as 930 ppm		
6	Att. 1, Step 5	Record RCS loop C boron concentration C_3	Records RCS loop C tboron concentration as 940 ppm		
7	Att. 1, Step 6	Record PRZ liquid space boron concentration C_{PRZ}	Records PRZ Liquid space boron concentration as 961 ppm		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*8	Att. 1, Step 7	Calculate average RCS boron concentration(C_{avg}) using the following formula (formula on Att. 1, Step 7)	Calculates average RCS boron concentration to be 951.7 ± 0.5 ppm	CRITICAL TO CALCULATE AVERAGE RCS BORON CONC WITHIN ALLOWED TOLERANCE.	
	NOTE: ALLOWED TOLERANCE BORDERS TOLERANCE FOR ALLOWED ERROR IN READING CURVE 5-X-40, BUT WILL NOT BE MET IF APPLICANT FAILS TO ACCOUNT FOR CVCS LETDOWN OR OTHER SIMILAR ERRORS.				
		TASK COMPLETE			

STOP TIME: _____

EXAMINER KEY

Attachment 1
Sheet 1 of 1

CALCULATION FOR AVERAGE RCS BORON CONCENTRATION

1. Record PRZ level at the time of PRZ sample: **45 %**

2. Determine PRZ volume (V_{PRZ}) based on PRZ level and curve *D-X-40* **2900 + 100 GAL**

3. Determine CVCS volume (V_{CVCS}) based an letdown status: **1068 GAL**
   - o If letdown in service = 2136 GAL ÷ 2 1068 GAL
   - o If letdown isolated = 0 GAL

4. Record RCS loop B boron concentration C_2: **930 PPM**

5. Record RCS loop C boson concentration C_3: **940 PPM**

6. Record PRZ liquid space boron concentration C_{PRZ}: **961 PPH**

7. Calculate average RCS boron concentration (C_{avg}) using the following formula:

$$C_{avg} = \frac{[(C_2 + C_3) \times (31.218 + V_{CVCS})] + [C_{PRZ} \times (V_{PRZ} + 3700)]}{(V_{PRZ} + V_{CVCS} + 66.135)} = \mathbf{951.7}\ \text{PPM}$$

NOTE 1: RCS Volume not including PRZ, Upper Head, Surge Line or CVCS = **62.435** GAL. (Value halved in calculation to account for averaging the boron concentration for Loops B and C - 31.218 GAL.)

NOTE 2: RCS Volume *not* including PRZ or CVCS = **66.135** GAL

NOTE 3: Combined Upper Head and Surge Line Volume = **3700** GAL. (Upper Head Volume = **3365** GAL and Surge Line Volume = **335** GAL.)

NOTE 4: CVCS Volume = **2136 GAL** (Value halved in Step 3 to account for averaging the boron concentration for RCS loop B end C - 1068 GAL.)

NOTE 5: The boron concentration of the Upper Head end Surge Line is assumed to be that of the PRZ since these volumes also stagnate when RCPs are lost. CVCS boron concentration is assumed to be that of the RCS.

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Following a loss of offsite power, recovery actions are being taken in accordance with EOP-EPP-002, "Loss of All AC Power Recovery Without SI Required."

Plant conditions are as follows:

- PRZ pressure 2230 psig
- RCS Hot Leg temperatures 555 °F
- Core Exit thermocouples 560 °F
- PRZ Liquid space temperature 650 "F
- PRZ Steam space temperature 650 °F
- PRZ level 45 %
- Charging and letdown are in service, with letdown flow at 45 gpm

Chemistry has just taken RCS boron samples and reports the following results:

- Loop 'B' Hot Leg 930 ppm
- Loop 'C' Hot Leg 940 ppm
- PRZ Liquid Space 961 ppm

INITIATING CUE(S):

Calculate the average RCS boron concentration for these conditions per EOP-EPP-002, Attachment I.

Attachment 1
Sheet 1 of 1

CALCULATION FOX AVERAGE RCS BORON CONCENTRATION

1. Record PRZ level at the time of PRZ sample: _____%

2. Determine PRZ volume (V_{PRZ}) based on PRZ level and curve D-X-40 _____GAL

3. Determine CVCS volume (V_{CVCS}) based on letdown status: _____GAL
   - If letdown in service = 2136 GAL ÷ 2 = 1068 GAL
     isolated = 0 GAL

4. Record RCS loop B boron concentration C_2: _____PFM

5. Record RCS loop C boron concentration C_3: _____PPM

6. Record PRZ liquid spece boron concentration C_{PRZ}: _____PPM

7. Calculate average RCS boron concentration (C_{avg}) using the following formula:

$$C_{avg} = \frac{[(C_2 \quad C_3) \times (31218 + V_{CVCS})] + [C_{PRZ} \times (V_{PRZ} + 3700)]}{(V_{PRZ} + V_{CVCS} + 66135)} = \_\_\_\_\_ PPM$$

NOTE 1: RCS Volume not including PRZ, Upper Head, Surge Line or CVCS = 62,435 GAL. (Value calved in calculation to account for averaging the boron concentration for Loops B and C = 31,218 GAL.)

NOTE 2: RCS Volume not including PRZ or CVCS = 66,135 GAL.

NOTE 3: Combined Upper Eead and Surge Line Volume = 3700 GAL. (Upper Head Volume = 3365 GAL an2 Surge Line Volume = 335 GAL.)

NOTE 4: CVCS Volume = 2136 GAL (Value halved in Step 3 to account for averaging the boron concentration for RCS loop B and C = 1068 GAL.)

NOTE 5: The boron concentraticn of the Upper Head and Surge Line is assumed to he that of the PRZ since these volumes also stagnate when RCPs are lost. CVCS boron concentration is assumed to be that of the RCS.

REGION II
INITIAL LICENSE EXAMINATION
JQB PERFORMANCE MEASURE

ADMIN COM-2

Determine Clearance Requirements for a CSlP

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE **MEASURE**

TASK: Determine Clearance Requirements for a CSIP

ALTERNATE PATH: None

FACILITY JPM NIJMBER: 98NRC (A.2C)

KA: 2.2.13 IMPORTANCE: SRO 3.8 RO 3.6

KA STATEMENT: Knowledge of tagging and clearance procedures.

TASK STANDARD: Provide complete electrical and mechanical isolation of CSHP 1B-SB

PREFERRED EVALUATION LOCATION: SIMULATOR ___ IN PLANT ___

PREFERRED EVALUATION METHOD: PERFORM ✔ SIMBJLATE ___

REFERENCES: OPS-NGGC-1301, Equipment Clearance
OP-107, Chemical and Volume Control System
SFD 2165 S-1304 and S-1305

VALIDATION TIME: 10 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ **FINISH** TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- JPM can he performed in any iocation where the identified references arc available

- OPS-NGGC-1301, Equipment Clearance
- OP-107, Chemical and Volume Control System
- SFD 2165 S-1304 and S-1305

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to he operated during the performance of this JPM. If performed on the simulator, then take all actions as yon normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, hut not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. Ail actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will he described and you may ask **for** clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to beperformed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise availabie. ***Report completion ofthe task as you would in theplant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. **You** are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL, CONDITIONS:

The plant is defueled. CSIP 1B-SB is required to be placed under a clearance for seal replacement. Cooling water and lube oil systems are **NOT** required to be placed under clearance.

INITIATING CUE(S):

You have been directed to determine the clearance requirements for CSIP 1B-SB using the CWDs, SFDs, and System Operating Procedures, **as** necessary. Provide complete electrical and mechanical protection. Provide the necessary vent and drain paths. The SSO has approved **using** single valve isolation.

NOTE: IT IS NOT INTENDED THAT YOU ACTUALLY GENERATE A CLEARANCE. ONLY PROVIDE THE EVALUATOR WITH A LISTING OF THE REQUIRED COMPONENTS AND POSITIONS.

START TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain a copy of the appropriate drawings	Operator obtains a copy of OP-107 to determine electrical requirements and 2165 S-1304 and S-1305 to determine mechanical requirements		
	NOTE: SEE JPM ATTACHMENT FOR A COMPLETE LISTING OF EACH COMPONENT AND REQUIRED POSITION. JPM STEPS ARE NOT REQUIRED TO BE PERFORMED IN THE LISTED SEQUENCE.				
*2	N/A	**Determine the electrical supply breaker for CSIP 1B-SB**	**Refers to OP-107 (or any other valid source) and determines the electrical supply breaker for CSIP 1B-SB to be 6.9 KV Emergency Bus 1B-SB, Cubicle 4** **Also** determines **pump** has MCB switch and includes **a** CTT on CSIP 'B' switch **(BREAKER RACKED OUT)**	**CRITICAL TO REMOVE POWER FROM PUMP.** *NOTE: CIT NOT REQUIRED TO BE INCLUDED FOR SATISFACTORY COMPLETION OF THIS STEP*	
*3	N/A	**Determine the suction valve for CSIP IB-SB**	**Refers to S-1305 and determine the suction valve for CSIP 1B-SB to be 1CS-187, B CSIP Suction Isol Vlv** **(CLOSE)**	**CRITICAL TO ISOLATE SIJCTION VALVE.**	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*4	N/A	Determine the discharge isolation for CSIP IB-SB	Refers to S-1305 and determines the valve to isolate CSIP 1B-SB discharge is 1CS-197, B CSIP Discharge Isol Vlv (CLOSE)	CRITICAL TO ISOLATE DISCHARGE FLOW PATH.	
*5	N/A	Determine the normal miniflow isolation for CSIP 1B-SB	Refers to S-1305 and OP-107 and determines the valve to isolate normal miniflow path for CSIP 1B-SB is 1CS-196 SB, CHARGING/SI PUMP B-SB MINIFLOW ISOL, and power supply for valve is 1B35-SB (Breaker 4E) Also determines valve has MCB switch and includes a CIT on 1CS-196 switch (VALVE TO BE CLOSED WITH POWER REMOVED – LOCAL HANDWHEEL TO BE IN CLOSED)	CRITICAL TO ISOLATE DISCHARGE FLOW PATH. *NOTE: CIT NOT REQUIRED TO BE INCLUDED FOR SATISFACTORY COMPLETION OF THIS STEP.*	
*6	N/A	Determine the alternate miniflow isolation for CSIP 1B-SB	Refers to S-1304 and determines the valve to isolate alternate miniflow path for CSIP 1B-SB is 1CS-751, B CSIP Alt Mini Flow Man Isol (CLOSE)	CRITICAL TO ISOLATE DISCHARGE FLOW PATH.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*7	N/A	Determine the vent path For CSIP 1B-SB	Refers to S-1305 and determines the valve to vent CSIP IR-SB is 1CS-188, B CSIP Suction Px Isol Vlv (OPEN WITH *CAP* REMOVED)	CRITICAL TO PROVIDE VENT PATH TO DEPRESSURIZE PIPING. *NOTE: EITHER STEP 7 OR STEP 8 IS CRITICAL. ONE OR THE OTHER MUST BE PERFORMED. BUT NOT BOTH. HOWEVER, IF BOTH ARE PERFORMED, THIS IS ALSO ACCEPTABLE.*	
*8	N/A	Determine the drain path for CSIP IB-SB	Refers to S-1305 and determines the valves to drain CSIP 1B-SB discharge piping to be 1CS-189, B CSIP Casing Leak Off Drain Vlv, and 1CS-190, B CSIP Casing Leak Off Drain Isol Vlv (BOTH OPEN)	CRITICAL TO PROVIDE DRAIN PATH TO DEPRESSURIZE PIPING. *NOTE EITHER STEP 7 OR STEP 8 IS CRITICAL. ONE OR THE OTHER MUST BE PERFORMED, BUT NOT BOTH. HOWEVER, IF BOTH ARE PERFORMED, THIS IS ALSO ACCEPTABLE.*	
TASK COMPLETE					

STOP TIME: _____

JPM ATTACHMENT
COMPONENT LISTING AND REQUIRED POSITIONS

COMPONENT	POSITION
1) CSIP IB-SB P.S. - 6.9 KV Emergency Bus 1B-SB, Cubicle 4	Racked Out
2) 1CS-187, B CSIP Suction Isol Vlv.	Shut
3) 1CS-197, B CSIP Discharge Isol Vlv.	Shut
4) 1CS-196 SB, CHARGING/SI PUMP B-SB MINIFLOW ISOL	Closed
5) 1CS-196 SB P.S. - 1B35-SB, Breaker 4E	Off
6) 1CS-751, B CSIP Alt Mini Flow Man Isol.	Shut
7) EITHER OR BOTH OF THE FOLLOWING:	
a) ICs-188, B CSIP Suction Px Isol Vlv	Uncapped/Open
- OR -	
b) 1CS-189, B CSIP Casing beak Off Drain Vlv	Open
- AND -	
1CS-190, B CSIP Casing beak Off Drain Isol Vlv	Open
8) CIT on 1CS-196 Switch (NOTE 1)	Neutral after Closed
9) CIT on CSIP 'B Switch (NOTE 1)	Neutral after Stop

(NOTE 1) -- CITs on MCB switches NOT required for satisfactory completion of JPM

EXAMINER KEY

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINEK UPON COMPLETION OF TASK)

INITIAL CQNDITIONS:

The plant is defueled. CSIP IR-SB is required to he placed under a clearance for seal replacement. Cooling water and lube oil systems are NOT required to be placed under clearance.

INITIATING CUE(S):

You have been directed to determine the clearance requirements for CSIP 1B-SB using the CWDs, SFDs, and System Operating Procedures, as necessary. Provide complete electrical and mechanical protection. Provide the necessary vent and drain paths. The SSO has approved using single valve isolation.

NOTE: IT IS NOT INTENDED THAT YOU ACTUALLY GENERATE A CLEARANCE. ONLY PROVIDE THE EVALUATOR WITH A LISTING OF THE REQUIRED COMPONENTS AND POSITIONS.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN COM-3

Determine Entry Conditions for a High Radiation Area

APPLICANT: _____

EXAMINER: _____

REGION 11
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Determine Entry Conditions for a High Radiation Area

ALTERNATE PATH: None

FACILITY JPM NUMBER: New

KA: 2.3.4 IMPORTANCE: SRO 3.1 RO 2.5

KA STATEMENT: Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.

TASK STANDARD: Determination made of appropriate requirements for entry to the Filter Backwash Transfer Tank and Pump Room.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ INPLANT ✔

PREFERRED EVALUATION METHOD: PERFORM ___ SIMULATE ✔

REFERENCES: NGGM-PM-0002, Radiation Control and Protection Manual
AP-535, Performing Work in Radiation Control Areas

VALIDATION TIME: 15 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS /EQUIPMENT / PROCEDURES NEEDED:

- Perform after completion of In Plant JPM COM-IP(i) while still in RCA

- NGGM-PM-0002, Radiation Control and Protection Manual
- **AP-535,** Performing Work in Radiation Control Areas
- RWP 00001771

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. **You** should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your **task.**

You are expected to adhere to all plant standards, including. but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to beperformedfrom memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then prcvide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in theplant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. ***You*** are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

The Control Room has directed you to determine the position of a valve in the Filter Backwash Transfer **Tank** and Pump room.

INITIATING CUE(S):

Discuss the actions you must take, specifically Radiological Control requirements, to **allow** entering the area.

START TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Locates area and determines area is contaminated	Locates Filter Backwash Transfer Tank and Pump room and determines area is a Locked High Radiation area		
2	N/A	Proceed to / contact HP to discuss entry with HP	Proceeds to / contacts HP to discuss entry with HP		
	CUE: ACTING AS HP, DIRECT APPLICANT TO "FOLLOW YOUR RWP."				
*3	N/A	**Using computer, calls up Radiation Work Permit**	**Calls up RWP 00001771 for Operations**	**CRITICAL TO ALLOW REVIEW OF ENTRY REQUIREMENTS** ***NOTE: At Evaluator's discretion, if Applicant demonstrated proper use of computer to call up RWP when entry was first made to RCA, this step may be marked "N/A".*** ***IF APPLICANT HAS NOT DEMONSTRATED ABILITY TO CALL UP RWP PREVIOUSLY, PROMPT AS NECESSARY TO DETERMINE APPLICANT'S ABILITY TO CALL UP RWP.***	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
	CUE: ONCE RWP 00001771 IS CALLED UP, PROVIDE ATTACHED HARD COPY OF RWP (PAGES 0 – 11 OF JPM).				
***4**	**N/A**	**Review RWP to determine entry requirements into Locked High Radiation area**	**Reviews RWP 00001771 and determines entry requirements for Locked High Radiation area are:** **1. Pre-Job briefing required** **2. RC Supervisor approval required prior to entry** **3. Continuous Radiation Control coverage required** 4. RP personnel are NOT **to** engage **in** activities **which** might **distract them from coverage**	**CRITICAL TO ENSURE ALL RADIOLOGICAL REQUIREMENTS MET.** ***NOTE: Item 4 (RP personnel not performing activities) is a requirement for the RP personnel and is not an operator requirement. Dress requirements are determined by RP personnel and are disseminated during pre-job briefing.***	
	NOTE SURVEY MAP IS PROVIDED AS PAGE 7 OF JPM IF APPLICANT REQUESTS IT, BUT IT IS NOT REQUIRED TO BE REVIEWED BY APPLICANT INDIVIDUALLY SINCE IT WILL BE REVIEWED IN PRE-JOB BRIEFING.				
	TASK COMPLETE				

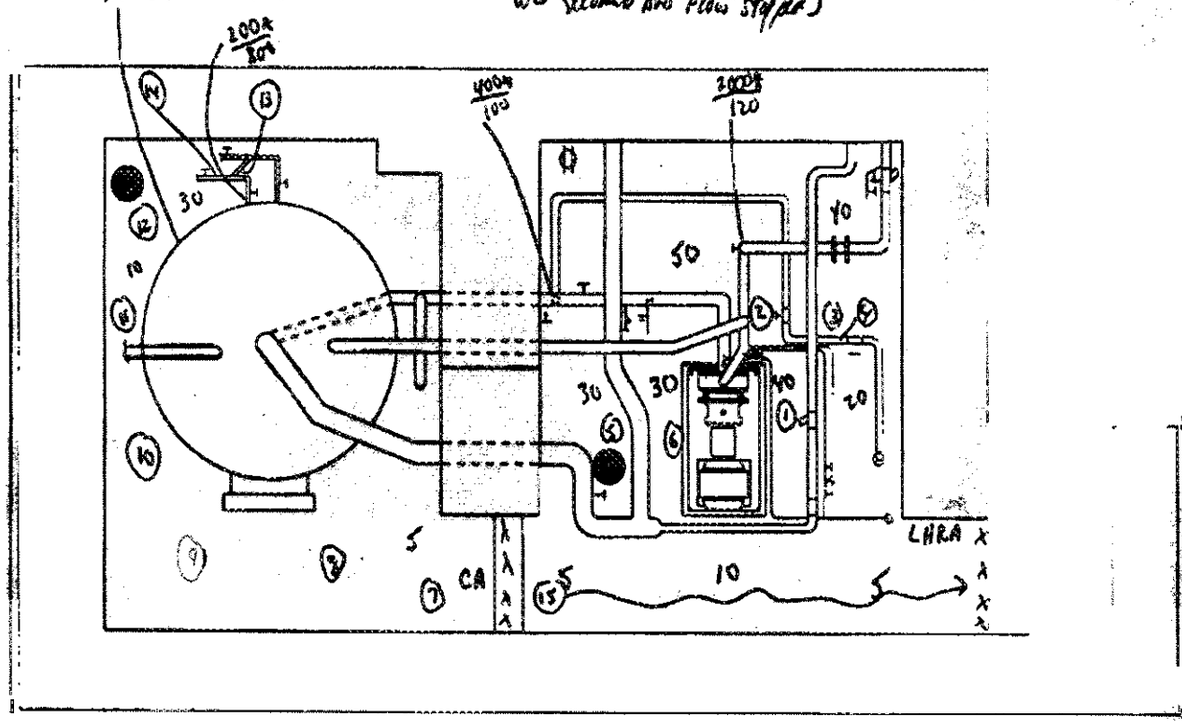
STOP TIME: _____

Map # A22

RADIOLOGICAL SURVEY RECORD

Unit	Bldg/Elev: RAB 236'	Area: Filter B/W Transfer Tk & Pump	Date: 3-13-03	Time: 0900	RWP #: [illegible] Survey #: 0313-003
Component: NA		Work Description: Job Coverage for Operation valve tagging			
Surveyor: Douglas MCCARON		Signature: [signature]		Reviewed By: [signature] 3-13-03	

Comments: *Smear #15 <1K dpm/100cm², dose rates taken after VT-2 (TANK PLACED IN recirc, with pump running, dose rate after pump was secured and flow stopped) dose received 11 mrem



#	dpm/100cm²	Location
1	<1K	Fl
2		
3		
4		
5		Fl
		Floor
		Piping
14		Floor
*15		

Instrument	Serial #
	31889
RO-2	4993

RA	Radiation Area	β	Beta Dose Rate
HRA	High Radiation Area	n	Neutron Dose Rate
LHRA	Locked High Radiation Area	R	Rem/Hour
VHRA	Very High Radiation Area	✱✱✱✱	Boundary
ARA	Airborne Radioactivity Area	o	Smear Location
CA	Contaminated Area	Δ	Air Sample Location
RMA	Radioactive Materials Area	Dose rates in mrem/hr unless otherwise noted	

Air Activity
No. NA DAC NA % Activity NA
No. DAC %
No. DAC 0 % Activity
WBIP/Action Record #

PASSPORT - TOTAL EXPOSURE SYSTEM

RADIATION WORK PERMIT

Report ID : TIPH900 RWP Number: **00001991 00** ALARA Task
Page: 1 Facility : **HNP** **00490854 01 01**

RWP Title : ROUTINE OPERATIONS ACTIVITIES
Type : LR Status: ACTIVE **Date** : **12/11/03** 12:55
Area : GENERAL FACILITY Location:

Work Begin Date: **12/15/03** 00:00 **Work** End Date: **12/31/10** 23:59
Extension Date : By:
Initiated **Bate** : **12/11/03** 12:55 By: SEABOM SEABOCK MICHA E
Approved : **12/11/03** 12:55 By: KIVETP KIVETT PER C

ALARA Task

ALARA Task : **00490854** 01 **01** Status: READY
ALARA Desc : OPS ACTIVITIES

Radiological Conditions

ED Time Alarm 900
(in minutes)

Adminstrative Dose Limit : **40** (mrem)

ED Dose **Alarm:** 32 (mrem) ED **Dose** Rate Alarm: **200** (mrem/hr)

Radiological Hazards

Radiological Hazard	Distance	Reading	
SEE HOLD POINT INST	N/A	N/A	N/A

PASSPORT - TOTAL EXPOSURE SYSTEM

RADIATION WORK PERMIT

Report ID : TIPH900 RWP Number: 00001771 00 ALARA Task
Page : 2 Facility : HNP 004,90854 01 01

Radiation Protection Requirements

Dosimetry Type : S STANDARD (DRD/TLD) Multi-Pack Type:

Type	Code	Description	Type	Code	Description
SPCL	SPCL	SEE SPECEAL INSTRUCTION			

Special Instructions and Hold Points

```
Nbr                    Special Instructions
 10  ************ WORK DESCRIPTION*************
 10  ROUNTINE OPERATIONS ACTIVITIES
 10  ---------------------------------------------------
 10
 10  1. REVIEW AREA SURVEY MAPS AND/OR CONTACT RADIATION
 10      CONTROL FOR SPECIFIC WORK AREA RADIOLOGICAL
 10      CONDITIONS PRIOR TO START OF WORK.
 10  2. IF RADIOLOGICAL CONDITIONS ARE SIGNIFICANTLY HIGHER
 10      THAN CURRENT SURVEYS OR HISTORICAL SURVEY DATA
 10      THEN WORK IS NOT ALLOWED TO CONTINUE ON THIS RWP
 10      WITHOUT APPROVAL FROM RC SUPERVISION.
 10  3. NOTIFY RADIATION CONTROL PRIOR TO CLIMBING IN
 10     THE OVERHEAD.
 10  4. FOR HIGH NOISE AREAS EVALUATE THE USE OF THE
 10      FOLLOWING:
 10    - LED LIGHT
 10    - VIBRATING DOSIMETRY
 10    - TELEMETRY
 10    - STAY TIMES
 10  5. IF ACCUMULATED DOSE ALARM OR UNANTICIPATED DOSE
 10     RATE ALARM SOUNDS, LEAVE THE AREA AND CONTACT
 10     RADIATION CONTROL.
 10
 10  *****'**LOCKED HIGH RADIATION AREA ENTRIES*****
 10  ---------------------------------------------------
 10  1. PRE-JOB BRIEFING REQUIRED.
 10  2. RC SUPERVISOR APPROVAL REQUIRED PRIOR TO ENTRY
 10  3. CONTINUOUS RADIATION CONTROL COVERAGE REQUIRED
 10  4.  WHEN PROVIDING CONTINUOUS COVERAGE, RP PERSONNEL
 20      SHALL NOT ENGAGE IN ANY ACTIVITIES WHICH COULD
 20      DISTRACT THEM FROM MONITORING THE WORKERS AND THE
 20      WORK ENVIRONMENT
 20
 25  **** CONTAMINATED SYSTEM BREACH (LINES > 1 INCH)
 25  ---------------------------------------------------
 25  1. CONTINUOUS RC COVERAGE REQUIRED FOR INITIAL
 25      SYSTEM BREACH.
```

PASSPORT - TOTAL EXPOSURE SYSTEM

RADIATION WORK PERMIT

Report ID : TIPH900 RWP Number: 00001771 00 ALARA Task
Page: 3 Facility : HNP 00490854 01 01

Special Instructions and Hold Points

```
Nbr                    Spacial Instructions
25   2. FULL PROTECTIVE CLOTHING W/HOOD, WATER RESISTANT
25      DRESS REQUIRED FOR WET WORK, AND ADDITIONAL DRESS
25      CONTROLS MAY BE REQUIRED BASED ON RC INSTRUCTIONS
25   3. GLOVES AND A CONTAINMENT DEVICE ARE REQUIRED AS A
25      MINIMUM IN CLEAN AREAS.
30   4. ENGINEERING CONTROLS AS PER RADIATION CONTROL.
30   5. PROVIDE PATH OR CONTAINMENT FOR SYSTEM DRAINAGE,
30      IF NEEDED TO CONTAIN LIQUIDS.
30
30   *****ABRASIVEWORK ON CONTAMINATED COMPONENTS*****
30   ----------------------------------------------------
30   1. FULL PROTECTIVE CLOTHING W/HOOD AND FACESHIELD
30      REQUIRED.
30   2. INTERMITTENT RC COVERAGE.
30   3. SPECIFIC LOCATION TO BE IDENTIFIED TO RADIATION
30      CONTROL PRIOR TO START OF ABRASIVE WORK.
30   4. ENGINEERING CONTROLS MAY BE REQUIRED BASED ON
30      RADIOLOGICAL CONDITIONS.
30   5. FIRE RETARDANT CLOTKING SHOULD BE CONSIDERED FOR
33      FOR HOT WORK (IE:WELDING,GRINDING, ETC.)
33
33   ***********CONTAMINATED AREA ENTRIES*************
33   ----------------------------------------------------
33   1. GLOVES AND SHOECOVERS REQUIRED AS A MINIMUM
35      FOR INSPECTIONS ACTIVITIES.
35   2. FULL PROTECTIVE CLOTUING AND HOOD REQUIRED FOR
35      CLIMBING IN OVERHEAD ABOVE 8 FEET AND/OR CRAWLING
35   3. FULL PROTECTIVE CLOTHING REQUIRED FOR HANDS ON WORK
35   4. DOUBLE SURGEONS GLOVES MAY BE SUBSTITUTED FOR RUBBER
35      GLOVES WITH RADIATION CONTROL APPROVAL
35   5. FULL PROTECTIVE CLOTHING, WATER RESISTANT DRESS
35      REQUIRED FOR WET WORK, AND ADDITIONAL DRESS
35      CONTROLS MAY BE REQUIRED SEE ON RC INSTRUCTIONS
35   6 INTERMITTENT RC COVERAGE. LESS H WISE
35      INSTRUCTED.
35
40   ******** INSULATION WORK IN CONTAMINATED AREAS'*'''**
43   ----------------------------------------------------
43   1. FULL PROTECTIVE CLOTHING WITH HOOD REQUIRED.
40   2. ENGINEERING CONTROLS MAY BE REQUIRED BASED ON
40      RADIOLOGICAL CONDITIONS.
40   3. INTERMITTENT RC COVERAGE, UNLESS OTHERWISE
40      INSTRUCTED.
43   4. ADDITIONAL CONTROLS REQUIRED FOR ASBESTOS REMOVAL
40
40   ******************SPENT FUEL POOL WORK***
```

PASSPORT - MTAL EXPOSURE SYSTEM

RADIATION WORK PERMIT

Report ID : TIPH900 RWP Number: 00001771 00 ALAHA Task
Page: 4 Facility : HNP 00490854 01 01

Special Instructions and Hold Points

Nbr	special Instructions
40	----------
40	1. SCRUBS, GLOVES, AND SHOECOVERS REQUIRED AS A
40	MINIMUM FOR FUEL MOVEMENT.
40	2. FULL PROTECTIVE CLOTHING W/HOOD, WATER RESISTANT
40	DRESS REQUIRED FOR WET WORK, AND ADDITIONAL DRESS
40	CONTROLS MAY BE REQUIRED BASED ON RC INSTRUCTIONS.
45	3. CONTINUOUS RADIATION CONTROL COVERAGE REQUIRED
45	FOR REMOVAL OF ANY ITEMS FROM THE POOL.
45	4 .NOTIFY THE CONTROL ROOM PRIOR TO ADDING WATER
45	TO POOL.
45	5. WIPE/WASH DOWN MATERIAL WHEN REMOVING FROM POOL
45	PER RADIATION CONTROL INSTRUCTIONS.
45	6. NOTIFY RADIATION CONTROL PRIOR TO SUSPENDING ANY
45	MATERIAL FROM A POINT OF ATTACHMENT ABOVE THE
45	WATER SURFACE.
45	7. WHEN USING POLES FOR MOVEMENT OF MATERIALS IN THE
45	SFP ENSURE POLES ARE HOLLOW AND FILLED WITH WATER.
45	8. WHEN PERSONNEL ARE WORKING ON THE BRIDGE CRANE,
45	AN ALARMING RADIATION MONITOR SHALL BE IN
45	OPERATION ON THE CRANE OR AN ALARMING
45	DOSIMETER SHALL BE PRESCRIBED. THIS
45	DOSIMETER IS IN ADDITION TO THE DRD THAT IS USED
45	FOR WHOLE BODY MONITORING AND WILL BE WORN
45	BETWEEN THE KNEE AND ANKLE..
45	
45	**********SOER 2001-1 REQUIREMENTS**********
45	----------
45	1. BOTH RC AND WORK SUPERVISION TO PARTICIPATE IN
45	PRE-JOE BRIEFING.
45	2. STAYTIKE AND TIME KEEPING REQUIRED WITH GENERAL
45	AREA DOSE RATES GREATER THAN 1000 MREM/HR.
45	3. CONTINUOUS RADIATION CONTROL COVERAGE REQUIRED WHEN
45	THE POTENTIAL GENERAL AREA DOSE RATES OF GREATER
45	THAN 1000 MREM/HR EXIST.
45	

Nbr	Hold Point Description
10	ENTRY ALLOWED TO ALL AREAS EXCEPT AREAS POSTED:
10	VERY HIGH RADIATION AREAS (VHRA)
20	AIRBORNE RADIATION AREAS (ARA),
30	HOT PARTICLE AREAS (HPA),
30	CONTAINMENT WHEN REACTOR CRITICAL

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Mode 6 Inadvertent Dilution Component Lineup is being **performed.** The position of ICS-670, RMW to Letdown Reheat Hx, is being determined.

INITIATING CUE(S):

Discuss the Radiological Control requirements to allow entering the area to determine **the** position of ICS-670.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN SRQ-4

Determine Protective Action Recommendations

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Determine Protective Action Recommendations

ALTERNATE PATH: None

FACILITY JPM NUMBER: CR-127 (M)

KA: 2.4.44 IMPORTANCE: SRO 4.0 RO NA

KA STATEMENT: **2.4.44** – Knowledge of emergency plan protective action recommendations

TASK STANDARD: Determines evacuation subzones to be A,B,C,D,E,F,K,L
Determines shelter subzones to be G,H,I,J,M,N

PREFERRED EVALUATION LOCATION: SIMULATOR ___ IN PLANT ___

PREFERRED EVALUATION METHOD: PERFORM ✓ SIMULATE ___

REFERENCES: PEP-110, Emergency Classification and Protective Action Recommendations

VALIDATION TIME: 10 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- JPM can be performed in any location where the identified references are available
- PEP-110. Emergency Classification and Protective Action Recommendations

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated. no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unreiated to your task.

You are expected to adhere **to** all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting. initial conditions **and** initiating cues will be described arid you may ask for clarification if needed.

You may use any nornially available reference materials; however, ***immediate actions, if any, are to beperformedfrom memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition **of** the indication if not otherwise available. ***Report completion of the task as you would in the plant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. You arc expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

A GENERAL EMERGENCY has been declared following a large break loss of coolant accident.

The following conditions are noted:

- **Core** Exit Thermocouple temperatures are all between 1900°F and 2000°F.
- Radiochemistry analysis indicates that approximately ***2.6%*** of the fuel volume has melted.
- RHR is injecting through the **WCS** cold **legs.**
- Containment Spray is operating with Containment Pressure at **I8** psig.
- Containment hydrogen concentration **is *5.5%.***
- Wind Direction is 220".
- Wind Speed is 18 mph.

INITIATING CUE(S):

Determine *the* Protective Action Recommendations for these conditions.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	**STANDARD**	**NOTES**	SAT / UNSAT
1		Obtain PEP-110 and required information for determining PAR	Obtains PEP-110, Attachment 3. Protective Action Recommendation Process		
*2		General Emergency Declared?	<YES> Determines a General Emergency has occurred based on **given** conditions	CRITICAL TO DETERMINE PROPER PAR.	
*3		Substantial core damage is imminent or has occurred	<YES> Determines substantial sore damage is imminent **or** has occurred due to core damage having exceeded 1%melting	CRITICAL TO DETERMINE PROPER PAR.	
*4		A significant loss of reactor coolant is imminent or has occurred	<YES> Determines significant **loss** of reactor coolant is imminent or has occurred due **to** Containment Hydrogen exceeding 1% or a LOCA	**CRITICAL TO** DETERMINE PROPER PAR.	
*5		Containment failure (Primary or S/G) is imminent or has occnrred	<YES> Determines containment failure (S/G) is imminent or has occurred due to Containment Hydrogen exceeding **4%**	**CRITICAL** TO DETERMINE PROPER PAR.	
*6		IDetermine wind direction	Determines wind direction from 220°	CRITICAL TO DETERMINE PROPER EVACUATION AND SHELTERING **SUBZONES.**	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*7		Determine evacuation areas	Determines evacuation subzones to be A,B,C,D,E,F,K,L biased on 5 mile radius and wind direction using 5 miles radius /10 mile downwind table	CRITICAL TO DETERMINE PROPER EVACUATION SUBZONES.	
*8		Determine shelter areas	Determines shelter subzones to be G,H,I,J,M,N based on 5 mile radius and wind direction using 5 miles radius /10 mile downwind table	CRITICAL TO DETERMINE PROPER SHELTERING SUBZONES.	
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

A GENERAL EMERGENCY has been declared following a large break loss of coolant accident.

The following conditions are noted:

- Core Exit Thermocouple temperatures are all between 1900°F and 2000°F.
- Radiochemistry analysis indicates that approximately 2.6% of the fuel volume has melted.
- RHR is injecting through the RCS cold legs.
- Containment Spray is operating with Containment Pressure at 18 psig.
- Containment hydrogen concentration is 5.5%.
- Wind Direction is 220°.
- Wind Speed is 18 mph.

INITIATING CUE(S):

Determine the Protective Action Recommendations for these conditions.

Facility: HARRIS Date of Examination: 2/23 - 2/27 /2004

xamination Level: RO Operating Test Number: 1

Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

	System/JPM Tie	Type Code*	Safety Function (KA# - RO Imp)
a.	Transfer 6.9KV Buses from Unit Auxiliary Transformers to the Startup Auxiliary Transformers per OP-156.02	N / A / S	6 (062A4.07 - 3.9)
b.	Perform Containment Cooling System Operability Test per OST-1010	D / S	5 (022A4.01 - 3.6)
c.	Perform an Emergency Boration per AOP-002	D / A / S / L	3 (000024AA2.01 - 3.8)
d.	Transfer SG Level Control to the Main Feedwater Regulating Bypass Valves per OP-134.01	N / S / L	4 s (059A4.03 - 2.9)
e.	Transfer to Cold Leg Recirculation per EOP-EPP-010	M / A / S / L	2 (006A4.05 - 3.9)
f.	Perform Control Rod and Rod Position Indicator Exercise per OST-1005	D / A / S	1 (001A2.11 - 4.4)
g.	Place Audio Count Rate Drawer in Service per OP-105	N / C (or S)	7 (015A4.02 - 3.9)
h.	Align CCW to Support RHR System Operations per OP-145	D / L / C (or S)	8 (008A4.01 - 3.3)

In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

i.	Perform Mode 6 Inadvertent Dilution Component Lineup per OP-107	M / A / R	1 (004A2.06 - 4.2)
j.	Perform local actions for placing an OTAT channel in Test per OWP-RP-01	N	7 (012A4.04 - 3.3)
k.	Locally operate a SG PORV per EOP-EPP-012 and OP-126	D / R	4S (000074EA1.04 - 3.9)

*Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol Room, (S)imulator, (L)ow-Power, (R)C. .

Facility: HARRIS Date of Examination: 2/23/-2/27/2004

Examination Level: SRO-U Operating Test Number: 1

Control Room Systems (8 for RO; 7 for SKO-I; 2 or 3 for SRO-U)

	System/JPM Title	Type Code*	Safety Function (KA # - SRO Imp)
a.	Transfer 6.9KV Buses from Unit Auxiliary Transformers to the startup Auxiliary Transformers per OP-156.02	N / A / S	6 (062A4.07 - 3.1)
b.	NOT APPLICABLE FOR SRO-U		
c	Perform an Emergency Boration per AOP-002	D / A / S / L	3 (000024AA2.01 - 4.1)
d.	NOT APPLICABLE FOR SRO-U		
e.	NOT APPLICABLE FOR SRO-U		
f.	NOT APPLICABLE FOR SRO-U		
g.	NOT APPLICABLE FOR SRO-U		
h.	NOT APPLICABLE FOR SRO-U		

In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

i.	Perform Mode 6 Inadvertent Dilution Component Lineup per OP-107	M / A / R	1 (00482.06- 4.3)
j.	perform local actions for placing an OTAT channel in Test per OWP-RP-04	N	7 (012A4.04 - 3.3)
k.	Locally operate a SG PORV per EOP-EPP-012 and OP-126	D / R	4S (000074EA1.04 - 4.1)

*Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol Room, (S)imulator, (L)ow-Power, (R)CA

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JPM

SRO

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2004

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JPM

RO

Walk-through Exam

2004

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM COM-SIM(a)

Transfer 6.9KV Buses from Unit Auxiliary Transformers to the Startup Auxiliary Transformers

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK Transfer 6.9KV Buses from Unit Auxiliary Transformers to the Startup Auxiliary Transformers

ALTERNATE PATH: Breaker 102, UNIT AUX XFMR A TO AUX BUS D, fails to open when required

FACILITY JPM NUMBER: NEW

KA: 062A4.07 IMPORTANCE: SRO 3.1 RO 3.1

KA STATEMENT: Ability to manually operate and/or monitor in the control room: Synchronizing and paralleling of different ac supplies

TASK STANDARD: Aux Buses A & D are both powered from SUT 1A and Breaker 102 has been manually opened

PREFERRED EVALUATION LOCATION: SIMULATOR ✓ INPLANT ___

PREFERRED €?VALUATIONMETHOD: PERFORM ✓ SIMULATE ___

REFERENCES: AOP-038, Rapid Downpower, Rev 7

OP-156.02, AC Electrical Distribution, Rev 40

VALIDATION TIME: 10 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to **IC-19** (100% power).
- FREEZE the simulator.
- Enter malfunction to prevent breaker 102 from automatically opening upon closure of breaker 101 – breaker 102 can be manually opened <EPS09B>.
- When Applicant is ready, place simulator in RUN.

- AOP-038, Rapid Downpower
- OP-156.02, **AC** Electrical Distribution

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator. then take all actions as you normally would in the Control Room. ***You*** should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized **to** the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to beperformed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in the plant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement **an** alternate method directed by plant procedures in order to compiete the assigned task. You are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

The **plant is being shutdown per AOP-038, Rapid Downpower.**

INITIATING CUE(S):

You have been directed to perform Step 25 of AOP-038 to transfer 6.9KV Ruses from **the Unit Auxiliary Transformer to the Startup Auxiliary Transformer per OP-156.02, Section 7.1, "Transferring 6.9KV Auxiliary Buses 1A** *and* ID **from UAT 1A** *to* SUT 1A."

The prerequisites of **Section** *3.0* in **OP-156.02 have been completed.**

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtains copy of OP-156.02, Section 7.1	Obtains copy of OP-156.02, Section 7.1	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	7.1.1	Initial Conditions 1. All prerequisites in Section **3.0** arc met. 2. Aux Buses 1A and 1D are powered from UAT 1A per Section 5.11 of this procedure. 3. Network grid breakers are closed and providing power to SUT 1A (Switchyard Breakers 52-2 and/or 52-3). **4.** If Switchyard Grid Breakers 52-2 and/or 52-3 arc not closed, close the breakers per Section **8.29** if desired.	Verifies Initial Conditions as being complete: 1. Prerequisites met 2. Buses 1A and 1D powered from **UAT** 1A 3. SUT 1A energized		
3	Note before 7.1.2.1	8.2 Steps 7.1.2.01 through 7.1.2.010 are NOTE ned at the MCB.	Reviews note		
4	7.1.2.1	Verify the availability of SUT 1A as indicated by the following voltmeters reading between ***6.55*** and 7.25KV. a. EI-503, X WINDNG VOLTS. b. EI-504, Y WINDNG VOLTS.	Verifies SUT 1A voltage indicating between 6.55 and 7.25 KV		
***5**	**7.1.2.2**	**Place the START UP AUX XFMR A TO AUX BUSES A & D SYNCHRONIZER switch in the BKR-107 position.**	**Places Synchronizer switch to BKR-107 position**	**CRITICAL TO ALLOW BREAKER 107 TO CLOSE.**	
6	7.1.2.3	Verify synchroscope is at the 12 O'CLOCK position.	Verifies synchroscope pointing to 12 o'clock position		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
7	Note before 7.1.2.4	NOTE When breaker 107 is placed in the **CLOSE** position and subsequently reieased, breaker 108 will open.	Reviews note		
8	Caution before 7.1.2.4	CAUTION If Breaker 108 fails to **open,** observe Precaution and Limitation 4.0.0.0 16.	Reviews caution		
***9**	**7.1.2.4**	**Place BREAKER 107, START UP XFMR A TO AUX BUS A, to the CLOSE position.**	**Rotates handswitch for BKR 107 to CLOSE position**	**CRITICAL TO PROVIDE POWER FOR AUX BUS A FROM SUT 1A.**	
10	7.1.2.5	Verify the following: a. Auxiliary **Bus** A voltage remains between 6.55 and 7.25KV as indicated on EI-560. b. BREAKER 108, UNIT AUX XFMR **A** TO **AUX** BUS **A,** is open.	Verifies a. **Aux** Bus **A** voltage indicates between 6.55 and7.25 **KV** b. Verifies BKR 108 opens by green light indication		
***11**	**7.1.2.6**	**Place the START UP XFMR A TO AUX BUSES A & D SYNCHRONIZER switch to the BKR-101 position.**	**Places Synchronizer switch to BKR-101 position**	**CRITICAL TO ALLOW BREAKER 101 TO CLOSE.**	
12	7.1.2.7	Verify synchroscope is at the 12 O'CLOCK position.	Verifies synchroscope pointing to 12 o'clock position		
13	Note before 7.1.2.8	NOTE When breaker 101 is placed in the **CLOSE** position and subsequently released, breaker 102 will open.	Reviews **note**		
14	Caution before 7.1.2.8	CAUTION If Breaker 102 fails to open, observe Precaution and Limitation 4.0.0.016.	Reviews caution		
***15**	**7.1.2.8**	**Place BREAKER 101, START UP XFMR A TO AUX BUS D, to the CLOSE position.**	**Rotates handswitch for BKR 101 to CLOSE position**	**CRITICAL TO PROVIDE POWER FOR AUX BUS D FROM SUT 1A.**	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
16	7.1.2.9	Verify the following: a. Auxiliary Bus D voltage remains between 6.55 and 7.25KV as indicated on EI-561. b. BREAKER 102, UNIT AUX XFMR A TO AUX BUS D, is open.	Verifies a. Aux Bus D voltage indicates between 6.55 and 7.25 KV b. Verifies BKR 102 **FAILED TO OPEN** by red light remaining ON and ALB-022-3-2, 6.9 KV AUX BUS D SUPPLY PARALLELED, alarming		
*17	**P&L 4.0.0.16**	Observe Precaution and Limitation **4.0.0.016.** Inadvertent parallel operations through the SUT and UAT should be limited to **no** longer than 24 hours. Parallel operations becomes ***a*** concern mainly on an electrical fault. With the SUT and UAT in parallel, the available fault current may exceed the interrupting capability of the ***6.9*** KV breakers. Circulating current can cause excessive heating of the components and conductors, or exceed the rating of those components. The Startup and Auxiliary Transformer limiting rating is **2,800** amps.	Informs **SRO** of failure of breaker to open	CRITICAL TO **INFORM SRO OF *FAILURE*** OF **BKR 102** TO **OPEN** TO ***PREVENT* EXCESSIVE** PARALLEL **OPERATION.**	
	CUE: SRO ACKNOWLEDGES REPORT AND DIRECTS YOU TO OPEN BREAKER 102.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
***18**	**7.1.2.9**	**Opens Breaker 102 when directed**	• **Opens breaker by holding THINK SWITCH in THINK position while placing handswitch for BREAKER 102, UNIT AUX XFMR A TO AUX BUS D, in OPEN position.** • Verifies BKR 102 open by green light ON and **red** light OFF	**CRITICAL TO OPEN BKR 102 TO PREVENT EXCESSIVE PARALLEL OPERATION.**	
19	7.1.2.10	Place the START UP AUX XFMR A TO AUX BUSES A & D SYNCHRONIZER switch to the OFF position.	Places Synchronizer switch to OFF position		
20	7.1.2.11	Perform Attachment 1, Transformer Electrical Lineup Checklist.	Informs SRO that Attachment 1 requires completion		
	CUE: ANOTHER OPERATOR WILL COMPLETE ATTACHMENT 1.				
	TASK COMPLETE				

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF **TASK)**

INITIAL CONDITIONS:

The plant is being shutdown per AOP-038, Rapid Downpower.

INITIATING CUE(S):

You have been directed to perform Step 25 of AOP-038 to transfer 6.9KV Buses from the Unit Auxiliary Transformer to the Startup Auxiliary Transformer per OP-156.02, Section 7.1, "Transferring 6.9KV Auxiliary Buses 1A and 1D from UAT 1A to SUT 1A."

The prerequisites of Section 3.0 in OP-156.02 have been completed.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-CR(b)

Perform Containment Cooling System Operability Test

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Perform Containment Cooling System Operability Test

ALTERNATE PATH: None

FACILITY JPM NUMBER: NRC98-B2

KA: 022A4.01 IMPORTANCE: SRO NA RO 3.6

KA STATEMENT: Ability to manually operate and/or monitor in the control room: CCS Fans

TASK STANDARD: One fan is running in slow speed for each cooler with all alarms clear.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ IN PLANT ✓

PREFERRED EVALUATION METHOD: PERFORM ✓ SIMULATE ___

REFERENCES: OST-1010, Containment Cooling System Operability Test Monthly Interval Modes 1 – 4, Rev 14

VALIDATIOK TIME: 20 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Designed to be performed in Control Room. If performed on simulator, then perform the following actions to establish proper conditions and do NOT provide cues.
- Initialize to IC-I9 (100% power).
- Go *to* run, acknowledge *alarms*
- Ensure AM-2 & 3 have both fans running in high speed and that AH-1 & 4 are in standby
- Start ESW Pumps SA and SB and ESW Pumps Booster Pumps SA and SB
- Run simulator until ALB-028, 5.1 and 8.5 are in ALARM
- FREEZE the simulator.
- When Applicant is ready, place simulator in RUN.

- OST-1010, Containment Cooling System Operability Test Monthly Interval Modes I - 4

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, inciuding. but not limited to, proper communication, place-keeping, ALARA and **use** of **personal** protective equipment. **Ail** actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in the plant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perfom that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. **You** are expected to make decisions and take actions based on procedural guidance and the indications availahle.

INITIAL CONDITIONS:

The unit is operating at power. Conditions have been established tu perform OST-1010, "Containment Cooling System Operability Test."

The Unit-SCO is aware of the Containment high vacuum condition and annunciator procedures have been referenced. The Unit-SCO has given permission to perform the test. **All** prerequisites have been performed.

INITIATING CUE(S):

You are directed to perform OST-1010.

START TIME: _____

*** DENOTES CRITICAL SIEP**

JPM STEP	FROC STEP	ELEMENT	**STANDARD**	NOTES	SAT / UNSAT
1	N/A	Obtain a copy of OST-1010	Obtain a copy ***of*** OST-1010 and enters Section **7.0**	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	Caution before 7.0.1	CAUTION When placing an ESW Train in service, Containment differential pressure may decrease below the **Tech** Spec limit due to increased ESW cooling causing **a** reduction of Containment pressure.	Reviews Caution		
3	7.0.1	Verify both trains of Emergency Service Water are in service per OP-139 with the following pumps running: a. EMER SW **PUMP A-SA** b. EMER SW PUMP B-SB c. EMER SW BOOSTER **PUMP A-SA** d. EMER SW BOOSTER PUMP **B-SB**	Verifies ESW Pumps A and B and ESW **Booster** Pumps **A** and B running by checking RED light on for **each** pump	*NOTE:* ***When shifting speed of the Containment Fan Coolers from HI-SPEED to LO-SPEED in the remaining steps, ensure at least 30 seconds allowed for the fan to coast down before starting in LO-SPEED to minimize equipment stresses. (P&L 2)***	
		CUE: ESW PUMPS A and B and ESW BOOSTER PUMPS A and B ALL HAVE RED INDICATING LIGHTS LIT AND GREEN LIGHTS OFF.			
4	Note before 7.1.1	NOTE: Service Water flow data may be collected at any time in this section.	Reviews note		
5	Note before 7.1.1	NOTE: Low flow alarms should be anticipated when fans are running at different speeds on the same air shaft.	Reviews note		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES —	SAT / UNSAT
6	Caution before 7.1.1	CAUTION: If Containment Temperature reaches 120°F at any time **during** the performance of this OST, discontinue the performance of this OST and reduce Containment Temperature per Tech Spec 3.6.1.5.	Reviews caution		
7	7.1.1	If running, then stop FAN COOLER AH-1 **B-SB** (Otherwise N/A)	Operator verifies Fan B-SB in FAN COOLER AH-I is secured and marks step N/A		
	CUE: FAN B-SB IN FAN COOLER AH-				
*8	**7.1.2**	**Verify FAN COOLER AH-1 A-SB is running in low speed by observing that the red LO SPD light illuminates**	**Operator places Fan A-SB in FAN COOLER AH-1 in LO SPD** and verifies red LO SPD light is lit	**CRITICAL TO START FAN FOR TEST.**	
	CUE: (PRIOR TO ANY ACTION) FAN A-SB IN FAN COOLER AH-I GREEN LIGHT IS ON. (AFTER ACTION TAKEN FAN A-SB IN FAN COOLER AH-4 RED LO SPD LIGHT IS ON.				
*9	**7.1.3**	**If running, then stop FAN COOLER AH-3 B-SA (Otherwise N/A)**	**Operator places Fan B-SA in FAN COOLER AII-3 to STOP**	**CRITICAL TO STOP FAN FOR TEST.**	
	CUE: (PRIOR TO ANY ACTION) FAN R-SA IN FAN COOLER AH-3 RED HI SPD LIGHT IS ON. (AFTER ACTION TAKEN) FAN B-SA IN FAN COOLER AH-3 GREEN LIGHT IS ON.				
*10	**7.1.4**	**Verify FAN COOLER AH-3 A-SA is running in low speed by observing that the red LO SPD light illuminates**	**Operator @aces Fan A-SA in FAN COOLER AH-3 to STOP,** waits 30 seconds, **places in LO SPD** and ***verifies*** red LO SPD light is lit	**CRITICAL TO START FAN FOR TEST.**	
	CUE: (PRIOR TO ANY ACTION) FAN A-SA IN FAN COOLER AH-3 RED HI SPD LIGHT IS ON. (AFTER ACTION TAKEN) FANA-SA IN FAN COOLER AH-3 RED LO SPD LIGHT IS ON.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*11	7.1.5	**If running, then stop FAN COOLER AH-2 B-SA (Otherwise N/A)**	**Operator places Fan B-SA in FAN COOLER AH-2 to STOP**	**CRITICAL TO STOP FAN FOR TEST.**	
	CUE: (PRIOR TO ANY ACTION) FAN B-SA IN FAN COOLER AH-2 RED HI SPD LIGHT IS ON. (AFTER ACTION TAKEN) FAN B-SA IN FAN COOLER AH-2 GREEN LIGHT IS ON.				
*12	7.1.6	**Verify FAN COOLER AH-2 A-SA is running in low speed by observing that the red LO SPD light illuminates**	**Operator places Fan A-SA in FAN COOLER AH-2 to STOP**, waits 30 **seconds, places in LO SPD and verifies red** LO SPD light is lit.	CRITICAL TO START FAN FOR TEST.	
	CUE: (PRIOR TO ANY ACTION) FAN A-SA IN FAN COOLER AH-2 RED HI SPD LIGHT IS OX (AFTER ACTION TAKEN) FAN A-SA IN FAN COOLERAH-2 RED LO SPD LIGHT IS ON.				
13	7.1.7	If running, then stop FAN COOLER AH-4 B-SB (Otherwise N/A)	Operator verifies Fan B-SB in FAN COOLER AH-4 is secured and marks step N/A		
	CUE: FAN B-SB IN FAN COOLER AH-4 GREEN LIGHT IS ON.				
*14	**7.1.8**	**Verify FAN COOLER AH-4 A-SB is running in low speed by observing that the red LO SPD light illuminates**	**Operator places Fan A-SB in FAN COOLER AH-4 in LO SPD** and verifies red LO SPD light is lit	**CRITICAL TO START FAN FOR TEST.**	
	CUE: (PRIOR TO ANY ACTION) FAN A-SB IN FAN COOLERAH-4 GREEN LIGHT IS ON. (AFTER ACTION TAKEN FAN A-SB IN FAN COOLERAM-4 RED LO SPD LIGHT IS ON.				
15	7.1.9	Check Annunciator ALB-29/3-2, CONTAINMENT FAN COOLERS AH-1 LOW FLOW-OIL, **has cleared**	**Operator** verifies annunciator ALB-29-3-2, CONTAINMENT FAN COOLERS AH-I LOW FLOW-OIL, **window is** DARK		
	CUE: ANNUNCIATOR WINDOW ALB-29-3-2 IS DARK.				

JPM SIEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
16	7.1.10	Check Annunciator ALB-27/8-2, CONTAINMENT PAN COOLERS AH-3 LOW FLOW-O/L, has cleared	Operator verifies annunciator ALB-27-8-2, CONTAINMENT FAN COOLERS AH-3 LOW FLOW-O/L, window is DARK		
	CUE: ANNUNCIATOR WINDOW ALB-27-8-2 IS DARK				
17	7.1.11	Check Annunciator ALB-27/7-2, CONTAINMENT FAX COOLERS AH-2 LOW FLOW-O/L, has cleared	Operator verifies annunciator ALB-27-7-2, CONTAINMENT FAN COOLERS AH-2 LOW FLOW-O/L, window is **DARK**		
	CUE: ANNUNCIATOR WINDOW ALB-27-7-2 IS DARK.				
18	7.1.12	Check Annunciator ALB-29/4-2, CONTAINMENT PAN COOLERS AH-4 LOW FLOW-O/L, has cleared	Operator identifies **that** annunciator ALB-29-4-2, CONTAINMENT PAN COOLERS AH-4 LOW FLOW-O/L, window ***is*** **DARK**		
	CUE: ANNUNCIATOR WINDOW ALB-29-4-2 IS DARK.				
	TASK COMPLETE				

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The unit **is** operating at power. Conditions have been established to perform OST-1010, "Containment Cooling System Operability Test."

The Unit-SCO is aware of the Containment high vacuum condition and annunciator procedures **have been** referenced. The Unit-SCO has given permission to perform **the test.** All prerequisites have been performed.

INITIATING CUE(S):

You are directed to perfom OST-1010.

REGION 11
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM COM-SIM(c)

Isolate the SI Accumulators following a LOCA

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Isolate the SI Accumulators following a LOCA

ALTERNATE PATH: Requires an accumulator to be vented to Containment

FACILITY JPM NIJMBER: New

KA: 00001 lEA1.13 IMPORTANCE: SRO 4.2 KO 4.1

KA STATEMENT: Ability to operate and monitor the following as they apply to a Large Break EOCA: Safety injection components

TASK STANDARD: Accumulators 'A' and 'B' have been isolated and Accumulator 'C' has been vented

PREFERRED EVALUATION LOCATION: SIMULATOR ✔ INPLANT ___

PREFERRED EVALLJATION METHOD: PERFORM ✔ SIMULATE ___

REFERENCES: PATH-1 Guide, Rev 14
OP-110, Safety Injection, Rev 22

VALIDATION TIME: 10 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT ___ UNSAT ___

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to **IC-I9 (100%** power)
- Insert a large break EOCA <MALF RCS-1C 100>
- Trip all RCPs
- Perform the actions of PATH-I, up to the point where SI accumulators are to be isolated, including transfer to CL recirculation
- Ensure RCS temperatures are < **370** °F
- Insert a malfunction to prevent **1SI-248** from closing <OVR XA1/162 OPEN>
- FREEZE the simulator
- When Applicant is ready, place simulator in RUN

- PATH-1 Guide
- OP-110, Safety injection

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

Ifsimulated, no actual plant controls or equipment are to be operated during the performance ofthis JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action **is** required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions **and** initiating cues will be described **and** you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in the plant.***

During the course of the walk-through examination, there may be some tasks **you** will be asked to perform that may require you to implement **an** alternate method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

A large break LOCA has occurred. Actions have been taken in accordance with PATH-1 to respond to the LOCA. EOP-EPP-010, "Transfer to Cold Leg Recirculation," has also been completed.

INITIATING CUE(S):

Isolate the SI Accumulators in accordance with Step 64 PATH-1 Guide.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of PATH-1 Guide	Obtains copy of PATH-1 Guide and locates Step 64	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	**PATH-1 Guide** 64.a	Isolate SI Accumulators: a. **RCS hot leg temperatures AT LEAST TWO LESS** THAN 370°F	**Verifies** all RCS **hot** leg **temperatures** < 370°F		
3	PATH-1 **Guide 64.b**	b. **Locally unlock AND close both breakers for each SI accumulator discharge valve:** • **ISI-246** (MCC-1A21-SA-5C) • ISI-247 (MCC-1B21-SB-5C) • **ISI-248** (MCC-1A21-SA-3D)	Directs an AO to locally close breakers		
	SIMULATOR OPERATOR INSTRUCTIONS: CLOSE BREAKERS BY INSERTING THE FOLLOWING REMOTE FUNCTIONS – SIS006 CLOSED; SIS007 CLOSED; SIS008 CLOSED.				
	CUE: (AFTER CLOSING BREAKERS) BREAKERS FOR 1SI-246, 1SI-247, AND 1SI-248 HAVE BEEN CLOSED.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT ! IJNSAT
*4	**PATH-1 Guide 64.c**	c. **Shut SI accumulator discharge valves:** • **lSI-246** • **lSI-247** • lSI-248	• **Places band switches for 1SI-246,** 1SI-247, and 1SI-248 **tu CLOSE** • Verifies 1SI-246 and 1SI-247 shut by **red** light **OFF** and green light ON • Determines 1SI-248 failed to shut by red light ON and green **light** OFF	**CRITICAL TO CLOSE 1SI-246 AND 1SI-247 TO ISOLATE CLAs.**	
5	NA	Locates OP-l I0, "Safety Injection," Section **8.3**	Locates procedure and section	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
6	OP-110, 8.3.2.1	Perform the following Steps on only one Accumulator at a time	Vents only Accumulator 'C' during the following steps		
7	OP-110, 8.3.2.2.a	At the MCB perform the following: a. *If necessary initiate an EIR.*	Informs **SCO** that an EIR may he necessary		
	CUE: SCO ACKNOWLEDGES REPORT AND WILL INITIATE THE EIR.				
*8	**OP-110, 8.3.2.2. b**	**b. Shut 1SI-287, ACCUMULATORS & PRZ PORV N2 SUPPLY**	• **Places 1SI-287 in CLOSE** • Verifies 1SI-287 shut by **red light** OFF and green light ON	**CRITICAL TO PREVENT N2 HEADER FROM BEING BLED INTO CONTAINMENT.**	
9	OP-110, 8.3.2.2.c	c. Declare the associated Accumulator inoperable per Tech Spec 3.5.1, due to being connected to Non-Safety piping	Informs SCO that Accumulator 'C' is to be declared inoperable		
	CUE: SCO ACKNOWLEDGES REPORT AND WILL ADDRESS TECH SPECS WHEN PLANT IS STABLE.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*10	**OP-110, 8.3.2.2. d**	**d. Opcnthe ACCUMULATOR N2 SUPPLY & VENT for the Accumulator to be vented** 1. 1SI-295, ACCUMULATOR A N2 SUPPLY & VENT 2. 1SI-296, ACCUMULATOR B N2 SUPPLY & VENT 3. **1SI-297, ACCUMULATOR C N2 SUPPLY & VENT**	• **Places 1SI-297 in OPEN** • Verifies 1SI-297 open by red Light ON and green light OFF	**CRITICAL TO ALIGN ACCUMULATOR 'C' TO VENT HEADER.**	
11	Caution before OP-110, 8.3.2.3	CAUTION: In modes I, 2, and 3, ensure Accumulators are maintained within Technical Specification iimits for pressure and Level when venting SI Accumulators	Reviews caution and determines not applicable due to not being in Modes 1-3		
*12	**OP-110, 8.3.2.3**	**Slowly adjust HC-936, 1SI-298 ACCUM VENT PRESS CNTL, control potentiometer output** signal to **open 1SI-298 and** vent **the Accumulator**	• **Rotates HC-936 potentiometer in CCW direction** • Observes valve demand increases by meter indication	**CRITICAL TO ALIGN ACCUMULATOR TO VENT HEADER.**	
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

A large break LOCA has occurred. Actions have been taken in accordance with PATH-1 to respond to the LOCA. EOP-EPP-010, "Transfer to Cold Leg Recirculation," has also been completed.

INITIATING CUE(S):

Isolate the SI Accumulators in accordance with Step 64 PATH-I Guide.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-SIM(d)

Start the Turbine Driven Auxiliary Feedwater Pump

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Start the Turbine Driven Auxiliary Feedwater Pump

ALTERNATE PATH: None

FACILITY JPM NUMBER CR-028 (M)

KA: 061A3.01 IMPORTANCE: SRO NA RO 4.2

KA STATEMENT: Ability to monitor automatic operation of the AFW, including: AFW **startup** and **flows**

TASK STANDARD: The TDAFW Pump *is* supplying *the* SGs *at* a **flow** rate of between 50 and 100 KPPH each.

PREFERRED EVALUATION LOCATION: SIMULATOR ✓ IN PLANT ___

PREFERRED EVALUATION METHOD: PERFORM ✓ SIMULATE ___

REFERENCES: OP-137, Auxiliary Feedwater System, Rev 22

VALIDATION TIME: 15 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: **SA?'** _____ IJNSAT _____

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to IC8 (8% power).
- Insert MALFUNCTIONS to cause the MDAFW Pumps to trip <CFW01A and CFW01B>.
- Manually trip the reactor.
- Secure the running Main Feedwater Pump.
- Allow SG levels *to* steam to approximately 45% level.
- Attempt to start both MDAFW Pumps to obtain trip alarms.
- FREEZE the simulator.
- When Applicant is ready, place simulator in RUN.

- OP-137, Auxiliary Feedwater System

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you nornially would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to ail plant standards, including, but not limited to, proper communication, place-keeping, **ALARA** and use of personal protective equipment. All actions taken by you should be clearly demonstrated ***and*** verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification **if needed.**

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory,*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in the plant***

During the course of the walk-through examination, there may be some tasks you will he asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

A manual plant trip has been initiated due to a loss of Main Feedwater. Following the trip, both Motor Driven Auxiliary Feedwater Pumps tripped. EOP-EPP-004, "Reactor Trip Response," is being performed.

INITIATING CUE(S):

Manually start the Turbine Driven Auxiliary Feedwater Pump and feed all three SGs at a rate between 25 and 50 KPPH each per OP-137, "Auxiliary Feedwater System," Section 5.5.

All Initial Conditions for starting the pump have been completed.

You have been assigned to perform this task as an extra operator. All other plant responses will be addressed by other operators.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	NA	Obtain copy of OP-137, Section **5.5**	Obtains copy of procedure	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	**5.5.1**	Conditions 1. Attachment 1 completed. **2.** Attachment **2** completed. 3. The spool pieces connecting AFW to the SG **Wet** Layup System are removed with blank **flanges** installed. 4. Attachment **5** has been completed for the TDAFW pump. 5. The **Pump** has been vented per Section 8.6 System Venting if required.	Initial conditions completed **per** initiating **cue**		
3	5.5.2.1	Log cycles as required by OMM-013	Logs cycles **as** necessary		
	CUE: AN EXTRA OPERATOR WILL LOG NECESSARY CYCLES.				
4	5.5.2.2	Verify PDK-2180.1SB: • In AUTO • Set at the value provided in the Operations Curve Book, Curve F-X-IO	Verifies **PDK-2** 180.1**SB** AUTO pushbutton is LIT and set at 31%		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*5	5.5.2.3	**IF full flow to the Steam Generators is not immediately desired, then perform the following:** 1. Declare the Turbine-**Driven** AFW Pump inoperable **2. Shut the following valves:** • **1AF-137, STM TURB AUX FW A ISOLATION** • **1AF-143, STM TURB AUX FW B ISOLATION** • **1AF-149, STM TURB AUX FW C ISOLATION**	a. Declares the TDAFW Pump inoperable **b. Places the following valves in SHUT** • **1AF-137** • **1AF-143** • **1AF-149** c. Verifies the **valves** shut **by** GREEN light LIT and RED light OFF	**CRITICAL TO PREVENT FEEDING SGs AT MAXIMUM FLOW RATE WHEN PUMP IS STARTED.** ***NOTE: Declaration of inoperability and verification is NOT critical.***	
	CUE: UNIT-SCO ACKNOWLEDGES THAT TDAFW PUMP IS INOPERABLE.				
*6	5.5.2.4	**Start the Turbine-Driven AFW Pump by placing either of the steam admission control switches to the open position.** • **1MS-70 SA, MAIN STEAM B TO AUX FW TURBINE** • **1MS-72 SB, MAIN STEAM C TO AUX FW TURBINE**	• **Places 1MS-70A and/or 1MS-70B in OPEN position** • Verifies valve(s) open by observing GREEN light **OFF** and RED light **LIT**	**CRITICAL TO START PUMP TO PROVIDE SOURCE OF WATER TO SGs.** ***NOTE: Verification is NOT criticul.***	
I	5.5.2.5	Dispatch an operator to perform the following: • Check the pump locally **for** proper operation • Verify adequate recirc flow	Dispatches **an** operator to perform checks		
	CUE: OPERATOR REPORTS TDAFW PUMP IS OPERATING PROPERLY WITH ADEQUATE RECIRC FLOW.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*8	5.5.2.6.a	If AFW Isolation valves were shut in Step 3, then. to start feeding the Steam Generators, perform the following: a. Shut Turbine Driven AI-W Pump Flow Control valves: • FK-2071A1 SB AUX FW A REGULATOR, 1AF-129 • FK-2071B1 SB AUX FW B REGULATOR, 1AF-130 • FK-2071C1 SB AUX FW C REGULATOR, 1AF-131	a. Shuts the following valves by placing Controller in MAN and lowering output to 0%: • FK-2071A1 SB AUX FW A REGULATOR, 1AF-129 • FK-2071B1 SB AUX FW B REGULATOR, 1AF-130 • FK-2071C1 SB AUX FW C REGULATOR, 1AF-131 b. Verifies valves shut by observing controller output at 0% and GREEN lights ON for valve position indication	CRITICAL TO PREVENT FEEDING SGs AT MAXIMUM FLOW RATE. *NOTE: Verification is NOT critical.*	
*9	5.5.2.6.b	b. Open Turbine Driven AFW Pump Isolation valves: • 1AF-137, STM TURB AUX FW A ISOLATION • 1AF-143, STM TURB AUX FW B ISOLATION • 1AF-149, STM TURB AUX FW C ISOLATION	Places the following valves in OPEN • 1AF-137 • 1AF-143 • 1AF-149 Verifies the valves open by GREEN light OFF and RED light LIT	CRITICAL TO ESTABLISH FLOW PATH. *NOTE: Verification is NOT critical.*	

JPM STEP	PKOC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
***10**	**5.5.2.7**	**Control AFW flow to the Steam Generators by throttling the following valves by operation of the respective MCB flow controller:** • **Steam Generator A 1AF-129 (FK-2071A1 SB)** • **Steam Generator B 1AF-130 (FK-2071B1 SB)** • **Steam Generator C 1AF-131 (FK-2071C1 SB)**	**Adjusts controllers for each of the following valves to provide flow at rate between 25 and 50 KPPH** • **SG A 1AF-129 (FK-2071A1 SB)** • **SG B 1AF-130 (FK-2071B1 SB)** • **SG C 1AF-131 (FK-2071C1 SB)**	**CRITICAL TO ESTABLISH PROPER FLOW' RATE.**	
11	5.5.2.8	Verify flow to the Steam Generators on the following indicators: • SG A AUX FW FLOW (FI-2050A1 SA) • SG B AUX FW FLOW (FI-2050B1 SB) • SG C AUX FW FLOW (FI-2050C1 SA)	Verifies flow to each SG between 25 and **50** KPPH by ohserving following indications: • SGAAUXFW FLOW (FI-2050A1 SA) • SG B AUX FW FLOW (FI-2050B1 SB) • SG C AUX FW FLOW (FI-2050C1 SA)		
12	5.5.2.9	If necessary, then adjust PDK-2 180.1SB to vary turbine ΔP	Adjusts **PDK-2180.1** SB as needed		
TASK COMPLETE					

TOP TIME: _____

APPLICANT CUE SHEET

(TO HE RETURNED TO EXAMINER UPON COMPLETION OF **TASK)**

INITIAL CONDITIONS:

A manual plant trip has been initiated due to a loss of Main Feedwater. Following the trip, both Motor Driven Auxiliary Feedwater Pumps tripped. EOP-EPP-004, "Reactor Trip Response," **is** being performed.

INITIATING CUE(§):

Manually start the Turbine Driven Auxiliary Feedwater Pump and feed all three SGs at a rate between 25 and 50 KPPH each per OP-137, "Auxiliary Feedwater System," Section ***5.5.***

All Initial Conditions for starting the pump have been completed.

You have been assigned ***to*** perfom this task as an **extra** operator. **All** other plant responses will be addressed by other operators.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-SIM(e)

Transfer to Cold Leg Recirculation

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Transfer to Cold Leg Recirculation

ALTERNATE PATH: 1CS-752 and 1SI-340 fail to operate, requiring operation of alternate valves

FACILITY JPM NUMBER: CR-031(M)

KA: 006A4.05 IMPORTANCE: SRO NA RO **3.9**

KA STATEMENT: Ability to manually operate and/or monitor in the control room: Transfer **of** ECCS flowpaths prior to recirculation

TASK STANDARD: High head SI flow is established and verified **on** both trains

PREFERRED EVALUATION LOCATION: SIMULATOR ✔ INPLANT ___

PREFERRED EVALUATION METHOD: PERFORM ✔ SIMULATE ___

REFERENCES: EOP-EPP-010, Transfer to Cold Leg Recirculation, Rev 15

VALIDATION TIME: 15 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to a Mode 4 post-LOCA condition.
- All equipment is operating as required and RWST level is approximately 22 percent.
- SI should be reset and CCW should be aligned to the RHR heat exchangers.
- Insert malfunctions to prevent 1CS-752, CSIP B Alternate Miniflow Isolation, <OVR ZRPK711B Fail_Energized> <OVR 1CS-752 OPEN> and ISI-340, Low Head SI Train A to Cold Leg Valve, from closing <OVR 1SI-340 OPEN>.
- FREEZE the simulator.
- When Applicant is ready, place simulator in RUN.

- EOP-EPP-010, Transfer to Cold Leg Recirculation

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should he clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, ifany, are to be performed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise avaiiable. ***Report completion of the task as you would in theplant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

A reactor **trip** and safety injection have occurred due to a LOCA. SI has been reset and CCW has been aligned to the RHR HXs. All equipment is operating as required and RWST level is approximately 23%.

INITIATING CUE(S):

Transfer to cold leg recirculation per EOP-EPP-010, "Transfer to Cold **Leg** Recirculation."

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of **EOP-EPP-010**	Obtains copy of EOP-**EPP-010**	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	Caution before Step 1	CAUTION • Do Steps I through 8 without delay. Do NOT implement Function Restoration Procedures prior to completion ***of*** these steps. • **SI** recirculation flow to **RCS** must he maintained at all times. • Switchover to recirculation may cause high radiation levels in the reactor auxiliary building. Radiation levels must be assessed prior to performance of local actions in the affected **area.**	Keviews cautions		
3	Note before Step I	NOTE: • Foldout applies. • **CNMT** wide range sump level of **greater** than 137.5 INCHES should ensure **a** long term recirculation suction source. • The following sequence of steps to transfer to cold leg recirculation assumes operability of at least one train of safeguards equipment.	Reviews notes	*NOTE: MAY REVIEW FOLDOUT* ***PAGE*** *ITEMS. NOT REQUIRED* ***TO*** *SATISFACTORILY COMPLETE JPM.*	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
4	1.a	Check both RHR pumps -- Running	Verifies both RHR pumps running by observing RED light ON, flow and / or current indicated		
5	1.b	Establish RHR Pump Recirculation Alignment: a. Verify CNMT sump to RHR pump suction valves OPEN: • Train A RHR pump: ISI-300 AND ISI-310 • Train B RIIR pump: ISI-301 AND ISI-311	• Verifies-Train A sump valves open by observing RED lights ON, green lights OFF on 1SI-300 and ISI-310 • Verifies Train B sump valves open by observing RED lights ON, green lights OFF on 1SI-301 **and** I **SI-31** I		
"6	**1.c**	**c. Shut RWST to RHR pump suction valves: ISI-322 (Train A) ISI-323 (Train B)**	e Places **1SI-322** and **1SI-323** handswitches **to CLOSE** • Verify valves closed by observing **RED** lights **ON,** green lights OFF on **1SI-322** and **1SI-323**	**CRITICAL TO ISOLATERHR PUMPS FROM RWST AS SUCTION SOURCE.**	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
7	1.d	d. Shut low head SI Train A to cold leg valve: 1SI-340	• Places 1SI-340 Control Power ON • Verifies ORANGE Control Power Light ON • Places 1SI-340 handswitch to CLOSE • Determines that 1SI-340 does NOT close by observing RED light ON, green light OFF • Goes to Step 1.c RNO	***NOTE: NOT CRITICAL TO CLOSE 1SI-340 VALVE WILL NOT OPERATE.***	
*8	1.d.RNO	**c. Shut low head SI Train B to cold leg valve: 1SI-341**	• **Places 1SI-341 Control Power ON** • Verifies ORANGE Control Power Light ON • **Places 1SI-341 handswitch to CLOSE** • Verifies that 1SI-340 closes by observing RED light OFF, green light ON	**CRITICAL TO CLOSE VALVE SINCE TRAIN A VALVE FAILED TO CLOSE AS REQUIRED.**	
9	2.a	Establish CSIP Recirculation Alignment: a. Shut CSIP alternate miniflow isolation valves: 1CS-746 (Train A CSIP) ***1CS-452*** (Train B **CSIP)**	• Verifies 1CS-746 closed by observing RED light OFF, GREEN light ON • Places 1CS-752 handswitch in CLOSE • Determines 1CS-746 did NOT close by observing RED light ON, GREEN light OFF • Goes to Step 2.a.RNO	***NOTE: NOT CRITICAL TO CLOSE 1CS-752 SINCE VALVE WILL NOT OPERATE.***	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*10	2.a.RNO	a. **Shut the associated block valve: 1CS-753 (Train B CSIP)**	• **Places 1CS-753 handswitch in CLOSE** • Verifies 1CS-753 closed by observing RED light OFF, GREEN light ON	**CRITICAL TO CLOSE VALVE SINCE MINIFLOW VALVE FAILED TO CLOSE AS REQUIRED.** ***NOTE:** May also close 1CS-745 as part of RNO although this is NOT required*	
11	2.b	b. Verify **normal** miniflow–isolation valves - SHUT 1CS-182 1CS-196 1CS-210 1CS-214	Verifies both valves closed by observing 1Cs-182 and 1Cs-196 RED lights OFF, GREEN lights ON		
*12	2.c	c. **Open RHR discharge to CSIP auction valves: 1RH-25 1RH-63**	• **Places handswitches for both 1RH-25 and 1RH-63 in OPEN** • Verifies 1RH-25 and 1RH-63 open by observing RED lights ON, GREEN lights OFF	**CRITICAL TO SUPPLY SUCTION FLOWPATH FROM SUMP TO CSIP.**	
13	2.d	d. Reset SI	Resets SI signal		
14	2.e	e. Manually realign safeguards equipment following a **loss** of offsite power	Notes step, hut takes NO action due to no loss of offsite power		
*15	2.f	f. **Shut RWST to CSIP suction valves AND place in pull-to-lock position: LCV-115B LCV-115D**	• **Places LCV-115B and LCV-115D in CLOSE and then in PULL-TO-LOCK** • Verifies LCV-115B and LCV-115D closed by observing RED lights OFF, GREEN lights ON	**CRITICAL TO ISOLATE RWST SUCTION WHILE ALIGNED FOR RECIRC.**	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
16	3.a	Check Charging System Status: a. Check charging line - isolated	• Checks Charging Line Isolation Valves 1CS-235 and 1CS-238 CLOSED hy observing RED lights OFF, GREEN lights ON • May also check FCV-122.1 CLOSED by observing **flow** indication of ZERO		
17	3.b	). Verify Both charging Pumps - running	Verifies CSIPs 1A-SA and 1B-SB both running by observing RED lights ON GREEN lights OFF		
***18**	**4.a**	**Establish Recirculation Injection Flowpath:** **a. Open alternate high herd SI to cold leg valve** **lSI-52**	• **Places 1SI-52 Control Power ON** • Verifies ORANGE Control Power Light ON • **Places 1SI-52 handswitch to OPEN** • Verifies 1SI-52 open by observing **KED** light ON, green Iight OFF	**CRITICAL TO lESTABLISH INJECTION FLOWPATH.**	
19	4.b	b. Check any BIT outlet valve - open **ISI-3** lSI-4	Verifies both 1 **SI-3** and 1SI-4 open by observing RED lights ON, GREEN lights OFF		
***20**	**4..e**	**c. Shut CSIP discharge cross connect valves based on Table: Discharge Cross Connect Valves To Be Shnt** **Any 2: lCS-217, lCS-218, ICs-219, lCS-220**	• **Places any 2 of 4 handswitches to CLOSE** position **for valves 1CS-217, 1CS-218, ICs-219, and/or 1CS-220** • Verifies **valves** operated closed by observing RED lights OFF, GREEN lights OFF	**CRITICAL TO SEPARATE SI TRAINS DURING RECIRCULATIO N PHASE.**	

JPM STEP	PKOC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
21	5	**Verify** High **Head SI Flow:** • **Alternate header** flow **(Train A): FI-940** • **Normal header** flow **(Train R): FI-943**	• **Verifies Train A** flow **indication on FH-940** • **Verifies Trdin B flow indication on FI-941**		
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

A reactor trip and safety injection have occurred due to a LOCA. SI has been reset and CCW has been aligned to the RHR HXs. All equipment is operating as required and RWST level is approximately 23%.

INITIATING CUE(S):

Transfer to cold leg recirculation per EOP-EPP-010, "Transfer to Cold Leg Recirculation."

REGION If
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-SIM(f)

Perform Control Rod and Rod Position Indicator Exercise

APPLICANT: _____

EXAMINER: _____

REGION 11
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK Perform Control Rod and Rod Position Indicator Exercise

ALTERNATE PATH: Two shutdown bank rods drop while withdrawing to full withdrawn position.

FACILITY JPM NUMBER: NRC00-1.g

KA: 001A2.11 IMPORTANCE: SRO NA RO 4.4

KA STATEMEN?': Ability to (a) predict the impacts of the following malfunction or operations on the CRDS- and (b) based on those predictions. use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Situations requiring a reactor trip

TASK STANDARD: The reactor has been manually tripped in response to two dropped rods

PREFERRED EVALUATION LOCATION: SIMULATOR ✔ INPLANT ___

PREFERRED EVALUATION METHOD: PERFORM ✔ SIMULATE ___

REFERENCES: OST-I005, Control Rod and Rod Position Indicator Exercise Quarterly Interval Modes 1 – 3. Rev 11
AOP-001, Malfunction of Rod Control and Indication System, Rev 22

VALIDATION TIME: 20 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to a 100% power IC.
- Enter malfunction to prevent auto opening of Reactor Trip Breakers <IMF RPS01B 3 1>.
- SEE INSTRUCTIONS AT STEP 7 TO ENTER ADDITIONAL MALFUNCTIONS. <Trigger created to IMF CRF03A 2 J13 and IMF CRF03B 2 C7 with a 1 sec TD>
- FREEZE the simulator.
- When Applicant is ready, place simulator in RUN.

- OST-1005, Control Rod and Rod Position Indicator Exercise Quarterly Interval Modes 1 – 3
- AOP-00 1, Malfunction of **Rod** Control and Indication System

READ TO OPERATOR

INSTRUCTIONS TO **APPLICANT:**

Ifsimulated, **no** actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication; place-keeping, **ALARA** and use of personal protective equipment. **All** actions taken by **you** should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification if needed.

You may **use** any normally available reference materials; however- ***immediate actions, if any, are to beperformedfiom memory.*** Describe the actions you are taking and the indications you are looking at during the performance ofthe JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion ofthe task asyou would in theplant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

The plant is operating at 100% power.

OST- 1005, "Control Rod and Rod Position Indicator Exercise Quarterly Interval Modes I - 3," is being performed. All prerequisites to perfom the test have been met. A briefing has been conducted for the performance of Section 7.I. The Superintendent-Shift Operations has given permission to perform this OST.

INITIATING CUE(S):

You are to perform OST-1005, Section 7.1, commencing with Shutdown Bank A

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of OST-1005	Obtains copy of OST-1005 and refers to Section 7.1	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	Note before 7.1.1.a	NOTE: Substeps 1.a through 1.g are to be signed off when testing of the components listed in Attachment 1 is completed.	Reviews note		
	NOTE: APPLICANT MAY REQUEST AN ADDITIONAL OPERATOR TO MONITOR AND RECORD DRPI DUE TO THE LOCATION OF INDICATION- IF REQUESTED, PROVIDE THE REQUIRED INFORMATION AS DRPI INDICATING '228'.				
3	7.1.1.a	For the rod bank being tested, record on Attachment 1 the rod heights as indicated by Group Step Counters and DRPI.	For Shutdown Bank 'A', records both Group Position indications as '225' and records all DRPI position indications as '228'		
***4**	**7.1.1.b**	**Rotate the Rod Bank Selector to the bank being tested.**	**Rotates the ROD BANK SELECTOR switch to the 'SB A' position**	**CRITICAL TO ALLOW MOVEMENT OF SHUTDOWN BANK 'A'.**	
5	Note before 7.1.1.c	NOTE: When inserting rods, the Hank Low Insertion and Rank Low-Low Insertion Limit Alarm may be actuated.	Reviews note		
***6**	**7.1.1.c**	**With the Rod Motion lever, drive the rod bank being tested IN 10 steps as indicated by Group Step Counters.**	**Places the ROD MOTION lever in the 'IN' position and inserts Shutdown Bank 'A' rods 10 steps by observing Group Position indication**	**CRITICAL TO CAUSE SHUTDOWN BANK 'A' RODS TO MOVE INWARD.**	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
	NOTE: IF REQUESTED, PROVIDE THE REQUIRED INFORMATION AS DRPI INDICATING '216' IN NEXT STEP.				
7	7.1.1.d	Record on Attachment 1, the rod *heights* ***for*** the *bank* being tested, as indicated by Group Step Counters and DRPI.	Records both Group Position indications as '215' and records all DRPI position indications as '216'		
SIMULATOR OPERATOR INSTRUCTIONS: **INSERT MALFUNCTIONS WHICH CAUSE 2 SHUTDOWN BANK 'A' RODS TO DROP INTO CORE AFTER RODS ARE WITHDRAWN 2-3 STEPS DURING THE PERFORMANCE OF THE FOLLOWING STEP <IMF CRF03A 2 J13 and IMF CRF03B 2 C7 WITH A 1 SEC TIME DELAY>.**					
	NOTE: IF APPLICANT INDICATES THAT UNIT-SCO PERMISSION IS REQUIRED TO WITHDRAW RODS, DIRECT APPLICANT TO RESTORE RODS TO ORIGINAL POSITION.				
8	Caution before 7.1.1.e	CAUTION: When withdrawing rods, ensure that any power limits in effect are not exceeded.	Reviews caution		
***9**	**7.1.1.e**	**With the Rod Motion lever, pull the rod bank being tested OUT 10 steps as indicated by Group Step Counters.**	**Places the ROD MOTION lever in the 'OUT' position and withdraws Shutdown Bank 'A' rods 10 steps by observing Group Position indication**	**CRITICAL TO CAUSE SHUTDOWN BANK 'A' RODS TO MOVE OUTWARD.**	

[JPM CONTINUED ON NEXT **PAGE]**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
10	N/A	Determine 2 Shutdown Bank 'A' rods have dropped into the core	Determines 2 rods have dropped into the core by observing: • Rod Bottom Lights • Decreasing **power** • Decreasing **Tavg** • ALE-13-74, ONE ROD AT BOTTOM • ALB-13-7-3, TWO OK MORE RODS AT BOTTOM • ALB-13-7-1, ROD CONTROL URGENT ALARM • ALB-13-4-2, POWER RANGE HIGH NEUTRON FLUX RATE ALERT • ALE-12-4-3, REACTOR TREP POWER RANGE HIGH FLUX RATE • ALE-13-5-3, POWER RANGE UPPER DETECTOR HIGH FLUX DEV OR AUTO DEFEAT • ALE-13-54, POWER RANGE LOWER DETECTOR HIGH FLUX DEV OR AUTO DEFEAT • ALB-13-4-5, POWER RANGE CHANNEL DEVIATION • ALE-13-8-5, COMPUTER ALARM ROD DEV/SEQ NIS PWR RANGE TILTS		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*11	AOP-001 IA	**Informs the Unit SCO of the multiple dropped rods and manually trips the reactor**	**Informs the Unit SCO and manually trips the reactor**	**CRITICAL TO MANUALLY TRIP THE REACTOR.** *NOTE: IMMEDIATE OPERATOR ACTION FOR AOP-001. ADDITIONALLY, TRIPPED RPS BISTABLES DUE TO NEGATIVE RATE TRIP ALSO REQUIRE REACTOR TRIP.* *NOT CRITICAL TO INFORM UNIT SCO PRIOR TO TRIPPING REACTOR.*	
		TASK COMPLETE			

STOP **TIME:** _____

APPLICANT CUE SHEET

(TO RE RETURNED TO EXAMINER UPON COMPLETION QF **TASK)**

INITIAL CONDITIONS:

The plant is operating at 100% power.

OST-1005, "Control Rod and Rod Position Indicator Exercise Quarterly Interval Modes I - 3," is being performed. All prerequisites to perfonn the test have been met. A **briefing** has been conducted for the performance of Section 7.1. The Superintendent-Shift Operations has given permission to perform this OST.

INITIATING CUE(S):

You arc to perform OST-1005, Section 7.1, commencing with Shutdown **Bank A**

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-CR(g)

Place Audio Count Rate Drawer in Service

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Place Audio Count Rate Drawer in Service

ALTERNATE PATH: None

FACILITY JPM NUMBER: New

KA: 015A4.02 IMPORTANCE: SRO NA RO **3.9**

KA STATEMENT: Ability to manually operate and/or monitor in **the** control room: NIS indicators

TASK STANDARD: Audio Count Rate Drawer **and** Scaler Timer **are** capable of providing counts in **30** seconds intervals.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ CR ✔

PREFERRED EVALUATION METHOD: PERFORM ___ SIMULATE ✔

REFERENCES: OP-105, Excorc Nuclear Instrumentation, Rev 21

VALIDATION TIME: 15 MINUTES TIME CRITICAL No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: **SAT** _____ **UNSAT** _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- This JPM is designed to be simulated in the Control Room.
- If used in the simulator, do NOT provide cues.
- If used in the simulator, initialize to any shutdown IC.
- FREEZE the simulator.
- When Applicant is ready, place simulator in RUN.

- OP-105, Excore Nuclear Instrumentation

READ TO OPERATOR

INSTRUCTIONS TO **APPLICANT:**

Ifsimulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. **You** should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and **use** of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, ifany, are to be performed from memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you **cues** describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in theplant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you *to* implement an alternate method directed by plant procedures in order to complete the assigned task. **You** are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

The plant is in Mode 3 following a reactor trip. Source Range Channel N-31 **is** indicating 30 cps and Source Range Channel N-32 *is* indicating 40 cps.

No personnel *are inside* containment.

INITIATING CUE(S):

Using OP-105, "Excore Nuclear Instrumentation," Section 8.1.2.3, establish operation of the Audio Count Rate and Scaler Timer in the PRESET TIME MODE?using **a** manual sampling periods of 30 seconds. **Use** the highest reading indication as input.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of OP-105	Obtains copy of OP-105, Section 8.1.2.3	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	Note before 8.1.2.3	NOTE: The CHANNEL SELECTOR switch must be pulled out to release the lock before it can be turned.	Reviews note		
3	Caution before 8.1.2.3	CAUTION When changing the multiplier switch Position, ensure personnel in containment are notified that a change in count level will be heard.	Reviews caution		
***4**	**8.1.2.3.a**	**For PRESET TIME mode, perform the following.** **a. Turn CHANNEL SELECTOR switch to the desired Source Range channel**	• Determines SR Channel N32 is desired channel • **Pulls Channel Selector switch OUT and then rotates to N32 position**	**CRITICAL TO ENSURE HIGHER CHANNEL SELECTED FOR AUDIO COUNT RATE.**	
		CUE: CHANNEL SELECTOR SWITCH IS IN THE "N-32" POSITION.			

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
5	8.1.2.3.b	b. Turn the AUDIO MULTIPLIER switch to position 10. If the audible count rate is too rapid, adjust the AUDIO MULTIPLIER switch upscale as necessary	Rotates Audio Multiplier switch to Position 10 Listens for audible count rate and determines whether it is too rapid	*NOTE: THIS IS NOT CRITICAL TO ALLOW COMPLETION OF TASK WHICH IS TO PROVIDE COUNT RATE INDICATION.*	
	CUE: AUDIO MULTIPLIER SWITCH IS IN "10" POSITION. BEEPING NOISE IS NEAR CONTINUOUS.				
5A	Repeat 8.1.2.3.b	b. Turn the AUDIO MULTIPLIER switch to position 10. If the audible count rate is too rapid, adjust the AUDIO MULTIPLIER switch upscale as necessary	Rotates Audio Multiplier switch to Position 100 Listens for audible count rate and determines whether it is too rapid		
	CUE: AUDIO MULTIPLIER SWITCH IS IN "100" POSITION. BEEPING NOISE OCCURS AT A RATE OF 1 BEEP EVERY 2-3 SECONDS.				
*6	**8.1.2.3.c**	**c. Set the DISPLAY PRESET switch to PRESET TIME SEC** or PRESEF **TIME MIN**	**Rotates Display Preset switch to PRESET TIME SEC position**	**CRITICAL TO ESTABLISH PROPER TIME PERIOD.**	
	CUE: DISPLAY PRESET SWITCH IS IN POSITION SUCH THAT PRESET IS AT "TIME SEC" AND DISPLAY IS AT "COUNT".				
	NOTE: IF PRESET IS PLACED IN "TIME MIN" THEN APPLICANT MUST SELECT "00005" IN JPM STEP 7.				
*7	**8.1.2.3.d**	**d. Set the digital thumb wheels to the desired** counting period. The switches are read **directly in tenth** seconds or minutes.	**Adjusts digital thumb wheels to "00300"**	**CRITICAL TO ESTABLISH PROPER SAMPLING TIME.** *NOTE: THUMB WHEEL HAS TENTHS POSTION.*	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
	CUE: THUMB WHEELS HAVE BEEN SET TO "00300" ("00005" IF "TIME MIN" SELECTED EARLIER.				
8	Vote xfore 8.1.2.3.e	NOTE: If the SAMPLING MODE switch is in AUTO, pushing the START push-button will cause the unit to accumulate counts for the preset time, display the total, automatically reset, and start over. In MANUAL, pushing the START push-button will cause the unit to go through one accumulate, display, and stop cycle. Pushing the START push-button again in MANUAL will repeat the cycle with the previous counts added to the new measurement.	Reviews note		
*9	8.1.2.3.e	**e. Position the SAMPLING MODE switch to the desired position, either AUTO or MAN**	**Places SAMPLING MODE switch to MAN position**	**CRITICAL TO ALLOW MANUAL CONTROL OF COUNTING.**	
	CUE: SAMPLING MODE SWITCH IS IN "MANUAL" POSITION.				
*10	8.1.2.3.f	**f. Depress the START push button.**	a **Depresses START button** • Verifies that counts increase for **30** seconds and then stop increasing.	**CRITICAL TO ALLOW SCALER TIMER TO BEGIN OPERATING.**	
	CUE: START BUTTON HAS BEEN DEPRESSED, DIGITAL DISPLAY INCREASES TO 1200 COUNTS AND STOPS.				
	TASK COMPLETE				

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant is in Mode 3 following a reactor trip. Source Range Channel N-31 is indicating 30 cps and Source Range Channel N-32 is indicating 40 cps.

No personnel are inside containment.

INITIATING CUE(S):

Using OP-105, "Excore Nuclear Instrumentation," Section 8.1.2.3, establish operation of the Audio Count Rate and Scaler Timer in the PRESET TIME MODE, using a manual sampling periods of 30 seconds. Use the highest reading indication as input.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-CR(h)

Align CCW to Support RHR System Operations

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Align CCW to Support RHR System Operations

ALTERNATE PATH: None

FACILITY JPM NUMBER: CR-085

KA: 00SA4.01 IMPORTANCE: SRO NA RO 3.3

KA STATEMENT: Ability to manually operate and/or monitor in the control room: CCW indications and controls

TASK STANDARD: CCW flow greater than or equal to 5000 gpm has been established to each RHR heat exchanger.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ CR ✔

PREFERRED EVALUATION METHOD: PERFORM ___ SIMULATE ✔

REFERENCES: OP-145, Component Cooling Water, Rev 43

VALIDATION TIME: 20 MINUTES TIME CRITICAL No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PEKFORMANCE TIME: _____ MINUTES

PEKFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- This JPM is designed **to** be simulated in the Control Room.
- If used in the simulator, do NOT provide cues.
- If used in the simulator. initialize to a Mode 4 condition. Both ESW trains should be in service and both CCW pumps should be running.
- FREEZE the simulator.
- When Applicant is ready, place simulator in RUN.

  - OP-145, Component Cooling Water

KEAD TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions **as** you normally would in the Control Room. You should silence all annunciators **and** determine if they are associated with the task you arc performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting. initial conditions and initiating cues will he described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking and the indications you **are** looking at during the performance **of** the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in the plant.***

During the course of the walk-through examination, there may be some tasks you will be asked **to** perfonn that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. You are expected **to** make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

The plant *is* in Mode **4** preparing for **WHR** start-up. Both ESW trains are in service and both CCW pumps are running. SFP 2&3A is in service.

INITIATING CUE(S):

Align CCW to both **REIK** heat exchangers per OP-145, "Component Cooling Water," Section **8.9.** Place **"A"** Train CCW in service first.

START TIME: _____

* **DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of OP-145	Obtains copy of OP-145 and refers to Section **8.9.**	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	Note before 8.9.2.1	NOTE: The purpose of this section is to ensure CCW **pump** runout does not occur. Maximum flow through one CCW pump is 12,650 gpm. This section will ensure that one CCW pump is not supplying hoth essential cooling loops and the non-essential Ioop simultaneously.	Reviews note		
3	Note before 8.9.2.1	NOTE: Normally it is desirable to **place** both RHR cooling trains in operation in Mode 4. This will require both CCW pumps to be in operation and one train of non-essential supply and return valves to be shut.	Reviews note		
4	Caution before 8.9.2.1	**CAUTION** To prevent pump runout when aligning CCW flow to the **RIIR Hx,** verify flow rate to the non-essential header with one pump running is less than 8500 gpm, ***as*** indicated on FI-652.1 (FI-653.1) prior to opening 1CC-147 (1CC-167).	Reviews caution		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
5	8.9.2.1.a	Perform the following to verify total CCW flow rate is less than 8500 gpm: a. If SFP 2&3A is in service. then shut 1CC-508, SFP HX 2&3A CCW Outlet Isolation Valve.	Directs operator to locally close 1CC-508		
	CUE: 1CC-508 HAS BEEN LOCALLY CLOSED.				
6	8.9.2.1.b	b. If SFP 2&3B is in service, then shut 1CC-521, SFP HX 2&3B CCW Outlet Isolation Valve.	Marks step N/A		
7	8.9.2.2	If both trains of RHR cooling are to be placed in service, start the second CCW pump per Section 5.2.	• Verifies both CCW pumps running by observing RED breaker indication ON • May also check flows on both loops to verify pumps running		
	CUE: BOTH CCW PUMPS INDICATE RED LIGHTS ON AND FLOWS ARE BOTH 7800 GPM.				
8	iiote before 8.9.2.3	**NOTE** If A (B) train RHR cooling is placed in service first, the A (B) CCW pump will only supply the A (B) CCW essential header. B (A) CCW pump will supply the non-essential CCW header and the B (A) CCW essential header.	Reviews note		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*9	8.9.2.3	**Open 1CC-147 (1CC-167), CCW FROM RHR HEAT EXCHANGER A-SA (B-SB).**	• **Places 1CC-147 to OPEN position** • Verifies valve open by observing RED light ON, GREEN light OFF	**CRITICAL TO ALIGN CCW TO RHR HX A-SA.**	
	CUE: 1CC-147 INDICATES RED LIGHT ON, GREEN LIGHT OFF.				
10	Caution before 8.9.2.4	CAUTION: With **one** CCW pump running **and** the standby pump capable of an automatic start, ensure **a** minimum flowrate of 7850 gpm exists as indicated on FI-652.1 (PI-653.1).If both CCW pumps are running OR the CCW trains are separated, a minimum of 3850 gpm per pump is required. This lower flownte should only be allowed for short durations to accompiish pump swapping or system realignment.	Reviews caution		
11	8.9.2.4	Verify RHR HX A (B) out flow is 5600 to 8150 gpm on FI-688A1 (FI-689A1).	Verifies flow on FI-688A1 is between 5600 and 8150 gpm		
	CUE: FI-688A1 INDICATES 5800 GPM.				
12	Note before 8.9.2.5	NOTE: If a leak occurs, and surge tank level is less than 40% (below the divider plate), make up water for the B CCW header will be supplied **by** demin water. Make up water for the **A** CCW header must be supplied by the Reactor Makeup Water System.	Reviews note		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
13	Caution before 8.9.2.5	CAUTION: Shutting both 1CC-99 and ICC-113 will result in the loss of the Nonessential Header.	Reviews caution		
*14	8.9.2.5	**If both CCW pumps are in service, close 1CC-99 (1CC-113), CCW HEAT EXCHANGER A(B) TO NONESSENTIAL SUP.**	• **Flares 1CC-99 in CLOSE position** • Verifies **valve** closed by observing RED light OFF, GREEN light ON	**CRITICAL TO SUPPLY NON-ESSENTIALS WITH ONLY ONE PUMP.**	
	CUE: 1CC-99 INDICATES RED LIGHT OFF, GREEN LIGHT ON.				
15	Caution before 8.9.2.6	CAUTION: Shutting both 1CC-128 and 1CC-127 will result in the loss of the Nonessential Header.	Reviews caution		
*16	8.9.2.6	**If both CCW pumps are in service, close 1CC-128 (1CC-127), CCW NONESSENTIAL RETURN TO HEADER A(B).**	• **Places 1CC-128 in CLOSE position** • Verifies valve **closed** by observing RED light OFF, GREEN light ON	**CRITICAL TO SUPPLY NON-ESSENTIALS WITH ONLY ONE PUMP.**	
	CUE: 1CC-128 INDICATES RED LIGHT OFF, GREEN LIGHT ON.				
17	8.9.2.7.a (1)	Verify the following: a. If both CCW Pumps are in service, then perform the following: (1) Check CCW Pump **A-SA** (B-SB) flow between 7850 and 8050 gpm on MCB indicator FI-688A1 (FI-689A1).	Verifies flow on FI-688A1 between 7850 and 8050 gpm		
	CUE: FI-688A1 INDICATES 7900 GPM.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
18	8.9.2.7.a (2)	(2) If necessary, then **adjust** 1CC-146 (1CC-166), RHR HX **A (B)** Outlet Throttle Valve, to obtain desired flow,	Marks step N/A		
19	8.9.2.7.b	b. If only one CCW Pump is in service, then perform the following: (1) Check CCW Pump **A-SA (B-SB)** flow between 10,000 and 12,500 gpm on **MCB** indicator FI-652.1 (FI-653.1) **(2)** If necessary, then adJust the following valves while monitoring **MCB** indicator FI-652.1 (FI-653.1) to obtain the desired flow: • If SFP HX 2&3A is in service, adjust and lock 1CC-508, **SFP HX 2&3A CCW** Outlet Isolation Valve • If SFP HX 2&3B is in service, adjust and lock 1CC-521, SFP HX 2&3B CCW Outlet Isolation Valve	Marks step N/A		
20	Caution before 8.9.2.8	CAUTION: Do not supply CCW to both RHR Heat ixchangers simultaneously vith only one CCW pump unning.	Reviews caution		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*21	8.9.2.8	**If both trains of RHR cooling are to be placed in** service, **open** 1CC-167 **(1CC-147), CCW FROM RHR HEAT EXCHANGER B-SB (A-SA)**	• **Places 1CC-167 to OPEN position** • Verifies valve open by observing RED light ON, GREEN light OFF	**CRITICAL TO ALIGN CCW TO RHR HX B-SB.**	
	CUE: 1CC-167 INDICATES RED LIGHT ON, GREEN LIGHT OFF.				
22	8.9.2.9.a	Verify CCW Pump **B-SB (A-SA)** flow rate in the required range, as follows: a. Check CCW Pump **B-SB (A-SA) flow** rate is between 10,000and 12,500gpm on MCB indicator FI-653.1 (FI-652.1)	Verifies ***flow*** indication on FI-653.1 between 10,000and **12,500** gpm		
	CUE: FI-653.1 INDICATES 11,200 GPM.				
23	3.9.2.9.b	b. If flow rate is not between 10,000and 12,500gpm, then **adjust** the applicable valve. • *If* SFP HX 2&3A is in **service,** adjust and lock 1CC-508, SFP HX 2&3A CCW Outlet Isolation Valve If SFP HX 2&3B **is** in service, adjust and lock 1CC-521, SFP **HX** 2&3B CCW Outlet Isolation Valve	Marks step N/A		
	TASK COMPLETE				

TOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant is in Mode 4 preparing for RHR start-up. Both ESW trains are in service and both CCW pumps are running. SFP 2&3A is in service.

INITIATING CUE(S):

Align CCW to both RIIR heat exchangers per OP-145, "Component Cooling Water," Section 8.9. Place "A" Train CCW in service first.

REGION 11
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM COM-IP(i)

Perform Mode 6 Inadvertent Dilution Component Lineup

APPLICANT: _____

EXAMINER: _____

REGION 11
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Perform Mode 6 Inadvertent Dilution Component Lineup

ALTERNATE PATH: 1CS-149 fails to close, requiring alternate isolation method

FACILITY JPM NUMBER: IP-147(M)

KA: 004A2.06 IMPORTANCE: SRO 4.3 RO 4.2

KA STATEMENT: Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Inadvertent boration/dilution

TASK STANDARD: All in-plant portions of OP-107, Attachment 11, are completed

PREFERRED EVALUATION LOCATION: SIMULATOR ___ INPLANT ✓

PREFERRED EVALUATION METHOD: PERFORM ___ SIMULATE ✓

REFERENCES: OP-107, Chemical and Volume Control System

VALIDATION TIME: 30 MINUTES TIME CRITICAL No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Performed in plant
- OP-107, Chemical and Volume Control System

READ TO OPERATOR

INSTRUCTIONS TO **APPLICANT:**

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as yon normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected **to** adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will **be** described and you may ask for clarification if needed.

You may **use** any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking **and** the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in theplant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require **you** to implement an alternate method directed by plant procedures in order to complete the assigned task. You are expected to make decisions and take actions based on procedural. guidance and the indications available.

INITIAL CONDITIONS:

The plant is making preparations to enter Mode 6. GP-009 has directed that the Mode 6 inadvertent dilution valve lineup and verification be performed.

INITIATING CUE(S):

You are directed to perform OP-107, Chemical and Volume Control System, Section 8.18. Any required locks and chains have been given to you by the SCO. Contact the Control Room for any valve operations required from the main control board.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of OP-107	Obtains copy of OP-107 and enters Section 8.18	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	8.18.1.1	The ptant is in MODE 6 **or** preparations are being made to enter MODE ***6.***	Initial conditions provide this information		
3	8.18.1.2	GP-009 has directed the establishment of controls to prevent inadvertent dilution while in MODE 6.	Initial conditions provide this information		
4	8.18.2.1	Complete Attachment 11 by placing the component in the position listed or by performing the contingency component manipulation listed	Enters Attachment 11 of OP-107		
5	Att. 11	Shuts and **locks** 1CS-149, RMW to Blending **Tee** Isolation (A-236-D31-E3-N12)	• Observes-NOTE 1. • Locates, and attempts to shut valve by rotating hand wheel **in** CW direction		
	CUE: 1CS-149 HAND WHEEL DOES NOT MOVE WHEN TURNED IN CW DIRECTION – STUCK OPEN.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
6	Att. 11	Determine 1CS-149 fails to shut	• Determines valve fails to shut by lack of movement • Contacts Control Room and **performs** contingency valve operations	***NOTE: Remaining valves may be operated in any order.***	
	CUE: CONTROL ROOM ACKNOWLEDGES REPORT AND DIRECTS YOU TO COMPLE 'E ATTACHMENT.				
*7	**Att. 11**	**ICs-155 (FCV-114A) Shut vith MCB C.S. in SHUT**	**Contacts Control Room and directs them to close 1CS-155 and maintain switch in SHUT**	**CRITICAL TO CONTACT CONTROL ROOM AND DIRECT THEM TO PERFORM THIS ACTION SINCE IT IS A CONTINGENCY FOR PREVIOUS VALVE FAILURE.** ***NOTE: CONTINGENCY ACTION FOR FAILURE OF 1CS-149 TO CLOSE.***	
	CUE: CONTROL ROOM REPORTS THAT 1CS-155 IS SHUT WITH CONTROL SWITCH IN CLOSE POSITION.				

JPM STEP	PROC SIEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*8	Att. 11	**1CS-156 (FCV-113B) Shut with MCB C.S. in SHUT**	**Contacts Control Room and directs them to close 1CS-156 and maintain switch in SHUT**	**CRITICAL TO CONTACT CONTROL ROOM AND DIRECT THEM TO PERFORM THIS ACTION SINCE IT IS A CONTINGENCY FOR PREVIOUS VALVE FAILURE.** *NOTE: CONTINGENCY ACTION FOR FAILURE OF 1CS-149 TO CLOSE.*	
	CUE: CONTROL ROOM REPORTS THAT 1CS-156 IS SHUT WITH CONTROL SWITCH IN CLOSE POSITION.				
9	Att. 11	Verifies 1CS-274, Manual Blend from RMWST Isol Viv, is **locked shut** (NEED LOCATION)	Locates and verifies valve is locked shut	*NOTE: CONTINGENCY ACTION FOR FAILURE OF 1CS-149 TO CLOSE.*	
	CUE: 1CS-274 IS SHUT, WITH LOCKING DEVICE IN PLACE .				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*10	Att. 11	**Verifies shut and locks 1CS-265, Chem Mixing Tank Inlet Isol Vlv (236' ELEVATION)**	**Locates, verifies shut by attempting to rotate hand wheel in CW direction, and lucks valve**	**CRITICAL TO ATTACH LOCKING DEVICE TO ENSURE ATTACHMENT REQUIREMENTS MET.** ***NOTE: CONTINGENCY ACTION FOR FAILURE OF 1CS-149 TO CLOSE***	
	CUE: 1CS-265 HAND WHEELDOES NOT MOVE WHENROTATEDIN CW DIRECTION - ALREADY CLOSED - AND LOCKING DEVICE HAS BEEN INSTALLED .				
11	Att. 11	Verifies 1CS-287, Alt E.G. Boration Manual Isol Vlv, is locked **shut** *(236'* ELEVATION)	Locates **and** verifies valve is locked shut	***CONTINGENCY ACTION FOR FAILURE OF 1CS-149 TO CLOSE.***	
	CUE: 1CS-287 IS SHUT, WITH LOCKING DEVICE IN PLACE .				
"12	Att. 11	**Verifies shut and locks 1CS-510, Boric Acid Batch Tank Outlet Isolation Valve (A-261-D42-W11-N5)**	• **Observes NOTES 2** • **Locates, verifies shut by attempting to rotate hand wheel in CW direction, and locks valve.**	**CRITICAL TO ATTACH LOCKING DEVICE TO ENSURE ATTACHMENT REQUIREMENTS MET.**	
	CUE: 1CS-510 HAND WHEEL DOES NOT MOVE WHEN ROTATED IN CW DIRECTION - ALREADY CLOSED - AND LOCKING DEVICE HAS BEEN INSTALLED .				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*13	Att. 11	**Verifies shut and locks 1CS-503, Demin Water to Boric Acid Batch Tank Isolation Valve (A-269-D42-W3-N7)**	• Observes **NOTES 3 & 4.** • **Locates, verifies shut by attempting to rotate hand wheel in CW direction, and locks valve.**	**CRITICAL TO ATTACH LOCKING DEVICE TO ENSURE ATTACHMENT REQUIREMENTS MET.**	
	CUE: 1CS-503 HAND WHEEL DOES NOT MOVE WHEN ROTATED IN CW DIRECTION- ALREADY CLOSED - AND LOCKING DEVICE HAS BEEN INSTALLED.				
14	Att. 11	Verifies ICs-93, Resin Sluice Water to Demins Isol, is locked shut (A-265-GZ42-E15-S2)	Locates and verifies valve is locked shut		
	CUE: ICs-93 IS SHUT, WITH LOCKING DEVICE IN PLACE.				
15	Att. 11	Verifies 1CS-320, RCP Seal Water Return X-Conn to BRS Feed Pump, is locked shut (A-263-E31-W2-N2)	Locates **and** verifies valve is locked shut		
	CUE: 1CS-320 IS SHUT, WITH LOCKING DEVICE IN PLACE.				
16	Att. 11	1CS-570 Mod Ht Xchgr **Tube Side** Inlet Isol Vlv Shut with MCB C.S. in SHUT and BTRS Function Selector Switch in OFF	Contacts Control Room and directs them to close 1CS-570 and maintain switch in SHUT Contacts Control Room and directs them to place BTRS Function Selector Switch in OFF		
	CUE: CONTROL ROOM REPORTS THAT 1CS-570 IS SHUT WITH CONTROL SWITCH IN CLOSE POSITION AND BTRS FUNCTION SELECTOR SWITCH IS IN OFF POSITION.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
17	Att. 11	Verifies ICs-670, RMW to Letdown Reheat Hx Locked Shut, is locked **shut** (A-240-FW41Y-E7-S8)	Locates and verifies valve is locked shut		
	CUE: 1CS-670 IS SHUT, WITH LOCKING DEVICE IN PLACE.				
18	Att. 11	Verifies 1CS-649, Resin Sluice Pump to RTRS Demins, is locked shut (A-263-GZ41Y-W10-N2)	Locates **and** verifies valve is locked shut		
	CUE: 1CS-649 IS SHUT, WITH LOCKING DEVICE IN PLACE.				
19	Att. 11	**ICs-98** BTRS **BYPASS** Open with MCR **C.S.** in OPEN	Contacts Control Room and directs them to **open** 1CS-98 and maintain switch in OPEN		
	CUE: CONTROL ROOM REPORTS THAT 1CS-98 IS OPEN WITH CONTROL SWITCH IN OPEN POSITION.				
	TASK COMPLETE				

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant is making preparations to enter Mode 6. GP-009 has directed that the Mode 6 inadvertent dilution valve lineup and verification be performed.

INITIATING CUE(S):

You are directed to perform OP-107, Chemical and Volume Control System, Section 8.18. Any required locks and chains have been given to you by the SCO. Contact the Control Room for any valve operations required from the main control board.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM COM-IP(j)

Perform Local Actions for Placing an **OTAT** Channel in Test

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Perform Local Actions for Placing an OTAT Channel in Test

ALTERNATE PATH: None

FACILITY JPM NUMBER: New

KA: 012A4.04 IMPORTANCE: SRO **3.3** RO **3.3**

KA STATEMENT: Ability to manually operate and/or monitor in the control room: Bistable, trips, reset and test switches

TASK STANDARD: Master Test switches and bistable test switches for all Loop I Tavg and OTAT trips and runbacks are in TEST position.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ INPLANT ✓

PREFEKRED EVALUATION METHOD: PERFORM ___ SIMULATE ✓

REFERENCES: OWP-RP-01, Reactor Protection

VALIDATIONTIME: 15 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: **SAT** _____ UNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- JPM to be performed in plant
- OWP-RP-01, Reactor Protection

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this **JPM.** If performed on the simulator. then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to all plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will be described and you may ask for clarification if needed.

You may use **any** normally available reference materials; however, ***immediate actions, ifany, are to beperformedfrom memory.*** Describe the actions you are taking and the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in the plant***

During the course of the walk-through examination, there may he some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. **You** are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

The plant was operating at 100% power when Loop 1 hot leg temperature input to Tavg and **OTAT** failed low.

INITIATING CUE(S):

Perform the local actions per OWP-RP-01 for troubleshooting and tripping bistables for Loop 1 Tavg and OTΔT to meet Technical Specifications. Inform the Control Room when all switches have been positioned to allow the Control Room to complete the actions required in the Control Room.

START TIME: _____

*** DENOTES CRITICAL STEP**

	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
	NA	Obtain copy of OWP-RP	Obtains copy of OWP-RP-1 and refers to section for Channel I Tavg/ΔT		
	NA	PRECAUTION: To prevent a Reactor Trip, prior to removing a channel from service, verify the corresponding Trip Status lights for the other channels are de-energized.	Reviews precaution		
	Control Board	On Main Control Board Rod Bank Selector to MAN	Requests Control Room place Rod Bank Selector to MAN		
	CUE: CONTROL ROOM REPORT ROD BANK SELECTOR IS IN MANUAL.				
4	Note before PIC 1 on Card C1-861	NOTE: Master Tsst switches may be positioned to TEST for troubieshooting. They are not required to be in TEST to meet Tech Specs. Operating these switches before operating the bistable switches aids in troubleshooting by maintaining system conditions the same as they were when the trouble occurred.	Reviews note		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
5	Note before PIC 1 on Card C1-861	NOTE: Concurrent verification is preferred while tripping bistables per PLP-702.	Reviews note		
	CUE: FOR THIS JPM ONLY, ASSUME THAT CONCURRENT VERIFICATION IS BEING PERFORMED AND THAT VERIFIER AGREES WITH ALL ACTIONS TAKEN.				
*6	PIC 1 on Card C1-861	In PIC 1 on Card C1-861: SW1 (TS/412F) Master Test Switch for TS/412D in TEST	Locates Card C1-861 and places SW1 in TEST position	CRITICAL TO MAINTAIN CURRENT CONDITIONS FOR TROUBLESHOOT.	
	CUE: SW1 IS IN TEST POSITION.				
*7	PIC 1 on Card C1-861	In PIC 1 on Card C1-861: SW2 (TS/412G) Master Test Switch for TS/412B1 in TEST	Locates Card C1-861 and places SW2 in TEST position	CRITICAL TO MAINTAIN CURRENT CONDITIONS FOR TROUBLESHOOT.	
	CUE: SW2 IS IN TEST POSITION.				
*8	PIC 1 on Card C1-863	In PIC 1 on Card C1-863: SW4 (TS/412R) Master Test Switch for TS/412B2 in TEST	Locates Card C1-863 and places SW4 in TEST position	CRITICAL TO MAINTAIN CURRENT CONDITIONS FOR TROUBLESHOOT.	
	CUE: SW4 IS IN TEST POSITION.				
*9	PIC 1 on Card C1-863	In PIC 1 on Card C1-863: SW5 (TS/412S) Master Test Switch for TS/412B3 in TEST	Locates Card C1-863and places SW5 in TEST position	CIUTICAL TO MAINTAIN CURRENT CONDITIONS FOR TROUBLESHOOT.	
	CUE: SW5 IS IN TEST POSITION				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*10	PIC 1 on Card C1-821	In PIC 1 on Card C1-821: BS1 (TB/412D1 Low Tavg) in TEST	Locates Card C1-821 and places BSI in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
	CUE: BSI IS IN TEST POSITION-				
*I1	PIC 1 on Card C1-821	In PIC 1 on Card C1-821: RS2 (TB/412D2 High Tavg) in TEST	Locates Card C1-821 and places BS2 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
	CUE.' BS2 IS IN TEST POSITION.				
*12	PIC 1 on Card C1-821	In PIC 1 on Card C1-821: BS3 (TB/412E Low Low Tavg) in TEST	Locates Card C1-821 and places BS3 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
	CUE: BS3 IS IN TEST POSITION.				
*13	PIC E on Card C1-822	In PIC 1 on Card C1-822: BS1 (TB/412B1 OPΔT) in TEST	Locates Card C1-822 and places BS1 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
	CUE: BS1 IS IN TEST POSITION.				
*14	PIC 1 on Card C1-822	In PIC 1 on Card C1-822: BS2 (TB/412B2 OPΔT C-4) in TEST	Locates Card C1-822 and places BS1 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
	CUE: BS2 IS IN TEST POSITION.				
"15	PIC 1 on Card C1-822	In PIC 1 on Card C1-822: BS3 (TB/412C1 OTAT) in TEST	Locates Card C1-822 and places RS3 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
	CUE: BS3 IS IN TEST POSITION.				

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
***16**	**PIC 1 on Card C1-822**	**In PIC 1 on Card CI-822: BS4 (TB/412C2 OTΔT C-3) in TEST**	**Locates Card C1-822 and places BS4 in TEST position**	**CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.**	
	CUE: BS4 IS IN TEST POSITION.				
17		Inform Control Room that local actions are complete and that remaining Control Room actions are to be performed	Informs Control Room		
	CUE: CONTROL ROOM ACKNOWLEDGES THE REPORT AND INFORMS YOU THAT ALL CONTROL ROOM ACTIONS HAVE BEEN COMPLETED.				
	TASK COMPLETE				

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF **TASK)**

INITIAL CONDITIONS:

The plant was operating at 100% power when Loop 1 hot leg temperature input to Tavg and OTAT failed low.

INITIATING CUE(S):

Perform the local actions per OWP-RP-01 for troubleshooting and tripping bistables for Loop 1 Tavg and OTΔT to meet Technical Specifications. Inform the Control Room when all switches have been positioned to allow the Control Room to complete the actions required in the Control Room.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM COM-IP(k)

Locally Operate a SG PORV

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Locally Operate a SG PORV

ALTERNATE **PATH:** None

FACILITY JPM NUMBER: IP-029

KA: 000074EA1.04 IMPORTANCE: SRO **4.1** RO **3.9**

KA STATEMENT Ability to operate and monitor the following as they apply to Inadequate Core Cooling: Turbine bypass or atmospheric dump valves, to obtain and maintain the desired pressure

TASK STANDARD: "A" SG PORV has been manually opened and closed.

PREFERRED EVALUATION LOCATION: SIMULATOR ___ INPLANT ✔

PREFERRED EVALUATION METHOD: PERFORM ___ SIMULATE ✔

REFERENCES: EOP-EPP-012, Loss **of** Emergency Coolant Recirculation

OP-126, Main Steam, Extraction Steam, and Steam Dump Systems

VALIDATION TIME: 20 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: **SAT** _____ IJNSAT _____

COMMENTS: _____

_____

_____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Performed in the plant
- Pliers
- Flashlight
- Plant communications equipment

- OP-126, Main Steam, Extraction Steam, and Steam Dump Systems

READ TO OPERATOR

INSTRUCTIONS TO APPLICANT:

If simulated, no actual plant controls or equipment are to be operated during the performance of this JPM. If performed on the simulator, then take all actions as you normally would in the Control Room. You should silence all annunciators and determine if they are associated with the task you are performing. No further action is required for annunciators unrelated to your task.

You are expected to adhere to **all** plant standards, including, but not limited to, proper communication, place-keeping, ALARA and use of personal protective equipment. All actions taken by you should be clearly demonstrated and verbalized to the evaluator. Before starting, initial conditions and initiating cues will he described and you may ask for clarification if needed.

You may use any normally available reference materials; however, ***immediate actions, if any, are to be performed from memory.*** Describe the actions you are taking **and** the indications you are looking at during the performance of the JPM; the evaluator will then provide you cues describing the condition of the indication if not otherwise available. ***Report completion of the task as you would in the plant.***

During the course of the walk-through examination, there may be some tasks you will be asked to perform that may require you to implement an alternate method directed by plant procedures in order to complete the assigned task. **You** are expected to make decisions and take actions based on procedural guidance and the indications available.

INITIAL CONDITIONS:

Following a Reactor Trip and Safety Injection, a transition has been made to EOP-EPP-012, "Loss of Emergency Coolant Recirculation." The crew is attempting to perform a cooldown using the SG PORVs, but are unable to operate them **from** the Main Control Room.

INITIATING CUE(S):

You have been directed **to** perform **local** manual operation of SG "A"PORV per OP-126, "Main Steam. Extraction Steam, and Steam Dump Systems," Section **8.2.**

An **Auxiliary** Operator **has** reported that the feeder breaker for SG PORV 'A' **Servo** Valve Solenoid has already been opened.

START TIME: _____

*** DENOTES CRITICAL STEP**

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of OP-126	Obtains copy of OP-126, Section 8.2	***Provide applicant with copy of procedure after demonstration of ability to obtain copy.***	
2	8.2.1.1.1	Local PORV operation has been deemed necessary by the Unit SCO, or has been directed **by** another	Initial condition provide information		
3	8.2.1.1.2	A Auxiliary Operator is available to open breakers as required by Step 8.2.1.2.2.	Initiating Cue indicates that AO has already opened required breaker		
	CUE: AN OPERATOR HAS BEEN DISPATCHED TO OPERATE THE REQUIRED BREAKERS.				
4	Caution before 8.2.1.2.1	CAUTION: Adverse conditions in **the** steam tunnel may cause more rapid operator fatigue and should be evaluated for extended operations	Reviews caution		
5	8.2.1.2.1	Obtain the following equipment: a. Pliers (to remove the cover on the side of the PORV) b. Flashlight c. High Noise Area Sound Powered Phone Head Set d. Sound Powered Phone Extension Cord	Obrain equipment	*NOTE: Items in toolbox* ***are*** *verified on* ***weekly*** *AO rounds. NOT* ***required to open toolbox*** *and actually obtain tools* ***as cover for*** *access is easily* ***removed*** *by hand.*	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
6	8.2.1.2.2	Open the Servo Valve Solenoids feeder breaker(s) for the PORV(s) which will be operated, as listed below: • A S/G PORV (1MS-58) PP-IA312-SA-3 • B S/G PORV (1MS-60) FP-IN312-SB-3 • C S/G PORV (1MS-62) IDP-1A-SIII-11	Contacts Control Room to have power removed from "A" SG PORV by opening Ckt 3 on PP-1A312-SA.		
	CUE: PP-1A312-SA, CIRCUIT 3, HAS BEEN OPENED.				
*7	**8.2.1.2.3**	Remove the cover from the side of the PORV(s) that is (are) to be operated, to permit operator access to the Solenoid Manual Overrides.	**Locates "A" SG PORV (1MS-58)** and removes the side cover plate.	**CRITICAL TO REMOVE COVER TO ALLOW ACCESS TO OVERRIDES.** ***NOTE: Prompt applicant, as necessary, to actually remove cover to allow visual access.***	
	CUE: SIDE COVER PLATE HAS BEEN REMOVED (PROMPT TO ACTUALLY REMOVE COVER IF NEEDED).				
8	Caution before 8.2.1.2.4	CAUTION: There is no local instrumentation at the PORVs to monitor system parameters. Therefore, direct communications must be maintained with the Control Room during PORV operation.	Keviews caution		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
9	8.2.1.2.4	Establish communications between the Control Room and the Operator in the Steam Tunnel using the sound powered phone system.	Establishes communications with Control Room		
	CUE: COMMUNICATIONS HAS BEEN ESTABLISHED. THE CONTROL BOOM DIRECTS YOU TO FULLY OPEN 'A' SG PORK				
10	Note before 8.2.1.2.5	NOTE: A fully pressurized accumulator will provide at least one full stroke of the PORV. If the accumulator is not **pressurized,** then the Nand Pump will have to be used to cycle **the** PORV per Section 8.2.2 of this procedure.	Reviews note		
11	Note before 8.2.1.2.5	NOTE: Step 8.2.1.2.5 will fully open the PORV and Step 8.2.1.2.6 will completely shut it. If a throttled position of the PORV is desired, then skip to step 8.2.1.2.7.	Reviews note		
12	Caution before 8.2.1.2.5	CAUTION: DO not apply excessive torque to Solenoid Manual Overrides, as serious damage could occur to the Solenoid Valve internals. Servo Valve Solenoids A(Top) and B(Bottom) must be deenergized prior to operating the manual overrides.	Keviews caution		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*13	8.2.1.2.5	**To fully open the PORV, rotate solenoids A (Top) and B (Bottom) manual overrides approximately 3/4 turn in the clockwise (on) direction.**	**Locates and rotates A and B solenoids in the clockwise direction 3/4 turn.**	**CRITICAL TO CAUSE SG PORV TO FULLY OPEN.**	
	CUE: BOTH 'A' AND 'B' SOLENOIDS HAVE BEEN ROTATED ¾ TURN IN THE CW DIRECTION. THE SG PORV IS FULLY OPEN THE CONTROL ROOM NOW DIRECTS YOU TO FULLY CLOSE THE SG PORV.			
*14	8.2.1.2.6				
*14	8.2.1.2.6	**To fully shut the PORV, place solenoids A (Top) and B (Bottom) manual overrides back to their original position by rotating them approximately 3/4 turn in the counterclockwise (OFF) direction.**	**Rotates A and B solenoids 3/4 turn in the counterclockwise direction, back to original position.**	**CRITICAL TO CAUSE SG PORV TO FULLY OPEN.**	
	CUE: BOTH 'A' AND 'B' SOLENOIDS HAVE BEEN ROTATED ¾ TURN IN THE CCW DIRECTION. THE SG PORV IS FULLY CLOSED.				
	TASK COMPLETE				

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Following **a** Reactor Trip and Safety Injection, a transition has been made to EOP-EPP-012, "Loss of Emergency Coolant Recirculation." The crew is attempting to perform a cooldown using the SG PORVs, but are unable to operate them from the Main Control Room.

INITIATING CUE(S):

You have been directed to perform local manual operation of SG **"A"**PORV per OP-126, "Main Steam, Extraction Steam, and Steam Dump ***Systems,"*** Section 8.2.

An Auxiliary Operator has reported that the feeder breaker for SG PQRV **'A'** Servo Valve Solenoid has already been opened.