

FINAL SUBMITTAL

**HARRIS EXAM
50-400/2004-30 ■**

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

FINAL AS-GIVEN JPMs FOR EACH

WALK-THROUGH TEST

Facility.	<u>HARRIS</u>	Date of Examination:	<u>2/23-27/04</u>
Examination Level.	<u>RO</u>	Operating Test Number,	<u> </u>
Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)			
System/JPM Title	Type Code'	Safety Function (MA# - 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 - 3.1)	
b. Perform Containment Cooling System Operability Test per OS 1010	D/S	5 (022A4.01 - 3.6)	
c. Isolate the SI Accumulators following a LOCA per PATH-1 and OP-110	N/A/S/L	3 (000011EA1.13 - 4.1)	
d. Start the Turbine Driven Auxiliary Feedwater Pump per OP-137	M/S/L	4S (061A3.01 - 4.2)	
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 Kate Drawer in Service per OP-105	N/S	7 (015A4.02 - 3.9)	
h. Align CCW to Support RHR System Operations per OP-145	D/L/S	a (008A4.01 - 3.3)	
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i. Local Makeup to the VCT Using the Emergency Boration Valve	D/R	1 (004A2.07 - 3.4)	
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	F F	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)CA			

Facility:	<u>HARRIS</u>	Date of Examination:	<u>02/23-27/04</u>
Examination Level:	<u>SRO-U</u>	Operating Test Number:	<u> </u>
Control Room Systems (8 for RO; 7 for SRO-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			
e. isolate the SI Accumulators following a LOCA per PATH-4 and OP-110	N/A/S/L	3 (000011EA1.13 - 4.2)	
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 SRQ-U)			
i. Local Makeup to the VCT Using the Emergency Boration Valve	D/R	1 (004A2.07 - 3.7)	
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 EOQ-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			

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 EA and Breaker 102 has been manually opened

PREFERRED EVALUATION LOCATION: SIMULATOR IN PLANT

PREFERRED EVALUATION METHOD: 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 saved IC-141
- THE FOLLOWING STEPS DESCRIBE THE STEPS NEEDED TO ESTABLISH CONDITIONS IN IC-161
- *Reset to IC-11 (90% 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 be performed from memory.*** Describe the actions you are taking and the indications you are seeing 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:

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 **BA** to SUT 1A."

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

STAR? TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtains copy of UP-156.02, Section 7.1	Obtains copy of OP-156.02, Section 7.1	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
2	7.1.1	<u>Initial Conditions</u> 1. All prerequisites in Section 3.0 are 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 are 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	NOTE: Steps 7.1.2.01 through 7.1.2.010 are performed at the MCB.	Review 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 EA 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-197 position.	Places Synchronizer switch to BKR-107 position	CRITICAL TO ALLOW BREAKER107 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 released, breaker 108 will open.	Reviews note		
8	Caution before 7.1.2.4	CAUTION If Breaker 108 fails to open, observe Precaution and Limitation 4.0.016.	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 and 7.25 KV b. Verifies BKR 108 opens by green light indication		
*11	7.1.2.6	Place the STAMT 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 4.0.016.	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 / LJNSAT
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 4.0.0.16. 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 69 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 SRQ 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	<ul style="list-style-type: none"> 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 		
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		
<i>CUE: ANOTHER OPERATOR WILL COMPLETE ATTACHMENT 1.</i>					
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.

EXAMINER:

APPLICANT:

Perform Containment Cooling System
Operability Test

JPM RO-SIM(b)

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

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 a l m s 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

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 saved IC-162
- THE FOLLOWING STEPS DESCRIBE THE STEPS NEEDED TO ESTABLISH CONDITIONS IN IC-162
- *Reset to IC-19 (100% power).*
- *Go to run, acknowledge alarms*
- *Ensure AH-2 & 3 have both fans running in high speed and that AH-1 & 3 are in standby*
- *Start ESW Pumps SA and SB and ESW Pumps Rooster Pumps SA and SB*
- *Run simulator until ALB-028, 5.1 and 8.5 me in ALARM*
- *FREEZE the simulator.*
- When Applicant is ready, place simulator in RUN.
- OST-1010, Containment Cooling System Operability Test Monthly Interval Modes 1 - 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, 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:

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 perform OST- 1010.

START TIME: _____

*** DENQTES CRITICAL STEP**

JPM STEP	PROC 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	<i>Provide applicant with copy of procedure after demonstration of ability tu obtain copy.</i>	
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. EMEK SW PUMP A-SA b. EMER SW PUMP B-SB c. EMEK SW BOOSTER PUMP A-SA d. EMEK SW BOOSTER PUMP R-SB	Verifies ESW Pumps A and B and ESW Booster Pumps A and B running by checking KED light on for each pump	<i>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)</i>	
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-1 is secured and marks step N/A		
*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-SR in FAN COOLER AH-1 in LO SPD and verifies red LO SPD light is lit	CRITICAL TO START FAN FOR TEST.	
*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 AN-3 to STOP	CRITICAL TO STOP FAN FOR TEST.	
*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 places 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.	
*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.	
*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.	
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		
*14	7.1.8	Verify FAN COOLER AN-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.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
15	7.1.9	Check Annunciator ALB-29/3-2, CONTAINMENT FAN COOLERS AH-1 LOW FLOW-O/L, has cleared	Operator verifies annunciator ALB-29-3-2, CONTAINMENT FAN COOLERS AH-1 LOW FLOW-OIL, window is DARK		
16	7.1.10	Check Annunciator ALB-27/8-2, CONTAINMENT FAN COOLERS AH-3 LOW FLOW-O/L, has cleared	Operator verifies annunciator ALB-27-8-2, CONTAINMENT FAN COOLERS AH-3 LOW FLOW-OIL, window is DARK		
17	7.1.11	Check Annunciator ALB-27/7-2, CONTAINMENT FAN COOLERS AH-2 LOW FLOW-OIL, has cleared	Operator verifies annunciator ALB-27-7-2, CONTAINMENT FAN COOLERS AH-2 LOW FLOW-O/L, window is DARK		
18	7.1.12	Check Annunciator ALB-29/4-2, CONTAINMENT FAN COOLERS AH-4 LOW FLOW-O/L, has cleared	Operator identifies that annunciator ALB-29-4-2, CONTAINMENT FAN COOLERS AH-4 LOW FLOW-O/L, window is DARK		
<i>CUE: ANOTHER OPERATOR WILL RECORD TEST STOP DATA.</i>					
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 perform OST-1010.

REGION II
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 NUMBER: New
KA: 000011EA1.13 IMPORTANCE: SRO 4.2 RO 4.1
KA STATEMENT: Ability to operate and monitor the following as they apply
to a Large Break LOCA: Safety injection components
TASK STANDARD: Accumulators 'A' and 'B' have been isolated and
Accumulator 'C' has been vented
PREFERRED EVALUATION LOCATION: SIMULATOR INPLANT
PREFERRED EVALUATION METHOD: PERFORM SIMULATE
REFERENCES: EPP-009, Post LOCA Cooldown and Depressurization
OP-110, Safety Injection, Mcv 32
VALIDATION TIME: 10 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FNISK TIME: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to saved IC-163
- THE FOLLOWING STEPS DESCRIBE THE STEPS NEEDED TO ESTABLISH CONDITIONS IN IC-143
- Initialize to IC-19 (100% power)
- insert a small break LOCA (MALF RCS 182)
- Trip all RCPs
- Perform the actions of PATH-1, transition to EPP-009
- Cooldown and depressurize to refill the Pressurizer to > 40%
- Insert a malfunction to prevent ISI-248 from closing
- Insert the following remote functions – SIS06 CLOSED; SIS007 CLOSED; SIS008 CLOSED to close the breakers for the accumulator valves
- FREEZE the simulator
- When Applicant is ready, place simulator in RUN
- EPP-009 POST LOCA COOLDOWN AND DEPRESSURIZATION
- EPP-009, Post LOCA Cooldown and Depressurization
- OP-110, Safety Injection

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 nominally 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 small break LOCA has occurred. Actions have been taken in accordance with PATH-I. and a transition to EPP-009 has been made.

INITIATING CUE(S):

The SI Accumulator isolation valve breakers have been closed. Isolate the SI Accumulators in accordance with Step 28 of EOP-EPP-009 "POST LOCA COOLDOWN AND DEPRESSURIZATION"

START TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of EPP-009, "Post LOCA Cooldown and Depressurization" Step 28	Obtains copy of EPP-009, "Post LOCA Cooldown and Depressurization" Step 28	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
2	28.a	Isolate SI Accumulators: a. RCS subcooling greater than 10°F [40°F] – C 20°F [50°F] – M	Verifies adequate subcooling		
3	28.b and 28.c	b. PRZ level greater than 10% [30%] c. Go to Step 28.e	Verifies adequate level and goes to Step 28.e		
4	28.e	e. Locally unlock AND close both breakers for each SI accumulator discharge valve: <ul style="list-style-type: none"> • ISI-246 (MCC-IA21-SA-5C) • ISI-247 (MCC-IB21-SB-5C) • ISI-248 (MCC-IA21-SA-3D) 	Directs an AO to locally close breakers		
CUE: BRI [] FOR ISI-246, ISI-247, AND ISI-248 HAVE BEEN CLOSED.					

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*5	28.f	c. Shut SI accumulator discharge valves: <ul style="list-style-type: none"> ISI-246 ISI-247 ISI-248 	<ul style="list-style-type: none"> Places hand switches for 1SI-246, 1SI-247, and 1SI-248 to 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.	
6	NA	Locates OP-110, "Safety Injection," Section 8.3	Locates procedure and section	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
7	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		
8	OP-110, 8.3.2.2.a	At the MCB perform the following: <ul style="list-style-type: none"> a. If necessary initiate an EIR. 	Informs SCO that an EIR may be necessary		
CUE: SCO ACKNOWLEDGES REPORT.					
9	OP-110, 8.3.2.2.b	b. Verify shut 1SI-287, ACCUMULATORS & PRZ PORV N2 SUPPLY	<ul style="list-style-type: none"> Places 1SI-287 to shut position Verifies 1SI-287 shut by red light OFF and green light ON 		
10	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
*11	OP-110, 8.3.2.2. d	d. Open the 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	<ul style="list-style-type: none"> 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.	
12	Caution before OP-110, 8.3.2.3	CAUTION: In modes 1, 2, and 3, ensure Accumulators are maintained within Technical Specification limits for pressure and level when venting SI Accumulators	Reviews caution and determines not applicable due to not being in Modes 1-3		
*13	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	<ul style="list-style-type: none"> Rotates HC-936 potentiometer in CCW direction Observes valve demand increases by meter indication 	CRITICAL TO ALIGN ACCUMULATOR TO VENT HEADER.	
14	NA	Verify pressure in Accumulator C decreasing	Monitors Accumulator C pressure and determines it is decreasing		
<i>CUE: AFTER ALB-01-9-1 "ACCUMULATOR TANK C HIGH/LOW PRESS" IS ACKNOWLEDGED CUE OPERATOR THAT ANOTHER OPERATOR WILL MONITOR THE PRESSURE DECREASE.</i>					
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL, CONDITIONS:

A small break LOCA has occurred. Actions have been taken in accordance with PATH-1, and a transition to EPP-009 has been made.

INITIATING CUE(S):

The SI Accumulator isolation valve breakers have been closed. Isolate the SI Accumulators in accordance with Step 28 of EOP-EPP-009 "POST LOCA COOLDOWN AND DEPRESSURIZATION"

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-SIM(d)

Start the Turbine Driven **Auxiliary Feedwater**
Bump

APPLICANT: _____

EXAMINER: _____

REGION 11
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: SAT _____ UNSAT _____

COMMENTS: _____

EXAMINER: _____

Signature

Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to saved IC-164

- THE FOLLOWING STEPS DESCRIBE THE STEPS NEEDED TO ESTABLISH CONDITIONS IN IC-164
- *Reset to IC-8 (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 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 front 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 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 KPPB each per OP-137, "Auxiliary Feedwater System." Section 5.5. Maintain SG levels between 52% and 62%.

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	<i>Provide applicant with copy of procedure after demonstration & ability to obtain copy.</i>	
2	5.5.1	<u>Initial Conditions</u> 1. Attachment 1 completed. 2. Attachment 2 completed. 3. The spool pieces connecting AEW 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		
<i>CUE: AN EXTRA OPERATOR WILL LOG NECESSARY CYCLES.</i>					
4	5.5.2.2	Verify PDK-2180.1 SB: <ul style="list-style-type: none"> • In AUTO • Set at the value provided in the Operations Curve Book, Curve F-X-10 	Verifies PDK-2180.1 SB AUTO pushbutton is LIT and set at 31%		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*5	5.5.2.3	<p>IF full flow to the Steam Generators is not immediately desired, then perform the following:</p> <ol style="list-style-type: none"> 1. Declare the Turbine-Driven AFW Pump inoperable 2. Shut the following valves: <ul style="list-style-type: none"> • 1AF-137, STM TURB AUX FW A ISOLATION • 1AF-143, STM TUHB AUX FW B ISOLATION • 1AF-149, STM TURB AUX FW C ISOLATION 	<ol style="list-style-type: none"> a. Declares the TDAFW Pump inoperable b. Places the following valves in SHUT <ul style="list-style-type: none"> • 1AF-137 • 1AF-143 • 1AF-149 c. Verifies the valves shut by GREEN light LIT and WED Light OFF 	<p>CRITICAL TO PREVENT FEEDING SGs AT MAXIMUM FLOW RATE WHEN PUMP IS STARTED.</p> <p><i>NOTE: Declaration of inoperability and verification is NOT critical.</i></p>	
CUE: UNIT-SCO ACKNOWLEDGES THAT TDAFW PUMP IS INOPERABLE.					
*6	5.5.2.4	<p>Start the Turbine-Driven AFW Pump by placing either of the steam admission control switches to the open position.</p> <ul style="list-style-type: none"> • 1MS-70 SA, MAIN STEAMB TO AUX FW TURBINE • 1MS-72 SB, MAIN STEAMC TO AUX FW TURBINE 	<ul style="list-style-type: none"> • Places 1MS-70A and/or 1MS-70B in OPEN position • Verifies valve(s) open by observing GREEN light OFF and RED light LIT 	<p>CRITICAL TO START PUMP TO PROVIDE SOURCE OF WATER TO SGs.</p> <p><i>NOTE: Verification is NOT critical.</i></p>	
7	5.5.2.5	<p>Dispatch an operator to perform the following:</p> <ul style="list-style-type: none"> • 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	<p>If AFW Isolation valves were shut in Step 3, then, to start feeding the Steam Generators, perform the following:</p> <p>a Shut Turbine Driven AFW Pump Flow Control valves:</p> <ul style="list-style-type: none"> • 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 	<p>a. Shuts the following valves by placing controller in MAN and lowering output to 0%:</p> <ul style="list-style-type: none"> • 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 <p>b. Verifies valves shut by observing controller output at 0% and GREEN lights ON for valve position indication</p>	<p>CRITICAL TO PREVENT FEEDING SGs AT MAXIMUM FLOW RATE.</p> <p><i>NOTE: Verification is NOT critical.</i></p>	
*9	5.5.2.6. b	<p>b. Open Turbine Driven AFW Pump Isolation valves:</p> <ul style="list-style-type: none"> • 1AF-137, STM TURB AUX FW A ISOLATION • 1AF-143, STM TURB AUX FW B ISOLATION • 1AF-149, STM TURB AUX FW C ISOLATION 	<p>Places the following valves in OPEN</p> <ul style="list-style-type: none"> • 1AF-137 • 1AF-143 • 1AF-149 <p>Verifies the valves open by GREEN light OFF and RED light LIT</p>	<p>CRITICAL TO ESTABLISH FLOW PATH.</p> <p><i>NOTE: Verification is NOT critical.</i></p>	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*10	5.5.2.7	<p>Control AFW flow to the Steam Generators by throttling the following valves by operation of the respective MCB flow controller:</p> <ul style="list-style-type: none"> • Steam Generator A 1AF-129 (FK-2071A1 SB) • Steam Generator B 1AF-130 (FK-2071B1 SB) • Steam Generator C 1AF-131 (FK-2071C1 SB) 	<p>Adjusts controllers for each of the following valves to provide flow at rate between 25 and 50 KPPH</p> <ul style="list-style-type: none"> • SGA 1AF-129 (FK-2071A1 SB) • SGB 1AF-130 (FK-2071B1 SB) • SGC 1AF-131 (FK-2071C1 SB) 	<p>CRITICAL TO ESTABLISH PROPER FLOW RATE.</p>	
11	5.5.2.8	<p>Verify flow to the Steam Generators on the following indicators:</p> <ul style="list-style-type: none"> • SGA AUX FW FLOW (FI-2050A1 SA) • SGB AUX FW FLOW (FI-2050B1 SB) • SGC AUX FW FLOW (FI-2050C1 SA) 	<p>Verifies flow to each SG between 25 and 50 KPPH by observing following indications:</p> <ul style="list-style-type: none"> • SGAAUXFW FLOW (FI-2050A1 SA) • SGBAUXFW FLOW (FI-2050B1 SB) • SGCAUXFW FLOW (FI-2050C1 SA) 		
12	5.5.2.9	<p>If necessary, then adjust PDK-2180.1SB to vary turbine ΔP</p>	<p>Adjusts PDK-2180.1 SB as needed</p>		
CUE: ANOTHER OPERATOR WILL MONITOR SG LEVELS.					
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER W O N 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(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. Maintain SG levels between 52% and 62%.

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.

REGION 11
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-330 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 IN PLANT
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: SA? UNSAT

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to saved IC-165
- THE FOLLOWING STEPS DESCRIBE THE STEPS NEEDED TO ESTABLISH CONDITIONS IN IC-165
- *Initialize to a Mode 3 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 ICY-752 OPEN> and ISI-340, Low Head **SI** Train A to Cold Leg Valve, from closing <OVR ISI-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 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 nominally 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 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."

STAKT TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROG STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	N/A	Obtain copy of EOP-EPP-010	Obtains copy of EOP-EPP-010	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
2	Caution before Step 1	<p>CAUTION</p> <ul style="list-style-type: none"> Do Steps 1 through 8 without delay. Do NOT implement Function Restoration Procedures prior to completion of these steps. SI recirculation flow to RCS must be 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. 	Reviews cautions		
3	Note before Step 1	<p>NOTE:</p> <ul style="list-style-type: none"> Foldout applies. CNMT wide range sump level of greater than 137.5 INCHES should ensure a long term recirculation suction source. <p>The following sequence of steps to transfer to cold leg recirculation assumes operability of at least one train of safeguards equipment.</p>	Reviews notes	<i>NOTE: MAY REVIEW FOLDOUT PAGE ITEMS. NOT REQUIRED TO SATISFACTORILY COMPLETE JPM.</i>	

JPM STEP	PROC STEP	ELEMENT	STANDAkd	NOTES	SAT/ UNSAT
4	1.a	Check both RHR pumps – Running	Verifies both RHR pumps running by observing WED 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: <ul style="list-style-type: none"> • Train A RHR pump: ISI-300 AND ISI-310 • Train B RHR pump: ISI-301 AND ISI-311 	<ul style="list-style-type: none"> • Verifies Train A sump valves open by observing RED lights ON, green lights OFF on ISI-300 and ISI-310 • Verifies Train B sump valves open by observing RED lights ON, green lights OFF on ISI-301 and ISI-311 		
*6	1.c	c. Shot RWST to RHR pump suction valves: ISI-322 (Train A) ISI-323 (Train B)	<ul style="list-style-type: none"> • Places ISI-322 and ISI-323 handswitches to CLOSE • Verify valves closed by observing RED lights ON, green lights OFF on ISI-322 and ISI-323 	CRITICAL TO ISOLATE RHR 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: ISI-340	<ul style="list-style-type: none"> 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 	<i>NOTE: NOT CRITICAL TO CLOSE ISI-340 VALVE WILL NOT OPERATE.</i>	
*8	1.d.RNO	c. Shut low head SI Train B to cold leg valve: ISI-341	<ul style="list-style-type: none"> 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: ICS-746 (Train A CSIP) ICS-752 (Train B CSIP)	<ul style="list-style-type: none"> Verifies 1CS-746 closed by observing RED light OFF, GREEN light ON Places 1CS-752 handswitch in CLOSE Determines 1CS-752 did NOT close by observing KED light ON, GREEN light OFF Goes to Step 2.a.RNO 	<i>NOTE: NOT CRITICAL TO CLOSE ICS-752 SINCE VALVE WILL NOT OPERATE.</i>	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*10	2.a.RNO	a. Shut the associated block valve: ICS-753 (Train B CSIP)	<ul style="list-style-type: none"> Places ICS-753 handswitch in CLOSE Verifies ICS-753 closed by observing RED light OFF, GREEN light ON 	<p>CRITICAL TO CLOSE VALVE SINCE MINIFLOW VALVE FAILED TO CLOSE AS REQUIRED.</p> <p><i>NOTE: May also close ICS-745 as part of RNO although this is NOT required.</i></p>	
11	2.b	b. Verify normal miniflow isolation valves - SHUT ICS-182 ICS-196 ICS-210 ICS-214	Verifies both valves closed by observing ICS-182 and ICS-196 RED lights OFF, GREEN lights ON		
*12	2.c	c. Open RHR discharge to CSIP suction valves: IRH-25 IRH-63	<ul style="list-style-type: none"> Places handswitches for both IRH-25 and IRH-63 in OPEN Verifies IRA-25 and IRH-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. but takes NO action due to no loss of offsite power		
*15	2.f	f. Shut RWST to CSIP suction valves AND place in poll-to-lack position: LCV-115B LCV-115D	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Checks Charging Line Isolation Valves 1CS-235 and 1CS-238 CLOSED by observing RED lights OFF, GREEN lights ON May also check FCV-122.1 CLOSED by observing flow indication of ZERO 		
17	3.b	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 head SI to cold leg valve 1SI-52	<ul style="list-style-type: none"> Places 1SI-52 Control Power ON Verifies ORANGE Control Power Light ON Places 1SI-52 handswitch to OPEN Verifies 1SI-52 open by observing RED light ON, green light OFF 	CRITICAL TO ESTABLISH INJECTION FLOWPATW.	
19	4.h	b. Check any BIT outlet valve – open 1SI-3 1SI-4	Verifies both 1SI-3 and 1SI-4 open by observing RED lights ON, GREEN lights OFF		
*20	4.c	c. Shut CSIP discharge cross connect valves based on Table: Discharge Cross Connect Valves To Be Shut Any 2: 1CS-217, 1CS-218, 1CS-219, 1CS-220	<ul style="list-style-type: none"> Places any 2 of 4 handswitches to CLOSE position for valves 1CS-217, 1CS-218, 1CS-219, and / or 1CS-220 Verifies valves operated closed by observing RED lights OFF. GREEN lights OFF 	CRITICAL TO SEPARATE SI TRAINS DURING RECIRCULATION PHASE.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
21	5	Verify High Head SI Flow: <ul style="list-style-type: none"> • Alternate header flow (Train A): FI-940 • Normal header flow (Train B): FI-943 	<ul style="list-style-type: none"> • Verifies Train A flow indication on FI-940 • Verifies Train B flow indication on FI-941 		
<i>CUE: ANOTHER OPERATOR WILL VERIFY CCW VALVE ALIGNMENT.</i>					
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 II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-SIM(f)

Perform Control Rod and Rod Position Indicator
Exercise

APPLICANT: _____

EXAMINER: _____

REGION II
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 STATEMENT: 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 IN PLANT

PREFERRED EVALUATION METHOD: PERFORM SIMULATE

REFERENCES: OST-1005, 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 saved IC-166
- THE FOLLOWING STEPS DESCRIBE THE STEPS NEEDED TO ESTABLISH CONDITIONS IN IC-164
- *Initialize to IC-19 (100%power).*
- *Enter malfunction to prevent auto opening of Reactor Trip Breakers <IMF RPS01B 3 I>.*
- *SEE INSTRUCTIONS AT STEP 7 TO ENTER ADDITIONAL MALFUNCTIONS. <for Control Bunk A Rods F2 and B6>*
- *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-001, Malfunction of Rod Control and Indication 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 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:

The plant ~~is~~ operating at 100% power.

OST-1005, "Control Rod and Rod Position Indicator Exercise Quarterly Interval Modes 1 - 3," is being performed. **All** prerequisites to perform 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):

Testing has been completed for the Shutdown Bank rods. You are **to** resume OST-1005, Section 7.1, commencing with Control Bank A.

START TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / IJNSAT
1	N/A	Obtain copy of OST-1005	Obtains copy of OST-1005 and refers to Section 7.1	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
2	Note before 7.1.1.a	<u>NOTE:</u> Substeps 1.a through 1.g are to be signed off when testing of the components listed in Attachment 1 is completed.	Reviews note		
<i>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'.</i>					
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 Control 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 'CBA' position	CRITICAL TO ALLOW MOVEMENT OF CONTROL BANK 'A'.	
5	Note before 7.1.1.c	<u>NOTE:</u> When inserting rods, the Bank Low Insertion and Bank 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 Control Bank 'A' rods 10 steps by observing Group Position indication	CRITICAL TO CAUSE CONTROL BANK 'A' RODS TO MOVE INWARD.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
<i>NOTE: IF REQUESTED, PROVIDE THE REQUIRED INFORMATION AS DRPI INDICATING '216' IN NEXT STEP.</i>					
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 COKE AFTER RODS ARE WITHDRAWN 2-3 STEPS DURING THE PERFORMANCE OF THE FOLLOWING STEP <IMF CRF03A 2 F2 and IMF CRF03B 2 B6 WITH A 1 SEC TEME DELAY>.					
<i>NOTE: IF APPLICANT INDICATES THAT UNIT-SCO PERMISSION IS REQUIRED TO WITHDRAW RODS, DIRECT APPLICANT TO RESTORE RODS TO ORIGINAL POSITION.</i>					
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 Control Bank 'A' rods 10 steps by observing Group Position indication	CRITICAL TO CAUSE CONTROL BANK 'A' RODS TO MOVE OUTWARD.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
10	N/A	Determine 2 Control Bank 'A' rods have dropped into the core	<p>Determines 2 rods have dropped into the core by observing:</p> <ul style="list-style-type: none"> • Rod Bottom Lights • Decreasing power • Decreasing Tavg • ALB-13-7-4, ONE ROD AT BOTTOM • ALB-13-7-3, TWO OR MORE RODS AT BOTTOM • ALES-13-7-1, ROD CONTROL URGENT ALARM • ALB-13-4-2, POWER RANGE HIGH NEUTRON FLUX RATE ALERT • ALR-13-5-3, POWER RANGE UPPER DETECTOR HIGH FLUX DEV OR AUTO DEFEAT • ALB-13-5-4, POWER RANGE LOWER DETECTOR HIGH FLUX DEV OR AUTO DEFEAT • ALB-13-44, POWER RANGE CHANNEL DEVIATION • ALES-13-8-5, COMPUTER ALARM ROD DEV/SEQ NIS PWR RANGETILTS 		

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	<p>CRITICAL TO MANUALLY TRIP THE REACTOR.</p> <p><i>NOTE: IMMEDIATE OPERATOR ACTION FOR AOP-001.</i></p> <p><i>NOT CRITICAL TO INFORM UNIT SCO PRIOR TO TRIPPING REACTOR.</i></p>	
<i>CUE: ANOTHER OPERATOR WILL COMPLETE THE IMMEDIATE ACTIONS OF PATH-1.</i>					
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant is operating at 100% power.

OST-1005, "Control Rod and Rod Position Indicator Exercise Quarterly Interval Modes 1 - 3," is being performed. **All** prerequisites to perform 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):

Testing has been completed for the Shutdown Bank rods. You are to resume OST-1005, Section 7.1, commencing with Control Bank A.

REGION 11
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM RO-SIM(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 KO 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. Excore Nuclear Instrumentation, Rev 21
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-163
- Rotate VOLUME to MIN
- Place CHANNEL SELECTOR in N31
- Place AUDIO MULTIPLIER in 10K
- Rotate THUMBWHEELS TO 0000.0
- Place DISPLAY PRESET to MIN / COUNT
- Depress STOP
- Depress RESET
- FREEZE the simulator.
-
- When Applicant is ready, place simulator in RUN.
- OP-105, Excore Nuclear Instrumentation

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 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:

The plant is in Mode 4.

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 automatic sampling period of 30 seconds. Use SR Channel 32 as input.

STAR? TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT! UNSAT
1	N/A	Obtain copy of OF-105	Obtains copy of OF-105, Section 8.1.2.3	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
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	<ul style="list-style-type: none"> Determines SR Channel N32 is desired channel Pulls Channel Selector switch OUT and then rotates to N32 position 	CRITICAL TO SELECT CHANNEL N32 FOR AUDIO COUNT RATE.	
5	8.1.2.3.h	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	<i>NOTE: NO NOISE WILL BE HEARD UNTIL APPLICANT DEPRESSES START LATER IN JPM.</i>	
5A	Repeat 8.1.2.3.b	b. Turn the AUDIO MULTIPLIER switch to position 100. 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	<i>NOTE: THIS STEP MAY NOT BE PERFORMED UNTIL APPLICANT DEPRESSES START LATER IN JPM.</i>	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*6	R.1.2.3.c	c. Set the DISPLAY PRESET switch to PRESET TIME SEC or PRESET TIME MIN	Rotates Display Preset switch to PRESET TIME SEC position	CRITICAL TO ESTABLISH PROPER TIME PERIOD.	
*7	R 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. <i>NOTE: THUMB WHEEL HAS TENTHS POSTION.</i>	
8	Note before 8.1.2.3.e	<u>NOTE:</u> 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 STAR? 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	Verifies SAMPLING MODE switch in AUTO position		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*10	8.1.2.3.f	f. Depress the START push button.	<ul style="list-style-type: none"> Depresses START button Verifies that counts display after 30 seconds and then system gates again. 	CRITICAL TO ALLOW SCALER TIMER TO BEGIN OPERATING.	
<i>NOTE: APPLICANT MAY ADJUST AUDIO COUNT RATE LEVEL AT THIS TIME.</i>					
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant is in Mode 4

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 automatic sampling period of 30 seconds. Use SR Channel 32 as **input**.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM SIM-CR(h)

Align CCW to Support RHR System Operations

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Align CCW to Support RHK System Operations

ALTERNATE PA??: None

FACILITY JPM NUMBER: CR-085

KA: 008A4.01 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 KHR 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: _____

PERFORMANCE TIME: _____ MINUTES

PERFORMANCE RATING: SAT UNSAT

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Initialize to IC-168
- Place STAR plate on controls for SFP Cooling Pump 2&3A

- THE FOLLOWING STEPS DESCRIBE THE STEPS NEEDED TO ESTABLISH CONDITIONS IN IC-168
- *Reset to IC-16 (Mode 4)*
- *Both ESW trains are in service and both CCW pumps are running*
- *Closed ICC-508*
- *Started SFP Cooling Pump 2&3A*
- *Secured SFP Cooling Pump 1 & 4A*
- *FREEZE the simulator.*

- When Applicant is ready, place simulator in RUN.

- OP-145, Component Cooling Water

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 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:

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

INITIATING CUE(S):

The SRO directs you to align CCW to both KHR 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	PKOC 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.	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
2	Note before 8.9.2.1	<u>NOTE:</u> 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 both essential cooling loops and the non-essential loop simultaneously.	Reviews note		
3	Note before 8.9.2.1	<u>NOTE:</u> 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	<u>CAUTION:</u> To prevent pump runout when aligning CCW flow to the RHR 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 ICC-147 (ICC-167).	Reviews caution		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
5	8.9.2.i.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	h. 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 RHK cooling are to be placed in service, start the second CCW pump per Section 5.2.	<ul style="list-style-type: none"> Verifies both CCW pumps running by observing RED breaker indication OS May also check flows on both loops to verify pumps running 		
8	Note 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		
*9	8.9.2.3	Open 1CC-147 (1CC-167), CCW FROM RHR HEAT EXCHANGER A-SA (B-SB).	<ul style="list-style-type: none"> 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.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
10	Caution before 8.9.2.4	I 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 (FI-653.1). If both CCW pumps are running OK the CCW trains are separated, a minimum of 3850 gpm per pump is required. This lower flowrate should only be allowed for short durations to accomplish pump swapping or system realignment.	Reviews caution		
11	8.9.2.4	Verify KHR 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		
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 <i>demin</i> water. Make up water for the A CCW header must be supplied by the Reactor Makeup Water System.	Reviews note		
13	Caution before 8.9.2.5	CAUTION: Shutting both 1CC-99 and 1CC-113 will result in the loss of the Sonessential 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.	<ul style="list-style-type: none"> Places 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.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAI
15	Caution before 8.9.2.6	CAUTION: Shutting both ICC-128 and ICC-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 ICC-128 (ICC-127), CCW NONESSENTIAL RETURN TO HEADER A(B).	<ul style="list-style-type: none"> Places ICC-128 in CLOSE position Verifies valve closed by observing RED light OFF, GREEN light ON 	CRITICAL TO SUPPLY NON-ESSENTIALS WITH ONLY ONE PUMP.	
17	8.9.2.4.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		
18	8.9.2.7.a (2)	(2) If necessary, then adjust ICC-146 (ICC-166), RHR HX A (B) Outlet Throttle Valve, to obtain desired flow.	Marks step N/A		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
19	8.9.2.7.b	<p>b. If only one CCW Pump is in service, then perform the following:</p> <p>(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)</p> <p>(2) If necessary, then adjust the following valves while monitoring MCB indicator FI-652.1 (FI-653.1) to obtain the desired flow:</p> <ul style="list-style-type: none"> • 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	<p>CAUTION: Do not supply CCW to both RIIR Heat Exchangers simultaneously with only one CCW pump running.</p>	Reviews caution		
"21	8.9.2.8	<p>If both trains of RHR cooling are to be placed in service, open 1CC-167 (1CC-147), CCW FROM RHR HEAT EXCHANGER R-SB (A-SA)</p>	<ul style="list-style-type: none"> • Places 1CC-167 to OPEN position • Verifies valve open by observing RED light ON, GREEN light OFF 	<p>CRITICAL TO ALIGN CCW TO RHR HX B-SB.</p>	

JPM STEP	PROC STEP	ELEMENI	STANDARD	NOTES	SAT / UNSAT
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 R-SB (A-SA) flow rate is between 10,000 and 12,500 gpm on MCB indicator FI-653.1 (FI-652.1)	Verifies flow indication on FI-653.1 between 10,000 and 12,500 gpm		
23	8.9.2.9.h	b. If flow-rate is not between 10,000 and 12,500 gpm, 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					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

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

INITIATING CUE(S):

The SRO directs you to align CCW to both RHR heat exchangers per OP-145, "Component Cooling Water," Section 8.9. Place "A" Train CCW in service first.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

JPM COM-IP(i)

Local Makeup to the VCT Using the Emergency
Boration Valve

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TA Local Makeup to the VCT Using the Emergency Boration Valve

ALTERNATE PA?": None

FACILITY JPM NUMBER: IP-95

KA: 004A2.07 IMPORTANCE: SRO 3.4 RO 3.4

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: Isolation of letdown / makeup

TASK STANDARD: 1CS-274 and 1CS-278 have been operated as directed with the breaker for 1CS-278 verified closed.

PREFERRED EVALUATION LOCATION: SIMULATOR INPLANT ✓

PREFERRED EVALUATION METHOD: PERFORM SIMULATE ✓

REFERENCES: AOP-003, Malfunction of Reactor Makeup Control

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):

- Performed in plant
- AOP-003, Malfunction of Reactor Makeup Control

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 nominally 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:

The plant is operating at 100% power. The Reactor Makeup Control System is inoperable. FCV-I 13A and FCV-114A will not open. A Boric Acid Pump and a RMUW Pump are both running, but VCT level is slowly decreasing.

INITIATING CUE(S):

The Unit-SCO has informed you that AOP-003, "Malfunction of Reactor Makeup Control," Attachment 2, is being performed to establish manual makeup flow to the VCT. The breaker for 1CS-278, Emergency Boric Acid Addition Valve, is open.

You are to perform **AOP-003**, "Malfunction of Reactor Makeup Control." Attachment 2, commencing with Step 20.

START TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Obtain copy of AOP-003, Attachment 2	Obtains copy of AOP-003, Attachment 2		
2	20.a	Direct an operator to perform the following: a. OBTAIN a radio and a locked valve key	Obtains radio and locked valve key		
3	20.b	b. Establish communication between 236' RAB Emergency Boration Valve Gallery and the Control Room	Transits to 236' RAB Emergency Boration Valve Gallery and establishes communications with the Control Room		
<i>CUE: INFORM APPLICANT THAT EVALUATOR WILL SIMULATE CONTROL ROOM FOR ALL COMMUNICATIONS.</i>					
4	20.c	c. Unlock ICS-274, RMUW Manual Blend from RMWST	Unlocks ICS-274		
<i>CUE: ICS-274 has been unlocked.</i>					
5	20.d	d. Take manual control of ICS-278, Emergency Boric Acid Addition	Takes manual control of ICS-278		
<i>CUE: Manual control of ICS-278 has been taken.</i>					
6	21	Verify the following are RUNNING • One Boric Acid Transfer Pump • One Reactor Makeup Water Pump	Verifies pumps running based on initial condition		
7	22	Prior to continuing, check that all applicable previous steps are complete	Ensures all applicable steps completed		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*8	23.a	As closely together as possible, locally perform the following: a. Throttle OPEN 1CS-278 SB, Emergency Boric Acid Addition, to obtain _____ gpm boric acid flow rate (from step 17).	Contacts Control Room and slowly throttles open 1CS-278 until desired flow is achieved	CRITICAL TO ESTABLISH BORIC ACID FLOW FOR PROPER BLENDED OPERATION.	
<i>CUE: (After 1CS-278 is simulated to be throttled open slightly) Control Room informs you that adequate boric acid flow has been achieved.</i>					
*9	23.b	b. Throttle OPEN 1CS-274, RMUW Manual Blend from RMWST, to obtain 120 gpm total makeup flow rate.	Contacts Control Room and slowly throttles open 1CS-274 until desired flow is achieved	CRITICAL TO ESTABLISH REACTOR MAKEUP WATER FLOW FOR PROPER BLENDED OPERATION.	
<i>CUE: (After 1CS-274 is simulated to be throttled open slightly) Control Room informs you that adequate total makeup flow has been achieved.</i>					
10	24	Monitor the following for expected response: <ul style="list-style-type: none"> • Tavg • Reactor power • Control rod motion • VCT level 	Informs Control Room to monitor these parameters		
<i>(WE: Control Room will monitor parameters.</i>					

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*11	25.a	When desired VCT level has been reached, then: a. Locally SHUT and LOCK ICS-274, RMUW Manual Blend from RMWST	Shuts and locks ICS-274 when Control Room informs applicant that proper VCT level has been reached	CRITICAL TO CLOSE VALVE TO PREVENT DILUTION OF RCS.	
<i>CLIE: Control Room informs you that desired VCT level has been reached.</i>					
<i>(After ICS-274 is simulated to be shut and locked), ICS-274 has been shut and locked.</i>					
*12	25.b	b. SHUT ICS-278 SB, Emergency Boric Acid Addition	Shuts ICS-278 when Control Room informs applicant that proper VCT level has been reached	CRITICAL TO CLOSE VALVE TO PREVENT BORATION OF RCS.	
<i>CUE: (After ICS-274 is simulated to be shut), ICS-278 has been shut.</i>					
*13	25.c	e. Verify breaker 1B35-SB-8C (for ICS-278 SB) is CLOSED	Closes breaker 1B35-SB-8C (for ICS-278 SB)	CRITICAL TO CLOSE BREAKER TO ALLOW REMOTE OPERATION FROM CONTROL ROOM.	
<i>CUE: Breaker 1B35-SB-8C has been closed.</i>					
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The plant is operating at 100% power. The Reactor Makeup Control System is inoperable. FCV-113A and FCV-114A will not open. A Boric Acid Pump and a RMUW Pump are both running, but VCT level is slowly decreasing.

INITIATING CUE(S):

The IJnit-SCO has informed you that AOP-003, "Malfunction of Reactor Makeup Control," Attachment 2, is being performed to establish manual **makeup** flow to the VCT. The breaker for 1CS-278, Emergency Boric Acid Addition Valve, is open.

You are to perform AOP-003, "Malfunction of Reactor Makeup Control," Attachment 2, commencing with Step 20.

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 1 Tavg and OTAT trips and runbacks are in TEST position.

PREFERRED EVALUATION LOCATION: SIMULATOR IN PLANT ✓

PREFERRED EVALUATION METHOD: PERFORM SIMULATE ✓

REFERENCES: OWP-RP-01, Reactor Protection

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 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, 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:

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 OTAT 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.

The Unit-SCO informs you that all Master Test Switches are to be placed in test for troubleshooting. The Control Room has placed Rod Control in MANUAL.

START TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	NA	Obtain copy of OWP-RP	Obtains copy of OWP-RP-1 and refers to section for Channel I Tavg/ ΔT	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
2	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		
3	Control Board	On Main Control Board Rod Bank Selector to MAN	Reviews Initiating Cue and notes that Control Room has placed Rod Bank Selector to MAN		
<i>CUE: CONTROL ROOM REPORT'S ROD BANK SELECTOR IS IN MANUAL.</i>					
4	IVote before IPIC 1 on Card C1-861	NOTE: Master Test switches may be positioned to TEST for troubleshooting. 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 and Initiating Cue to determine that Master Test Switches are to be placed in TEST for troubleshooting		

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
5	Note before PIC 1 on Card C1-861	<u>NOTE:</u> Concurrent verification is preferred while tripping bistables per PLP-702.	Reviews note		
<i>CUE: FOR THIS JPM ONLY, ASSUME THAT CONCURRENT VERIFICATION IS BEING PERFORMED AND THAT VERIFIER AGREES WITH ALL ACTIONS TAKEN.</i>					
*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.	
<i>CUE: SW1 IS IN TEST POSITION.</i>					
*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.	
<i>CUE: SW2 IS IN TEST POSITION.</i>					
*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.	
<i>CUE: SW4 IS IN TEST POSITION.</i>					
*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 C1-863 and places SW5 in TEST position	CRITICAL TO MAINTAIN CURRENT CONDITIONS FOR TROUBLESHOOT.	
<i>CUE: SW5 IS IN TEST POSITION.</i>					

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 BS1 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
<i>CUE: BS1 IS IN TEST POSITION.</i>					
*11	PIC 1 on Card C1-821	In PIC 1 on Card C1-821: BS2 (TB/412D2 High Tavg) in TEST	Locates Card C1-821 and places BS2 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
<i>CUE: BS2 IS IN TEST POSITION.</i>					
*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.	
<i>CUE: BS3 IS IN TEST POSITION.</i>					
*13	PIC 1 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.	
<i>CUE: BS1 IS IN TEST POSITION.</i>					
*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 BS2 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
<i>CUE: BS2 IS IN TEST POSITION.</i>					
*15	PIC 1 on Card C1-822	In PIC 1 on Card C1-822: BS3 (TB/412C1 OTΔT) in TEST	Locates Card C1-822 and places BS3 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
<i>CUE: BS3 IS IN TEST POSITION.</i>					

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAI
*16	PIC 1 on Card C1-822	In PIC 1 on Card C1-822: BS4 (TB/412C2 OTAT C-3) in TEST	Locates Card C1-822 and places BS4 in TEST position	CRITICAL TO TRIP BISTABLE TO MEET TECH SPECS.	
		<i>CUE: BS4 IS IN TEST POSITION.</i>			
		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 OTAT 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.

The Unit-SCO informs you that all Master Test Switches are to be placed in test for troubleshooting. The Control Room has placed Rod Control in MANUAL.

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 POKV
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 UNSAT

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- Performed in the plant
 - Pliers
 - Flashlight
 - Plant communications equipment
 - Keys to access toolbox
-
- 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 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:

Following a Keactor 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" POKV 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 POKV '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 and keys to access toolbox	Obtains copy of OP-126, Section 8.2 and keys to access toolbox	<i>Provide applicant with copy of procedure after demonstration of ability to obtain copy.</i>	
2	8.2.1.1.1	Local PORV operation has been deemed necessary by the Unit SCO, or has been directed by another procedure.	Initial condition provide information		
3	8.2.1.1.2	An 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		
CIJE: 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 POKV) b. Flashlight c. High Noise Area Sound Powered Phone Head Set d. Sound Powered Phone Extension Cord	Obtain equipment	<i>NOTE: Items in toolbox are verified on weekly AO rounds. NOT required to actually obtain tools as cover for access is easily removed by hand, however evaluator may require applicant to actually open toolbox.</i>	

JPM STEP	PROC STEP	ELEMENT	STAKDARD	NOTES	§AT / UNSAT
6	8.2.1.2.2	Open the <i>Servo Valve</i> (Solenoids feeder breaker(s) for the PORV(s) which will be operated, as listed below: <ul style="list-style-type: none"> • A S/G PORV (1MS-58) PP-1A312-SA-3 • B S/G PORV (1MS-60) PP-1B312-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.		
<i>CUE: EP-1A312-SA, CIRCUIT 3, HAS BEEN OPENED.</i>					
*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. <i>NOTE: Prompt applicant, as necessary, to actually remove cover to allow visual access. Operations has given permission for this cover to be removed.</i>	
<i>CUE: SIDE COVERPLATE HAS BEEN REMOVED (PROMPT TO ACTUALLY REMOVE COVER IF NEEDED).</i>					
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.	Reviews 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		
<i>CUE: COMMUNICATIONS HAS BEEN ESTABLISHED. THE CONTROL ROOM DIRECTS YOU TO FULLY OPEN 'A'SGPORE.</i>					
10	Vote 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 Hand 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 R.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.	Reviews caution		

JPM STEP	PKOC 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.	
<i>CUE: BOTH 'A' AND 'B' SOLENOIDS HAVE BEEN ROTATED 3/4 TURN IN THE CW DIRECTION. THE SG PORVIS FULLY OPEN. THE CONTROL ROOM NOW DIRECTS YOU TO FULLY CLOSE THE SG PORV.</i>					
*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.	
<i>CUE: BOTH 'A' AND 'B' SOLENOIDS HAVE BEEN ROTATED 3/4 TURN IN THE CCW DIRECTION. THE SG PORVIS FULLY CLOSED.</i>					
TASK COMPLETE					

STOP TIME.: _____

APPLICANT CUE SWEET

(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 PORV 'A' Servo Valve Solenoid has already been opened.

Facility: <u>HARRIS</u>	Date of Examination: <u>2/23 - 2/27/2004</u>
Examination Level: <u>SRO</u>	Operating Test Number: <u>1</u>
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-IO36 (2.1.25 - 2.8 / 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-1301 (2.2.13 - 3.6 / 3.8)
Radiation Control	Determine TEDE While Working in a High Airborne Area (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.	

Facility: <u>HARRIS</u>		Date of Examination: <u>2/23 - 2/27, 2004</u>
Examination Level: <u>RO</u>		Operating Test Number: <u>1</u>
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 - 2.6 / 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-1301 (2.2.13 - 3.6 / 3.8)	
Radiation Control	Determine TEDE While Working in a High Airborne Area (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		

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN COM-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-017 (M)

KA: 2.1.25 IMPOKTANCE: SRO 3.1 RO 2.8

K4 STATEMENT: Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data

TASK STANDARD: OST-I036, 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: PERFORM SIMULATE

REFERENCES: OST-1036, 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 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 be performed from memory.** Describe the actions you are taking and the indications you are locking 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:

- 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	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1		Locate OST-1036, Section 7.3, Attachment 3, and <i>Curve Book</i>	Locates OST-1036, Section 7.3, Attachment 3 , and Curve Book		
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 RIL to be 140 ± 2 steps	CRITICAL TO ALLOW DETERMINING INTEGRAL MOD WORTH.	
4	Att. 3, Step 3	Enters <i>core</i> 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 2250 ± 50 pcm	CRITICAL TO ENSURE PROPER POWER DEFECT INCLUDED IN CALCULATION. NOTE: CURVE C-12-3 USED DUE TO 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	<p>CRITICAL TO ENSURE PROPER ROD WORTH INCLUDED IN CALCULATION.</p> <p><i>NOTE: CURVE A-10-11 USED DUE TO CORE BURN UP, EQUILIBRIUM XENON CONDITIONS, AND POWER > 10%.</i></p>	
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	<p>CRITICAL TO CORRECTLY DETERMINE TOTAL SHUTDOWN MARGIN.</p> <p><i>NOTE: TOLERANCE DETERMINED USING PREVIOUSLY ALLOWED TOLERANCES IN READING GRAPHS.</i></p>	
10	Section 7.3	Signs off Section 7.3 steps	Signs off steps as complete		
<i>CUE: INDEPENDENT VERIFICATION IS NOT REQUIRED FOR PURPOSES OF THIS JPM ONLY.</i>					
TASK COMPLETE					

STOP TIME: _____

EXAMINER KEY

(SHADED AREA BELOW INDICATES DATA ALREADY PROVIDED)

Manual SDM Calculation (Modes 1 and 2)

- | | | |
|--------------------------------------------------|----------------|--------------|
| 1. Reactor Dower level. | <u>75</u> | % |
| 2. Rod insertion limit for the above power level | | |
| | <u>140 ± 2</u> | stepson bank |
| | | <u>D</u> |
| 3. Burn up (POWERTRAX/MCR Status Board) | <u>355</u> | EFPD |
| 4. Present RCS Boron Concentration | <u>300</u> | 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 Cvcle 12. | | |
| | <u>6683</u> | 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 | <u>C-12-3</u> | |
| | | <u>2250 ± 50</u> 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 | <u>A-12-11</u> | |
| | | <u>615 ± 25</u> 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). | | |
| | | <u>0</u> pcm |
| | | (d) |

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

$$\begin{array}{r}
 \text{Total SDM } C_B = \\
 \text{(e)} \quad \frac{6683}{\text{(a)}} - \frac{2250 \pm 50}{\text{(b)}} - \frac{615 \pm 25}{\text{(c)}} - \frac{0}{\text{(d)}} \\
 \hline
 \text{3818} \pm 75 \text{ pcm} \\
 \text{(e)}
 \end{array}$$

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.
- KCS 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.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN COM-1B

Determine Average RCS Boron Concentration

APPLICANT: _____

EXAMINER: _____

REGION II
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 95.17 ± 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: _____

EXAMINER: _____
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 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 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 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 **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 1.

START TIME: _____

*** DENOTES CRITICAL STEP**

J/M STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Locate EPP-002, Attachment 1, and Curve Book	Locates EPP-002, Attachment 1, and Curve Book		
2	Att. 1, step 1	Record PRZ level at the time of PRZ sample	Records PRZ level as 45%		
*3	Att. 1, step 2	Determine PRZ volume (V_{PRZ}) based on PRZ level and curve D-X-40	<ul style="list-style-type: none"> References curve D-X-40 Determines intersection of "653 "FPRZ LIQUID SPACE TEMP LINE" and 45% on "INDICATED PRESSURIZER LEVEL" axis (X) to correspond to 2900 ± 100 gallons on "VOLUME" axis (Y) 	CRITICAL TO ACCURATELY DETERMINE EFFECT OF PRZ ON BORON CONC.	
*4	Att. 1, step 3	Determine CVCS volume (V_{CVCS}) based on letdown status: <ul style="list-style-type: none"> If letdown in service = $2136 \text{ gal} \div 2 = 1068 \text{ gal}$ 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 boron concentration as 930 ppm		
6	Att. 1, step 5	Record RCS loop C boron concentration C_3	Records RCS loop C boron concentration as 910 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.	
<p>NOTE: ALLOWED TOLERANCE BORDERS TOLERANCE FOR ALLOWED ERROR IN READING CURVE D-X-40, BUT WILL NOT BE MET IF APPLICANT FAILS TO ACCOUNT FOR CVCS LETDOWN OR OTHER SIMILAR ERRORS.</p>					
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 on 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 boron concentration C_3 : 940 PPM
 6. Record PRZ liquid space boron concentration C_{PRZ} : 961 PPM
 7. Calculate average RCS boron concentration (C_{avg}) using the following formula:
- $$C_{avg} = \frac{[(C_2 + C_3) \times (31.218 + V_{CVCS})] + [C_{PRZ} \times (V_{PRZ} + 3700)]}{(V_{PRZ} + V_{CVCS} + 66.135)} = \underline{951.7 \text{ PPM}}$$

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 and C - 1068 GAL.)

NOTE 5: The boron concentration of the Upper Head and 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 1.

Attachment 1
Sheet I of 1
CALCULATION FOR 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
 - 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 : _____ PPM
5. Record RCS loop C boron concentration C_3 : _____ PPM
6. Record PRZ liquid space boron concentration C_{PRZ} : _____ PPM
7. Calculate average RCS boron concentration (C_{avg}) using the following formula:

$$C_{avg} = \frac{[(C_2 + C_3) \times (31218 + V_{CVCS})] + [C_{PRZ} \times (V_{PRZ} + 3700)]}{(V_{PRZ} + 2(V_{CVCS}) + 66135)} = \text{_____ PPM}$$

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 E 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 and C = 1068 GAL.)

NOTE 5: The boron concentration of the Upper Head and **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.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN COM-2

Determine Clearance Requirements for a CSIP

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Determine Clearance Requirements for a CSIP
ALTERNATE PATH: None
FACILITY JPM NUMBER: 98NRC (A.2C)
KA: 2.2.13 IMPORTANCE: **SKO** 3.8 RO 3.6
KA STATEMENT: Knowledge of tagging and clearance procedures.
TASK STANDARD: Provide complete electrical and mechanical isolation of CSIP
IB-SB
PREFERRED EVALUATION LOCATION: SIMULATOR IN PLANT
PREFERRED EVALUATION METHOD: PERFORM SIMULATE
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 be performed in any location where the identified references are available
- OPS-NGGC-1301, Equipment Clearance
- OP-107, Chemical and Volume Control System
- SED 2165 S-1304 and S-1305

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 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:

The plant is defueled. **CSIP** IR-SR *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** IR-SR 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 <u>NOT</u> REQUIRED TO BE PERFORMED IN THE LISTED SEQUENCE.					
*2	N/A	Determine the electrical supply breaker for CSIP 1B-SB	Refers to OP-107 (OK 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 CIT on CSIP 'B' switch (BREAKER RACKED OUT)	CRITICAL TO REMOVE POWER FROM PUMP. <i>NOTE: CIT NOT REQUIRED TO BE INCLUDED FOR SATISFACTORY COMPLETION OF THIS STEP</i>	
*3	N/A	Determine the suction valve for CSIP 1B-SB	Refers to S-1305 and determines the suction valve for CSIP 1B-SB to be 1CS-187, B CSIP Suction Isol Vlv (CLOSE)	CRITICAL TO ISOLATE SUCTION VALVE.	

JPM STEP	PRO(STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
*4	N/A	Determine the discharge solution for CSIP 1B-SB	Refers to S-1305 and determines the valve to isolate CSHP 1B-SB discharge is 1CS-197, E CSIP Discharge Isol Vlv (CLOSE)	CRITICAL TO ISOLATE DISCHARGE FLOW PATH.	
*5	N/A	Petermine the normal miniflow isolation for CSHP B-SB	Refers to S-1305 and OP-107 and determines the valve to isolate normal miniflow path far CSIP 1B-SB is 1CS-196 SB, CHARGING/SI PUMP B-SB MINIFLOW ISOL, and power supply for valve is 1535-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. <i>NOTE: CIT NOT REQUIRED TO BE INCLUDED FOR SATISFACTORY COMPLETION OF THIS STEP.</i>	
*6	YL4	Determine the alternate miniflow isolation for CSIP B-SB	Refers to S-1304 and determines the valve to isolate alternate miniflow path for CSIP IB-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 or CSIP IB-SB	Refers to S-1305 and determines the valve to vent CSHP 1B-SB is CS-188, B CSIP Casing Leak Off Drain Isolation Valve (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 or CSHP 1B-SB	Refers to S-1305 and determines the valves to drain CSHP 1B-SB discharge piping to be CS-189, B CSIP Casing Leak Off Drain Valve, and 1CS-190, B CSIP Casing Leak Off Drain Isolation Valve (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**

<u>COMPONENT</u>	<u>POSITION</u>
1) CSIP 1B-SB P.S. - 6.9 KV Emergency Bus IB-SB, Cubicle 4.	Racked Out
2) ICS-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) ICS-189, B CSIP Casing Leak Off Brain Vlv	Open
- AND -	
1CS-190, B CSIP Casing Leak Off Brain Isol Vlv	Open
8) CIT on 1CS-196 Switch	Neutral after Closed
(NOTE 1)	
9) CIT on CSIP 'B' Switch	Neutral after Stop
(NOTE 1)	

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

EXAMINER KEY

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

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.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ABMTN COM-3

Determine TEDE While Working in a High
Airborne Area

APPLICANT: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

TASK: Determine TEDE While Working in a High Airborne Area
ALTERNATE PATII: None
FACILITY JPM NUMBER: New
KA. 2.3.10 IMPORTANCE: SRO 3.3 RO 2.9
KA STATEMENT: Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.
TASK STANDARD: Determination made that wearing a respirator will result in a higher TEDE.
PREFERRED EVALUATION LOCATION: SIMULATOR IN PLANT
PREFERRED EVALUATION METHOD: PERFORM SIMULATE
REFERENCES: NGGM-PM-0002, Radiation Control and Protection Manual
VALIATION TIME: 10 MINUTES TIME CRITICAL: No

APPLICANT: _____

START TIME: _____ FINISH TIME: _____

PERFORMANCE TIME: _____ MINIJTES

PERFORMANCE RATING: SAT UNSAT

COMMENTS: _____

EXAMINER: _____
Signature Date

TOOLS / EQUIPMENT / PROCEDURES NEEDED:

- JPM can be performed in any location

- NGGM-PM-0002, Radiation Control and Protection Manual

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 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:

The Control Room has directed you to enter an area to align several valves.

The estimated dose rate in the area is 180 mRem/hr. An airborne contamination concern also exists.

It is estimated that it will take you approximately 30 minutes to complete the alignment if you wear a respirator. If you do **NOT** wear a respirator, the alignment will take you only 20 minutes, but Radiation Protection projects that your internal exposure will be 8 DAC-hrs.

INITIATING CUE(S):

Determine whether you should wear a respirator to minimize your total effective dose equivalent.

START TIME: _____

* DENOTES CRITICAL STEP

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
1	N/A	Determines internal exposure while wearing a respirator	Determines internal exposure to be ZERO while wearing a respirator	<i>NOTE: Steps in this JPM may be performed in any order.</i>	
*2	N/A	Determines external exposure while wearing a respirator	Determines external exposure to be 90 mRem TEDE while wearing a respirator (180 mRem / hr x 30 min = 90 mRem)	CRITICAL TO ALLOW DETERMINING TOTAL EXPOSURE WHILE WEARING A RESPIRATOR.	
3	N/A	Determines TOTAL exposure while wearing a respirator	Determines total exposure to be 90 mRem while wearing a respirator (0 mRem internal + 90 mRem external = 90 mRem total)		
*4	N/A	Determines internal exposure while NOT wearing a respirator	Determines internal exposure to be 20 mRem while not wearing a respirator (2.5 mRem / hr x 8 DAC-hr = 20 mRem)	CRITICAL TO ALLOW DETERMINING TOTAL EXPOSURE WHILE NOT WEARING A RESPIRATOR.	
*5	N/A	Determines external exposure while NOT wearing a respirator	Determines external exposure to be 60 mRem TEDE while not wearing a respirator (180 mRem / hr x 20 min = 60 mRem)	CRITICAL TO ALLOW DETERMINING TOTAL EXPOSURE WHILE NOT WEARING A RESPIRATOR.	

JPM STEP	PROC STEP	ELEMENT	STANDARD	NOTES	SAT / UNSAT
6	N/A	Determines TOTAL exposure while NOT wearing a respirator	Determines total exposure to be 80 mRem while not wearing a respirator (20 mRem internal + 60 mRem external = 80 mRem total)		
*7	N/A	Determines TOTAL exposure while NOT wearing a respirator LOWER than while wearing a respirator	Compares total exposures and determines that NOT wearing a respirator results in a lower total exposure	CRITICAL TO DETERMINE LOWEST EXPOSURE.	
TASK COMPLETE					

STOP TIME: _____

APPLICANT CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

The Control Room has directed you to enter an area to align several valves.

The estimated dose rate in the area is 180 mRem/hr. An airborne contamination concern also exists.

It is estimated that it will take **you** approximately 30 minutes to complete the alignment if you wear a respirator. If you do **NOT** wear a respirator, the alignment will take **you** only 20 minutes, but Radiation Protection projects that your internal exposure will be 8 DAC-hrs.

INITIATING CUE(S):

Determine whether you should wear a respirator to minimize your total effective dose equivalent.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

ADMIN SRO-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 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 action:: 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:

- 5 Core Exit Thermocouple temperatures are all between 1900°F and 2000°F.
- 5 Radiochemistry analysis indicates that approximately 2.6% of the fuel volume has melted.
- 5 KHR is injecting through the RCS cold Legs.
- 5 Containment Spray is operating with Containment Pressure at 18 psig.
- 5 Containment hydrogen concentration is 5.504.
- 5 Wind Direction is 220°.
- 5 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 core 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 3 LOCA	CRITICAL TO DETERMINE PROPER PAR.	
*5		Containment failure (Primary or S/G) is imminent or has occurred	<YES> Determines containment failure (S/G) is imminent or has occurred due to Containment Hydrogen exceeding 4%	CRITICAL TO DETERMINE PROPER PAR.	
*6		Determine 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,I based 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.
- RKK *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.