FINAL SUBMITTAL

WATTS BAR EXAM
50-390, 391/2001-301

JANUARY 29 - FEBRUARY 6, 2001

FINAL AS-GIVEN JPMs FOR EACH

WALK-THROUGH TEST

+
40 min

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.1.b JPMR023/Sim

RESPOND TO PRESSURIZER HIGH LEVEL PER FR-I.1

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: RESPOND TO PRESSURIZER HIGH LEVEL PER FR-I.1

Alternate Path: 1-FCV-62-69 will not open requiring the performer to use RNO and establish excess letdown.

Facility JPM #: 3-OT-JPMR023 Rev 1

K/A Rating(s):

011A1.01	(3.5/3.6)	011A1.02	(3.3/3.5)	2.1.23	(3.9/4.0)
2.1.31	(4.2/3.9)	006A4.09	(4.1/4.2)		

Task Standard: Performance of FR-I.1 which results in Excess Letdown being placed in service.

Preferred Evaluation Location: Simulator __X__ In-Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: FR-I.1 "High Pressurizer Level" Rev. 6

Task Number:: RO-113-FRI.1-001 APPLICABLE FOR: RO/SRO

10CFR55.45: 6

Validation Time: 17 min. **Time Critical:** No

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Applicant: _____ (NAME) _____ (SSN) Time Start: _____ Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ (NAME) _____ (SIGNATURE) /_____ (DATE)

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COMMENTS

_____

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SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC # **145**.

2. Acknowledge all alarms.

3. Ensure 1-FCV-62-69 has been over ridden to the close position.
   View on ORS summary.

4. Ensure Source Range Count Rate is audible in horse shoe.

5. Freeze simulator until the performance indicates understanding of the task and time is allowed for control board familiarization.

6. NOTE: This JPM has been preshot in IC **#145**. The following is the setup instructions if needed:
   Reset to IC **#40**
   Manually initiate Reactor Trip and SI.
   Allow to run until PZR level is ≈ 94%.
   Terminate SI
   Establish Charging at minimum flow.
   Reset Ø A isolation signal.
   Transfer Steam Dumps to pressure mode and stabilize RCS temperature.
   Re-establish Letdown per ES-1.1.

   Ensure Letdown Valve 1-FCV-62-77 is closed.
   Insert ior zdihs6269a close to override valve hand switch to close position..
   Acknowledge all alarms .
   FREEZE the simulator till the performer indicates an understanding of the task.

7. After performer indicates understanding of task, place simulator in run.

SIMULATOR OPERATOR INSTRUCTIONS:

ENSURE 1-FCV-62-69 has been over ridden closed.
(view override summary for zdihs6269a close)

Tools/Equipment/Procedures Needed:

Ensure clean copy of FR-I.1 in all copies of Operating Instructions on the Simulator Floor.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

An Inadvertent Safety Injection has occurred.

SI has been terminated and ECCS Pumps stopped.

While performing Step 19 of ES-1.1, the STA has determined there is a Yellow Condition on the Inventory Status Tree due to the high Pressurizer level.

You are the OAC.

INITIATING CUES:

You have been directed by the Unit Supervisor to perform the appropriate procedure for a Yellow Condition on Status Tree INVENTORY.

You are to notify the Unit Supervisor when the procedure has been completed.

START TIME: _____

STEP 1: Obtain the correct procedure. STANDARD: A copy of FR-I.1 has been obtained. **EXAMINER'S CUE:** ***After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.*** COMMENTS:	___ SAT ___ UNSAT
STEP 2: **[Step 1] CHECK** SI terminated: • Both SI pumps STOPPED. • BIT isolated. STANDARD: Performer verifies SI pumps stopped: •1A-A SI Pump (green indicating lights on 1-HS-63-10A) •1B-B SI pump (green indicating lights on 1-HS-63-11A) and: Performer verifies BIT outlet valves are closed: •1-FCV-63-25 (green indicating lights on 1-HS-63-25A) •1-FCV-63-26 (green indicating lights on 1-HS-63-26A) COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 3: **[STEP 2] ENSURE** cntmt air in service: a. Aux air press greater than 75 psig [M-15] b. Cntmt air supply valves OPEN [M-15]: • 1-FCV-32-80. • 1-FCV-32-102. • 1-FCV-32-110. STANDARD: a. The performer verifies aux air pressure > 75 psig **both** trains using 1-PI-32-104A & 1-PI-32-105A on M-15. b. Valves listed are determined to be open by red indicating lights LIT on M-15: • 1-HS-32-80A, • 1-HS-32-102A • 1-HS-32-110A *****CUE:*** **If contacted, all air compressors are operating properly** COMMENTS:	___ SAT ___ UNSAT
CAUTION: During RCS solid water operation, any change in charging or letdown flows could cause rapid RCS pressure changes.	
STEP 4: **[STEP 3] CHECK** at least one charging pump RUNNING. STANDARD: 1-HS-62-108A CCP 1A-A has a red light verified to be illuminated or amps on meter above handswitch. COMMENTS:	___ SAT ___ UNSAT

STEP 5: **[STEP 4] CHECK** charging flow established. STANDARD: •Charging Flow Indicator, 1-FI-62-93A, indicating flow. • 1-FVC-62-90 (verified open by red lights on handswitch) • 1-FCV-62-91 (verified open by red lights on handswitch). • 1-FCV-62-85 (verified open by red lights on handswitch). • 1-FCV-62-89 is throttled open to establish flow through the Regen. Heat Exchanger. COMMENTS:	___ SAT ___ UNSAT
Note To Evaluator: Step 6 will drive the performer to the RNO column. Step 7 is the RNO and the performer will NOT be able to complete the RNO due to 1-FCV-62-69 failing to open.	
STEP 6: **[STEP 5] CHECK** letdown in service. STANDARD: Letdown is determined to NOT be in service by letdown flow indicator, 1-FI-62-82, indicating no flow and letdown valves closed. COMMENTS:	___ SAT ___ UNSAT

STEP 7: **[STEP 5 RNO] IF** charging flow established, **THEN ESTABLISH** letdown: a. **OPEN** letdown isolation valves. • 1- FCV-62-69 • 1- FCV-62-70 • 1- FCV-62-77 STANDARD: Performer attempts to open 1-FCV-62-69 and determines the valve remains closed and cannot be opened by green light on 1-HS-62-69A. ***CUE:* **If contacted, acknowledge the request to open valve locally. Report back that the valve will not open locally.** **NOTE TO EVALUATOR: May perform other steps of RNO, however letdown flow will not be established.** COMMENTS:	___ SAT ___ UNSAT
Note To Evaluator: Step 8 will drive the performer to the RNO column. Steps 8 through 14 are all part of this same instruction step (8 - 13 is the RNO).	
STEP 8: **[STEP 6] CHECK** Charging and letdown flows established. STANDARD: Performer determines that normal letdown is **NOT established** and **proceeds to the RNO**, excess letdown is required due to normal letdown being isolated and proceeds to the RNO column of the instruction. COMMENTS:	___ SAT ___ UNSAT

STEP 9:	**[STEP 6 RNO] PLACE** excess letdown in service: a. **OPEN** 1- FCV-70-143 b. **OPEN** 1- FCV-70-85.	**CRITICAL STEP**
STANDARD:	1-HS-70-143A has been placed in the OPEN position. 1-HS-70-85A has been placed and held in the OPEN position until the valve gets full open. **Step is critical to establish cooling through excess letdown heat exchanger.**	___ SAT ___ UNSAT
COMMENTS:		
STEP 10:	**[STEP 6 RNO]** c. **OPEN** 1- FCV-62-54. d. **OPEN** 1- FCV-62-55.	**CRITICAL STEP** ___ SAT
STANDARD:	1-HS-62-54A has been placed in the OPEN position. 1-HS-62-55A has been placed in the OPEN position. **Step is critical to establish cooling through excess letdown heat exchanger.**	___ UNSAT
COMMENTS:		

STEP 11: **[STEP 6 RNO]** e. **ENSURE** 1-FCV-62-59 in NORMAL. STANDARD: 1-HS-62-59A has been checked/placed in the normal position. COMMENTS:	___ SAT ___ UNSAT
STEP 12: **[STEP 6 RNO]** f. **ADJUST** 1-FCV-62-56 to maintain excess letdown heat exchanger outlet temp less than 225°F. STANDARD: 1-HIC-62-56A pot is rotated counter clockwise to open and temperature is maintained <225°F on 1-TI-62-58 on 1-M-5. **Step is critical to prevent excess thermal stress to the excess letdown heat exchanger.** **NOTE TO EVALUATOR: If ARI is referenced, performer may limit temperature to less than 200°F.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
Note To Evaluator: Steps 13 and 14 are part of the same instruction step.	
STEP 13: **[STEP 7] CHECK** RCS press: a. Pressure less than 2335 psig. STANDARD: RCS pressure verified to be < 2335 psig by observation of RCS pressure instruments on the MCR. COMMENTS:	___ SAT ___ UNSAT

STEP 14:	**[STEP 7] CHECK** RCS press: b. Pressure less than 2260 psig.	
STANDARD:	RCS pressure verified to be < 2260 psig by observation of RCS pressure instruments on the MCR.	___ SAT
COMMENTS:		___ UNSAT
STEP 15:	**[STEP 8] CHECK** PZR PORVs CLOSED.	
STANDARD:	Both PORV Handswitches have been located and checked closed by green lights lit on 1-HS-68-340AA & 1-HS-68-334A.	___ SAT
COMMENTS:		___ UNSAT
STEP 16:	**[STEP 9] CONTROL** pzr heaters as necessary to establish pzr bubble.	
STANDARD:	Control Bank "D" and "A-A", "B-B" Backup Heaters may be manually energized. "C" Backup heaters are observed to be energized due to high level in pressurizer.	___ SAT
COMMENTS:		___ UNSAT

Note To Evaluator: Steps 17 and 18 are part of the same instruction step.	
STEP 17: **[STEP 10] ENSURE** PZR spray valves CLOSED. a. **CHECK** normal pzr spray valves closed. STANDARD: 1-XI-68-340B & 1-XI-68-340D are checked to indicate red lights off & green lights on. **NOTE TO EVALUATOR: Spray valves may be slightly open due to integral operation.** COMMENTS:	___ SAT ___ UNSAT
STEP 18: **[STEP 10]** b. **ENSURE** aux spray valve CLOSED. STANDARD: 1-FCV-62-84 is checked closed by green light illuminated on 1-HS-62-84A COMMENTS:	___ SAT ___ UNSAT
STEP 19: **[STEP 11] CONTROL** charging and letdown: a. **MAINTAIN** RCS pressure stable. b. **DECREASE** pzr level. STANDARD: 1. PZR pressure is being maintained in its normal range by observation of RCS pressure instruments in the MCR. 2. PZR Level is decreasing. COMMENTS:	___ SAT ___ UNSAT

STEP 20: **[STEP 12] CHECK** pzr Level < 92% STANDARD: PZR Level is decreasing. If pressurizer level is ≥ 92% then performer returns to Step 11 of FR-I.1 (the previous performance step). *****CUE:*** **If pressurizer level is decreasing, state that pressurizer level is now 90%** COMMENTS:	___ SAT ___ UNSAT
STEP 21: **[STEP 13] RETURN TO** instruction in effect. STANDARD: The Unit Supervisor has been notified that FR-I.1 has been completed and to return to the instruction in effect. *****EXAMINER CUE:*** **When notified, acknowledge the report)** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

An Inadvertent Safety Injection has occurred.

SI has been terminated and ECCS Pumps stopped.

While performing Step 19 of ES-1.1, the STA has determined there is a Yellow Condition on the Inventory Status Tree due to the high Pressurizer level.

You are the OAC.

INITIATING CUES:

You have been directed by the Unit Supervisor to perform the appropriate procedure for a Yellow Condition on Status Tree INVENTORY.

You are to notify the Unit Supervisor when the procedure has been completed.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.1.c JPMR055/Sim

PERFORM ADDING N_2 TO COLD LEG ACUMULATORS WHILE IN SERVICE PER SOI-63.01

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: PERFORM ADDING N_2 TO COLD LEG ACUMULATORS WHILE IN SERVICE PER SOI-63.01

Alternate Path: N/A

Facility JPM #: 3-OT-JPMR055 Rev 0

K/A Rating(s): 006A1.13 (3.5/3.7) 2.1.23 (3.9/4.0) 2.1.30 (3.9/3.4)

Task Standard: Cold Leg Accumulator 1 pressure is with-in alarm limits, and normal alignment is re-established per SOI-63.01.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator __X__ In-Plant _____ Perform __X__ Simulate _____

References: SOI-63.01 "Safety Injection System" Rev. 24

Task Number:: RO-063-SOI-63-016 APPLICABLE FOR: RO/SRO

10CFR55.45: 3, 4, 6, 7

Validation Time: 10 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

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SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC # **146** 100% steady state power.

2. Acknowledge all alarms.

3. Freeze simulator until the performance indicates understanding of the task and time is allowed for control board familiarization.

4. NOTE: This JPM has been preshot in IC **#146**. The following is the setup instructions if needed:
   Initialize to IC # **40**.
   Vent Cold Leg Accumulator 1 to 610 to 620 psig as follows:
   Place 1-HS-63-127A in Open Position.
   Place 1-HIC-63-65A in Open Position.
   Close both valves after pressure is lowered.
   Ensure 1-HS-63-64A, in the CLOSE position.
   Acknowledge all alarms

5. After performer indicates understanding of task, place simulator in run.

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

Tools/Equipment/Procedures Needed:

Ensure clean copy of SOI-63.01 in all copies of Operating Instructions on the Simulator Floor.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is at 100% RTP

Cold Leg Accumulator (CLA) 1 pressure Hi/Lo alarm is illuminated.

You are the Operator at the Controls (OAC).

INITIATING CUES:

The Unit Supervisor directs you to increase CLA 1 Nitrogen Pressure to normal by adding Nitrogen.

You are to notify Unit Supervisor when you have completed the task.

START TIME: _____

STEP 1: Obtain a copy of the procedure. STANDARD: A copy of SOI-63.01 section 8.6 has been obtained **EXAMINER'S CUE:** ***After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.*** COMMENTS:	___ SAT ___ UNSAT
CAUTION: Adding N_2 to more than one CLA at a time while they are required to be operable places the plant outside design basis. This section is to be used to add N_2 to any selected single CLA. If more than one CLA needs N_2, separate evolutions must be performed. **NOTE** • **This section adds N_2 to in-service CLAs that are indicating normal level, and have a N_2 atmosphere.** • **If N_2 is added to a CLA with low level, subsequent level rises could result in overpressurizing the CLA with associated airborne release.** • **Rising CLA level may restore CLA pressure to within limits without adding N_2.**	
STEP 2: **[Step 1] IF** CLA level needs to be raised prior to adding N2, THEN GO TO Section 8.3. STANDARD: Performer determines that level in CLA Accumulator #1 is adequate by checking 1-LI-63-119 and -129 or from initiating cue and proceeds to the next step. COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 3: **[STEP 2] OPEN** applicable valve to place corresponding PCV in service (N/A valve NOT used):

NOMENCLATURE	LOCATION	POSITION	UNID
N2 BANK A CNTMT ISOL (0-PCV-77-253)	A9X/729	OPEN	0-ISV-77-859A
N2 BANK B CNTMT ISOL (0-PCV-77-254)	A9X/729	OPEN	0-ISV-77-859B

STANDARD: Performer contacts an AUO to open either 0-ISV-77-859A or 0-ISV-77-859B.

*****CUE:*** **When contacted, respond as AUO, acknowledge request using repeat back, then report that valve 0-ISV-77-859A or B has been opened (valve requested to be opened).**

COMMENTS:

___ SAT

___ UNSAT

CAUTION **The consequences of not verifying 1-FCV-63-65 closed in the next step could cause the pressure to drop below T/S limit.**

STEP 4: **[STEP 3] ENSURE** the following:

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
CLA N2 VENT HDR CONTROL	1-M-6	CLOSED	1-HIC-63-65
N2 HDR TO CL ACCUMS	1-M-6	OPEN	1-FCV-63-64

STANDARD: 1-HIC-63-65 controller output is 0%. Hand switch for I-HS-63-64A has been placed in the OPEN position.

Step is critical to assure N2 is aligned to header that supplies CLA's.

NOTE TO EVALUATOR: Underlined portion is critical.

COMMENTS:

___ SAT

___ UNSAT

STEP 5: **[STEP 4] PERFORM** the following for selected N_2 supply (N/A vlvs not selected):

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
N2 TO CL ACCUM 1	1-M-6	OPEN	1-FCV-63-127
N2 TO CL ACCUM 2	1-M-6	OPEN	1-FCV-63-107
N2 TO CL ACCUM 3	1-M-6	OPEN	1-FCV-63-87
N2 TO CL ACCUM 4	1-M-6	OPEN	1-FCV-63-63

STANDARD: Hand switch for 1-HS-63-127A has been placed in the OPEN position and 1-FCV-63-127 is verified open with associated hand switch red light ON green light OFF.

Step is critical to open flow path to supply N2 to CLA Accumulator #1.

___ SAT

___ UNSAT

NOTE TO EVALUATOR: Underlined portion is critical.

COMMENTS:

STEP 6: **[STEP 5] WHEN** CLA(s) at desired pressure, **THEN PERFORM** the following for selected N_2 sup (N/A vlvs not selected):

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
N2 TO CL ACCUM 1	1-M-6	CLOSED	1-FCV-63-127
N2 TO CL ACCUM 2	1-M-6	CLOSED	1-FCV-63-107
N2 TO CL ACCUM 3	1-M-6	CLOSED	1-FCV-63-87
N2 TO CL ACCUM 4	1-M-6	CLOSED	1-FCV-63-63

STANDARD: After pressure has been restored to ≥ 617 psig & < 660 psig on 1-PI-63-128 &/or PI-63-128, 1-HS-63-127A is placed in the CLOSE position. and 1-FCV-63-127 is verified closed with associated hand switch green light ON red light OFF.

Step is critical to close flow of N2 flow path to CLA Accumulator #1.

___ SAT

___ UNSAT

NOTE TO EVALUATOR: Underlined portion is critical.

COMMENTS:

STEP 7: **[STEP 6] CLOSE** 1-FCV-63-64, N_2 HDR TO CL ACCUMS

STANDARD: Hand switch for 1-HS-63-64A has been placed in the CLOSE position.

Step is critical to close second valve in flow path to CLA Accumulator #1.

COMMENTS:

CRITICAL STEP

___ SAT

___ UNSAT

STEP 8: **[STEP 7] ENSURE** selected CLA is at desired press [Alarm 131-134-B, CL ACCUM 1(2,3,4) PRESS HI/LO]

STANDARD: Annunciator alarm window 131-B is checked DARK.

COMMENTS:

___ SAT

___ UNSAT

STEP 9: **[STEP 8] WHEN** Accumulator N_2 fill COMPLETE, **THEN PERFORM** the following:

NOMENCLATURE	LOCATION	POSITION	UNID
N2 BANK A CNTMT ISOL (0-PCV-77-253)	A9X/729	CLOSED	0-ISV-77-859A
N2 BANK B CNTMT ISOL (0-PCV-77-254)	A9X/729	CLOSED	0-ISV-77-859B

STANDARD: Performer contacts an AUO to close the valve opened earlier (JPM Step 3) either 0-ISV-77-859A or 0-ISV-77-859B.

*****CUE:*** **When contacted, respond as AUO, acknowledge request using repeat back, then report that valve 0-ISV-77-859A or B has been closed (valve requested to be closed). The Rad waste AUO has completed the IV.**

COMMENTS:

___ SAT

___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 10: Notify the Unit Supervisor that N_2 addition to CLA 1 is complete. STANDARD: Unit Supervisor has been notified that N_2 addition to CLA 1 has been completed. ***CUE:* **When notified, acknowledge the report using "repeat back"** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is at 100% RTP

Cold Leg Accumulator (CLA) 1 pressure Hi/Lo alarm is illuminated.

You are the Operator at the Controls (OAC).

INITIATING CUES:

The Unit Supervisor directs you to increase CLA 1 Nitrogen Pressure to normal by adding Nitrogen.

You are to notify Unit Supervisor when you have completed the task.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.1.d JPMR028A/Sim

START A REACTOR COOLANT PUMP PER SOI-68.02

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: START A REACTOR COOLANT PUMP PER SOI-68.02

Alternate Path: After RCP is started, its #1 seal will fail requiring the performer to stop the RCP based on pump bearing temperature.

Facility JPM #: 3-OT-JPMR028A Rev 3

K/A Rating(s):

003K1.03	(3.3/3.6)	003K1.12	(3.0/3.3)	003A.3.01	(3.3/3.2)
003A3.03	(3.2/3.1)	003A3.04	(3.6/3.6)	003A.4.01	(3.3/3.2)
003A4.04	(3.1/3.0)				

Task Standard: RCP #1 is started per SOI-68.02. Then RCP #1 is stopped due to high bearing temperature.

Preferred Evaluation Location: Simulator __X__ In-Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: SOI-68.02 "Reactor Coolant Pumps" Rev. 15
AOI-24 "RCP Seal Abnormalities During Pump Operation" Rev 20

Task Number:: RO-068-SOI-68-007 APPLICABLE FOR: RO/SRO

10CFR55.45: 3, 4, 6, 7

Validation Time: 18 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

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SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC # **147** BOL Mode 3..

2. Acknowledge all alarms.

3. Freeze simulator until the performance indicates understanding of the task and time is allowed for control board familiarization.

4. NOTE: This JPM has been preshot in IC **#147**. The following is the setup instructions if needed:
   Initialize to IC # **49**.
   Drive control banks to 0 steps.
   Place HS-68-8BA (RCP # 1) in the STOP position.
   Place HS-68-8AA (RCP # 1) in the PUSHED IN position.
   Plave 1-PIC-68-340D "Loop 1 Spray Control" in MANUAL and CLOSED
   Insert the following:
   ior zdihs629a (e1) open RCP #1 Seal Return Valve OPEN to manual trigger 1.
   imf cv17a (e1) 100 to fail seal #1 on RCP #1 to 100% is assigned to manual trigger 1.
   Ensure the following indications are correct:
   - #1 Seal $\Delta P \geq 200$ psig
   - Thermal Barrier Flow ≥ 40 gpm
   - Lower Bearing Flow ≥ 5 gpm
   - Upper Bearing Flow ≥ 150 gpm
   - Seal Water HTX Flow ≥ 215 gpm
   - RCP Seal Flow 8 to 13 gpm
   - VCT Pressure ≥ 17 psig
   - Seal Leakoff ≥ 0.2 gpm
   - Aux Overcurrent Protection ACB Indicating Lights Energized

   Acknowledge all alarms.

5. After performer indicates understanding of task, place simulator in run.

SIMULATOR OPERATOR INSTRUCTIONS:

After performer has stopped #1 RCP's Oil Lift Pump (Performance step 23) than insert the following over rides by activating manual trigger 1: **imf itrigger**
ior 62hs9a open to fail #1 RCP Seal Return open.
imf cv17a 100 to fail #1 seal to 100%

Tools/Equipment/Procedures Needed:

Ensure clean copy of SOI-68.02 in all copies of Operating Instructions on the Simulator Floor.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is in Mode 3, Hot Standby.

RCP # 1 has been shut down 24 hours for repairs to the motor leads.

Maintenance reported the repairs have been completed.

An AUO has performed Checklist 3, RCP Local Inspection.

All conditions are normal.

You are the Operator at the Controls (OAC).

INITIATING CUES:

The Unit Supervisor has directed you to start RCP #1 per procedure.

You are to notify the Unit Supervisor when the procedure is complete.

START TIME: _____

STEP 1: Obtain a copy of the procedure. STANDARD: A copy of SOI-68.02 section 5.0 has been obtained **EXAMINER'S CUE:** ***After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.*** COMMENTS:	___ SAT ___ UNSAT
NOTE This instruction may be repeated as deemed necessary by the US/SRO.	
STEP 2: **[Step 1] REVIEW** Section 3.0, Precautions and Limitations. STANDARD: Section 3.0 has been reviewed. COMMENTS:	___ SAT ___ UNSAT
STEP 3: **[Step 2] VERIFY** Section 4.2, Field Preparations, COMPLETE. STANDARD: Section 4.2 has been checked complete. *****CUE:*** **Inform performer that Section 4.2 has been completed.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE **RCP status may be checked by remote indications if cntmt conditions do not permit access per PAI-2.03.**

NOTE **Step [3] is N/A if not performed.**

STEP 4: **[Step 3] IF** containment conditions permit access, **THEN PERFORM** Checklist 3, "RCP Local Inspection".

STANDARD: Information given in initial conditions. **No action required**.

*****CUE:*** **If asked, the local checklist 3 has been performed**

COMMENTS:

___ SAT

___ UNSAT

STEP 5: **[STEP 4] WHEN** RCS press is greater than 100 psig, **ENSURE** the following:

NOMENCLATURE	LOCATION	POSITION	UNID
RCP 1 SEAL RETURN	1-M-5	OPEN	1-FCV-62-9
RCP 2 SEAL RETURN	1-M-5	OPEN	1-FCV-62-22
RCP 3 SEAL RETURN	1-M-5	OPEN	1-FCV-62-35
RCP 4 SEAL RETURN	1-M-5	OPEN	1-FCV-62-48

STANDARD: Performer verifies red open indication for above valves are lit.

COMMENTS:

___ SAT

___ UNSAT

NOTE: **Procedure step [5] & [6] are N/A if not performed.** **Performance Step 6 and Step 7 relate to the Procedure Steps 5 & 6**	
STEP 6: **[Step 5] IF** no RCP's are in service **THEN EVALUATE** the following criteria to determine if a potential "pocket" of low boron concentration exists: • Plant configuration since the last RCP was removed from service (unexplainable decrease in Primary Water Storage Tank level since last RCP was removed from service. • Change in RCS boron concentration since last RCP was removed from service. • Loss of offsite power during post refueling dilution to criticality. • During refueling, the Cold Leg Accumulator level decrease without a corresponding increase in Hold Up Tank level. • Any natural circulation cooldown where boration has occurred. • Any Post SGTR condition where natural circulation cooldown has occurred. STANDARD: Performer determines that **step in not applicable** and N/As step. COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 7: **[Step 6] IF** a "pocket" is suspected in RCS **THEN EVALUATE** the following criteria to determine if a potential "pocket" of low boron concentration exists: • Plant configuration since the last RCP was removed from service (unexplainable decrease in Primary Water Storage Tank level since last RCP was removed from service. **[a] INITIATE** sampling of boron concentration for the potential areas of concern. **[b] EVALUATE** the samples to determine potential "pockets" of low concentration boron in the RCS. **[c] COORDINATE** with Reactor Engineering to develop an **ACTION PLAN** to address the "pocket" of low boron concentration. **[d] DO NOT** start an RCP, **UNTIL ACTION PLAN** has addressed the "pocket" of low boron concentration. STANDARD: Performer determines that **step in not applicable** and N/As step. COMMENTS:	___ SAT ___ UNSAT
NOTE: **Procedure Steps [7] thru [23] are performed for each RCP to be started.**	
STEP 8: **[Step 7] ENSURE** the following parameters [0-M-27B]: **[a]** Thermal Barrier Flow 35-50 gpm **[b]** LWR Oil Clr flow greater than 5 gpm **[c]** UPR Oil Clr flow greater than 170 gpm **[d]** RCP Seal Water Hx flow greater than 215 gpm STANDARD: Thermal Barrier (1-FI-70-115), Lower oil cooler (1-FI-70-119), Upper oil cooler (1-FI-70-116), and Seal Water HTX (1-FI-70-176) flows of specified values are verified. COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

CAUTION **Inadvertent RCP start may occur if RCP alternate supply breaker is left in its automatic configuration (pulled out).**

NOTE **Oil Lift Pump is started 2 minutes before RCP start.**

STEP 9: **[STEP 8] ENSURE** the following:

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
RCP 1 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN START	1-HS-68-8AA
RCP 2 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN START	1-HS-68-31AA
RCP 3 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN START	1-HS-68-50AA
RCP 4 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN START	1-HS-68-73AA

STANDARD: Hand switch 1-HS-68-8AA has been "pulled out" and placed to the START position.

Step is critical to assure oil lift pressure thrust bearings to prevent metal to metal contact on bearing surfaces when pump is started from idle.

___ SAT

___ UNSAT

COMMENTS:

STEP 10: **[Step 9] VERIFY** #1 seal ΔP greater than 200 psid [1-M-5].

___ SAT

STANDARD: #1 seal ΔP for RCP 1 verified greater than 200 psid on 1-PDI-62-8A.

___ UNSAT

COMMENTS:

STEP 11: **[Step 10] VERIFY** 8 to 13 gpm to RCP seal [1-M-5]. STANDARD: RCP 1 seal flow indicated between 8 and 13 gpm verified on 1-FI-62-1A. **NOTE TO EVALUATOR: Performer may make adjustment of seal injection flow.** COMMENTS:	___ SAT ___ UNSAT
STEP 12: **[Step 11] ENSURE** VCT press at least 15 psig [1-M-6]. STANDARD: VCT indicated pressure verified greater than 15 psig on 1-PI-62-122. COMMENTS:	___ SAT ___ UNSAT
STEP 13: **[Step 12] VERIFY** #1 seal leakoff greater than 0.2 gpm or within Normal Operating Range for existing #1 Seal ΔP (see Appendix B). STANDARD: Seal leakoff from RCP 1 verified greater than 0.2 gpm or within Normal Operating Range by red pen of 1-FR-62-23 and 24 respectively. COMMENTS:	___ SAT ___ UNSAT

STEP 14: **[Step 13]** **IF** leakoff flow is not established, **THEN GO TO** Section **8.0**. STANDARD: Performer verifies seal flow established and goes to next step. COMMENTS:	___ SAT ___ UNSAT
STEP 15: **[Step 14]** **ENSURE** RCS press is greater than 325 psig but less than 1000 psig. **[a]** OPEN 1-FCV-62-53, #1 SEAL BYPASS [1-M-5] to VENT RCP. **[b]** CLOSE 1-FCV-62-53, #1 SEAL BYPASS [1-M-5]. STANDARD: Performer determines that this step does not apply and proceeds to the next step. COMMENTS:	___ SAT ___ UNSAT
NOTE: Step [15] prevents excessive Rod motion upon starting RCP. **NOTE TO EVALUATOR: The above note refers to JPM Step 16,**	
STEP 16: **[Step 15]** **IF** restarting RCP with Control Rods withdrawn, **THEN PLACE** Rod Bank Select in MANUAL after matching T_{avg} with T_{ref}. STANDARD: Performer determines that this **step does not apply**, NAs this step and proceeds to the next step. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

CAUTION **To reduce thermal shock to RCP shaft and seals, a maximum of 1°F per minute temp reduction will be observed, until bearing temp is less than 225°F.**	
STEP 17: **[Step 16] IF** restarting RCP after stopping due to high temp limits caused by loss of Injection Water and High CCS temp, **THEN ENSURE** following parameters established to prevent thermal shock to RCP parts: **[a]** CCS temp to thermal barrier less than 105°F (CCS Hx outlet). **[b]** Seal leakoff temp less than 180°F. **[c]** 0.2 to 5 gpm seal flow STANDARD: Performer determines that this **step does not apply** and proceeds to the next step. *****CUE:*** **If asked, inform performer that this condition does not apply to current situation.** COMMENTS:	___ SAT ___ UNSAT
STEP 18: **[Step 17] ENSURE** Aux OC Bkr, CLOSED. STANDARD: Performer verifies red ACB position indicating light for RCP 1 Aux Overcurrent Protection ACB illuminated. COMMENTS:	___ SAT ___ UNSAT

STEP 19: **[Step 18] IF** starting RCP 1, **THEN ENSURE** Pzr spray, 1-PCV-68-340D, is CLOSED. STANDARD: 1-PCV-68-340D has been checked in the CLOSED position by 1-XI-68-340D green light lit. COMMENTS:	___ SAT ___ UNSAT
STEP 20: **[Step 19] IF** starting RCP 2, **THEN ENSURE** Pzr spray, 1-PCV-68-340B, is CLOSED. STANDARD: **NO action required**, not starting loop #2 RCP, however 1-PCV-340B may be checked in the CLOSED position by 1-XI-68-340B green light lit. COMMENTS:	___ SAT ___ UNSAT
STEP 21: **[Step 20] ANNOUNCE** RCP start on plant PA system. STANDARD: Performer simulates announcement of RCP start on plant PA system. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE: Below 15% power with station service NOT transferred, the Alternate handswitch is used to start RCP.

STEP 22: **[STEP 21]** **START** selected RCP (N/A HSs not used):

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
RCP 1 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-8AA
RCP 1 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-8BA
RCP 2 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-31AA
RCP 2 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-31BA
RCP 3 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-50AA
RCP 3 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-50BA
RCP 4 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-73AA
RCP 4 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-73BA

STANDARD: 1-HS-68-8BA has been pushed in and placed to the START position, and RCP 1 amps and flow verified to be within proper range after appropriate time delay (pump is up to normal speed).

Step is critical to close breaker supplying RCP #1.

___ SAT

___ UNSAT

COMMENTS:

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 23: **[STEP 22] WHEN** RCP has operated 1 minute, **THEN STOP** Oil Lift Pump with applicable handswitch (N/A HSs not used):

NOMENCLATURE	LOCATION	POSITION	UNID
RCP 1 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN STOP	1-HS-68-8AA
RCP 2 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN STOP	1-HS-68-31AA
RCP 3 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN STOP	1-HS-68-50AA
RCP 4 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT, THEN STOP	1-HS-68-73AA

STANDARD: Handswitch 1-HS-68-8AA has been "pulled out" and placed to the STOP position .

COMMENTS:

___ SAT

___ UNSAT

CONSOLE OPERATOR inserts the following when oil lift pump is stopped:
OVERRIDE 62HS9A TO FAIL 'AS IS' (#1 RCP Seal Return)
INSERT MALFUNCTION CV17A @ 100% -FAILS #1 SEAL

STEP 24: Performer transitions to AOI-24 or performer determine that the bearing temperature will exceed limit and stops the Reactor Cooling pump.

CRITICAL STEP

STANDARD: Performer transitions to AOI-24 or 1-HS-68-8BA is placed in the STOP position and green ACB position indicating light is illuminated.

Step is to prevent additional damage to RCP #1 Seal Package.

___ SAT

___ UNSAT

NOTE TO EVALUATOR: Underlined portion critical if performed at this time. The performer may elect to stop RCP since it was just started.

COMMENTS:

NOTE TO EVALUATOR: The following steps are from AOI-24 Section 3.2. The performer may refer to ARI for 99D or 100D. **CAUTION** **A seal leakoff rise to greater than 2.0 gpm AFTER experiencing low leakoff of less than 0.8 gpm may indicate seal degradation. Plant Management should be notified of leakoff trends.** **NOTE** • **Anytime #1 seal leakoff flow exceeds the values shown on attachment 1, system engineering should be requested to perform an evaluation of the #11 seal condition.** • **During plant startup after seal maintenance, the #1 seal may require 24 hours of run time before the seal fully seats fully and operates normally.** • **The #1 seal return should be isolated between 3 and 5 minutes after tripping an RCP to allow for pump coastdown.**	
STEP 25: **[Step 1] MONITOR** #1 seal leakoff equal to or greater than 6.0 gpm. STANDARD: Performer determines seal leakoff flow is equal to or greater than 6 gpm by checking Seal Leakoff - High Range - flow recorder 1-FR-62-24 Red Pen. COMMENTS:	___ SAT ___ UNSAT
STEP 26: **[Step 2] MONITOR** RCPs lower bearing and #1 seal outlet temp STABLE or DROPPING. STANDARD: Performer determines RCPs lower bearing and #1 seal outlet temperatures are increasing and transitions to the RNO column. COMMENTS:	___ SAT ___ UNSAT

STEP 27:	**[Step 2 RNO]** **IF** reactor power greater than P8, **THEN TRIP** reactor. **IF** reactor power less than or equal to P-8 **THEN PLACE** rods in MAN. **STOP** affected RCP.	**CRITICAL STEP** ___ SAT
STANDARD:	1-HS-68-8BA is placed in the STOP position and green ACB position indicating light is illuminated. **Step is to prevent additional damage to RCP #1 Seal Package.**	___ UNSAT
	*****CUE:*** **After RCP is stopped, state that we will stop here.**	
COMMENTS:		
	END OF TASK	

TIME STOP: _____

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is in Mode 3, Hot Standby.

RCP # 1 has been shut down 24 hours for repairs to the motor leads.

Maintenance reported the repairs have been completed.

An AUO has performed Checklist 3, RCP Local Inspection.

All conditions are normal.

You are the Operator at the Controls (OAC).

INITIATING CUES:

The Unit Supervisor has directed you to start RCP #1 per procedure.

You are to notify the Unit Supervisor when the procedure is complete.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.1.e JPMR039/Sim

START A THERMAL BARRIER BOOSTER PUMP PER SOI-70.01

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: START A THERMAL BARRIER BOOSTER PUMP PER SOI-70.01

Alternate Path: N/A

Facility JPM #: 3-OT-JPMR039 Rev 5

K/A Rating(s): 008A4.01 [3.3/3.1] 008A4.08 [3.1*/2.8]

Task Standard: 1A-A TBBP running with control switch in A-P AUTO (pulled out) and 1B-B TBBP control switch in A-P Auto (pulled out).

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator __X__ In-Plant _____ Perform __X__ Simulate _____

References: SOI-70.01 "Component Cooling Water (CCS)" Rev. 39

Task Number:: RO-070-SOI-70-020 APPLICABLE FOR: RO/SRO

10CFR55.45: 3, 4, 6, 7

Validation Time: 7 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____

_____

_____

_____

_____

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to **IC # 156** place the simulator in run.
2. Acknowledge all alarms.
3. Shutdown T.B. Booster pumps and pull to lock.
4. Place simulator in run and clear all alarms.
5. Reset Hi-Flux at shutdown alarm at NI cabinet.
6. Ensure Source Range Count is Audible in Control Room.

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

Tools/Equipment/Procedures Needed:

Ensure clean copy of SOI-70.01 in all copies of Operating Instructions on the Simulator Floor.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Plant start-up after refueling outage which required complete shutdown of the Component Cooling Water System (CCS).

The CCS has been return to service and is operating normally except for the Thermal Barrier Booster Pumps (TBBP) which are shutdown.

Both TBBPs have been aligned and are available for service.

You are the OAC operator.

INITIATING CUES:

The Unit Supervisor has directed you to place 1A-A TBBP in service and align both TBBP control switches in normal alignment per the procedure.

You are to notify the Unit Supervisor when the procedure has been completed.

START TIME: _____

STEP 1: Obtain a copy of the procedure. STANDARD: A copy of SOI-70.01 Section 5.4 has been obtained. **EXAMINER'S CUE:** ***After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.*** *****CUE:*** **If asked, all of section 4.0 has been completed.** COMMENTS:	___ SAT ___ UNSAT
STEP 2: **[Step 1] ENSURE** Section **5.1** and **5.3** COMPLETE STANDARD: Performer has determined that CCS has been determined to be aligned, filled, and vented per task assignment. *****CUE:*** **When checked, Sections 5.1 and 5.3, have been performed** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 3: **[Step 2] START** either of the following (N/A pump not started):

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
THRM BAR BSTR PMP 1A (TBBP)	0-M-27B	START	1-HS-70-131A
THRM BAR BSTR PMP 1B (TBBP)	0-M-27B	START	1-HS-70-130A

STANDARD: 1-HS-70-131A has been placed in the START position.

Step is critical in starting TBBP to establish flow.

___ SAT

COMMENTS:

___ UNSAT

STEP 4: **[STEP 3] MONITOR** increase flow to approximately 160 gpm on 1-FI-70-81, TH BAR RET HDR FLOW [0-M-27B].

___ SAT

STANDARD: 1-FI-70-81 has been checked for flow increase.

COMMENTS:

___ UNSAT

STEP 5: **[STEP 4] IF** TBBP 1A is running (or available), **THEN ENSURE** 1-HS-70-130A, THRM BAR BSTR PMP 1B (TBBP) in A-P AUTO.

CRITICAL STEP

STANDARD: 1-HS-70-130A has been placed in A-P AUTO position (pulled out).

___ SAT

Step is critical to ensure that pumps control switches are aligned for either a process or accident signal.

___ UNSAT

COMMENTS:

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 6:	**[STEP 5] IF** TBBP 1B is running (or available), **THEN ENSURE** 1-HS-70-131A, THRM BAR BSTR PMP 1A (TBBP) in A-P AUTO.	**CRITICAL STEP**
STANDARD:	1-HS-70-131A has been placed in A-P AUTO position (pulled out).	___ SAT
	Step is critical to ensure that pumps control switches are aligned for either a process or accident signal.	___ UNSAT
COMMENTS:		
STEP 7:	Notify the Unit Supervisor that 1A-A TBBP Pump is running both TBBP pumps hand switches are in A-P AUTO.	
STANDARD:	The Unit Supervisor has been notified that 1A-A TBBP Pump is running and both TBBP hand switches are in A-P-AUTO.	___ SAT
***CUE:*	**When notified, acknowledge the report using repeat back.**	___ UNSAT
COMMENTS:		
	END OF TASK	

TIME STOP: _____

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Plant start-up after refueling outage which required complete shutdown of the Component Cooling Water System (CCS).

The CCS has been return to service and is operating normally except for the Thermal Barrier Booster Pumps (TBBP) which are shutdown.

Both TBBPs have been aligned and are available for service.

You are the OAC operator.

INITIATING CUES:

The Unit Supervisor has directed you to place 1A-A TBBP in service and align both TBBP control switches in normal alignment per the procedure.

You are to notify the Unit Supervisor when the procedure has been completed.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.1.f JPMR168/Sim

SHUTDOWN "A" TRAIN EGTS FOLLOWING 10 HOUR RUN PER SOI-65.02

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: SHUTDOWN "A" TRAIN EGTS FOLLOWING 10 HOUR RUN PER SOI-65.02

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 027A4.01 (3.3*/3.3*) 027A4.01 (3.3*/3.2*) 2.1.23 (3.9/4.0)
2.1.30 (3.9/3.4)

Task Standard: EGTS "A" Train has been shutdown and returned to ES Standby alignment in accordance with SOI-65.02.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator __X__ In-Plant _____ Perform __X__ Simulate _____

References: SOI-65.02 "Emergency Gas Treatment System" Rev. 13

Task Number:: RO-065-SOI-65-005 APPLICABLE FOR: RO/SRO

10CFR55.45: 3, 6, 8

Validation Time: 28 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

_____

_____

_____

_____

_____

_____

_____

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC # **152** 100% steady state power.

2. Acknowledge all alarms.

3. Freeze simulator until the performance indicates understanding of the task and time is allowed for control board familiarization.

4. NOTE: This JPM has been preshot in IC **#152**. The following is the setup instructions if needed:
   Initialize to IC # **40**.
   Startup "A" Train EGTS per SOI-65.02 Section 8.3 as follows:
   Open 1-FCV-65-10 with 1-HS-65-10.
   Open 1-FCO-65-26 with 1-HS-65-26
   Place 1-HS-65-81/86 to OPEN
   Place 1-HS-65-83/87 in A AUTO STANDBY
   Place 0-HS-65-23A to start and release.
   Acknowledge all alarms

5. After performer indicates understanding of task, place simulator in run.

SIMULATOR OPERATOR INSTRUCTIONS:

NONE

Tools/Equipment/Procedures Needed:

Ensure clean copy of SOI-65.02 in all copies of Operating Instructions on the Simulator Floor.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is at 100% RTP

0-SI-65-6-A "Emergency Gas Treatment System Train A 10-Hour Operation performance in progress.

"A" Train EGTS Fan has been in service for 10 hours.

You are a support operator in the control room.

INITIATING CUES:

The Unit Supervisor directs you shutdown the "A" Train EGTS Fan per SOI-65.02 and return EGTS to Standby Alignment per the procedure.

You are to notify Unit Supervisor when you have completed the task.

START TIME: _____

STEP 1: Obtain a copy of the procedure. STANDARD: A copy of SOI-65.02 section 7.1 has been obtained **EXAMINER'S CUE:** ***After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.*** **NOTE TO EVALUATOR: Performer may also identify Section 5.0 as needed to return EGTS to standby. You may provide a copy of this section when performer seeks to obtain a copy.** COMMENTS:	___ SAT ___ UNSAT
CAUTION: If EGTS is in service due to an accident signal initiation, and the charcoal filter banks have decay heat, an engineering evaluation must be performed before shutting down the EGTS system. **NOTE If EGTS was Auto actuated, both Trains' shutdown sections must be performed prior to return to standby readiness.**	
STEP 2: **[Step 1] ENSURE** a ØA Cntmt Isolation signal is NOT present. STANDARD: Performer determines that ØA Cntmt Isolation signal is NOT present by checking Master Isol Signal PNLs 1-XX-55-6C & 6D ØA light NOT LIT. COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 3:	**[Step 2]** Momentarily **PLACE** 0-HS-65-23A, EGTS FAN & DISCH DMPR, in STOP (returns to A-AUTO).	**CRITICAL STEP**
STANDARD:	Performer stops "A" Train EGTS Fan with 0-HS-65-23A and checks red light off and green light ON the associated handswitch. **Step is critical to shutdown the running EGTS Fan.**	___ SAT ___ UNSAT
COMMENTS:		
STEP 4:	**[Step 3]** **ENSURE** 1-FCV-65-8, EGTS TR-A U1 SUCT DMPR, CLOSED.	
STANDARD:	Performer checks 1-HS-65-8 and verifies red light off and green light ON for the associated hand switch	___ SAT ___ UNSAT
COMMENTS:		
STEP 5:	**[Step 4]** **PERFORM** the following: **[a]** CLOSE 1-FCO-65-10, EGTS TR-A U1 SUCT DMPR. **[b]** CLOSE 1-FCO-65-26, EGTS TO U1 SHIELD BLDG.	**CRITICAL STEP** ___ SAT
STANDARD:	Performer closes 1-FCO-65-10 with 1-HS-65-10, performer closes 1-FC0-65-26 with 1-HS-65-26. Respective hand switches red lights are off and green lights are LIT. **Step is critical to shutdown return ventilation lineup to normal following 10 hour run.**	___ UNSAT
COMMENTS:		

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 6: **[STEP 5] IF** Train A EGTS to be returned to STANDBY, **THEN: PERFORM** the following:

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
EGTS TR-A U1 SUCT DMPR	0-M-27B	A AUTO	1-HS-65-10
EGTS TR-A U1 SHIELD BLDG	0-M-27B	A AUTO	1-HS-65-26

STANDARD: Performer places 1-HS-65-10 and 1-HS-65-26 to the A AUTO position.

Step is critical to return these hand switches to ES Standby alignment.

___ SAT

___ UNSAT

COMMENTS:

STEP 7: **[Step 6] IF** Train B EGTS is to be shutdown, THEN GO TO Section 7.2.

STANDARD: Performer determines that this step **does not apply** and proceeds to the next step.

___ SAT

COMMENTS:

___ UNSAT

STEP 8: **[Step 7] IF** EGTS is to be returned to STANDBY, THEN GO TO Section 5.0 to align EGTS for STANDBY.

STANDARD: Performer goes to Section 5.0.

___ SAT

COMMENTS:

___ UNSAT

NOTE TO EVALUATOR: The following performance steps are from section 5.1 of SOI-65.02.

CAUTION IF EGTS is being returned to standby after auto actuation, THEN both Sections 7.1 and 7.2 must be performed prior to Standby Readiness alignment.

STEP 9: **[Step 1] ENSURE** a ØA Cntmt Isolation signal is NOT present.

STANDARD: Performer determines that ØA Cntmt Isolation signal is NOT present by checking Master Isol Signal PNLs 1-XX-55-6C & 6D ØA light NOT LIT.

___ SAT

NOTE TO EVALUATOR: This was previously performed in step 2 of JPM.

___ UNSAT

COMMENTS:

STEP 10: **[STEP 2] PERFORM** the following:

120VAC VITAL INST POWER BD 1-I

NOMENCLATURE	LOCATION	POSITION	UNID
EGTS TRAIN A AUX RELAYS 1-PCV-65-81/1-PCV-65-86	BKR 38	ON	1-BKR-235-1/38

120VAC VITAL INST POWER BD 1-II

NOMENCLATURE	LOCATION	POSITION	UNID
EGTS TRAIN B AUX RELAYS 1-PCV-65-81/1-PCV-65-87	BKR 38	ON	1-BKR-235-2/38

STANDARD: An AUO is contacted to ensure 1-BKR-235-1/38 and 1-BKR-235-2/38 are ON.

___ SAT

***CUE:* When contacted, respond as AUO, acknowledge request using repeat back, then report that 1-BKR-235-1/38 and 1-BKR-2/38 are ON.**

___ UNSAT

COMMENTS:

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 11: **[STEP 3] PERFORM** the following:

NOMENCLATURE	LOCATION	POSITION	UNID
EGTS FAN A & DISCH DMPR	0-M-27B	A AUTO	0-HS-65-23A
EGTS FAN B & DISCH DMPR	0-M-27B	A AUTO	0-HS-65-42A

STANDARD: Hand switches 0-HS-65-23A and 0-HS-65-42A have checked in the A AUTO position (pushed in).

COMMENTS:

___ SAT

___ UNSAT

STEP 12: **[STEP 4] OPEN** the following dampers, and **PLACE** the handswitches in A AUTO:

NOMENCLATURE	LOCATION	POSITION	UNID
U1 ANN VAC FANS SUCT	0-M-27B	A AUTO	1-HS-65-52
U1 ANN VAC FANS SUCT	0-M-27B	A AUTO	1-HS-65-53

STANDARD: Hand switches 0-HS-65-52 and 0-HS-65-53 have checked in the A AUTO position.

COMMENTS:

___ SAT

___ UNSAT

NOTE 1 **The following step may be N/A'd if annulus fans are running.**

NOTE 2 **If a phase A signal has been present, the next step may start one Ann Vac Fan due to low flow. Either fan may be selected first. Flow should be allowed to stabilize before the second fan is placed in auto to avoid two fans running. SOI-65.01 Section 5.0 should be referenced to ensure proper damper alignment and control after fan start.**

STEP 13: **[STEP 5] PLACE** the following handswitches in STOP to break seal-in and , **RETURN** to A-P AUTO:

NOMENCLATURE	LOCATION	POSITION	UNID
ANN VAC FAN 1A & SUCT FCO	0-M-27B	A-P AUTO	1-HS-65-77A
ANN VAC FAN 1B & SUCT FCO	0-M-27B	A-P AUTO	1-HS-65-74A

STANDARD: Performer determines ANN VAC FAN 1A is running by checking red light LIT on 1-HS-65-77A, that step is N/A and proceeds to the next step.

___ SAT

COMMENTS:

___ UNSAT

STEP 14: **[STEP 6] IF** an accident signal (ØA) has occurred **OR** Annulus ΔP has dropped below 4.0 in. H_2O, THEN:
[a] PERFORM the following:

NOMENCLATURE	LOCATION	POSITION	UNID
U1 EGTS-ANN ΔP CNTLR B ISOL	0-M-27B	A-AUTO	1-HS-65-83/87
U1 EGTS-ANN ΔP CNTLR A ISOL	0-M-27B	A-AUTO	1-HS-65-81/86

STANDARD: Performer determines that step is N/A by checking U1 EGTS-ANN ΔP is greater than 4.0 " H_2O on 1-PDI-30-126A. Performer may also observe that Annunciator alarm window 232-B is DARK and proceeds to the next step.

___ SAT

***CUE:** **If asked, respond as CRO, and state that Window 232-B has remained DARK throughout the 10 hour run of "A" Train EGTS Fan.**

___ UNSAT

COMMENTS:

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 15: **[STEP 6 b] WHEN** Annulus ΔP is greater than 4.0 in. H_2O, **THEN PERFORM** the following (N/A if not required):

NOMENCLATURE	LOCATION	POSITION	UNID
PCV-65-81 and PCV-65-86, EGTS CNTMT ANNULUS DP RESET	A5W737, 1-JB-292-4013-A, N. of GFFD Rm.	RESET	1-HS-65-80 and 1-HS-65-90
PCV-65-83 and PCV-65-87, EGTS CNTMT ANNULUS DP RESET	A4V737, 1-JB-292-4015-B, S. of GFFD Rm.	RESET	1-HS-65-82 and 1-HS-65-97

STANDARD: Performer determines that **step is N/A** by checking U1 EGTS-ANN ΔP as greater than 4.0 " H_2O on 1-PDI-30-126A. Performer may also observe that Annunciator alarm window 232-B is DARK and proceeds to the next step.

COMMENTS:

___ SAT

___ UNSAT

STEP 16: **[STEP 7] ENSURE** the following dampers are CLOSED and, **PLACE** either 1-HS-65-83/87 or 1-HS-65-81/86 in A AUTO, and the other handswitch in A AUTO STANDBY:

NOMENCLATURE	LOCATION	AS-LEFT POSITION	UNID
U1 EGTS-ANN ΔP CNTLR B ISOL	0-M-27B		1-HS-65-83/87
U1 EGTS-ANN ΔP CNTLR A ISOL	0-M-27B		1-HS-65-81/86

STANDARD: Performer checks positions of 1-HS-65-83/87 and 1-HS-81/86 and ensures one switch is in A AUTO and the other switch is in A-AUTO STANDBY.

COMMENTS:

___ SAT

___ UNSAT

CAUTION **PDIC-65-80 & 82 Setpoint Thumbwheels are adjusted by MIG only.**

STEP 17: **[STEP 8]** **ENSURE** the following controllers in AUTO:

NOMENCLATURE	LOCATION	POSITION	UNID
EGTS-ANN ΔP CONTROL	0-M-27B	AUTO	1-PDIC-65-82
EGTS-ANN ΔP CONTROL	0-M-27B	AUTO	1-PDIC-65-80

STANDARD: Performer checks both handswitches (1-PDIC-65-82 & -80) are in AUTO.

COMMENTS:

___ SAT

___ UNSAT

STEP 18: **[STEP 9]** **ENSURE** the following:

NOMENCLATURE	LOCATION	POSITION	UNID
EGTS TR A DECAY COOLING	0-M-27B	CLOSE	0-HS-65-28B
EGTS TR A DECAY COOLING	0-M-27B	CLOSE	0-HS-65-28A
EGTS TR B DECAY COOLING	0-M-27B	CLOSE	0-HS-65-47A
EGTS TR B DECAY COOLING	0-M-27B	CLOSE	0-HS-65-47B

STANDARD: Performer check and verifies 0-HS-65-28B, -28A, -47A, -47B are in the close position.

COMMENTS:

___ SAT

___ UNSAT

STEP 19: **[STEP 10] PERFORM** the following

NOMENCLATURE	LOCATION	POSITION	UNID
EGTS TR-A U1 SUCT DMPR	0-M-27B	A AUTO	1-HS-65-10
EGTS TR-A U1 SUCT DMPR	0-M-27B	CLOSE	1-HS-65-8
EGTS FAN B U1 SUCT DMPR	0-M-27B	CLOSE	1-HS-65-51
EGTS TR-B U1 SUCT DMPR	0-M-27B	A AUTO	1-HS-65-30
EGTS TO U1 SHIELD BLDG	0-M-27B	A AUTO	1-HS-65-26
EGTS TO U1 SHIELD BLDG	0-M-27B	A AUTO	1-HS-65-27

STANDARD: Performer checks 1-HS-65-10 & -26 to the A AUTO position.
Performer checks 1-HS-65-8 & -51 in the CLOSE position.
Performer checks 1-HS-65-30, -26, -27 in the A AUTO position.

___ SAT

___ UNSAT

COMMENTS:

NOTE TO EVALUATOR The following step is from Section 7.1

STEP 20: **[Step 8] IF** Annulus Vacuum System was shutdown, **THEN PLACE** Annulus Vacuum in service per SOI-65.01.

___ SAT

STANDARD: Performer determines that this step is not applicable as annulus vacuum is already in service.

___ UNSAT

COMMENTS:

STEP 21: Notify the Unit Supervisor that "A" Train EGTS Fan has been shutdown and EGTS has been returned to STANDBY. STANDARD: Unit Supervisor has been notified that "A" Train EGTS Fan has been shutdown and EGTS has been returned to STANDBY. ***CUE:* **When notified, acknowledge the report using "repeat back"** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is at 100% RTP

0-SI-65-6-A "Emergency Gas Treatment System Train A 10-Hour Operation performance in progress.

"A" Train EGTS Fan has been in service for 10 hours.

You are a support operator in the control room.

INITIATING CUES:

The Unit Supervisor directs you shutdown the "A" Train EGTS Fan per SOI-65.02 and return EGTS to Standby Alignment per the procedure.

You are to notify Unit Supervisor when you have completed the task.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.1.g JPMR108A/Sim

RETURN PRM N-42 TO SERVICE PER AOI-4

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: RETURN PRM N-42 TO SERVICE PER AOI-4

Alternate Path: When rod control is returned to auto a continuous rod insertion occurs requiring performer to return rod control to manual and then trip the reactor.

Facility JPM #: 3-OT-JPMR108 Rev 1

K/A Rating(s): 015A4.02 [3.9/3.9] 2.1.23 [3.9/4.0] 001AA1.05 [4.3/4.2]

Task Standard: The DETECTOR CURRENT COMPARATOR switch for UPPER SECTION, the DETECTOR CURRENT COMPARATOR switch for LOWER SECTION, the ROD STOP BYPASS, the POWER MISMATCH BYPASS, and the COMPARATOR CHANNEL DEFEAT have been placed in NORMAL or OPERATE as directed AOI-2, Attachment 1 and then reactor is manually tripped due to continuous rod insertion.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator __X__ In-Plant _____ Perform __X__ Simulate _____

References: AOI-4, NUCLEAR INSTRUMENTATION MALFUNCTIONS, Rev 20

Task Number:: RO-092-AOI-4-002 APPLICABLE FOR: RO/SRO
RO-085-AOI-2-005

10CFR55.45: 2, 3, 4, 5, 6, 12

Validation Time: 9 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____

_____

_____

_____

_____

_____

_____

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC # **157**.

2. Acknowledge all alarms.

3. IFreeze simulator until the performance indicates understanding of the task and time is allowed for control board familiarization.

4. NOTE: This JPM has been preshot in IC **#157**. The following is the setup instructions if needed:

   Initialize to IC #40, 50, or 60
   imf rd02 (e1) 20 "Uncontrolled Rod insertion Bank D Group 2".
   Place PRM N42 OOS:
   - Place S/G LEVEL-NIS BIAS controllers for S/Gs 2 and 3 in MANUAL and adjust to demand output of unaffected S/Gs.
   - Place DETECTOR CURRENT COMPARATOR switch for UPPER SECTION to N42
   - Place DETECTOR CURRENT COMPARATOR switch for LOWER SECTION to N42
   - Place ROD STOP BYPASS switch to N42
   - Place POWER MISMATCH BYPASS switch to N42
   - Place COMPARATOR CHANNEL DEFEAT switch to N42

   Acknowledge all alarms .
   FREEZE the simulator till the performer indicates an understanding of the task.

5. After performer indicates understanding of task, place simulator in run.

SIMULATOR OPERATOR INSTRUCTIONS:

ENSURE rd 02 with 20 steps per minutes is assigned to manual trigger 1.

When rod control has been returned to automatic (JPM STEP 11 Completion), then insert continuous rod insertion by activating manual trigger 1:
imf itrigger

Tools/Equipment/Procedures Needed:

Ensure clean copy of AOI-4 and AOI-2 in all copies of Abnormal Operating Instructions on the Simulator Floor.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit at 100% RTP

PRM N42 failed during last shift

AOI-4 Section 3.4 has been completed through Step 15.

Work Control has notified the MCR that repairs to PRM N42 are complete and the instrument is ready to be returned to service.

You are the Operator at the Controls.

INITIATING CUES:

The Unit Supervisor has directed you to return PRM N42 to service.

You are to notify the US when the procedure has been completed.

START TIME: _____

STEP 1: Obtain the correct procedure. STANDARD: A copy of AOI-4 has been obtained. **EXAMINER'S CUE:** ***After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.*** COMMENTS:	___ SAT ___ UNSAT
STEP 2: **[Step 16] WHEN** PRM is to be restored **THEN**: a. **PLACE** controls rods in manual. STANDARD: The rod control hand switch has been placed in Manual position. COMMENTS:	___ SAT ___ UNSAT
STEP 3: **[Step 16b] REFER TO** Attachment 1, PRM Function At NIS Rack, step 2. STANDARD: Performer refers to Attachment 1, PRM Function At NIS Rack, Step 2 for restoration of PRM N42. COMMENTS:	___ SAT ___ UNSAT

NOTE TO EVALUATOR: The following steps are from Attachment 1 page 2 of 2 AOI-4	
STEP 4: **[STEP 2] WHEN** PRM is ready for return to service, **THEN PERFORM** the following steps: a. **PLACE** DETECTOR CURRENT COMPARATOR switch for UPPER SECTION in NORMAL STANDARD: Detector Current Comparator Upper Section switch placed to "NORMAL" (Miscellaneous Control & Indication Panel,1-IDWR-92-N50-G IV) **Step is critical for proper restoration of upper power detector to current comparator.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 5: **[STEP 2 b] PLACE** DETECTOR CURRENT COMPARATOR switch for LOWER SECTION in NORMAL STANDARD: Detector Current Comparator Lower Section switch placed to "NORMAL" (Miscellaneous Control & Indication Panel,1-IDWR-92-N50-G IV). **Step is critical for proper restoration of lower power detector to current comparator.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

NOTE: On the following step, annunciator window 66-C, 67-C, 68-C, OR 69-C, N-(#) OVERPOWER ROD STOP BYPASSED, will clear depending on which channel is bypassed.	
STEP 6: **[STEP 2 c] PLACE** ROD STOP BYPASS switch in OPERATE. STANDARD: Rod Stop Bypass switch is positioned from "N42 to placed to "OPERATE" (Miscellaneous Control & Indication Panel,1-IDWR-92-N50-G IV) **Step is critical for proper restoration of to enable rod stop interlock protection from this channel.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 7: **[STEP 2 d] PLACE** POWER MISMATCH BYPASS switch in OPERATE. STANDARD: Power Mismatch Bypass switch is positioned from "N42" to "OPERATE" (Miscellaneous Control & Indication Panel, 1-IDWR-92-N50-G IV) **Step is critical to restore channel input to high auctioneering circuit and power mismatch circuits.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

NOTE: On the following step, annunciator window 82-E, NIS CHANNEL IN TEST, will clear.	
STEP 8: **[STEP 2 e]** **PLACE** COMPARATOR CHANNEL DEFEAT switch in NORMAL. STANDARD: Comparator Channel Defeat Switch is positioned to "NORMAL" (Comparator & Rate Panel ,Comparator N37, 1-IDWR-92-N37 IV). **Step is critical to restore channel input to channel comparator alarm circuits.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
NOTE: On the following step, annunciator window 115-E, POWER RANGE FLUX RATE HI, will clear if the positive rate trip light is LIT.	
STEP 9: **[STEP 2 RNO f]** **IF** POSITIVE RATE TRIP is LIT, **THEN RESET** RATE MODE switch. STANDARD: Positive Rate Trip light on Power Range Upper N42A, 1-IDWR-92-42A II, is checked and determine light is NOT LIT and continues to next step. COMMENTS:	___ SAT ___ UNSAT
NOTE TO EVALUATOR: Performer returns to AOI-4 at step 16 c.	
STEP 10: **[STEP 16 c]** **ENSURE** T-avg and T-ref within 1°. STANDARD: Performer verifies T-avg and T-ref within 1° by recorder 1-TR-68-2B on 1-M-5 or other T-avg - T-ref indications. COMMENTS:	___ SAT ___ UNSAT

STEP 11: **[STEP 16 d] IF** auto rod control desired, **PLACE** control rods in AUTO. STANDARD: The rod control hand switch has been placed in AUTO position. *****CUE:*** **If asked, respond as US that auto rod control is desired.** NOTE TO EVALUATOR: The continuous rod insertion malfunction will be inserted just after rod control has been placed to auto. The operator may immediately return rod control to manual, check for rod motion stopped, then trip the reactor before referring to AOI-2. COMMENTS:	___ SAT ___ UNSAT
NOTE TO EVALUATOR: The Following Steps are from AOI-2 Section 3.2 due to continuous rod insertion.	
STEP 12: **[STEP 1] PLACE** control rods in MAN. STANDARD: The rod control hand switch has been placed in Manual position. *****NOTE:*** Rods will continue to step IN. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 13: **[STEP 2] CHECK** control rod movement STOPPED. STANDARD: The rod control indications have been checked for movement and performer determines that rods are still inserting and goes to RNO for step. ***NOTE:* Rods will continue to step IN. COMMENTS:	___ SAT ___ UNSAT
STEP 14: **[STEP 2 RNO] TRIP** reactor. **GO TO** E-0, Reactor Trip or Safety Injection. STANDARD: Reactor Trip hand switch on 1-M-4 or 1-M-6 has been placed to the TRIP position. Performer than goes to E-0. **Step is critical to task performance as uncontrolled rod movement in manual rod control requires reactor trip** ***CUE:* **When performer transitions to E-O, inform him/her that the JPM is complete "WE'LL STOP HERE".** COMMENTS: **END OF TASK**	**CRITICAL STEP** ___ SAT ___ UNSAT

TIME STOP: _____

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit at 100% RTP

PRM N42 failed during last shift

AOI-4 Section 3.4 has been completed through Step 15.

Work Control has notified the MCR that repairs to PRM N42 are complete and the instrument is ready to be returned to service.

You are the Operator at the Controls.

INITIATING CUES:

The Unit Supervisor has directed you to return PRM N42 to service.

You are to notify the US when the procedure has been completed.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.1.a JPMR095A/Sim

RETRIEVE A DROPPED ROD PER AOI-2

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: RETRIEVE A DROPPED ROD PER AOI-2

Alternate Path: Second rod drops while withdrawing dropped rod requiring a manual trip of the reactor.

Facility JPM #: 3-OT-JPMR095A Rev 0

K/A Rating(s):

001A4.03	(4.0/3.7)	001A4.06	(2.9/3.2)	2.1.30	(3.9/3.4)
2.1.23	(3.9/4.0)	2.4.4	(4.0/4.3)	003AA1.02	(3.6/3.4)
003AA1.03	(3.6/3.3)	003AK3.04	(3.8/4.1	003AK3.09	(3.0/3.5)

Task Standard: Performer prepares for the withdrawal of the dropped rod per AOI-2, Section 3.3, Steps 16-27.

Preferred Evaluation Location:

Simulator __X__ In-Plant _____

Preferred Evaluation Method:

Perform __X__ Simulate _____

References: AOI-2 "Malfunction Of The Reactor Control System" Rev.23

Task Number:: RO-085-AOI-2-004 APPLICABLE FOR: RO/SRO

10CFR55.45: 2, 3, 4, 5, 6, 12

Validation Time: 23 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____

_____

_____

_____

_____

_____

_____

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC # **144**.

2. Ensure Bank Step Counters at correct settings.

3. Acknowledge all alarms.

4. Freeze simulator until the performance indicates understanding of the task and time is allowed for control board familiarization.

5. NOTE: This JPM has been preshot in IC **#144**. The following is the setup instructions if needed:
   Reset to IC **#51**
   imf rd07b. Causes C-5 rod to drop.
   Dilute 700 gallons
   Ensure Shutdown Bank and Control Banks that are fully withdrawn have step counters at correct setting (Simulator at 228, check K0015 which contains the current monthly full out rod position on ICS computer).
   Assign drop rod F6 (Control Bank C) to manual trigger e1: **imf rd07a (e1)**

6. Ensure CR in Manual

7. Ensure Power Range NIs at 75% or less.

8. After performer indicates understanding of task, place simulator in run.

SIMULATOR OPERATOR INSTRUCTIONS:

Ensure that malfunction to drop control rod F6 has been assigned to manual trigger e1.

During performance of JPM step 12 [Step 27] "Align RCCA to affected bank position" when control rod C-5 **reaches 10 steps** withdrawn, activate manual trigger 1 by:
imf itrigger or use ETM page.

Tools/Equipment/Procedures Needed:

Ensure clean copy of AOI-2 in all copies of Operating Instructions on the Simulator Floor.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The plant was operating at 100% power when shutdown rod C-5 dropped into the core due to a power cabinet card problem about 15 minutes ago.

AOI-2,Sect 3.3, was entered and performed through Step 16.

The problem has been repaired.

The reactor power was reduced to ≤ 75% per the instruction.

Unit SRO, Shift Manager, Reactor Engineering and STA have agreed on a retrieval rate of 64 steps per minute, and maximum power level of 100%.

You are the OAC.

INITIATING CUES:

The Unit Supervisor directs you to realign the C-5 rod starting at AOI-2, Section 3.3, Step 17.

You are to notify the Unit Supervisor when the rod is realigned with the bank.

START TIME: _____

STEP 1: Obtain the correct procedure. STANDARD: A copy of AOI-2 Section 3.3 has been obtained. **EXAMINER'S CUE:** ***After the performer has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.*** COMMENTS:	___ SAT ___ UNSAT
STEP 2: **[Step 17] PLACE** rod control in bank select position for affected bank. STANDARD: 1-RBSS is placed in the SBD position. **Step is critical to ensure proper bank is selected to align affected rod.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE: Computer Points for individual rods are C0009A through C0035A for shutdown banks and C0039A through C0076A for control banks. Average rod position points are U0001 through U0013. Rod step position points are U0049 through U0056. All points are in ICS "GROUP DISPLAY MENU" listed in "SPECIAL GROUPS" as "SG 1".	
STEP 3: **[STEP 18] RECORD** the value of the following: • Affected bank's step counter(s). • Computer step indication for rods in the affected bank. • P/A converter for bank (N/A for Shutdown Bank) [Aux Inst Room, el 708, 1-PNL-85-R42]. • Bank Overlap Counter (N/A for Shutdown Bank) [control rod drive room, el 782, panel 1-L-122]. STANDARD: Performer determines & logs the following: - Step counter readings for SD bank D - Computer step indication for SD bank D. COMMENTS:	___ SAT ___ UNSAT
NOTE: Toggle switch up is disconnected. Toggle switch down is connected.	
STEP 4: **[STEP 19] DISCONNECT** all lift coils in affected bank, EXCEPT for dropped RCCA. STANDARD: Toggle switches in cabinet 1-XS-85-1 for rods E-13, N-11, & L-3 are placed in the disconnect position (up position). **Step is critical to assure proper rod is selected to be aligned and the remaining rods are not inadvertently positioned in the following steps.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

NOTE: **The next step will cause a CONTROL ROD URGENT FAILURE alarm (except for Shutdown Banks C and D). Additional alarms associated with rod position may occur due to possible errors in the P/A converter and the computer (such as Lo-Lo Rod insertion alarm when zeroing the P-A converter). After the rods are aligned and the rod position is updated, then these alarms will reset.**	
STEP 5: **[STEP 20] INSERT** affected RCCA greater than 10 steps, and **CONTINUE** until NO RCCA motion is observed on RPI STANDARD: 1-FLRM, Rod Motion Control IN-OUT stick, is used to insert rod > 10 steps on step counter COMMENTS:	___ SAT ___ UNSAT
STEP 6: **[STEP 21] SET** affected step counter to "000". STANDARD: Shutdown Bank D Step counter is set at "0" COMMENTS:	___ SAT ___ UNSAT

STEP 7:	**[STEP 22] USE** Plant computer to set affected bank's position to zero. a. **SELECT** NSS and BOP b. **SELECT** ROD BANK UPDATE c. **ENTER** 0 in affected bank position, **THEN PRESS** F3 to save.	___ SAT
STANDARD:	Performer uses the plant computer Rod Bank update function to set Shutdown Bank D Step Counter to "0".	___ UNSAT
COMMENTS:		
STEP 8:	**[STEP 23] IF** dropped RCCA is in Control Bank, **THEN ADJUST** the P/A converter, USING Attachment 1 [Aux Inst Room, el 708, 1-PNL-85-R42].	___ SAT
STANDARD:	Performer determines the rod is in shutdown bank and proceeds to next step.	___ UNSAT
COMMENTS:		

NOTE: Computer constant K0015 contains the current monthly full out rod position for all rod banks.	
STEP 9: **[STEP 24] DETERMINE** affected RCCA bank's required position. STANDARD: Performer reviews data from Step 18 or from computer point K0015 or from NOB or calls Rx Engineering to determine full out position. *****CUE:*** **IF NOB is referenced or Reactor Engineering contacted, state full out position is 228 steps.** COMMENTS:	___ SAT ___ UNSAT
STEP 10: **[STEP 25] OBTAIN** approval from the Plant Manager or designee prior to raising reactor power. STANDARD: Performer calls Plant Manager or his designee for approval prior to increasing Reactor Power. *****CUE:*** **When Plant Manager or his designate is contacted, grant approval to increase power.** COMMENTS:	___ SAT ___ UNSAT

CAUTION **Power level for performing recovery and maximum allowable power level during recovery will depend on initial power, location of dropped RCCA and duration of event.**	
STEP 11: **[STEP 26] DO NOT CONTINUE** UNTIL the following agree on a retrieval rate, power level at which recovery will be performed and maximum power level: • Unit SRO. • Shift Manager. • Rx Engineering. • STA. STANDARD: Performer determines that the above personnel have agreed to retrieval rate and maximum power level per initial conditions. *****CUE:*** **If any one of the above is contacted, state that the Unit SRO, Shift Manager, Rx Engineering and STA are in agreement to retrieve the rod at normal manual speed of 64 steps/minute. Maximum power level is 100%. Recover from present power level.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE **Step 27 RNO does not apply if alignment stopped due to turbine load reaching maximum established in Step 26. Step 28 will reduce turbine load and allow alignment to continue.**	
STEP 12: **[STEP 27] ALIGN** RCCA to affected bank position:. • USE rod control to position affected RCCA to bank position determined in Step 24. • RAISE turbine load to maintain T-avg and T-ref within 3°F. STANDARD: Performer attempts to realign the rod by placing 1-FLRM to the OUT position AND determines that the rod is withdrawing. Performer stops withdrawing rod after recognizing another rod has dropped into core. *****CUE:*** **If requested then CRO will control turbine load to maintain T-avg and T-ref within 3° F.** ***NOTE TO EVALUATOR*** When rod has been withdrawn **10 steps** the **console operator will drop control rod F6 in control bank C.** The operator may immediately stop withdrawing rod, announce that a second rod has dropped, and then trip the reactor before referring to AOI-2 Section 3.3. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE TO EVALUATOR: Following steps are from the beginning of Section 3.3 in AOI-2 due to another dropped rod.	
STEP 13: **[STEP 1] PLACE** control rods in MAN. STANDARD: Control Rods are in MAN position. No action required. NOTE TO EVALUATOR: Rod control is in SBD position. COMMENTS:	___ SAT ___ UNSAT
STEP 14: **[STEP 2] IF** two or more RCCAs have dropped THEN: a. **TRIP** reactor. b. ****GO TO** E-0, Reactor Trip or Safety Injection. STANDARD: Reactor Trip hand switch on 1-M-4 or 1-M-6 has been placed to the TRIP position. Performer than goes to E-0. **Step is critical to task performance as two dropped control rods requires reactor trip.** ***CUE:* **When performer transitions to E-O, inform him/her that the JPM is complete "WE'LL STOP HERE".** COMMENTS: **END OF TASK**	**CRITICAL STEP** ___ SAT ___ UNSAT

TIME STOP: _____

***Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.*

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The plant was operating at 100% power when shutdown rod C-5 dropped into the core due to a power cabinet card problem about 15 minutes ago.

AOI-2,Sect 3.3, was entered and performed through Step 16.

The problem has been repaired.

The reactor power was reduced to ≤ 75% per the instruction.

Unit SRO, Shift Manager, Reactor Engineering and STA have agreed on a retrieval rate of 64 steps per minute, and maximum power level of 100%.

You are the OAC.

INITIATING CUES:

The Unit Supervisor directs you to realign the C-5 rod starting at AOI-2, Section 3.3, Step 17.

You are to notify the Unit Supervisor when the rod is realigned with the bank.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.2.a JPMA047/Local

LOCAL CONTROL OF SG LEVELS (AFWT A-S) PER SOI-3.02

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: LOCAL CONTROL OF SG LEVELS (AFWT A-S) PER SOI-3.02.

Alternate Path: N/A

Facility JPM #: 3-OT-JPMA047 Rev 4

K/A Rating(s): 061A3.03 [4.2/4.2] 055EA2.01 [3.4/3.7] 055EK3.02 [403/4.6]
2.1.20 [4.3/4.2] 2.2.25 [2.5/3.7] 2.1.30 [3.9/3.4]

Task Standard: 1-FCV-3-173 and 1-FCV-3-172 are located and positioned per SOI-3.02.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator _____ In-Plant __X__ Perform _____ Simulate __X__

References: SOI-3.02 "Auxiliary Feedwater System" Rev. 29

Task Number:: AUO-003-SOI-3.02-014 APPLICABLE FOR: AUO/RO/SRO

10CFR55.45: 7, 8, 9

Validation Time: 10 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____

_____

_____

_____

_____

_____

_____

Tools/Equipment/Procedures Needed:

Hard Hat, Safety Glasses, Flashlight, Hearing Protection, and Plant Approved Shoes.
Latest revision of SOI-3.02.
ALARA considerations.

NOTE: START THIS JPM AT THE RAD WASTE DESK.

Provide copy of SOI-3.02 Section 8.5 with Applicant's Cue Sheet.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit has tripped from 100% power.

A loss of all AC power has occurred.

The Turbine Driven Aux. Feed Pump is running and on recirc.

All Control Air pressure (essential and non-essential) is decreasing and the TD AFW pump LCVs have closed.

You are the Aux. Bldg. AUO

INITIATING CUES:

You have been dispatched by the CRO to take local control of valves 1-LCV-3-173 and 1-LCV-3-172 per SOI-3.02 Section 8.5 (#2 and #3 S/G LCVs from the TD AFW pump) with directions to manually open each valve approximately 50%.

You are to inform the operator after both valves are positioned.

START TIME: _____

STEP 1: Obtain a copy of the instruction. STANDARD: A copy of SOI-3.02 Section 8.5.3 has been obtained. **EXAMINER'S CUE: Provide performer copy of Section 8.5.3 from SOI-3.02.** COMMENTS:	___ SAT ___ UNSAT
NOTE TO EVALUATOR The following is not a procedure step but is included as a procedure note preceding the procedure section in effect. Simulate obtaining radio. **NOTE Direct radio communication with UO required to perform this section.**	
STEP 2: Establish communication with the UO. STANDARD: Radio Communication with the MCR has been established. *****CUE:* Role play as the MCR / UO, acknowledge report using repeat back.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

Note: The following step was given in the initial conditions and may be omitted by the performer.	
STEP 3: **[Step 1] ENSURE** TD AFW PUMP A-S running. STANDARD: Performer determines TD AFW Pump A-S is running. This information was supplied in the initial conditions. ***CUE:* **If a TDAFWP parameter is checked, state the condition to indicate that the Turbine Driven pump is running. (Given in initial conditions)** COMMENTS:	___ SAT ___ UNSAT
Note: The performer may elect to position one valve at a time or may perform steps on both valves simultaneously.	
STEP 4: **[Step 2] IF** MANUAL control of SG 1 level is necessary, **THEN PERFORM** the following to fail CLOSED 1-LCV-3-174, TD AFW PUMP SG 1 LEVEL CONTROL {S. Vlv Rm]: **[a] CLOSE** 1-ISV-32-3736, ESSENT CONTROL AIR ISOL VALVE TO 1-LCV-3-174. **[b] DEPRESSURIZE** air from regulator on 1-LCV-3-174. STANDARD: Performer determines that this step **does not apply**. COMMENTS:	___ SAT ___ UNSAT

STEP 5: **[Step 3]** **MODULATE** flow with handwheel on top of 1-LCV-3-174 (CLOCKWISE to OPEN) per UO instruction. STANDARD: Performer determines that this step **does not apply**. COMMENTS:	___ SAT ___ UNSAT
STEP 6: **[Step 4]** **IF** MANUAL control of SG 2 level is necessary, **THEN PERFORM** the following to fail CLOSED 1-LCV-3-173, TD AFW PUMP SG 2 LEVEL CONTROL [A3U/737 Pen. Rm]: **[a]** **CLOSE** 1-ISV-32-3735, ESSENT CONTROL AIR ISOL VALVE TO 1-LCV-3-173. **[b]** **DEPRESSURIZE** air from regulator on 1-LCV-3-173. STANDARD: The control air supply to 1-LCV-3-173 has been isolated by closing 1-ISV-32-3735, and the petcock on the regulator opened to release any air pressure remaining. **Step is critical to isolate air from the diaphragm to fail valve closed and ensure it is vented.** *****CUE:*** **After air supply valve handwheel is rotated in the clockwise direction, state that the handwheel rotates several turns and gets snug.** *****CUE:*** **After air supply is isolated and the petcock on the regulator is opened, state that the air is initially heard/felt coming from the petcock then slows down and stops.)** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 7:	**[Step 5]** **MODULATE** flow with handwheel on top of 1-LCV-3-173 (CLOCKWISE to OPEN) per UO instruction.	**CRITICAL STEP**
STANDARD:	The hand wheel on 1-LCV-3-173 has been rotated in the CLOCKWISE direction to open the valve ≈ 50% by local indication.	___ SAT
	Step is critical to manually position valve to supply feedwater to SG #2.	___ UNSAT
	*****CUE:*** **If the hand wheel is turned counterclockwise, state that the hand wheel will NOT move.**	
	*****CUE:*** **If the hand wheel is turned clockwise, state that the hand wheel rotates.**	
	*****CUE:*** **If the valve stem is checked, state it indicates approximately 50% open.**	
COMMENTS:		

STEP 8:	**[Step 6]** **IF** MANUAL control of SG 3 level is necessary, **THEN PERFORM** the following to fail CLOSED 1-LCV-3-172, TD AFW PUMP SG 3 LEVEL CONTROL [A3U/737 Pen. Rm]: **[a]** **CLOSE** 1-ISV-32-3770, ESSENT CONTROL AIR ISOL VALVE TO 1-LCV-3-172. **[b]** **DEPRESSURIZE** air from regulator on 1-LCV-3-172.	**CRITICAL STEP** ___ SAT
STANDARD:	The control air supply to 1-LCV-3-172 has been isolated by closing 1-ISV-32-3770, and the petcock on the regulator opened to release any air pressure remaining. **Step is critical to isolate air from the diaphragm to fail valve closed and ensure it is vented.** *****CUE:*** **After air supply valve hand wheel is rotated in the clockwise direction, state that the hand wheel rotates several turns and gets snug.** *****CUE:*** **After air supply is isolated and the petcock on the regulator is opened, state that the air is initially heard/felt coming from the petcock then slows down and stops.**	___ UNSAT
COMMENTS:		

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 9:	**[Step 7]** **MODULATE** flow with handwheel on top of 1-LCV-3-172 (CLOCKWISE to OPEN) per UO instruction.	**CRITICAL STEP**
STANDARD:	The hand wheel on 1-LCV-3-172 has been rotated in the CLOCKWISE direction to open the valve ≈ 50% by local indication. **Step is critical to manually position valve to supply feedwater to SG #3.** *****CUE:*** **If the hand wheel is turned counterclockwise, state that the hand wheel will NOT move.** *****CUE:*** **If the hand wheel is turned clockwise, state that the hand wheel rotates.** *****CUE:*** **If the valve stem is checked, state it indicates approximately 50% open.**	___ SAT ___ UNSAT
COMMENTS:		
STEP 10:	**[Step 8]** **IF** MANUAL control of SG 4 level is necessary, **THEN PERFORM** the following to fail CLOSED 1-LCV-3-175, TD AFW PUMP SG 3 LEVEL CONTROL [S. Vlv Rm]: **[a]** **CLOSE** 1-ISV-32-3769, ESSENT CONTROL AIR ISOL VALVE TO 1-LCV-3-175. **[b]** **DEPRESSURIZE** air from regulator on 1-LCV-3-175.	___ SAT
STANDARD:	The performer determines that this **step does not apply**.	
COMMENTS:		___ UNSAT

STEP 11: **[Step 9] MODULATE** flow with handwheel on top of 1-LCV-3-175 (CLOCKWISE to OPEN) per UO instruction. STANDARD: The performer determines that this **step does not apply**. COMMENTS:	___ SAT ___ UNSAT
STEP 12: Inform the CRO that 1-LCV-3-172 and 1-LCV-3-173 have been manually positioned to 50% open. STANDARD: The CRO is contacted and informed that 1-LCV-3-172 and 1-LCV-3-173 have been manually positioned to 50% open. *****CUE:*** **When the CRO is contacted, repeat back and then terminate the JPM by telling the performer, "Rad Waste AUO will take over control of LCVs 3-172 and 173. We'll stop here".** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit has tripped from 100% power.

A loss of all AC power has occurred.

The Turbine Driven Aux. Feed Pump is running and on recirc.

All Control Air pressure (essential and non-essential) is decreasing and the TD AFW pump LCVs have closed.

You are the Aux. Bldg. AUO

INITIATING CUES:

You have been dispatched by the CRO to take local control of valves 1-LCV-3-173 and 1-LCV-3-172 per SOI-3.02 Section 8.5 (#2 and #3 S/G LCVs from the TD AFW pump) with directions to manually open each valve approximately 50%.

You are to inform the operator after both valves are positioned.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.2.b JPMA044A/Local

ALIGNMENT UPPER CONTAINMENT MONITOR TO THE LOWER CONTAINMENT LOCALLY

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: Alignment Upper Containment Monitor To The Lower Containment Locally

Alternate Path: N/A

Facility JPM #: 3-OT-JPMA044A Rev 2

K/A Rating(s): 002K4.05 [3.8/4.2] 029K1.02 [3.3/3.6] 002A3.01 [3.7/3.9]

Task Standard: 1-RM-90-112 is located, and valves are aligned and 1-RM-90-112 is sampling the lower containment per SOI-90.02 Section 8.1

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator _____ In-Plant __X__ Perform _____ Simulate __X__

References: SOI-90.02 "Gaseous Process Radiation Monitors" Rev.11

Task Number:: AUO-090-SOI-90.2-005 APPLICABLE FOR: AUO/RO/SRO

10CFR55.45: 9

Validation Time: 15 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____

_____

_____

_____

_____

_____

_____

Tools/Equipment/Procedures Needed:

Hard Hat, Safety Glasses, Flashlight, Hearing Protection, and Plant Approved Shoes.
Latest revision of SOI-90.02.
ALARA considerations.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit One is at 10 % power following a startup.

1-RM-90-106 "Lower Containment Air Monitor" and 1-RM-90-112 "Upper Containment Air Monitor" were aligned and were sampling their respective containments (normal alignment).

1-RM-90-106 has tripped, neither sample pump could be restarted, and monitor was shutdown per the appropriate procedure.

You are the Auxiliary Bldg AUO.

INITIATING CUES:

You have been directed by the Operator At Controls to align 1-RM-90-112 to sample lower containment.

You are to notify the MCR operator when you have completed this alignment.

START TIME: _____

STEP 1: Obtain a copy of the appropriate instruction STANDARD: A copy of SOI-90.02 Section 8.1 has been obtained **EXAMINER'S CUE: After the performer identifies correct instruction, the evaluator can provide a copy of the instruction.** COMMENTS:	___ SAT ___ UNSAT
NOTE If any Radiation Monitor experiences sufficient elevated reading above normal request MIG to perform purge. **Cue: If asked, or MCR contacted, state Radiation Monitors are reading normal.**	
STEP 2: **[Step 1] ENSURE** Upper Containment Air Monitor Aligned per Section 5.2. STANDARD: The performer determines that Upper Containment Air Monitor is aligned normal per task assignment sheet. *****CUE:* IF asked, state that Section SOI-90.02 Section 5.2 has been completed and the Upper Containment Monitor is sampling Upper Containment.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 3: **[Step 2] NOTIFY** Chem lab of intent to realign monitors so that proper sampling of Cntmt. and release permits are addressed. STANDARD: The performer notifies Chem Lab of the intent to realign upper containment monitor 1-RM-90-112 to the lower containment. *****CUE:*** **Respond as Chem Lab, using repeat back to the notification as stated by the performer.** COMMENTS:	___ SAT ___ UNSAT
STEP 4: **[Step 3] SHUTDOWN** Lower Containment Air Monitor per Section 7.1. STANDARD: The performer determines that lower containment air monitor 1-RM-90-106 has been shut down based on task assignment sheet. *****CUE:*** **Respond as OAC if contacted, using repeat back that SOI-90.02 Section 7.1 has been completed for the lower containment monitor.** COMMENTS:	___ SAT ___ UNSAT

STEP 5: **[Step 4] ENSURE** 1-RE-90-106 and 1-RE-90-112 pumps are OFF before aligning monitor. STANDARD: The performer locally checks 90-106 and 90-112 monitor sample pumps <u>and turns off the running sample pump on the 1-90-RM-112 monitor</u> (switch above monitor cabinet). **Step is critical prevent burn-up of sample pump during valve alignments to follow.** NOTE TO EVALUATOR: **Underlined portion above is critical portion of this step.** ***CUE:* IF asked and when checked, state the following for respective monitor:** • **RM-106 sample pumps "off" green light is LIT and both handswitch stop pushbuttons are IN** • **RM-112, sample pump 112A in service red "on" light is LIT and sample pump 112B green "off" light is LIT.** • **State sample pump for 112A green light is LIT and red light is OFF when running pumps handswitch STOP pushbutton is depressed.)** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 6: **[Step 5] RECORD** the monitor sample pump STOPPED (N/A pump NOT stopped) **[a]** 1-HS-90-112A **[b]** 1-HS-90-112B STANDARD: The performer records the sample pump stopped in the previous step **1-HS-90-112A** for the A pump. COMMENTS:	___ SAT ___ UNSAT

Evaluator Note: JPM steps 7, 8, and 9 are part of the same procedure step, can be performed in any order.

STEP 7: **[STEP 6]** PERFORM THE FOLLOWING:

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
LOWER CONTAINMENT SUP TO 1-RE-90-112 CROSS TIE	A3U/737	OPEN	1-ISIV-90-112A

STANDARD: Performer locates 1-ISIV-90-112A and rotates hand wheel counter clockwise until valve is fully open. (Valve located above monitor)

Step is critical align to upper containment monitor to lower containment.

*****CUE:*** **After performer indicates how to open the valve, state that the valve handle rotated several turns in the counter clockwise direction and stops.**

___ SAT

___ UNSAT

COMMENTS:

STEP 8: **[STEP 6]** PERFORM THE FOLLOWING:

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
CNTMT TO RM-106 CIV-CVI INSIDE CNTMT	0-M-12	CLOSED	1-HS-90-110
CNTMT TO RM-106 CIV-CVI OUTSIDE CNTMT	0-M-12	CLOSED	1-HS-90-111
CNTMT TO RM-112 CIV-CVI OUTSIDE CNTMT	0-M-12	CLOSED	1-HS-90-113
CNTMT TO RM-112 CIV-CVI INSIDE CNTMT	0-M-12	CLOSED	1-HS-90-114
CNTMT TO RM-112 CIV-CVI INSIDE CNTMT	0-M-12	CLOSED	1-HS-90-115

STANDARD: Performer contacts the control room and has the above valves positioned to the CLOSED position. Valves 90-113, 90-114, 90-115 are closed and verified closed by communication with the control room. Valves 90-110 & 111 are verified closed by communication with the control room.

Step is critical to ensure proper flow path from lower containment to the upper containment monitor.

___ SAT

___ UNSAT

NOTE TO EVALUATOR: Underlined portion above is only portion that is critical.

*****CUE:*** **Respond as the MCR when contacted, using proper communication technique and then state that 1-HS-90-110 & 111 hand switches were already closed, 1-HS-90-113, 114, & 115 hand switches have been placed to the CLOSED position.**

COMMENTS:

STEP 9: **[STEP 6]** PERFORM THE FOLLOWING:

CRITICAL STEP

NOMENCLATURE	LOCATION	POSITION	UNID
CNTMT TO RM-112 CIV-CVI INSIDE CNTMT	0-M-12	OPEN	1-HS-90-116
CNTMT TO RM-112 CIV-CVI OUTSIDE CNTMT	0-M-12	OPEN	1-HS-90-117
CNTMT TO RM-106 CIV-CVI OUTSIDE CNTMT	0-M-12	OPEN	1-HS-90-107
CNTMT TO RM-106 CIV-CVI INSIDE CNTMT	0-M-12	OPEN	1-HS-90-108
CNTMT TO RM-106 CIV-CVI INSIDE CNTMT	0-M-12	OPEN	1-HS-90-109

STANDARD: Performer contacts the control room and has the above valves positioned to the OPEN position. Valves 90-116, 90-117 are opened and verified open by communication with MCR. Valves 90-107, 90-108, & 90-109 are verified open by communication with control room.

___ SAT

___ UNSAT

Step is critical to ensure proper flow path from lower containment to the upper containment monitor.

NOTE TO EVALUATOR: Underlined portion above is only portion that is critical.

*****CUE:*** **Respond as the MCR when contacted, using proper communication technique and then state that 1-HS-90-116 & 117 hand switches have been placed to the OPEN position.**

*****CUE:*** **Respond as the MCR when contacted, using proper communication technique and state 1-HS-90-107, 108, & 109 hand switches were already in the OPEN position.**

COMMENTS:

STEP 10: **[STEP 7] START** the monitor sample pump STOPPED in Step **[5]** (N/A pump NOT started): **[a]** 1-HS-90-112A **[b]** 1-HS-90-112B STANDARD: The performer starts the proper sample pump that was shutdown earlier using **1-HS-90-112A** for the A pump.. **Step is critical to establish flow from lower containment to the upper containment monitor.** ***CUE:* **When performer indicated how pump is started and if asked state sample pump for 112A red "on" light is LIT and green "off" light is OFF. Supply the following if/when asked:** **1-FI-90-112A indicates ≈ 12 SCFM,** **1-FI-90-112C indicates ≈ 2.1 SCFM,** **1-PI-90-112B indicates 2" vacuum,** **1-PI-90-112A indicates 4" vacuum,** **Iodine Low Flow red alarm light is LIT** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 11: **[STEP 8] IF** IODINE LOW FLOW ALARM on skid comes in, **THEN RESET** with 1-HS-90-112JB. STANDARD: The performer resets the iodine low flow alarm with 1-HS-90-112JB. ***CUE:* **When asked and when checked, State that Iodine Low Flow red light is LIT.** ***CUE:* **When asked, State that light turns off when performer operates 1-HS-90-112JB to reset.** COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 12: **[STEP 9] PERFORM** MONITOR SOURCE CHECK [0-M-12], and **ENSURE** 1-RM-90-112 green OPERATE Light LIT and red HIGH & yellow ALERT Lights NOT LIT., **ENSURE** ANN 173-A UPR CNTMT AIR 1-RM-112 RAD HI, NOT LIT. **ENSURE** ANN 173-D UPR CNTMT AIR 1-RM-112 INSTR MALF, NOT LIT. STANDARD: Performer contacts the control room to have the 90-112 monitor source checked and verifies that green operate light is LIT and High & Alert light are NOT LIT and ANNs windows 173-A and 173-D are NOT LIT. *****CUE:*** **Respond as the MCR when contacted using proper communication technique, then state:** • **monitor source check was successful** • **green OPERATE light is LIT** • **High & Alert lights for monitor are NOT LIT** • **ANN windows 173-A & 173-D are NOT LIT.** COMMENTS:	___ SAT ___ UNSAT
STEP 13: **[STEP 10] ENSURE** Local Panel Lights RESET STANDARD: The performer verifies that Filter Failure light is NOT LIT, verifies that the Particulate LOW Flow Light is NOT LIT, verifies that the Iodine LOW flow Light is NOT LIT. *****CUE:*** **If asked and when checked, state that** • **Iodine Low Flow light is NOT LIT (If Iodine low flow was not reset in JPM step 11 step [8], this light will be LIT)** • **Particulate Low flow light is NOT LIT** • **Filter Fail light is NOT LIT** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 14: Notify Operator At Controls that Upper Containment Monitor has been aligned to Lower Containment. STANDARD: The performer contacts the control room and reports that the Upper Containment Monitor is aligned to Lower Containment. *****CUE:*** **When notified, acknowledge the report using "repeat back"** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Unit One is at 10 % power following a startup.

1-RM-90-106 "Lower Containment Air Monitor" and 1-RM-90-112 "Upper Containment Air Monitor" were aligned and were sampling their respective containments (normal alignment).

1-RM-90-106 has tripped, neither sample pump could be restarted, and monitor was shutdown per the appropriate procedure.

You are the Auxiliary Bldg AUO.

INITIATING CUES:

You have been directed by the Operator At Controls to align 1-RM-90-112 to sample lower containment.

You are to notify the MCR operator when you have completed this alignment.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

B.2.c JPMA098/Local

ALIGNMENT OF ERCW TO 1A-A CCP LUBE OIL HEAT EXCHANGER PER AOI-15

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: ALIGNMENT OF ERCW TO 1A-A CCP LUBE OIL HEAT EXCHANGER PER AOI-15

Alternate Path: N/A

Facility JPM #: 3-OT-JPMA098 Rev 3

K/A Rating(s): 026AA1.03 [3.6/3.6] 2.1.30 [3.9/3.4]

Task Standard: ERCW is aligned to the 1A-A CCP per AOI-15, Attachment 1 within 12 minutes.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator _____ In-Plant __X__ Perform _____ Simulate __X__

References: AOI-15 "Loss Of Component Cooling Water (CCS)" Rev.18

Task Number:: RO-070-AOI-15-003 APPLICABLE FOR: AUO/RO/SRO
AUO-067-AOI-15-001

10CFR55.45: 8, 9, 10

REQUIRED COMPLETION Time: 12 min. **Time Critical: YES**

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

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Tools/Equipment/Procedures Needed:

Hard Hat, Safety Glasses, Flashlight, Hearing Protection, and Plant Approved Shoes.
AOI-15 Attachment 1 (Latest revision)
Auxiliary Building Entry under RWP.
Ladder Safety since some valves require access from above floor elevation, and ALARA considerations.

NOTE: **Start this JPM at the Rad Waste AUO Desk EL 692.**

NOTE: **Hand Attachment 1of AOI-15 to the performer with their handout sheet**

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit has experienced a loss of Train A Component Cooling Water.

The 1A-A CCP is in service and is the only available charging pump.

You are an AUO on shift.

INITIATING CUES:

You have been instructed by the Unit Operator to align ERCW to the 1A-A CCP lube oil heat exchanger per Attachment 1 of AOI-15.

You are to notify the Unit Operator when the appendix is complete.

THIS IS A TIME CRITICAL JPM.

START TIME: _____

CAUTION: **CCP may survive for only 10 to 12 minutes after loss of CCS to lube oil cooler.** **NOTE:** **All valves are located in CCP 1A-A room, except for 1-ISV-67-602A, CVCS CCP ROOM CLR 1A ERCW RET ISOL which is outside the room [A4T/692]**	
STEP 1: **[STEP 1] CLOSE** 1-ISV-67-602A, CVCS CCP ROOM CLR 1A-A ERCW RET ISOL [A4T/692]. STANDARD: 1-ISV-67-602A is closed by pulling the orange handle 90°. (perpendicular to the pipe). **Step is critical to isolate flow path from cooler to ERCW return header.** **EXAMINER'S CUE:** **After the performer has demonstrated the method of closing the valve, state that the valve handle is perpendicular to the pipe.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 2: **[Step 2] CLOSE** 1-ISV-70-553A, CCP1A-A OIL COOLERS CCS INLET ISOLATION. STANDARD: 1-ISV-70-553A is closed by rotating the valve hand wheel clockwise. **Step is critical to isolate flow path to CCS Supply header.** *****CUE:*** **After the performer has demonstrated the method of closing the valve, state that the valve travels several turns in the clockwise direction and stops.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 3:	**[STEP 3] CLOSE** 1-THV-70-554A, CCP1A-A OIL COOLERS CCS OUTLET THROTTLE.	**CRITICAL STEP**
STANDARD:	1-THV-70-554A is closed by rotating the valve hand wheel clockwise. **Step is critical to isolate flow path to CCS Return header.** *****CUE:*** **After the performer has demonstrated the method of closing the valve, state that the valve travels several turns in the clockwise direction and stops.**	___ SAT ___ UNSAT
COMMENTS:		
STEP 4:	**[STEP 4] CLOSE** 1-DRV-67-1017B, CCP OIL CLR ERCW SUP XTIE HDR DRAIN.	**CRITICAL STEP**
STANDARD:	1-DRV-67-1017B is closed by rotating the valve hand wheel clockwise. **Step is critical to isolate flow path from ERCW supply drain to enable ERCW to be aligned to supply oil cooler.** *****CUE:*** **After the performer has demonstrated the method of closing the valve, state that the valve travels several turns in the clockwise direction and stops.**	___ SAT ___ UNSAT
COMMENTS:		

Note To Evaluator: Performance Steps 5 through 7 are all part of the same Attachment step.	
STEP 5: **[STEP 5] ESTABLISH** ERCW flow to lube oil cooler: a. **OPEN** 1-ISV-67-1015B, CCP OIL CLR ERCW SUP XTIE ISOL. STANDARD: 1-ISV-67-1015B is opened by rotating the valve hand wheel counter-clockwise. **Step is critical to provide flow path from ERCW to CCP.** *****CUE:*** **After the performer has demonstrated the method of opening the valve, state that the valve travels several turns in the counter-clockwise direction and stops.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 6: b. **OPEN** 1-ISV-67-1016B, CCP OIL CLR ERCW SUP XTIE ISOL. STANDARD: 1-ISV-67-1016B is opened by rotating the valve hand wheel counter-clockwise. **Step is critical to supply ECRW flow path to CCP Lube Oil Cooler.** *****CUE:*** **After the performer has demonstrated the method of opening the valve, state that the valve travels several turns in the counter-clockwise direction and stops.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

STEP 7: c. **OPEN** 1-DRV-70-782A, CCP 1A-A OIL COOLERS CCS OUTLET DRAIN to establish ERCW flow to oil coolers. STANDARD: 1-DRV-70-782A is opened by rotating the valve hand wheel counter-clockwise. **Step is critical to provide flow path from CCP Lube Oil Cooler to floor drain.** *****CUE:*** **After the performer has demonstrated the method of opening the valve, state that the valve travels several turns in the counter-clockwise direction and stops.** *****CUE:*** **If asked, water is gushing into the floor drain from the hose connected to the line.** **NOTE TO EVALUATOR: NOTE TIME VALVE SIMULATED OPEN _____** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 8: Notify the Unit Operator that the Attachment 1 of AOI-15 is complete. STANDARD: The Unit is notified that the Attachment 1 is complete. *****CUE:*** **When notified, acknowledge the report using repeat back.** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit has experienced a loss of Train A Component Cooling Water.

The 1A-A CCP is in service and is the only available charging pump.

You are an AUO on shift.

INITIATING CUES:

You have been instructed by the Unit Operator to align ERCW to the 1A-A CCP lube oil heat exchanger per Attachment 1 of AOI-15.

You are to notify the Unit Operator when the appendix is complete.

THIS IS A TIME CRITICAL JPM.

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

A.1.a JPMRADMIN

DETERMINE MAIN TURBINE ROLL AND LOADING RATES USING SOI-47.02 GRAPHS

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

Task: DETERMINE MAIN TURBINE ROLL AND LOADING RATES USING SOI-47.02 GRAPHS

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.1.25 [2.8/3.1]

Task Standard: Time for roll of main turbine to synch speed and loading rates are determined based upon initial HP 1st stage metal temperature.

References: SOI-47.02 "Turbo-Generator Startup Operation" Rev. 23

Task Number:: RO-047-SOI-47-003 APPLICABLE FOR: RO/SRO
RO-047-SOI-47-003

10CFR55.45: 5, 6

Validation Time: ____ min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

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Tools/Equipment/Procedures Needed:

Latest revision of SOI-47.02.
Ruler or straight edge.
Calculator

NOTE: START THIS JPM AT A LOCATION WHERE PERFORMER HAS ACCESS TO PROCEDURES (Simulator, Main Control Room, TIC or provide performer with procedure).

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Main Turbine-generator had been shut down 12 hours ago to perform a repair of an EHC oil leak that has been subsequently repaired.

Main Turbine roll and turbo-generator loading is scheduled as the next activity.

The CRO is performing SOI-47.02, TURBO-GENERATOR STARTUP OPERATION.

Turbine IMPULSE CHAMBER METAL temp [1-TR-47-2, pt1] is **150**°F

You are the CRO.

INITIATING CUES:

Using Appendix C of SOI 47.02 perform the following:

- **Determine the turbine maximum acceleration rate and minimum time allowed by procedure to bring main turbine to sync speed.**
- **Determine the minimum length of time that turbine load must held at 5%.**
- **Determine the minimum time allowed by procedure to increase load to 100% after completion of the 5% hold. Assume no other restrictions on loading rate.**
- **Write and circle answer at bottom of graph.**

START TIME: _____

STEP 1: Obtain a copy of the instruction. STANDARD: A copy of SOI-47.02 has been obtained. **EXAMINER'S CUE: After the performer identified correct instruction, the evaluator can provide a copy of the instruction.** COMMENTS:	___ SAT ___ UNSAT
STEP 2: Determine the turbine acceleration rate and minimum time allowed by procedure to bring main turbine to sync speed. STANDARD: Using Appendix C of SOI-47.02 for 150°F, the performer determines that minimum time to reach synch speed is 0.75 (± 0.1) hrs (or 45 ±6) minutes. Acceleration rate 1800rpm/44.2min = 40 (34 - 46) rpm/minute. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 3: Determine the minimum length of time that turbine load must held at 5%. STANDARD: Using Appendix C of SOI-47.02 for 150°F, the performer determines that minimum time to hold turbine generator at minimum load is 0.875 (± 0.125) hrs (or 52.5 ± 7.5) minutes. COMMENTS:	___ SAT ___ UNSAT
STEP 4: Determine the minimum time allowed by procedure to increase load to 100% after completion of the 5% hold. Assume no other restrictions on loading rate. STANDARD: Using Appendix C of SOI-47.02 for 150°F, the performer determines that it will take 2.625 (± 0.2) additional hours to reach 100% load (157.5 ± 7.5 minutes). Assuming 5% initial load to 100% load to take 157.5 ± 7.5 minutes. COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Main Turbine-generator had been shut down 12 hours ago to perform a repair of an EHC oil leak that has been subsequently repaired.

Main Turbine roll and turbo-generator loading is scheduled as the next activity.

The CRO is performing SOI-47.02, TURBO-GENERATOR STARTUP OPERATION.

Turbine IMPULSE CHAMBER METAL temp [1-TR-47-2, pt1] is **150**°F

You are the CRO.

INITIATING CUES:

- **Determine the turbine acceleration rate and minimum time allowed by procedure to bring main turbine to sync speed.**
- **Determine the minimum length of time that turbine load must held at 5%.**
- **Determine the minimum time allowed by procedure to increase load to 100% after completion of the 5% hold. Assume no other restrictions on loading rate.**

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

Task: DETERMINE MAIN TURBINE ROLL AND LOADING RATES USING SOI-47.02 GRAPHS

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.1.25 [2.8/3.1]

Task Standard: Time for roll of main turbine to synch speed and loading rates are determined based upon initial HP 1st stage metal temperature.

References: SOI-47.02 "Turbo-Generator Startup Operation" Rev. 25

Task Number:: RO-047-SOI-47-003 APPLICABLE FOR: RO/SRO
RO-047-SOI-47-003

10CFR55.45: 5, 6

Validation Time: ____ min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

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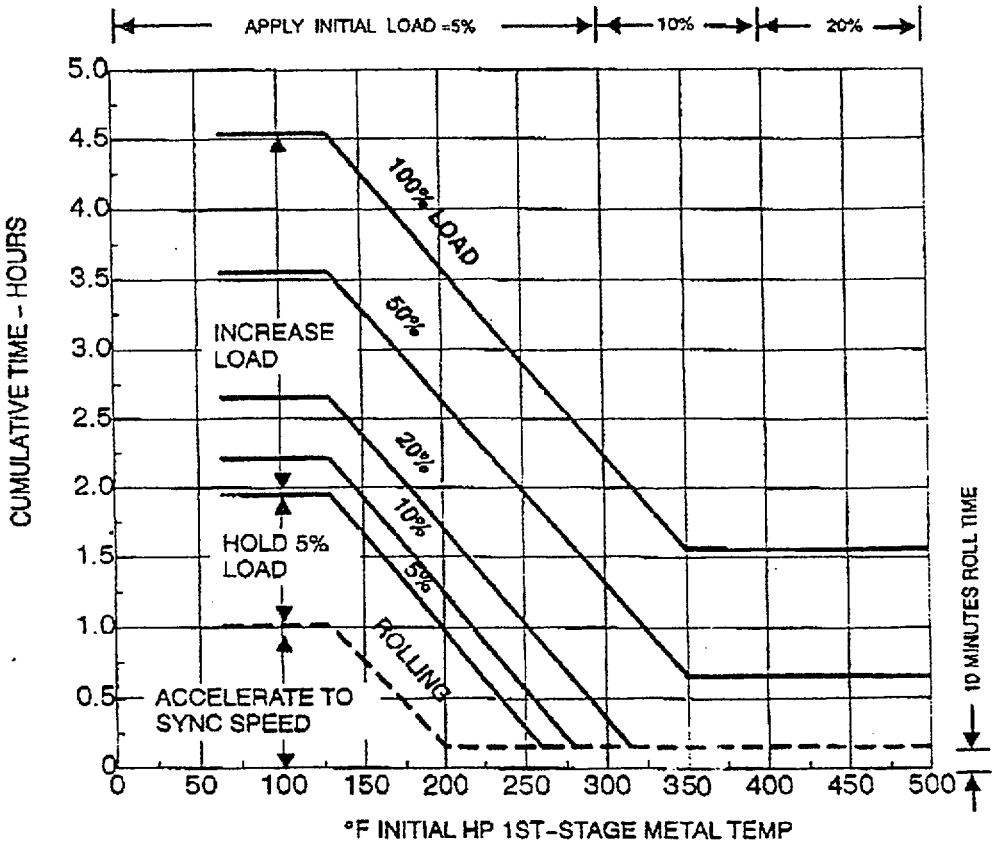
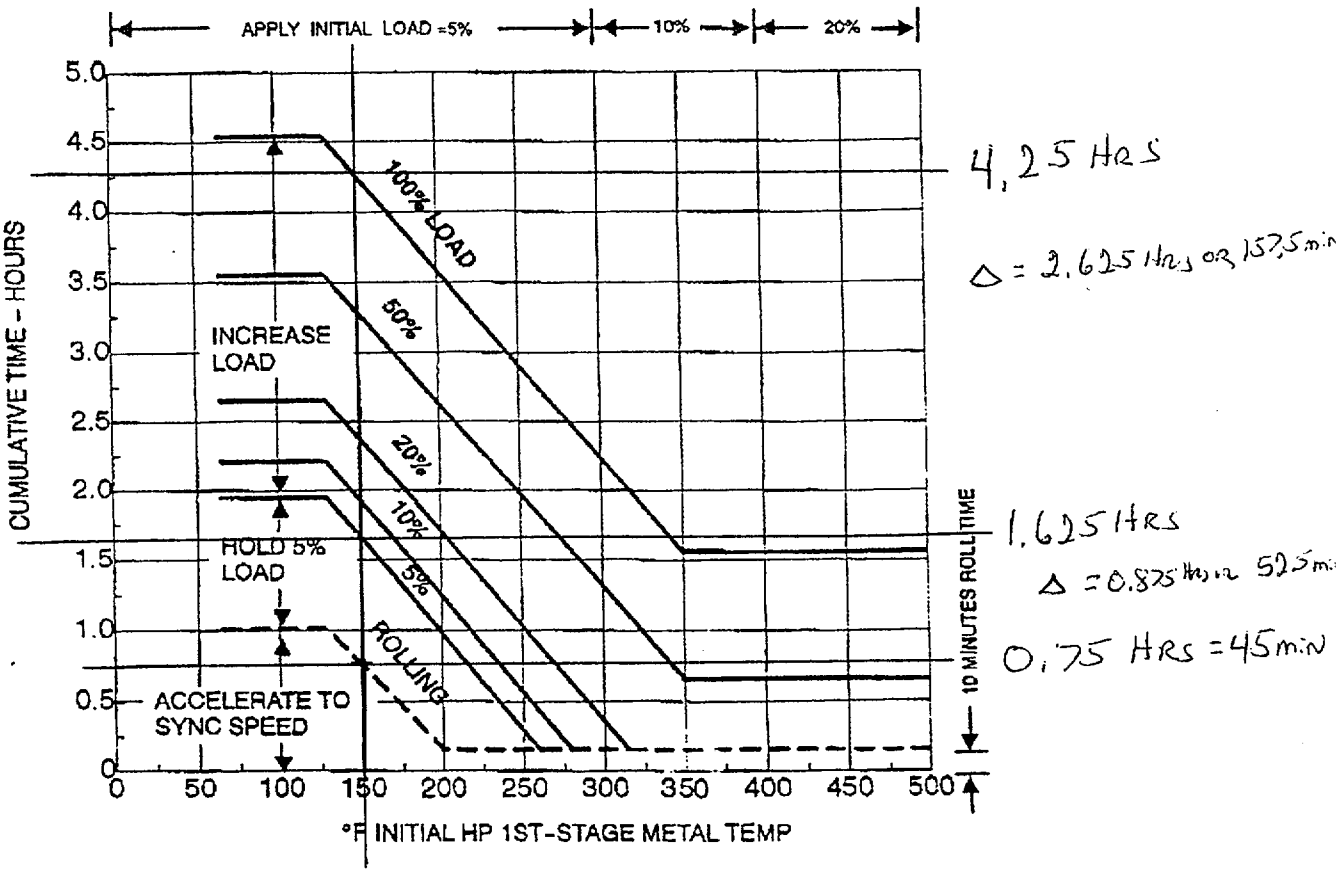
APPENDIX C
Page 1 of 1
TURBINE STARTUP CURVE



APPENDIX C
Page 1 of 1
TURBINE STARTUP CURVE



- Roll to 1800 RPM is (45 minutes)
  Acceleration rate is (40 RPM/min)
- Hold 5% load (52.5 minutes)
- Reach 100% after 5% hold (2.625 Hrs or 157.5 minutes)

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

A.1.b JPMRADMIN

OBTAIN AND VERIFY CONTROLLED PROCEDURE COPY USING CURATOR

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

Task: OBTAIN AND VERIFY CONTROLLED PROCEDURE COPY USING CURATOR

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.1.21 [3.1/3.2]

Task Standard: Verify for use a controlled procedure copy using CURATOR.

References: SPP-2.3 "Document Control" Rev. 4 Section 3.11 and 3.12.

Task Number:: AUO-119-SSP-2.55-004 APPLICABLE FOR: AUO/RO/SRO

10CFR55.45:

Validation Time: ____ min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

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Tools/Equipment/Procedures Needed:

Access to computer that has Curator (FYI) that can produce hard copies of documents.

NOTE: **START THIS JPM AT A LOCATION WHERE PERFORMER HAS ACCESS TO COMPUTER THAT HAS CURATOR ACCESS TO WBN. (Main Control Room, TIC or Shift Clerk's Office, Tagging Office, Classroom.).**

NOTE TO EVALUATOR: **If curator (FYI) program is presently open or minimized, have the performer exit the program before assigning the task. At the completion of the task, have the performer exit curator (FYI) program.**

NOTE TO EVALUATOR: **This JPM should be given in conjunction with Sim 3 JPMR168.**

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is at 100% rated thermal power.

SOI-65.02 "Emergency Gas Treatment System" is scheduled to be performed later in the current shift.

You are the CRO.

INITIATING CUES:

- **The Unit Supervisor has directed you to obtain a copy of SOI-65.02 from CURATOR.**
- **Inform the Unit Supervisor when you have obtained this copy.**

START TIME: _____

STEP 1: Locate a computer that has access to CURATOR . STANDARD: Performer locates computer that has access to CURATOR. COMMENTS:	___ SAT ___ UNSAT
STEP 2: Open CURATOR software program and access WBN's Curator files. STANDARD: Performer selects the "FYI" icon and opens program, selects WBNFYI Prod and enters OK Performer enters Login ID and password. **NOTE TO EVALUATOR: Login ID can also be LOOKUP or GUEST, Password can also be LOOKUP or GUEST.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 3: Select procedure general from Search Class List to obtain Search Screen. STANDARD: Performer Selects PROCEDURE GENERAL from the search class list by selecting it (i.e., highlighting it) with mouse, then either double click mouse or use forward arrow at top of file. COMMENTS:	___ SAT ___ UNSAT
STEP 4: Enter procedure number into search screen in the Procedure Number field. STANDARD: Performer enters SOI-65.02 into procedure number field of the search screen and then depresses enter key or clicks on forward arrow. Performer may enter SOI into the procedure type field and select advance, then scroll until procedure found. Performer may enter a combination of letters into the procedure title field (i.e., CONTAIN "EMERGENCY" or "GAS" etc.). COMMENTS:	___ SAT ___ UNSAT

STEP 5: Selects procedure SOI-65.02 from the document list and opens document. STANDARD: Performer advances to next step Folder Screen and selects SOI-65.02 and advances to document screen and then advances to open document. **NOTE TO EVALUATOR: Document will open in the appropriate format for viewing. (WORD or IMAGENATION).** COMMENTS:	___ SAT ___ UNSAT
STEP 6: Print a copy of SOI-65.02, retrieve copy from printer. STANDARD: Performer simulates printing a copy of SOI-65.02. **EVALUATOR CUE: Simulate what you would do to print the document.** **NOTE TO EVALUATOR: Do not allow print of document.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 7: Inform Unit Supervisor that a copy of SOI-65.02 has been obtained from CURATOR.	___ SAT
STANDARD: Performer Informs Unit Supervisor that a copy of SOI-65.02 has been obtained from CURATOR.	___ UNSAT
*****CUE:*** **Acknowledge report as Unit Supervisor using repeat back.**	
*****CUE:*** **Have applicant close all windows opened and exit from curator.**	
COMMENTS:	
END OF TASK	

TIME STOP: _____

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The Unit is at 100% rated thermal power.

SOI-65.02 "Emergency Gas Treatment System" is scheduled to be performed later in the current shift.

You are the CRO.

INITIATING CUES:

- **The Unit Supervisor has directed you to obtain a copy of SOI-65.02 from CURATOR.**
- **Inform the Unit Supervisor when you have obtained this copy.**

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

A.2 JPMRADMIN

CALCULATE QPTR USING 1-SI-0-21

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

Task: CALCULATE QPTR USING 1-SI-0-21

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.1.12 [2.9/4.0]

Task Standard: Quadrant Power Tilt Ratio has been determined per 1-SI-0-21 Section 6.1 and Attachment 1. Acceptance criteria are determined to be not met due for N-42 Lower Detector and N-44 Upper Detector.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator __X__ In-Plant _____ Perform __X__ Simulate _____

References: 1-SI-0-21 "Excore QPTR & Axial Flux Difference" Rev. 11; Nuclear Operating Book (NOB) A-2 Sheet 1-3 Rev 38, A-2 Sheet 4 Rev 36.

Task Number:: RO-092-SI-2-001 APLICABLE FOR: RO/SRO

10CFR55.45:

Validation Time: 13 min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

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COMMENTS

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Tools/Equipment/Procedures Needed:

Applicant Data Sheet
Latest revision of 1-SI-0-21
Latest revision of NOB Sheets A-2 (all four PR detector channels)
Calculator

NOTE: START THIS JPM AT A LOCATION WHERE PERFORMER HAS ACCESS TO PROCEDURES (Simulator, Main Control Room, TIC, etc.).

NOTE TO EVALUATOR: Hand out the Applicant Data Sheet along with the Applicant's Cue Sheet.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit is operating at 100% rated thermal power

AFD Monitor Alarm and QPTR alarms are out of service due to card problem in the annunciator system.

1-SI-0-21 "Excore QPTR & Axial Flux Difference SI is required to be performed every 12 hours since both QPTR alarms are inoperable.

Plant computer is not available for performing this SI.

You are a support CRO.

INITIATING CUES:

- **Given the data that was just obtained from each power range channel upper and lower detector currents, the Unit Supervisor directs you to perform Section 6.1 "Excore QPTR Determination" of 1-SI-0-21. M&TE will not be utilized for data measurements.**

- **Report the results to the Unit Supervisor when Attachment 1 and Section 6.1 have been completed.**

START TIME: _____

STEP 1: Obtain a copy of the instruction. STANDARD: A copy of 1-SI-0-21 has been obtained. **EXAMINER'S CUE: After the performer identified correct instruction, the evaluator can provide a copy of the instruction.** COMMENTS:	___ SAT ___ UNSAT
NOTE TO EVALUATOR: The following steps are from Section 6.1 of 1-SI-0-21 **NOTE 1 Obtaining QPTR calculated values from the Process Computer is the preferred method to check that the QPTR is within Technical Specification limits. QPTR values are obtained from Process Computer calculated computer points for upper and lower radial flux tilt. These points are available on the "Tilting Factors" display. The report may be printed with turn on code TFREP.** **NOTE 2 Up to one inoperable excore channel can be marked N/A if THERMAL POWER is < 75% RTP.**	
STEP 2: [Step 1] **IF** the process Computer is available, **THEN PRINT** the Tilting Factors Report **AND/OR PERFORM** the QPTR calculations using Attachment 1. STANDARD: Performer goes to attachment 1 and commences performance of attachment 1. COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

NOTE TO EVALUATOR: The following steps are from Attachment 1 of 1-SI-0-21	
NOTE 1 **Determining detector currents by measuring the voltage across the detector's meter test points, using DVM, is the most accurate method for measuring QPTR and for determining the validity of a QPTR alarm.** **NOTE 2** **Using detector current meter readings is another method to quickly check that QPTR is within limits. These meters are not as accurate as the DVM readings and may produce unacceptable results because: 1) the meters on the 'B' drawer may be scaled too high or (2) the meter may be unstable due to drift or noise. When unacceptable results are obtained DVM readings should be obtained, otherwise, Step [1] and [2] may be marked N/A if DVM not used.** **NOTE 3** **Up to one inoperable excore channel can be marked N/A if THERMAL POWER is < 75% RTP.**	
STEP 3: **[Step 1] RECORD** DVM information: A. TVA M&TE ID: _____ B. Cal Due Date: _____ STANDARD: Performer determine step in N/A based on initial conditions for task performance and proceeds to the next step. COMMENTS:	___ SAT ___ UNSAT
STEP 4: **[Step 2]** ENSURE require M&TE is within its current calibration. STANDARD: Performer determines step is N/A based on initial conditions for task performance and proceeds to the next step. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE **The following determination may be made by measuring the voltage across the 1000 ohm precision resistor in NIS power range drawer B. When using this method the Ohm's Law conversion from a millivolt measurement to a microamp measurement only requires changing the unit designator (e.g., 280 millivolts converts to 280 microamps.**

CAUTION **An inadvetent reactor trip may be prevented by ensuring that no power range neutron high flux rate or power range high flux channels are in the tripped condition prior to taking EACH measurement in the NIS Power Range Drawer B.**

STEP 4: **[Step 3] DETERMINE** the microamps for each upper and lower excore detector on each NIS power range drawer B, **AND RECORD** below:

	UPPER DETECTOR	LOWER DETECTOR
NIS Channel	I_t Detector Current (microamps)	I_b Detector Current (microamps)
N-41A	(369)	(384)
N-42A	(368)	(386)
N-43A	(369)	(385)
N-44A	(371)	(386)

STANDARD: Performer obtains the detector current microamp readings from the handout given during task assignment and enters the appropriate data into Attachment 1 step 3.

NOTE TO EVALUATOR: Values above in ( ) are detector currents from handout.

COMMENTS:

___ SAT

___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

NOTE: R_t and R_b (detector calibration data) changes periodically throughout the cycle. Current values are on NOB Sheet A-2, NIS Calibration Data.

STEP 5: **[Step 4] OBTAIN** and **RECORD** current values of R_t and R_b (volts/microamps).

	UPPER DETECTOR	LOWER DETECTOR
NIS Channel	R_t (volts/microamps)	R_b (volts/microamps)
N-41A	(0.0360)	(0.0347)
N-42A	(0.0374)	(0.0370)
N-43A	(0.0360)	(0.0342)
N-44A	(0.0402)	(0.0356)

STANDARD: Performer obtains the detector current values from NOB Sheets A-2 for the respective NIS Power Range Detectors and records them in appropriate blocks on Attachment 1 Step 4.

NOTE TO EVALUATOR: Values above in ( ) are detector currents from respective NOB Sheets A-2.

COMMENTS:

___ SAT

___ UNSAT

STEP 6: **[Step 5] CALCULATE** calibrated output voltages by multiplying the uncalibrated detector output currents by R_t or R_b (as applicable).

A. $V_t = I_t \times R_t$

B. $V_b = I_b \times R_b$

	UPPER DETECTOR	LOWER DETECTOR
NIS Channel	V_t Calib. Output Voltage	V_b Calib. Output Voltage
N-41A	(369) (0.0360)=13.284	(384) (0.0347)=13.325
N-42A	(368) (0.0374)=13.763	(386) (0.0370)=14.282
N-43A	(369) (0.0360)=13.284	(385) (0.0342)=13.167
N-44A	(371) (0.0402)=14.914	(386) (0.0356)=13.742

STANDARD: Performer calculates the calibrated output voltages **[Step 3]** by multiplying the respective detector's current reading times resistance values **[step 4]** and records the results in appropriate blocks on Attachment 1 Step 5.

___ SAT

___ UNSAT

COMMENTS:

STEP 7: **[Step 6] CALCULATE** average calibrated output voltage for the upper and lower detectors.

	UPPER V_t	LOWER V_b
AVERAGE	(13.284+13.763+13.284+14.914)/4 = 13.811	(13.325+14.282+13.167+13.742)/4 = 13.629

STANDARD: Performer calculates the average output voltages for the upper detector by adding the respective upper detector's calibrated output voltage readings **[from Step 5]** and dividing the result by the number of channels in service. This process is repeated for the lower detector using the lower detector calibrated voltages. The results recorded in appropriate blocks on Attachment 1 Step 6.

___ SAT

___ UNSAT

COMMENTS:

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 8: **[Step 7] CALCULATE** QPTR values by dividing each detector's (upper or lower) Calibration Output Voltage by the average (upper or lower) Calibrated Output Voltage.

A. $QPTR_t = V_t \div Avg\ V_t$

B. $QPTR_b = V_b \times Avg\ V_b$

	UPPER DETECTOR	LOWER DETECTOR
NIS Channel	$QPTR_t$ Value	$QPTR_b$ Value
N-41A	(13.284/13.811)= 0.962	(13.325/13.629)= 0.978
N-42A	(13.763/13.811)= 0.997	(14.282/13.629)= 1.048
N-43A	(13.284/13.811)= 0.962	(13.167/13.629)= 0.966
N-44A	(14.914/13.811)= 1.080	(13.742/13.629)= 1.008

STANDARD: Performer calculates QPTR values by dividing the respective Calibrated Output Voltage **[from step 5]** by the Average Calibrated Output Voltage for each NIS channel **detector [from step 6]**. The results recorded in appropriate blocks on Attachment 1. Performer returns to Section 6.1 Step 7.

___ SAT

___ UNSAT

COMMENTS:

NOTE TO EVALUATOR The following steps are from Section 6.1 of 1-SI-0-21.

STEP 9: [Step 2] **REVIEW** the Upper and Lower QPTR values.

STANDARD: Performer reviews QPTR values from Attachment 1 Step 7.

___ SAT

COMMENTS:

___ UNSAT

STEP 10: [Step 3] **CHECK** (√) Acceptance Criteria. **ACCEPTANCE CRITERIA**: All operable excore channels (upper and lower) indicate a QPTR ≤ 1.02. **YES NO** STANDARD: Performer determines that N-42 Lower Detector and N-44A Upper Detector exceed 1.02 QPTR. Performer then checks NO statement. COMMENTS:	___ SAT ___ UNSAT
STEP 11: Inform the Unit Supervisor that Attachment 1 and Section 6.1 of 1-SI-0-21 has been completed and the results of the QPTR. STANDARD: Performer inform the Unit Supervisor of the completion of Attachment 1 and Section 6.1 of 1-SI-0-21 and reports that acceptance criteria have not been satisfied. QPTR for N-42 Lower Detector is 1.047 and for N-44 Upper detector is 1.079 which exceed QPTR limit of 1.02. **EXAMINER'S CUE: Acknowledge report as Unit Supervisor, then state We will stop here.** COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit is operating at 100% rated thermal power

AFD Monitor Alarm and QPTR alarms are out of service due to card problem in the annunciator system.

1-SI-0-21 "Excore QPTR & Axial Flux Difference SI is required to be performed every 12 hours since both QPTR alarms are inoperable.

Plant computer is not available for performing this SI.

You are a support CRO.

INITIATING CUES:

- **Given the data that was just obtained from each power range channel upper and lower detector currents, the Unit Supervisor directs you to perform Section 6.1 "Excore QPTR Determination" of 1-SI-0-21. M&TE will not be utilized for data measurements.**

- **Report the results to the Unit Supervisor when Attachment 1 and Section 6.1 have been completed.**

APPLICANT DATA SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

The following microampere readings were taken from the Power Range NIS detectors:

	UPPER DETECTOR	LOWER DETECTOR
NIS Channel	I_t Detector Current (microamps)	I_b Detector Current (microamps)
N-41A	369	384
N-42A	368	386
N-43A	369	385
N-44A	371	386

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

A.3 JPMRADMIN

DETERMINE IF PERSONNEL WILL EXCEED ADMINISTRATIVE DOSE LIMITS WHILE PERFORMING TASK

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

Task: **DETERMINE IF PERSONNEL WILL EXCEED ADMINISTRATIVE DOSE LIMITS WHILE PERFORMING TASK**

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.3.10 [2.9/3.3]

Task Standard: Performer determines that path from additional equipment building results in the lowest dose, and that the remaining allowable dose is not exceeded.

Preferred Evaluation Location:

Simulator ____ In-Plant _____

Preferred Evaluation Method:

Perform __X___ Simulate _____

References:

Task Number:: AUO-119-SSP-5.01-001 APLICABLE FOR: AUO/RO/SRO

10CFR55.45: 10

Validation Time: 10 min. **Time Critical:** No

==========

Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____

_____

_____

_____

_____

_____

_____

_____

Tools/Equipment/Procedures Needed:

Calculator

NOTE TO EVALUATOR: Hand out the Applicant Data Sheet along with the Applicant's Cue Sheet.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit had experienced a valid safety injection signal.

The unit had also experienced a loss of both Unit 1 shutdown boards and RCP Seal Injection and thermal barrier cooling have been isolated per ECA-0.0 Appendix "A".

The unit has also experienced fuel damage.

Shutdown Board 1A has been re-energized and control room dispatches you to locally start 1A TBBP and throttle open the discharge valve.

A survey map is available for elevation 737 of the auxiliary building, showing dose rates and travel times to reach the TBBP Discharge valve that you will throttle open.

Three AUO's are available for assignment to perform this task.

RADCON personnel are currently unavailable to provide assistance.

INITIATING CUES:

You have been directed to determine the AUO (s) that could perform task without exceeding administrative limits:

- **AUO #1 has TEDE of 625 mRem**
- **AUO #2 has TEDE of 675 mRem**
- **AUO #3 has TEDE of 725 mRem**

START TIME: _____

NOTE TO EVALUATOR: The following steps may be performed out of order.	
STEP 1: Calculate Exposure during pump start and throttle valve operation. STANDARD: (2 R/hr)(1000MR/R)(1HR/60Min)(5 Min) = 166.67 MR **EXAMINER'S CUE: After the performer identified correct instruction, the evaluator can provide a copy of the instruction.** COMMENTS:	___ SAT ___ UNSAT
STEP 2: Calculate the exposure getting to task area and return. STANDARD: Dose received for 2 way travel for survey area "B" are added to dose received in Survey Area "A": 1) (3 R/hr)(1000MR/R)(1HR/60Min)(4 Min) = 200 MR COMMENTS:	___ SAT ___ UNSAT
STEP 3: Calculate total dose for job. STANDARD: Dose received for 2 way travel for survey area "B" are added to dose received in Survey Area "A": 1) Two way Survey Area B = 200 MR 2) Dose in Survey Area A = 166.67 MR 3) Total Dose = 200 MR + 166.67 MR = 366.67 MR COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 5: Determine total dose that would be received for all AUO.s involved. STANDARD: Performer Determines dose that would be received by AUO's. 1) AUO #1: 625 mrem + 366.67 mrem = 991.67 mrem 2) AUO #2: 675 mrem + 366.67 mrem = 1041.67 mrem 3) AUO #3: 725 mrem + 366.67 mrem = 1091.67 mrem COMMENTS:	___ SAT ___ UNSAT
STEP 5: Determines which AUO can perform tasks without exceeding Administrative limits. STANDARD: Performer determines AUO #1 is the only AUO that could perform task. COMMENTS: **END OF TASK**	___ SAT ___ UNSAT

TIME STOP: _____

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The unit had experienced a valid safety injection signal.

The unit had also experienced a loss of both Unit 1 shutdown boards and RCP Seal Injection and thermal barrier cooling have been isolated per ECA-0.0 Appendix "A".

The unit has also experienced fuel damage.

Shutdown Board 1A has been re-energized and control room dispatches you to locally start 1A TBBP and throttle open the discharge valve.

A survey map is available for elevation 737 of the auxiliary building, showing dose rates and travel times to reach the TBBP Discharge valve that you will throttle open.

Three AUO's are available for assignment to perform this task.

RADCON personnel are currently unavailable to provide assistance.

INITIATING CUES:

You have been directed to determine the AUO (s) that could perform task without exceeding administrative limits:

- **AUO #1 has TEDE of 625 mRem**
- **AUO #2 has TEDE of 675 mRem**
- **AUO #3 has TEDE of 725 mRem**

APPLICANT DATA SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

SURVEY DATA:

- TBBP control switches and pump discharge FCV are located in Survey area "A".
- Estimated time at control switch and discharge valve is 5 minutes.
- Travel time to Valve & control switches is 2 minutes.
- General Area Dose rate for Survey Area "A" is 2 R/hr.
- General Area Dose rate for Survey Area "B" is 3 R/hr.

- **AUO #1 has TEDE of 625 mRem**
- **AUO #2 has TEDE of 675 mRem**
- **AUO #3 has TEDE of 725 mRem**

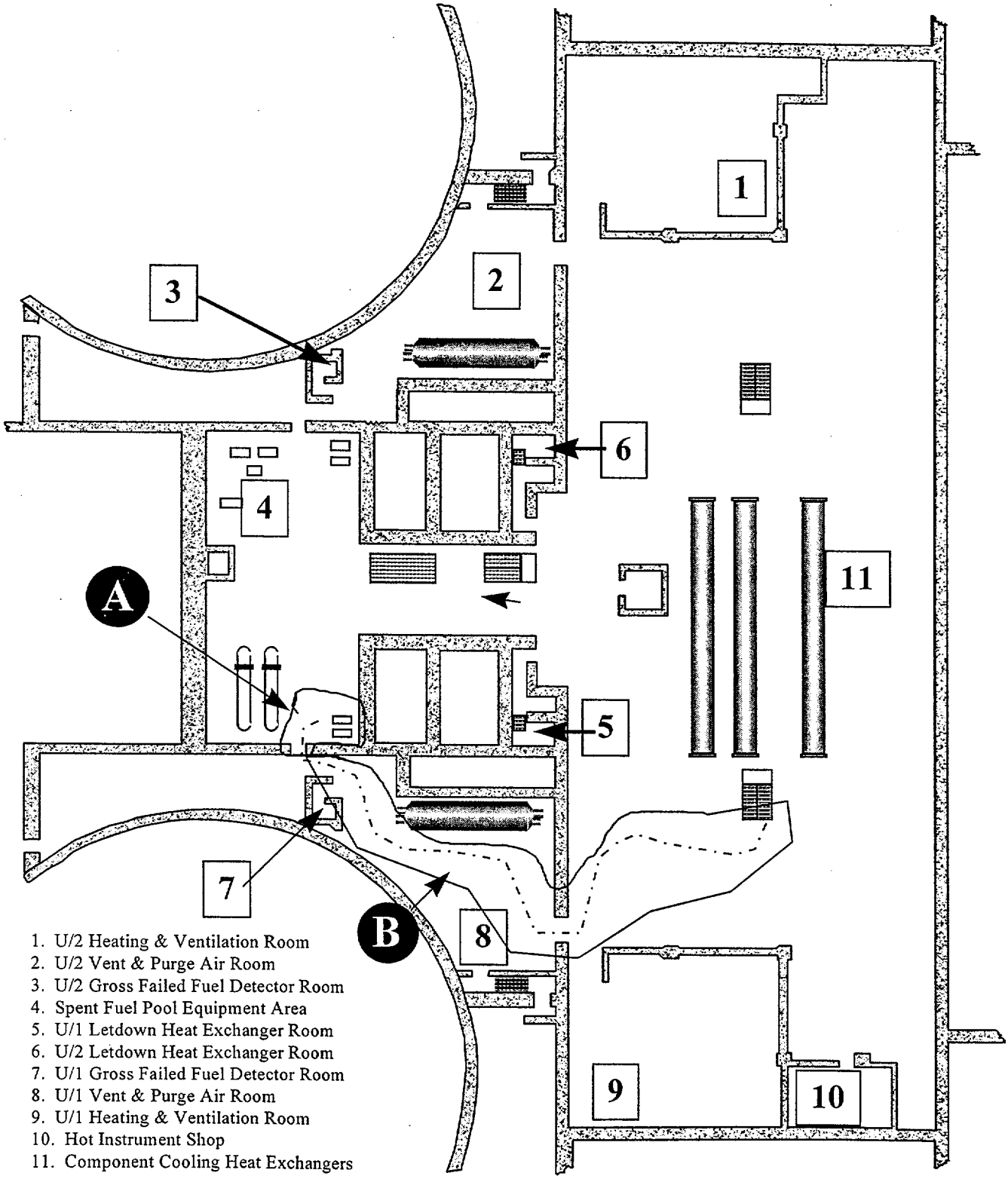
RESULTS:

Indicate below by checking yes or no if the respective AUO can be allowed to perform task without exceeding administrative dose limits.

	YES	NO
AUO #1	☐	☐
AUO #2	☐	☐
AUO #3	☐	☐

APPLICANT DATA SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

AUXILIARY BLDG ELEV. 737 G/A



1. U/2 Heating & Ventilation Room
2. U/2 Vent & Purge Air Room
3. U/2 Gross Failed Fuel Detector Room
4. Spent Fuel Pool Equipment Area
5. U/1 Letdown Heat Exchanger Room
6. U/2 Letdown Heat Exchanger Room
7. U/1 Gross Failed Fuel Detector Room
8. U/1 Vent & Purge Air Room
9. U/1 Heating & Ventilation Room
10. Hot Instrument Shop
11. Component Cooling Heat Exchangers

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

A.4.RO JPMRADMIN

RESPOND TO A MEDICAL EMERGENCY IN ACCORDANCE WITH EPIP-10

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
ADMINISTRATIVE JOB PERFORMANCE MEASURE

Task: **DETERMINE CRITICAL SAFETY FUNCTION STATUS TREES WITH SPDS UNAVAILABLE.**

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.4.39 [3.3/3.1]

Task Standard: Performer performs actions of Appendix A of EPIP-10, "Medical Emergency Response".

Preferred Evaluation Location:

Simulator __X__ In-Plant _____

Preferred Evaluation Method:

Perform __X__ Simulate _____

References: EPIP-10, "Medical Emergency Response", Rev. 12.

Task Number: RO-100-SOI-100-011 APPLICABLE FOR: RO/SRO

10CFR55.45: 11

Validation Time: ____ min. **Time Critical:** No

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ___

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____

_____

_____

_____

_____

_____

_____

SIMULATOR OPERATOR INSTRUCTIONS:

This JPM may be performed either on the simulator or in another location. If performed on the simulator refer to the following.

1. Initialize to any IC.

2. Acknowledge all alarms.

3. Freeze simulator for duration of task performance.

5. NOTE: This JPM may be performed using a console booth instructor who acts as personnel outside the main control room. Cues may be made by him as indicated by the JPM.

SIMULATOR OPERATOR INSTRUCTIONS:

When directed by the evaluator, place phone call to the "Horsehoe" to initiate the medical emergency:

Call the "Horseshoe" and state the following:

"I want to report a medical emergency."

Tools/Equipment/Procedures Needed:

Latest revision of EPIP-10

NOTE: START THIS JPM AT A LOCATION WHERE PERFORMER HAS ACCESS TO PROCEDURES (Simulator, Main Control Room, TIC or provide performer with procedure).

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

You are the Control Room Operator (CRO) on shift.

You have received a telephone call reporting an onsite medical emergency.

INITIATING CUES:

- **Respond to the medical emergency in accordance with EPIP-10.**

START TIME: _____

STEP 1: Obtain a copy of the instruction. STANDARD: A copy of EPIP-10 has been obtained. **EXAMINER'S CUE: After the performer locates and obtains correct instruction, the evaluator can provide a copy of the instruction.** COMMENTS:	___ SAT ___ UNSAT
NOTE TO EVALUATOR: The following steps are from EPIP-10, Appendix A	
STEP 2: [Step A] Obtain NAME of caller. STANDARD: CRO requests name of caller and records on Appendix A. ***CUE:*** **State to the performer that your name is John Doe.** COMMENTS:	___ SAT ___ UNSAT

STEP 3: [Step B] LOCATION of caller. STANDARD: Performer requests the location of the caller and records on Appendix A. ***CUE:*** **State to the performer that you are just south of the station air compressors on elevation 685' in the Turbine Building.** COMMENTS:	___ SAT ___ UNSAT
STEP 4: [Step C] Type of Medical Emergency. STANDARD: Performer requests the type of Medical Emergency and records on Appendix A. ***CUE:*** **State to the performer that you found a male victim lying on the floor unconscious but has heartbeat and is breathing.** COMMENTS:	___ SAT ___ UNSAT
STEP 5: [Step D] Number of personnel Involved. STANDARD: Performer requests how many people involved and records on Appendix A. ***CUE:*** **State to the performer: "no other individuals are involved".** COMMENTS:	___ SAT ___ UNSAT

STEP 6: [Step E] Immediate Area Hazards (Radiological, Safety). STANDARD: Requests if immediate hazards exist and records on Appendix A. ***CUE:*** **State to the performer: "no hazards exist in the area".** COMMENTS:	___ SAT ___ UNSAT
STEP 7: [Step F] Telephone number of the caller. STANDARD: Request the telephone number of the caller and records on Appendix A. ***CUE:*** **State to the performer that the phone number of the phone you are calling from is 5555.** COMMENTS:	___ SAT ___ UNSAT
STEP 8: [Step G] ALERT and DISPATCH MERT PERSONNEL STANDARD: Performer alerts and dispatches MERT personnel. ***CUE:*** **As MERT personnel, acknowledge performer's communication.** COMMENTS:	___ SAT ___ UNSAT

STEP 9: [Step H] Make the following plant announcement with public address: **"ATTENTION ALL SITE PERSONNEL."** **"ATTENTION ALL SITE PERSONNEL."** **"A MEDICAL emergency has been reported. The MERT is to ACTIVATE and RESPOND to the following LOCATION: _____"** STANDARD: Performer makes public address announcement and has MERT respond to Turbine Building elevation 685', just south of the station air compressors. **EXAMINER'S CUE: If NOT being performed on the simulator, do NOT allow performer to actually perform this announcement. Ensure it is simulated.** COMMENTS:	
STEP 10: [Step I] CONFIRM that the Shift Manager (SM) has been notified. STANDARD: Performer ensures the SM has been notified. (may make phone call or announce to the control crew that a medical emergency is in progress) ****CUE: Acknowledge report as Shift Manager.** COMMENTS:	

STEP 11: [Step J] CONFIRM that the Fire Protection Section Duty Shift Supervisor (Fire Brigade Leader) was notified by: Radio or Telephone (extension 3311 or 3355) or Pocket Pager 40566 STANDARD: Performer ensures the Fire Protection Section Duty Shift Supervisor was notified by either radio, telephone, or pocket pager. **EXAMINER'S CUE: Do NOT allow performer to actually perform this notification. Ensure it is simulated.** **CUE: Acknowledge report as Fire Protection Section Duty Shift Supervisor.** COMMENTS:	___ SAT ___ UNSAT
STEP 12: [Step K] CONFIRM/COORDINATE MERT response (via radio or phone) until Incident Commander assumes control. STANDARD: Performer confirms/coordinate the MERT response until the Incident Commander assumes control. **CUE: As Incident Commander, notify the performer that you have assumed control of the emergency. We will stop here.** COMMENTS:	
END OF TASK	

TIME STOP: _____

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the administrative task to be performed. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

You are the Control Room Operator (CRO) on shift.

You have received a telephone call reporting an onsite medical emergency.

INITIATING CUES:

- **Respond to the medical emergency in accordance with EPIP-10.**

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin A.4/Scenario 2

Classify The Event Per The REP (Cold Leg LOCA)

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: Classify The Event Per The REP (Cold Leg LOCA)

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.4.38 [2.2/4.0]

Task Standard: The event is classified as an ALERT based on EAL 1.2.2, "RCS Leakage/LOCA ". Notifications are made per EPIP-3.

Preferred Evaluation Location: **Preferred Evaluation Method:**

Simulator __X__ In-Plant _____ Perform __X__ Simulate _____

References: EPIP-1 "Emergency Plan Classification Flowpath", Rev. 15; EPIP-3 "ALERT", Rev. 16

Task Number: SRO-113-EPIP-001 APPLICABLE FOR: SRO

10CFR55.45: 11

Validation Time: 20 min. **Time Critical:** No YES

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Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time ____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____
_____
_____
_____
_____
_____
_____
_____
_____

SIMULATOR OPERATOR INSTRUCTIONS:

1. This JPM will commence from the point where simulator is frozen at the end of simulator exam scenario 2.

SIMULATOR OPERATOR INSTRUCTIONS:

1. Obtain copy of EPIP-3 to facilitate role plays for contacts made by the performer.
2. Performer must use NRC ring down phone.

Tools/Equipment/Procedures Needed:

Ensure clean copy of EPIP-3 in all copies of Emergency Instructions on the Simulator Floor and in the file drawer of Unit Supervisor's desk..

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Simulator represents the current plant conditions.

Simulator operation is frozen.

INITIATING CUES:

Using the current conditions, make the initial classification of the event per the REP and make the required notifications.

Time Critical Task

EXAMINER NOTE: This handout sheet and accompanying equation sheet is to be used after JPM Step 18. Provide applicant with both sheets.

READ TO OPERATOR

NEW CONDITIONS:

- A breech of containment has occurred resulting in a rapid reduction of containment pressure to approximately atmospheric pressure.
- Incore thermocouples indicate 850°F Hi quadrant average
- RVLIS Level is 60%
- A radiological field team reported that measured external dose at **7 miles** from the plant is **200 mr/hr**.

A General Emergency has been declared.

INITIATING CUES:

Make the Protective Action Recommendations for this declaration. When determining 2 and 5 mile dose rates, assume that these readings are measured from a point source at the plant. (Ignore all atmospheric conditions that would affect measurements)

START TIME: _____

STEP 1: Refers to EPIP-1 to determine level of event. STANDARD: Performer refers to EPIP-1 and declares an ALERT based on EAL 1.2.2, "RCS Leakage/LOCA". This must be completed within **15 minutes** of task assignment. **This step is critical to ensure proper activation of TVA resources for event in progress.** COMMENTS: **RECORD time that declaration was made:**_____	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 2: Implements EPIP-3, ALERT STANDARD: EPIP-3, ALERT, is implemented. COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 3: **[STEP 1] DIRECT** Shift Personnel to activate the Emergency Paging System (EPS) to staff the TSC and Operations Support Center (OSC). Shift Personnel should confirm activation and provide the 20 minute printed report to the SM for review. STANDARD: Shift personnel is notified to activate the emergency paging system (EPS) to staff the TSC and Operations Support Center (OSC) or EPS is activated in the control room. **This step is critical to ensure proper activation of TVA resources for event in progress.** *****CUE:*** **After the shift personnel is notified, acknowledge the request to activate the Emergency Paging System.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
NOTE 1 **IF the EPS system fails, call the ODS (5-751-1700) and have him activate the EPS.** **NOTE 2** **IF the above methods of activating the EPS fail, the Shift Personnel must use the Radiological Emergency Response Call Lists to staff the TSC and OSC. This list is located in the EPS Manual near the terminal.**	
STEP 4: **[STEP 2] COMPLETE** Appendix A, Notification Information. STANDARD: Appendix A is accurately completed. COMMENTS:	___ SAT ___ UNSAT

STEP 5: **[STEP 3] ANNOUNCE** to the crew: "An Alert is being declared based on EAL 1.2.2, "RCS Leakage/LOCA." I will be the Site Emergency Director." STANDARD: The above announcement is made to the crew. Wording describing the event may vary. This must be completed within **15 minutes** of task assignment. **Step is critical to alert crew to the declaration of the ALERT.** *****CUE:*** **After the crew is notified, acknowledge the report.** COMMENTS: **RECORD time that declaration was made:_____**	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 6: **[STEP 4] NOTIFY** the ODS direct by ODS Ringdown or No. 5-751-1700 or 5-751-2495 and **PROVIDE** the information from Appendix A. **If** the ODS cannot be contacted within 10 minutes, the Tennessee Emergency Management Agency is to be notified of the Radiological Emergency Plan activation by calling 9-1-800-262-3300 or 9-1-615-741-0001 or 9-1-800-262-3400. STANDARD: The ODS is notified and provided the information on Appendix A. This notification must be made within **5 minutes** of event declaration. **Step is critical to ensure timely staffing of CECC.** **EVALUATOR NOTE: DO NOT allow actual call to ODS. Ensure call is to simulator instructor.** *****CUE:*** **(Booth Operator) Role play the ODS and repeat back the report.** COMMENTS: **RECORD time that ODS was notified:_____**	**CRITICAL STEP** ___ SAT ___ UNSAT

STEP 7: **[STEP 5] FAX** Appendix A to the ODS.(No. pre-programmed or 5-751-8620.) STANDARD: Appendix A is placed in the fax machine and transmission simulated. ***CUE:* Do NOT allow fax to be transmitted. COMMENTS:	___ SAT ___ UNSAT
STEP 8: **[STEP 6] ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. AN ALERT emergency has been declared based on EAL 1.2.2, "RCS Leakage/LOCA." Staff the TSC and OSC. (Repeat) STANDARD: A public address announcement for Plant Emergency Response Personnel to staff the TSC and OSC is made over the plant paging system. Wording describing the event may vary. **Step is critical to alert all plant personnel of the REP declaration and instructions staffing TSC and OSC.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

STEP 9: **[STEP 7] EVALUATE** plant conditions, and **IF** conditions warrant, **INITIATE** assembly and accountability by completing steps 8 and 9. (For additional details, go to WBN EPIP-8, "Personnel Accountability and Evacuation"). **IF** you are not going to initiate assembly and accountability, **GO TO** step 10. STANDARD: Performer decides whether conditions warrant initiating assembly and accountability or whether the conditions do NOT warrant assembly and accountability. **If the decision is that conditions do then the performer proceeds to step 8 (JPM STEP 10). If the decision is that conditions do NOT then the performer goes to the step 10 (JPM STEP 14). Either is acceptable.** NOTE: Limited Area Evacuation per EPIP-8 App B may be implemented and if so skip to procedure step 10 (JPM step 14). COMMENTS:	___ SAT ___ UNSAT
EVALUATOR NOTE Steps 10, 11, and 12 are all part of the same procedure step.	
STEP 10: **[STEP 8] NOTIFY** Security (CAS) that assembly and accountability is to be conducted. STANDARD: The performer notifies Security that assembly and accountability is to be conducted. **This step is critical to enable assembly card readers.** *****CUE:*** **(Booth Operator) If RADCON is notified to implement EPIP-16, acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

CAUTION **If there is any possibility of a radiological release, do not send personnel into areas of unknown radiological conditions without first contacting Radiological Control (RADCON).** **EVALUATOR NOTE: Performance Steps 11, 12, and 13 will only be critical if the decision was made to initiate assembly & accountability.** **EVALUATOR NOTE: Performance Steps 11, 12, and 13 are all part of the same Procedure step.**	
STEP 11: **[STEP 9] ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. Report to your assembly areas for accountability." (Repeat) **AND** STANDARD: The above announcement is made for all site personnel to report to their assembly areas for accountability. **Step is critical to alert all plant personnel of the assembly & accountability instructions.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 12: **[STEP 9] ACTIVATE** assembly alarm for personnel assembly and accountability. STANDARD: The performer pushes assembly alarm "EVAC AUTO" or "EVAC MANUAL" push button. **This step is critical to activate assembly & accountability alarm.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

STEP 13: **[STEP 9] INITIATE** WBN EPIP-8, "Personnel Accountability and Evacuation". STANDARD: The performer refers to EPIP-8, Appendix C, to determine actions necessary for personnel accountability and evacuation. **This step is critical in that specific guidance is given with regard to assembly & accountability..** *****CUE:*** **After the performer has determined which sections of EPIP-8 apply, direct him/her to return to EPIP-3 and continue actions.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 14: **[STEP 10] CALL** RADCON Lab and **SAY**: "We are in an Alert, implement WBN EPIP-14, and CECC EPIP-9." STANDARD: The RADCON Lab is notified to implement WBN EPIP-14 and CECC EPIP-9 . **This step is critical to notify RADCON so proper survey's, etc are implemented.** *****CUE:*** **(Booth Operator) Acknowledge the request to implement WBN EPIP-14 and CECC EPIP-9.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

STEP 15: **[STEP 11] IF** there are personnel injuries, **IMPLEMENT** WBN EPIP-10, "Medical Emergency Response." STANDARD: Performer determines that it is NOT necessary to implement EPIP-10. *****CUE:*** **Inform the performer that there are NO personnel injuries.** COMMENTS:	___ SAT ___ UNSAT
STEP 16: **[STEP 12] IF** there is a security threat, **IMPLEMENT** WBN EPIP-11, "Security and Access Control." STANDARD: Performer determines that it is NOT necessary to implement EPIP-11. *****CUE:*** **Inform the performer that there has been NO reports of a security threat** COMMENTS:	___ SAT ___ UNSAT
STEP 17: **[STEP 13] NOTIFY** Duty Plant Manager, **and PROVIDE** Appendix A information (**SEE** duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or his alternate. STANDARD: Duty Plant Manager is provided the Appendix A information. **This step is critical as it alerts plant management to REP activation.** *****CUE:*** **(Booth Operator) Role play as the Duty Plant Manager and acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 18: **[STEP 14] EVALUATE** the need to implement EPIP-16, "Initial Dose Assessment for Radiological Emergencies," for a dose projection if radioactivity is being released through normal plant release paths. STANDARD: The performer determines whether or not EPIP-16 is to be implemented. Either decision is acceptable. *****CUE:*** **(Booth Operator) If RADCON is notified to implement EPIP-16, acknowledge the report.** COMMENTS:	___ SAT ___ UNSAT
NOTE NRC notification should be made as soon as practicable but within one hour of "Alert" declaration. Whenever NRC requests, a qualified person must provide a continuous update to NRC Operations Center. The following commercial numbers are for the NRC Operations Center. **9-1-301-816-5100 (MAIN)** **9-1-301-951-0550 (BACKUP)** **9-1-301-816-5151 (FAX)** **EVALUATOR NOTE: DO NOT allow actual call to NRC. Ensure call is to simulator instructor.**	
STEP 19: **[STEP 15] NOTIFY** the NRC, using designated NRC phone (ENS), of plan activation. STANDARD: The NRC is notified of plan activation using designated line. **This step is critical as it alerts NRC to REP activation.** **EVALUATOR NOTE: DO NOT allow actual call to NRC. Ensure call is to simulator instructor.** *****CUE:*** **(Booth Operator) Role play the NRC and acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 20: **[STEP 16] NOTIFY** the NRC Resident Inspector by calling 1776 and **PROVIDING** the information on Appendix A. STANDARD: The NRC Resident Inspector is provided Appendix A information. **This step is critical as it alerts NRC to REP activation.** EVALUATOR NOTE: **DO NOT allow actual call to NRC Resident. Ensure call is to simulator instructor.** *****CUE:*** **(Booth Operator) Role play the NRC Resident and acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
EVALUATOR CUE: State to applicant that conditions have now changed. A General Emergency has been declared. **EVALUATOR CUE: Read and provide Applicant handout sheet and equation sheet for PAR recommendations.**	
STEP 21: Refers to EPIP-5 to Appendix B "Protective Action Recommendation Guidance. STANDARD: Applicant obtains copy of EPIP-5 Appendix B. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 22:	General Emergency Declared.	___ SAT
STANDARD:	Applicant enters logic tree at top of page since general emergency has been declared. (given in applicant's handout sheet.)	___ UNSAT
COMMENTS:		
STEP 23:	Is Projected or Measured Dose Greater Than or Equal to Table 1 Limits at or beyond 5 miles.	___ SAT
STANDARD:	Applicant determines that measured external dose does NOT exceed table 1 limits, therefore applicant answers NO to logic question and continues to the next decision block on the PAR flowchart. Applicant calculates dose at 5 miles using point source equation: $I_1(d_1)^2 = I_2(d_2)^2$ $200mr./hr(7mi)^2 = I_2(5mi)^2$ $I_2 = 9800/25 = 392$ mr/hr = 0.392 R/hr (external dose rate at 5 miles)	___ UNSAT
COMMENTS:		

STEP 24: Indications of Severe Core Damage Greater Than or Equal to the Values in Table 2. STANDARD: Applicant determines that a table 2 limit has been NOT been exceeded, therefore applicant answers NO to logic question and continues to the next decision block on the PAR flowchart. COMMENTS:	___ SAT ___ UNSAT
STEP 25: Is there loss of Physical Control of the Facility. STANDARD: Applicant determines that physical control of the facility has NOT been lost (security status from earlier has not changed), therefore applicant answers NO to logic question and continues to the next decision block on the PAR flowchart. *****CUE:*** **Inform the performer that there has been NO reports of a security threat** COMMENTS:	___ SAT ___ UNSAT

STEP 26: Is Projected or Measured Dose Greater Than or Equal to Table 1 Limits at or beyond 2 miles.	**CRITICAL STEP**
STANDARD: Applicant determines that dose exceeds table 1 limits (1 REM/hr external dose) at 2 miles or beyond, therefore applicant answers YES to logic question. Applicant then determines that the logic indicates Recommendation 2 as the Protective Action Recommendation. Applicant calculates dose at ~~5~~ 2 miles using point source equation: $I_1(d_1)^2 = I_2(d_2)^2$ $200mr./hr(7mi)^2 = I_2(2mi)^2$ $I_2 = 9800/4 = 2450$ mr/hr = 2.45 R/hr (external dose rate at 2 miles) **This step is critical for making the appropriate PAR to the CECC.**	
***CUE:* Acknowledge report by the applicant**	
COMMENTS:	
END OF TASK	

TIME STOP: _____

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Simulator represents the current plant conditions.

Simulator operation is frozen.

INITIATING CUES:

Using the current conditions, make the initial classification of the event per the REP and make the required notifications.

APPLICANT HANDOUT SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

NEW CONDITIONS:

- A breech of containment has occurred resulting in a rapid reduction of containment pressure to approximately atmospheric pressure.
- Incore thermocouples indicate 850°F Hi quadrant average
- RVLIS Level is 60%
- A radiological field team reported that measured external dose at **7 miles** from the plant is **200 mr/hr**.

A General Emergency has been declared.

INITIATING CUES:

Make the Protective Action Recommendations for this declaration. When determining 2 and 5 mile dose rates, assume that these readings are measured from a point source at the plant. (Ignore all atmospheric conditions that would affect measurements)

This is a Time Critical Task

EQUATIONS

$\dot{Q} = \dot{m}c_p\Delta T$

$\dot{Q} = \dot{m}c_p\Delta h$

$\dot{Q} = UA\Delta T$

$SUR = \frac{26.06(\lambda_{eff}\,\rho)}{(\bar{B}-\rho)}$

$SUR = \frac{26.06}{\tau}$

$\rho = \frac{(K_{eff} - 1)}{K_{eff}}$

$\rho = \frac{\Delta K_{eff}}{K_{eff}}$

$\tau = \frac{\ell^*}{\rho} + \left[\frac{(\bar{B}-\rho)}{\lambda_{eff}\,\rho}\right]$

$\ell^* = 1 \times 10^{-4}$ seconds

$\lambda_{eff} = .01$ seconds^{-1}

$P = P_o 10^{SUR(t)}$

$P = P_o e^{t/\tau}$

$SCR = \frac{S}{(1 - K_{eff})}$

$CR_1 = (1 - K_{eff1}) = \frac{CR_2}{CR_1}$

$M = \frac{(1 - K_{eff1})}{(1 - K_{eff2})}$

$SDM = \frac{(1 - K_{eff})}{K_{eff}}$

$I_1(d_1) = I_2(d_2)$

$I_1(d_1)^2 = I_2(d_2)^2$

$\dot{W}_{pump} = \dot{m}\Delta P v$

Cycle Efficiency = $\frac{\text{Net Work (out)}}{\text{Energy (in)}}$

CONVERSIONS

1 Curie = 3.7×10^{10} dps

1 hp = 2.54×10^3 Btu/hr

1 Btu = 778 ft-lbf

$^oC = 5/9\ (^oF - 32)$

1 kg = 2.21 lbm

1 MW = 3.41×10^6 Btu/hr

$^oF = 9/5\ ^oC + 32$

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin A.4/Scenario 3

Classify The Event Per The REP (Steam Line Break Inside Containment)

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: Classify The Event Per The REP (Steam Line Break Inside Containment)

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.4.38 [2.2/4.0]

Task Standard: The event is classified as an Unusual Event based on EAL 2.7 "Uncontrolled Cooldown." Notifications are made per EPIP-2.

Preferred Evaluation Location:

Simulator __X__ In-Plant _____

Preferred Evaluation Method:

Perform __X__ Simulate _____

References: EPIP-1 "Emergency Plan Classification Flowpath", Rev. 15; EPIP-2 "Notification Of Unusual Event", Rev. 13

Task Number: SRO-113-EPIP-001 APPLICABLE FOR: SRO

10CFR55.45: 11

Validation Time: 20 min. **Time Critical:** YES

==========

Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time ____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____
_____
_____
_____
_____
_____
_____
_____
_____

SIMULATOR OPERATOR INSTRUCTIONS:

1. This JPM will commence from the point where simulator is frozen at the end of simulator exam scenario 3.

SIMULATOR OPERATOR INSTRUCTIONS:

1. Obtain copy of EPIP-2 to facilitate role plays for contacts made by the performer.
2. Performer must use NRC ring down phone.

Tools/Equipment/Procedures Needed:

Ensure clean copy of EPIP-2 in all copies of Emergency Instructions on the Simulator Floor and in the file drawer of Unit Supervisor's desk.

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Simulator represents the current plant conditions.

Simulator operation is frozen.

INITIATING CUES:

Using the current conditions, make the initial classification of the event per the REP and make the required notifications.

THIS IS A TIME CRITICAL TASK

EXAMINER NOTE: This handout sheet and accompanying equation sheet is to be used after JPM Step 18. Provide applicant with both sheets.

READ TO OPERATOR

NEW CONDITIONS:

A LOCA occurs from present conditions resulting in the following:

- CNTMT pressure 7.0 psig with NO CNTMT Spray Pumps running.
- RVLIS Level 17% and stable.
- Core Cooling RED path.
- A radiological field team reported that measured external dose at **7 miles** from the plant is **10 mr/hr**.

A General Emergency has been declared.

INITIATING CUES:

Make the Protective Action Recommendations for this declaration. When determining 2 and 5 mile dose rates, assume that these readings are measured from a point source at the plant. (Ignore all atmospheric conditions that would affect measurements)

START TIME: _____

STEP 1: Refers to EPIP-1 to determine level of event. STANDARD: Performer refers to EPIP-1 and declares an Notification Of Unusual Event based on EAL 2.7 "Uncontrolled Cooldown." This must be completed within **15 minutes** of task assignment. **This step is critical to ensure proper activation of TVA resources for event in progress.** COMMENTS: **RECORD time that declaration was made:**_____	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 2: Implements EPIP-2, Notification Of Unusual Event STANDARD: EPIP-2, Notification Of Unusual Event, is implemented. COMMENTS:	___ SAT ___ UNSAT
STEP 15: **[STEP 1] IF** there are personnel injuries, **IMPLEMENT** WBN EPIP-10, "Medical Emergency Response." STANDARD: Performer determines that it is NOT necessary to implement EPIP-10. *****CUE:*** **Inform the performer that there are NO personnel injuries.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 4: **[STEP 2] COMPLETE** Appendix A, Notification Information. STANDARD: Appendix A is accurately completed. COMMENTS:	___ SAT ___ UNSAT
STEP 5: **[STEP 3] ANNOUNCE** to the crew: "An Notification of Unusual Event is being declared based on EAL 2.7 "Uncontrolled Cooldown." I will be the Site Emergency Director." STANDARD: The above announcement is made to the crew. Wording describing the event may vary. This must be completed within **15 minutes** of task assignment. **Step is critical to alert crew to the declaration of the Notification of Unusual Event.** *****CUE:*** **After the crew is notified, acknowledge the report.** COMMENTS: **RECORD time that declaration was made:_____**	**CRITICAL STEP** ___ SAT ___ UNSAT

STEP 6: **[STEP 4] NOTIFY** the ODS direct by ODS Ringdown or No. 5-751-1700 or 5-751-2495 and **PROVIDE** the information from Appendix A. **If** the ODS cannot be contacted within 10 minutes, the Tennessee Emergency Management Agency is to be notified of the Radiological Emergency Plan activation by calling 9-1-800-262-3300 or 9-1-615-741-0001 or 9-1-800-262-3400. STANDARD: The ODS is notified and provided the information on Appendix A. This notification must be made within **5 minutes** of event declaration. **Step is critical to ensure timely staffing of CECC.** **EVALUATOR NOTE: DO NOT allow actual call to ODS. Ensure call is to simulator instructor** *****CUE:*** **(Booth Operator) Role play the ODS and repeat back the report.** COMMENTS: **RECORD time that ODS was notified:_____**	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 7: **[STEP 5] FAX** Appendix A to the ODS.(No. pre-programmed or 5-751-8620.) STANDARD: Appendix A is placed in the fax machine and transmission simulated. *****CUE:*** **Do NOT allow fax to be transmitted.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 8:	**[STEP 6] ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. A Notification of Unusual Event is being declared based on EAL 2.7 "Uncontrolled Cooldown." (Repeat)	**CRITICAL STEP**
STANDARD:	A public address announcement for Notification of Unusual Event. Wording describing the event may vary. **Step is critical to alert all plant personnel of the REP declaration.**	___ SAT ___ UNSAT
COMMENTS:		
STEP 9:	**[STEP 7] NOTIFY** Duty Plant Manager, and **PROVIDE** Appendix A information (**SEE** duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or his alternate.	**CRITICAL STEP**
STANDARD:	Duty Plant Manager is provided the Appendix A information. **This step is critical as it alerts plant management to REP activation.** *****CUE:*** **(Booth Operator) Role play as the Duty Plant Manager and acknowledge the report.**	___ SAT ___ UNSAT
COMMENTS:		

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE If the EPS system fails, call the ODS ringdown or (5-751-1700) and have him activate the EPS.	
STEP 10: **[STEP 8] IF** TSC and OSC support is needed, ACTIVATE the emergency system paging (EPS). STANDARD: Performer contacts shift personnel to activate EPS or EPS is activated in the control room, or performer decides NOT to staff the TSC/OSC at this time. **This step is critical to ensure proper activation of TVA resources for event in progress.** *****CUE:*** **After the shift personnel is notified, acknowledge the request to activate the Emergency Paging System.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

NOTE **NRC notification should be made as soon as practicable but within one hour of "NOTIFICATION OF UNUSUAL EVENT" declaration. Whenever NRC requests, a qualified person must provide a continuous update to NRC Operations Center. The following commercial numbers are for the NRC Operations Center** **9-1-301-816-5100 (MAIN)** **9-1-301-951-0550 (BACKUP)** **9-1-301-816-5151 (FAX)** **EVALUATOR NOTE: DO NOT allow actual call to NRC. Ensure call is to simulator instructor.**	
STEP 11: **[STEP 9] NOTIFY** the NRC, using designated NRC phone (ENS), of plan activation. STANDARD: The NRC is notified of plan activation using designated line. **This step is critical as it alerts NRC to REP activation.** **EVALUATOR NOTE: DO NOT allow actual call to NRC. Ensure call is to simulator instructor.** *****CUE:*** **(Booth Operator) Role play the NRC and acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 12: **[STEP 10] EVALUATE** the need to implement EPIP-16, "Initial Dose Assessment for Radiological Emergencies," for a dose projection if radioactivity is being released through normal plant release paths. STANDARD: The performer determines whether or not EPIP-16 is to be implemented. Either decision is acceptable. *****CUE:*** **(Booth Operator) If RADCON is notified to implement EPIP-16, acknowledge the report.** COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 13: **[STEP 11] NOTIFY** WBN Emergency Preparedness. **NOTE** Notification to Emergency Preparedness should be made as soon as practicable, but only when notification does not interfere with emergency actions or notifications in progress. Work - 3232 or Work - 8004 Home - 9-1-423-337-2911 Home -9-1-423-842-3020 Pager - 30374 Pager - 30388 STANDARD: WBN Emergency Preparedness is notified of plan activation. EVALUATOR NOTE: **DO NOT allow actual call to WBN Emergency Preparedness. Ensure call is to simulator instructor.** *****CUE:*** **(Booth Operator) Role play as WBN Emergency Preparedness and acknowledge the report.** COMMENTS:	___ SAT ___ UNSAT
EVALUATOR CUE: State to applicant that conditions have now changed. A General Emergency has been declared. **EVALUATOR CUE: Read and provide Applicant handout sheet and equation sheet for PAR recommendations.**	
STEP 14: Refers to EPIP-5 to Appendix B "Protective Action Recommendation Guidance. STANDARD: Applicant obtains copy of EPIP-5 Appendix B. COMMENTS:	___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 15: General Emergency Declared. STANDARD: Applicant enters logic tree at top of page since general emergency has been declared. (given in applicant's handout sheet. COMMENTS:	___ SAT ___ UNSAT
STEP 16: Is Projected or Measured Dose Greater Than or Equal to Table 1 Limits at or beyond 5 miles. STANDARD: Applicant determines that measured external dose does NOT exceed table 1 limits, therefore applicant answers NO to logic question and continues to the next decision block on the PAR flowchart. Applicant calculates dose at 5 miles using point source equation: $I_1(d_1)^2 = I_2(d_2)^2$ $10mr./hr(7mi)^2 = I_2(5mi)^2$ $I_2 = 490/25 = 19.6$ mr/hr = 0.0196 R/hr (external dose rate at 5 miles) COMMENTS:	___ SAT ___ UNSAT

Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.

STEP 17: Indications of Severe Core Damage Greater Than or Equal to the Values in Table 2. STANDARD: Applicant determines that a table 2 limit has been exceeded (Inadequate Core Cooling as indicated by "red" path from core cooling status trees), answer is YES to the logic question. Applicant then determines that the logic indicates Recommendation 2 as the Protective Action Recommendation. **This step is critical for making the appropriate PAR to the CECC.** *****CUE:*** **Acknowledge report by the applicant** COMMENTS: **END OF TASK**	**CRITICAL STEP** ___ SAT ___ UNSAT

TIME STOP: _____

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Simulator represents the current plant conditions.

Simulator operation is frozen.

INITIATING CUES:

Using the current conditions, make the initial classification of the event per the REP and make the required notifications.

THIS IS A TIME CRITICAL TASK

APPLICANT HANDOUT SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

NEW CONDITIONS:

A LOCA occurs from present conditions resulting in the following:

- CNTMT pressure 7.0 psig with NO CNTMT Spray Pumps running.
- RVLIS Level 17% and stable.
- Core Cooling RED path.
- A radiological field team reported that measured external dose at **7 miles** from the plant is **10 mr/hr**.

A General Emergency has been declared.

INITIATING CUES:

Make the Protective Action Recommendations for this declaration. When determining 2 and 5 mile dose rates, assume that these readings are measured from a point source at the plant. (Ignore all atmospheric conditions that would affect measurements)

EQUATIONS

$\dot{Q} = \dot{m}c_p\Delta T$

$\dot{Q} = \dot{m}c_p\Delta h$

$\dot{Q} = UA\Delta T$

$SUR = \frac{26.06(\lambda_{eff}\,\rho)}{(\bar{B}-\rho)}$

$SUR = \frac{26.06}{\tau}$

$\rho = \frac{(K_{eff} - 1)}{K_{eff}}$

$\rho = \frac{\Delta K_{eff}}{K_{eff}}$

$\tau = \frac{\ell^*}{\rho} + \left[\frac{(\bar{B}-\rho)}{\lambda_{eff}\,\rho}\right]$

$\ell^* = 1 \times 10^{-4}$ seconds

$\lambda_{eff} = .01$ seconds^{-1}

$P = P_o 10^{SUR(t)}$

$P = P_o e^{t/\tau}$

$SCR = \frac{S}{(1 - K_{eff})}$

$CR_1 = (1 - K_{eff1}) = \frac{CR_2}{CR_1}$

$M = \frac{(1 - K_{eff1})}{(1 - K_{eff2})}$

$SDM = \frac{(1 - K_{eff})}{K_{eff}}$

$I_1(d_1) = I_2(d_2)$

$I_1(d_1)^2 = I_2(d_2)^2$

$\dot{W}_{pump} = \dot{m}\Delta P v$

Cycle Efficiency = $\frac{\text{Net Work (out)}}{\text{Energy (in)}}$

CONVERSIONS

1 Curie = 3.7×10^{10} dps

1 hp = 2.54×10^3 Btu/hr

1 Btu = 778 ft-lbf

$^oC = 5/9\ (^oF - 32)$

1 kg = 2.21 lbm

1 MW = 3.41×10^6 Btu/hr

$^oF = 9/5\ ^oC + 32$

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Admin A.4 /Scenario 1

Classify The Event Per The REP (SGTR With Ruptured SG Faulted Outside Containment)

APPLICANT _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task: Classify The Event Per The REP (SGTR With Ruptured SG Faulted Outside Containment)

Alternate Path: N/A

Facility JPM #: New

K/A Rating(s): 2.4.38 [2.2/4.0] 2.4.30 [2.2/3.6]

Task Standard: The event is classified as an SITE AREA EMERGENCY based on EAL 1.2.3 "Steam Generator Tube Rupture" and EAL 1.3.4 "Containment Bypass." Notifications are made per EPIP-4.

Preferred Evaluation Location:

Simulator __X__ In-Plant _____

Preferred Evaluation Method:

Perform __X__ Simulate _____

References: EPIP-1 "Emergency Plan Classification Flowpath", Rev. 15; EPIP-4 "SITE AREA EMERGENCY", Rev. 17

Task Number: SRO-113-EPIP-001 APPLICABLE FOR: SRO

10CFR55.45: 11

Validation Time: 22 min. **Time Critical:** Yes

==========

Applicant: _____ _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time ____

Examiner: _____ _____/_____
NAME SIGNATURE DATE

==========

COMMENTS

_____
_____
_____
_____
_____
_____
_____
_____
_____

SIMULATOR OPERATOR INSTRUCTIONS:

1. This JPM will commence from the point where simulator is frozen at the end of simulator exam scenario 1

SIMULATOR OPERATOR INSTRUCTIONS:

1. Obtain copy of EPIP-4 to facilitate role plays for contacts made by the performer.
2. Performer must use NRC ring down phone.

Tools/Equipment/Procedures Needed:

Ensure clean copy of EPIP-4 in all copies of Emergency Instructions on the Simulator Floor and in the file drawer of Unit Supervisor's desk..

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

Simulator represents the current plant conditions.

Simulator operation is frozen.

INITIATING CUES:

Using the current conditions, make the initial classification of the event per the REP and make the required notifications.

THIS IS A TIME CRITICAL TASK

EXAMINER NOTE: This handout sheet and accompanying equation sheet is to be used after JPM Step 18. Provide applicant with both sheets.

READ TO OPERATOR

NEW CONDITIONS:

- Chemistry reported RCS activity is now **350 μci/gm** dose equivalent Iodine-131
- A radiological field team reported that measured external dose at **7 miles** from the plant is **800 mr/hr**.

A General Emergency has been declared.

INITIATING CUES:

Make the Protective Action Recommendations for this declaration. When determining 2 and 5 mile dose rates, assume that these readings are measured from a point source at the plant. (Ignore all atmospheric conditions that would affect measurements)

START TIME: _____

STEP 1: Refers to EPIP-1 to determine level of event. STANDARD: Performer refers to EPIP-1 and declares an SITE AREA EMERGENCY based on EAL 1.2.3 "Steam Generator Tube Rupture" and EAL 1.3.4 "Containment Bypass." This must be completed within **15 minutes** of task assignment. **This step is critical to ensure proper activation of TVA resources for event in progress.** COMMENTS: **RECORD time that declaration was made:**_____	**CRITICAL STEP** ___ SAT ___ UNSAT
STEP 2: Implements EPIP-4, SITE AREA EMERGENCY STANDARD: EPIP-4, SITE AREA EMERGENCY, is implemented. COMMENTS:	___ SAT ___ UNSAT

STEP 3: **[STEP 1] DIRECT** Shift Personnel to activate the Emergency Paging System (EPS) to staff the TSC and Operations Support Center (OSC). Shift Personnel should confirm activation and provide the 20 minute printed report to the SM for review. STANDARD: Shift personnel is notified to activate the emergency paging system (EPS) to staff the TSC and Operations Support Center (OSC) or EPS is activated in the control room. **This step is critical to ensure proper activation of TVA resources for event in progress.** *****CUE:*** **After the shift personnel is notified, acknowledge the request to activate the Emergency Paging System.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
NOTE 1 **IF the EPS system fails, call the ODS (5-751-1700) and have him activate the EPS.** **NOTE 2** **IF the above methods of activating the EPS fail, the Shift Personnel must use the Radiological Emergency Response Call Lists to staff the TSC and OSC. This list is located in the EPS Manual near the terminal.**	
STEP 4: **[STEP 2] COMPLETE** Appendix A, Notification Information. STANDARD: Appendix A is accurately completed. COMMENTS:	___ SAT ___ UNSAT

STEP 5:	**[STEP 3] ANNOUNCE** to the crew: "A SITE AREA EMERGENCY is being declared based on EAL 1.2.3 "Steam Generator Tube Rupture" and EAL 1.3.4 "Containment Bypass.". I will be the Site Emergency Director, all support and job assignments must be authorized through me."	**CRITICAL STEP** ___ SAT
STANDARD:	The above announcement is made to the crew. Wording describing the event may vary. This must be completed within **15 minutes** of task assignment. **Step is critical to alert crew to the declaration of the SITE AREA EMERGENCY and provide for tracking personnel.** *****CUE:*** **After the crew is notified, acknowledge the report.** COMMENTS: **RECORD time that declaration was made:_____**	___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 6:	**[STEP 4] NOTIFY** the ODS direct by ODS Ringdown or No. 5-751-1700 or 5-751-2495 **and PROVIDE** the information from Appendix A. **IF** the ODS cannot be contacted within 10 minutes, then directly notify Rhea County, Meigs County, McMinn County, and the Tennessee Emergency Management Agency (TEMA) of the classification. Rhea County EMA 9-775-2505 ____(TIME) (Alternate) 9-775-7828 ____(TIME) Meigs County EMA 9-1-423-334-3049 ____(TIME) (Alternate) 9-1-423-334-5268 ____(TIME) McMinn County 9-1-423-744-2760 ____(TIME) (Alternate) 9-1-423-744-2721 ____(TIME) Tennessee EMA 9-1-800-262-3300 ____(TIME) (Alternate) 9-1-615-741-0001 ____(TIME) (Alternate) 9-1-800-262-3400 ____(TIME)	**CRITICAL STEP** ___ SAT ___ UNSAT
STANDARD:	The ODS is notified and provided the information on Appendix A. This notification must be made within **5 minutes** of event declaration. **Step is critical to ensure timely staffing of CECC and notification of the appropriate state agencies.**	
EVALUATOR NOTE:	**DO NOT allow actual call to ODS. Ensure call is to simulator instructor**	
*****CUE:***	**(Booth Operator) Role play as the ODS and repeat back the report.**	
COMMENTS:	**RECORD time that ODS was notified:_____**	

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 7: **[STEP 5] FAX** Appendix A to the ODS. (No. pre-programmed or 5-751-8620.) STANDARD: Appendix A is placed in the fax machine and transmission simulated. ***CUE:* **Do NOT allow fax to be transmitted.** COMMENTS:	___ SAT ___ UNSAT
CAUTION **If there is any possibility of a radiological release, do not send personnel into areas of unknown radiological conditions without first contacting Radiological Control (RADCON).**	
STEP 8: **[STEP 6] NOTIFY** Security (CAS) that assembly and accountability is to be conducted. STANDARD: The performer notifies Security that assembly and accountability is to be conducted. **This step is critical to ensure assembly card readers are enabled.** ***CUE:* **(Booth Operator) Role play as the Security and repeat back the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

EVALUATOR NOTE	**Steps 9, 10, and 11 are all part of the same procedure step.**	
STEP 9:	**[STEP 7] ANNOUNCE** to the plant: "ATTENTION ALL SITE PERSONNEL. ATTENTION ALL SITE PERSONNEL. AN Site Area Emergency has been declared based on EAL 1.2.3 "Steam Generator Tube Rupture" and EAL 1.3.4 "Containment Bypass." All personnel report to your assembly areas for accountability. Staff the TSC and OSC. (Repeat)	**CRITICAL STEP**
STANDARD:	A public address announcement for Plant Emergency Response Personnel to staff the TSC and OSC is made over the plant paging system. Wording describing the event may vary. **Step is critical to alert all plant personnel of the REP declaration and instructions staffing TSC and OSC and alert all plant personnel to assembly areas for accountability.**	___ SAT ___ UNSAT
COMMENTS:		
STEP 10:	**[STEP 7] SOUND** assembly alarm **AND**	**CRITICAL STEP**
STANDARD:	The performer pushes assembly alarm "EVAC AUTO" or "EVAC MANUAL" push button. **This step is critical to activate assembly & accountability alarm.**	___ SAT ___ UNSAT
COMMENTS:		

STEP 11:	**[STEP 7] INITIATE** WBN EPIP-8, "Personnel Accountability and Evacuation".	**CRITICAL STEP**
STANDARD:	The performer refers to EPIP-8, Appendix C, to determine actions necessary for personnel accountability and evacuation. **This step is critical in that specific guidance is given with regard to assembly & accountability..** *****CUE:*** **After the performer has determined which sections of EPIP-8 apply, direct him/her to return to EPIP-4 and continue actions.**	___ SAT ___ UNSAT
COMMENTS:		
STEP 12:	**[STEP 8] CALL** RADCON Lab and **SAY**: "We are in a Site Area Emergency, implement WBN EPIP-14, and CECC EPIP-9."	**CRITICAL STEP**
STANDARD:	The RADCON Lab is notified to implement WBN EPIP-14 and CECC EPIP-9 . **This step is critical to notify RADCON so proper survey's, etc. are implemented.** *****CUE:*** **(Booth Operator) Acknowledge the request to implement WBN EPIP-14 and CECC EPIP-9.**	___ SAT ___ UNSAT
COMMENTS:		

STEP 13: **[STEP 9] IF** there are personnel injuries, **IMPLEMENT** WBN EPIP-10, "Medical Emergency Response." STANDARD: Performer determines that it is NOT necessary to implement EPIP-10. *****CUE:*** **Inform the performer that there are NO personnel injuries.** COMMENTS:	___ SAT ___ UNSAT
STEP 14: **[STEP 10] IF** there is a security threat, **IMPLEMENT** WBN EPIP-11, "Security and Access Control." STANDARD: Performer determines that it is NOT necessary to implement EPIP-11. *****CUE:*** **Inform the performer that there has been NO reports of a security threat** COMMENTS:	___ SAT ___ UNSAT
STEP 15: **[STEP 11] NOTIFY** Duty Plant Manager, **and PROVIDE** Appendix A information (**SEE** duty list for telephone numbers). The Duty Plant Manager will call the Plant Manager or alternate. STANDARD: Duty Plant Manager is provided the Appendix A information. **This step is critical as it alerts plant management to REP activation.** *****CUE:*** **(Booth Operator) Role play as the Duty Plant Manager and acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

*****Italicized Cues Are To Be Used Only If JPM Performance Is Being Simulated.***

STEP 16: **[STEP 12] EVALUATE** the need to implement EPIP-16, "Initial Dose Assessment for Radiological Emergencies," for a dose projection if radioactivity is being released through normal plant release paths. STANDARD: The performer determines whether or not EPIP-16 is to be implemented. Either decision is acceptable. *****CUE:*** **(Booth Operator) If RADCON is notified to implement EPIP-16, acknowledge the report.** COMMENTS:	___ SAT ___ UNSAT
NOTE NRC notification should be made as soon as practicable but within one hour of "SITE AREA EMERGENCY" declaration. Whenever NRC requests, a qualified person must provide a continuous update to NRC Operations Center. The following commercial numbers are for the NRC Operations Center. **9-1-301-816-5100 (MAIN)** **9-1-301-951-0550 (BACKUP)** **9-1-301-816-5151 (FAX)** **EVALUATOR NOTE: DO NOT allow actual call to NRC. Ensure call is to simulator instructor.**	
STEP 17: **[STEP 13] NOTIFY** the NRC, using designated NRC phone (ENS), of plan activation. STANDARD: The NRC is notified of plan activation using designated line. **This step is critical as it alerts NRC to REP activation.** **EVALUATOR NOTE: DO NOT allow actual call to NRC. Ensure call is to simulator instructor.** *****CUE:*** **(Booth Operator) Role play the NRC and acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT

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STEP 18: **[STEP 14] NOTIFY** the NRC Resident Inspector by calling 1776 and **PROVIDING** the information on Appendix A. STANDARD: The NRC Resident Inspector is provided Appendix A information. **This step is critical as it alerts NRC to REP activation.** EVALUATOR NOTE: **DO NOT allow actual call to NRC Resident. Ensure call is to simulator instructor.** *****CUE:*** **(Booth Operator) Role play the NRC Resident and acknowledge the report.** COMMENTS:	**CRITICAL STEP** ___ SAT ___ UNSAT
EVALUATOR CUE: State to applicant that conditions have now changed. A General Emergency has been declared. **EVALUATOR CUE: Read and provide Applicant handout sheet and equation sheet for PAR recommendations.**	
STEP 19: Refers to EPIP-5 to Appendix B "Protective Action Recommendation Guidance. STANDARD: Applicant obtains copy of EPIP-5 Appendix B. COMMENTS:	___ SAT ___ UNSAT

STEP 20: General Emergency Declared. STANDARD: Applicant enters logic tree at top of page since general emergency has been declared. (given in applicant's handout sheet. COMMENTS:	___ SAT ___ UNSAT
STEP 21: Is Projected or Measured Dose Greater Than or Equal to Table 1 Limits at or beyond 5 miles. STANDARD: Applicant determines that dose exceeds table 1 limits (1 REM/hr external dose) at 5 miles or beyond, therefore applicant answers YES to logic question. Applicant then determines that the logic indicates Recommendation 1 as the Protective Action Recommendation. Applicant calculates dose at 5 miles using point source equation: $I_1(d_1)^2 = I_2(d_2)^2$ $800mr./hr(7mi)^2 = I_2(5mi)^2$ $I_2 = 39200/25 = 1568$ mr/hr = 1.568 R/hr (external dose rate at 5 miles) **This step is critical for making the appropriate PAR to the CECC.** ***CUE:* Acknowledge report by the applicant COMMENTS: **END OF TASK**	**CRITICAL STEP** ___ SAT ___ UNSAT

TIME STOP: _____

APPLICANT CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

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INITIAL CONDITIONS:

Simulator represents the current plant conditions.

Simulator operation is frozen.

INITIATING CUES:

Using the current conditions, make the initial classification of the event per the REP and make the required notifications.

THIS IS A TIME CRITICAL TASK

APPLICANT HANDOUT SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

NEW CONDITIONS:

- Chemistry reported RCS activity is now **350 μci/gm** dose equivalent Iodine-131
- A radiological field team reported that measured external dose at **7 miles** from the plant is **800 mr/hr**.

A General Emergency has been declared.

INITIATING CUES:

Make the Protective Action Recommendations for this declaration. When determining 2 and 5 mile dose rates, assume that these readings are measured from a point source at the plant. (Ignore all atmospheric conditions that would affect measurements)

EQUATIONS

$\dot{Q} = \dot{m}c_p\Delta T$

$\dot{Q} = \dot{m}c_p\Delta h$

$\dot{Q} = UA\Delta T$

$SUR = \frac{26.06(\lambda_{eff}\,\rho)}{(\bar{B}-\rho)}$

$SUR = \frac{26.06}{\tau}$

$\rho = \frac{(K_{eff} - 1)}{K_{eff}}$

$\rho = \frac{\Delta K_{eff}}{K_{eff}}$

$\tau = \frac{\ell^*}{\rho} + \left[\frac{(\bar{B}-\rho)}{\lambda_{eff}\,\rho}\right]$

$\ell^* = 1 \times 10^{-4}$ seconds

$\lambda_{eff} = .01$ seconds^{-1}

$P = P_0 10^{SUR(t)}$

$P = P_0 e^{t/\tau}$

$SCR = \frac{S}{(1 - K_{eff})}$

$CR_1 = (1 - K_{eff1}) = \frac{CR_2}{CR_1}$

$M = \frac{(1 - K_{eff1})}{(1 - K_{eff2})}$

$SDM = \frac{(1 - K_{eff})}{K_{eff}}$

$I_1(d_1) = I_2(d_2)$

$I_1(d_1)^2 = I_2(d_2)^2$

$\dot{W}_{pump} = \dot{m}\Delta P v$

Cycle Efficiency $= \frac{\text{Net Work (out)}}{\text{Energy (in)}}$

CONVERSIONS

1 Curie = 3.7×10^{10} dps

1 hp = 2.54×10^3 Btu/hr

1 Btu = 778 ft-lbf

$^oC = 5/9\ (^oF - 32)$

1 kg = 2.21 lbm

1 MW = 3.41×10^6 Btu/hr

$^oF = 9/5\ ^oC + 32$