NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO ADMIN 1a

TITLE: DETERMINE QUADRANT POWER TILT PER PO-3

CANDIDATE:

EXAMINER:

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Determine Quadrant Power Tilt per PO-3

Alternate Path: N/A

Facility JPM #: 2010 NRC EXAM

K/A: G2.1.7   Importance: RO: 4.4   SRO: 4.7

K/A Statement: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

Task Standard: Four NI Power readings recorded within ± 1% of key and Quadrant Power Tilt calculated correctly per PO-3

Preferred Evaluation Location: Simulator   __X__   In Plant   _____

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: PO-3, "Alternate Incore and Excore Applications"

Validation Time: 22 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                              Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

PO-3, "Alternate Incore and Excore Applications"

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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 was at full power.
- Incores #9 and #35 are inoperable.
- Control Rod #11 has dropped into the core.

INITIATING CUES:

During performance of PO-3, "Alternate Incore and Excore Applications," the Control Room Supervisor directs you to perform Excore Quadrant Power Tilt per section 5.2 of PO-3.

EVALUATOR CUE: Provide candidate with a working copy of PO-3 entire procedure with SRO approval indicated in section 3.1.1

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
5.2.1	Obtain lower and upper excore readings as required. (S_{AL}, S_{BL}, S_{CL}, S_{DL} and S_{AU}, S_{BU}, S_{CU}, S_{DU}).	Lower and upper excore readings from the Upper and Lower NI Detector meters on EC-06 are entered on PO-3, Attachment 2 per the answer key.	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
5.2.1	Calculate the sum from the Lower + Upper excore readings (S_A, S_B, S_C, S_D)	Lower + Upper excore readings (S_A, S_B, S_C, S_D) summed and entered on PO-3, Attachment #2, within per the answer key.	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
5.2.1	1. Calculate the sum of all excore readings divided by 4: ($S = \Sigma$ all detectors/4).	Sum of all excores reading divided by 4 calculated and entered on PO-3, Attachment 2.	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
Att 2 Note	Calculate the Quadrant Tilt.	Using the formula $T_{EX} = [(S_X - S)/S]$, calculate the tilt for each Quadrant.	**S U**

Comment:

EVALUATOR NOTE: All four Quadrant Tilts should add up to approximately zero (0).

CRITICAL STEP

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
5.2.1	Have calculations verified.	Have another qualified individual verify the calculations.	**S U**

Comment:

EVALUATOR NOTE: Sign-off as the other qualified individual verifying the calculation.

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
n/a	Notify the CRS that Excore Quadrant Power Tilt has been completed per PO-3, Attachment 2.	Operator notifies CRS of completion of PO-3, Attachment 2, Excore Quadrant Power Tilt and recognizes Tech Spec limits are exceeded.	**S U**

Comment:

EVALUATOR CUE: If candidate does NOT indicate values above 0.05 as being out of tolerance readings, then ask the following:

"Are any limits being exceeded?"

Answer should include that Flux Tilt limit of less than or equal to 0.05 is specified in LCO 3.2.3, "Quadrant Power Tilt"

CRITICAL STEP (recognize Tech Specs are exceeded)

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

SIMULATOR SET UP:

Simulator Setup Instructions:
- Full power IC
- Drop Control Rod #11 fully into the core with RD-11 (Final Value = 2) on PIDRD02
- When plant has stabilized, freeze the Simulator and SNAP
- Use PO-3, Attachment 2 and record/calculate from the Upper and Lower NI Detector meters on EC-06 and use as answer key.

Excore	Lower Reading (%) S_{AL}, S_{BL}, S_{CL}, S_{DL}	Upper Reading (%) S_{AU}, S_{BU}, S_{CU}, S_{DU}	Lower + Upper S_A, S_B, S_C, S_D	$S = (\Sigma \text{ All Detectors})/4$ $= (S_A + S_B + S_C + S_D)/4$	Excore Quadrant Tilt T_{EA}, T_{EB}, T_{EC}, T_{ED}	
5 (CH A)	$S_{AL} =$ [NI-005 Lower (A)] **51 (50.5-51.5)**	$S_{AU} =$ [NI-005 Upper (B)] **50 (49.5-50.5)**	$S_A = S_{AL} + S_{AU}$ **101 (100-102)**	**95.75 (94.75-96.75)**	$T_{EA} = [(S_A\text{-}S)/S]$ **0.055 (0.034 to 0.076)**	QUAD 1
6 (CH B)	$S_{BL} =$ [NI-0065 Lower (A)] **41 (40.5-41.5)**	$S_{BU} =$ [NI-006 Upper (B)] **40 (39.5-40.5)**	$S_B = S_{BL} + S_{BU}$ **81 (80-82)**		$T_{EB} = [(S_B\text{-}S)/S]$ **-0.154 (-0.17 to -0.13)**	QUAD 3
7 (CH C)	$S_{CL} =$ [NI-007 Lower (A)] **50 (49.5-50.5)**	$S_{CU} =$ [NI-007 Upper (B)] **50 (49.5-50.5)**	$S_C = S_{CL} + S_{CU}$ **100 (99-101)**		$T_{EC} = [(S_C\text{-}S)/S]$ **0.044 (0.023 to 0.066)**	QUAD 4
8 (CH D)	$S_{DL} =$ [NI-008 Lower (A)] **52 (51.5-52.5)**	$S_{DU} =$ [NI-008 Upper (B)] **49 (48.5-49.5)**	$S_D = S_{DL} + S_{DU}$ **101 (100-102)**		$T_{ED} = [(S_D\text{-}S)/S]$ **0.055 (0.034 to 0.076)**	QUAD 2

NOTE: The four QPTs should sum to approximately zero.

Comments: _____

_____

Performed By: ____***Pat Person***_____   Date: _____***Today***_____   Time: _____***Now***_____

Calculations Verified By: _____   Date: _____

After calculations are verified, forward to NSSS and Reactor Engineering Supervisor or designee for final review.

Reactor Engineering Supervisor or designee: _____   Date: _____

ANSWER KEY   ANSWER KEY   ANSWER KEY   ANSWER KEY   ANSWER KEY   ANSWER KEY

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- Plant was at full power.
- Incores #9 and #35 are inoperable.
- Control Rod #11 has dropped into the core.

INITIATING CUES:

During performance of PO-3, "Alternate Incore and Excore Applications," the Control Room Supervisor directs you to perform Excore Quadrant Power Tilt per section 5.2 of PO-3.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO ADMIN 1b

TITLE: ESTIMATION OF RIA-0631, CONDENSER OFF GAS MONITOR COUNT RATE

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Determine RIA-0631 Count Rate per AOP-24

Alternate Path: N/A

Facility JPM #: NEW

K/A: G2.1.20   Importance: RO: 4.6   SRO: 4.6

K/A Statement: Ability to interpret and execute procedure steps.

Task Standard: RIA-0631 count rate determined for 0.1 gpm leak rate 1.735E4 cpm
(1.73E4 to 1.74E4cpm)

Preferred Evaluation Location: ANY   __X___

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: AOP-24, "Steam Generator Tube Leak"

Validation Time: 8 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                        Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- AOP-24, "Steam Generator Tube Leak"
- ESOMS log printout that includes offgas flow reading of 7 scfm

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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 was at full power.
- A Steam Generator Tube Leak is in progress.
- Crew has entered AOP-24, "Steam Generator Tube Leak."
- Action Level 2 is in effect.

INITIATING CUES:

During performance of AOP-24, "Steam Generator Tube Leak," the Control Room Supervisor directs you to estimate the count rate for RIA-0631, Condenser Off Gas Monitor that would require entry into Action Level Three, utilizing Attachment 1 of the procedure.

EVALUATOR CUE: Provide candidate with a working copy of AOP-24.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
Att 1pg 3 **Step 1**	DETERMINE maximum Primary to Secondary Leakrate (gpm) based on current Action Level.	Candidate determines 0.1 gpm to be value needed based on AOP-24, Attachment 2, page 6 and initiating cue.	**S U**
Comment: *EVALUATOR CUE: If asked as CRS, inform candidate that the rate of change in the primary to secondary leakage is stable/unchanged.* CRITICAL STEP			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
Att 1 pg 3 **Step 2**	OBTAIN Condenser Off Gas Monitor flow rate (preferred) OR USE last known reading recorded in ESOMS narrative log if taken within 24 hours.	Candidate obtains information.	**S U**
Comment: *EVALUATOR CUE: When asked as NPO/CRS, provide ESOMS log sheet that includes Offgas flowrate = 7 SCFM (Cue Sheet #2)* CRITICAL STEP			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
Att 1 pg 3 **Step 3**	NOTIFY Chemistry to obtain the following parameters from Nuclear IQ: Bkg = RIA-0631 background reading, in cpm Rc = Total response factor RIA-0631, (cpm)	Candidate obtains information.	**S U**
Comment: *EVALUATOR CUE: When asked as Chemistry, provide the following:* *Background reading = 20 cpm,* *Total Response Factor = 9.1E6 cpm.* CRITICAL STEP			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
Att 1 pg 3 **Step 4**	CALCULATE RIA-0631 count rate using the equation provided	Calculates 1.735E4 cpm (1.73E4 to 1.74E4 cpm)	**S U**
Comment: ***EVALUATOR NOTE:*** ***R (cpm) = 20 cpm + (0.1 gpm x 1440 min/day x 9.1E6 cpm) ÷ (7 SCFM x 1.08E4)*** ***R = 20cpm + 1310.4E6 ÷ 7.56E4 = 20 cpm + 173E2 = 1.735E4 cpm*** CRITICAL STEP			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
N/A	Notify the CRS that RIA-0631 Count Rate estimation has been completed per AOP-24, Attachment 1.	Operator notifies CRS of completion of AOP-24, Attachment 1.	**S U**
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

1. N/A

CANDIDATE CUE SHEET #2

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

TODAY 06:00:00	Shift 2 has assumed the watch. SM - Mike Kane, CRS - John Mannikko, SE - Bracy Means. SM U/I - Paul Rhodes. NCOs - Aaron Miller and Scott Nichols. NPOs - Gerry Thompson, Joe Hoerle, Larry King, Ernest Wheeler, Keith Myrick, Joe Ford, and Chris McClure. Plant is in Mode 1, Reactor Power @ 100.0%, MWe gross @ 835. RAW = 1.06/Green/Low. Integrated Risk: LOW due to MO-3007, HPSI TO REACTOR COOLANT LOOP 1A TRAIN 1, work and Main Transformer scaffold erection. No items are on the LCO board. [Mannikko, John M, CRS]
TODAY 09:04:45	Secondary NPO reports Condenser Off Gas @ 7.0 scfm. Updated PPC pg 540. [Nichols, Scott L, NCO-T]
TODAY 09:32:37	Secondary area checks completed satisfactorily. Blewdown F-13A/B SEAL WATER SUPPLY STRAINERS and Instrument air compressor C-2C. [Wheeler IV, Ernest, Secondary - Safe S/D NPO]
TODAY 10:00:23	Feedwater area checks completed satisfactorily. Blew down MV-VA50034A, CONTROL ROOM HVAC CAM TRAIN 'A' DRAIN VLV, MV-VA50034B, CONTROL HVAC CAM TRAIN 'B' DRAIN VALVE. Manually primed P-210A, DIESEL GENERATOR 1-1 K-6A FUEL OIL PRIMING, and P-210B, DIESEL GENERATOR 1-2 K-6B FUEL OIL PRIMING. T-939, DEMINERALIZED WATER STORAGE TANK @ 63%. [Ford, Joseph D, Feedwater NPO]
TODAY 10:10:00	Authorized MT-10, "CORE MONITORING." No Tech Spec LCO Action entered during this procedure. WO# 52549760-01. [Mannikko, John M, CRS]
TODAY 10:15:00	T/G operated IAW NERC/NPOA per SOP-8 section 4.4. [Nichols, Scott L, NCO-T]

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- Plant was at full power.
- A Steam Generator Tube Leak is in progress.
- Crew has entered AOP-24, "Steam Generator Tube Leak."
- Action Level 2 is in effect.

INITIATING CUES:

During performance of AOP-24, "Steam Generator Tube Leak," the Control Room Supervisor directs you to estimate the count rate for RIA-0631, Condenser Off Gas Monitor that would require entry into Action Level Three, utilizing Attachment 1 of the procedure.

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO ADMIN 2
TITLE: PERFORM TSST MO-8 COMPARISON OF ΔT POWER VS ACTUAL POWER

CANDIDATE:

EXAMINER:

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform TSST MO-8 Section 5.2 Comparison of Delta-T Power vs Actual Power

Alternate Path: N/A

Facility JPM #:   BANK

K/A: 2.2.12   Importance: RO: 3.7   SRO: 4.1

K/A Statement: Knowledge of surveillance procedures.

Task Standard: Delta-T power for PIP and SPI obtained and compared to actual power. Determine that acceptance criteria not met.

Preferred Evaluation Location: Simulator   __X___   In Plant   _____

Preferred Evaluation Method: Perform   __X___   Simulate   _____

References: MO-8, "Palisades Plant Computer (PPC) - PDIL and PPDIL Check and Control Rod Out-Of-Sequence Alarm."
Technical Data Book Figure 1.9

Validation Time: 10   minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____   minutes

Performance Rating: SAT _____   UNSAT   _____

Comments:

Examiner: _____   Date: _____
                 Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

MO-8
Technical Data Book

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

The monthly surveillance for PDIL and PPDIL Checks is due. The plant is operating at approximately 100% power.

INITIATING CUES:

You have been directed to perform Section 5.2, "Comparison of Delta-T Power VS Actual Power," of MO-8, "Palisades Plant Computer (PPC) - PDIL and PPDIL Check and Control Rod Out-Of-Sequence Alarm."

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
	Locate procedure.	MO-8 located.	**S U**

Comment:

EVALUATOR CUE: Provide candidate with a working copy of MO-8 with sign-offs and placekeeping completed such that section 5.2 is ready to be performed.

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
5.2.1	Obtain ΔT Power for PIP node	Obtains POWER_PIP_DELTA_T value from PPC MO-8 Trend Screen and records	**S U**

Comment:

EVALUATOR NOTE: Reading should be 94.25±0.1%

CRITICAL STEP

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
5.2.1	Obtain ΔT Power for SPI node	Obtains POWER_SPI_DELTA_T value from PPC MO-8 Trend Screen and records	**S U**

Comment:

EVALUATOR NOTE: Reading should be 100.98±0.1%

CRITICAL STEP

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
5.2.3	Record Actual Power from the Plant heat balance, HB_PWR_STEADY.	Obtains HB_PWR_STEADY value from PPC MO-8 Trend Screen and records	**S U**
Comment: **EVALUATOR NOTE: Reading should be 99.98±0.1%** **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
5.2.4	VERIFY ΔT Power values in step 5.2.1 are NOT lower than Actual Power in Step 5.2.3 by greater than 4% for each node.	Recognizes PIP Node ΔT Power is NOT within 4% of actual power, circles in red and notifies CRS. Verifies SPI Node ΔT Power within 4% of actual power (not critical) Does **NOT** sign step 5.2.4 since step criteria is not met.	**S U**
Comment: **EVALUATOR CUE: If candidate informs CRS that PIP node is not within limits, acknowledge same.** **CRITICAL STEP**			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

Reset to IC-17.
Insert RX22B (PIDRX04) final value = 71.

   Check the PPC MO-8 Trend Screen to ensure POWER_PIP-DELTA T is more than 4%
   lower than HB_PWR_STEADY: [may also use Trend Group 53 (DJB) Trends Sets 2
   and 4 for this info].

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

The monthly surveillance for PDIL and PPDIL Checks is due. The plant is operating at approximately 100% power.

INITIATING CUES:

You have been directed to perform Section 5.2, "Comparison of Delta-T Power VS Actual Power," of MO-8, "Palisades Plant Computer (PPC) - PDIL and PPDIL Check and Control Rod Out-Of-Sequence Alarm."

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: **RO ADMIN 4**
TITLE: **OBTAIN METEOROLOGICAL DATA FOR EMERGENCY NOTIFICATION FORM**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Obtain Meteorological Data for Emergency Notification Form

Alternate Path: N/A

Facility JPM #: BANK

K/A: 2.4.39   Importance: RO: 3.9

K/A Statement: Knowledge of RO responsibilities in emergency plan implementation

Task Standard: EI-6.8, Attachment 2, completed with correct data obtained within
15 minutes per attached key

Preferred Evaluation Location: ANY   __X___

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: EI-3.0, "Communications and Notifications"
EI-6.0, "Offsite Dose Calculation and Recommendations for Protective Actions"
EI-6.8, "Backup and Supplemental Meteorology"

Validation Time: 10 minutes   Time Critical: YES - 12 Minutes

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                        Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

    EI-6.8

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

- The Shift Manager, acting as the Site Emergency Director, has declared an Alert condition.
- A thunderstorm is in progress and the onsite meteorological data system is out of service due to a lightning strike.
- The Shift Manager has printed out data from the WSI Weather System per EI-6.8, "Backup and Supplemental Meteorology," steps 5.1.1 through 5.1.6.
- Today is May 24th, the current time is 0810.

INITIATING CUES:

The Shift Manager has directed you to complete EI-6.8 step 5.1.10 (i.e. fill out Attachment 2 of EI-6.8) by using the WSI data printout and steps 5.1.7 through 5.1.9. The Shift Manager requires this data to complete EI-3, Attachment 1, Palisades Event Notification Form.

THIS JPM IS TIME CRITICAL

EVALUATOR CUE:Provide candidate with a Working Copy of EI-6.8, "Backup and Supplemental Meteorology" and second cue sheet (WSI data printout).

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
5.1.10	Obtain meteorological data from the WSI Printout: "Wind" for hourly observation in Benton Harbor is "1511" which means wind direction is from <u>150 degrees</u>	On EI-6.8 Att. 2 data recorded as follows: Wind Direction = <u>150</u>	**S U**
Comment: *EVALUATOR NOTE: Applicant uses steps 5.1.7 through 5.1.9 to identify data from the WSI printout and then records data using step 5.1.10.* CRITICAL STEP			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
5.1.10	Obtain meteorological data from the WSI Printout: "Wind" for hourly observation in Benton Harbor is "1511" which means wind speed is <u>11 mph</u>	On EI-6.8 Att. 2 data recorded as follows: Wind Speed = <u>11 mph</u>	**S U**
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
5.1.10	Obtain meteorological data from the WSI Printout: "PS" for hourly observation in Benton Harbor is "D"	On EI-6.8 Att. 2 data recorded as follows: Stability Class = <u> D</u>	**S U**
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
n/a	EI-6.8, Attachment 2 completed: Date:, Time:, Completed By:	On EI-6.8 Att. 2 data recorded as follows: Date: <u>Today's date</u> *Time: <u>Current time -within 12 minutes from start of JPM</u> Completed By: <u>Operator's name</u>	**S U**

Comment:

CRITICAL STEP

* Time is only portion of critical step

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
n/a	Notify the CRS that EI-6.8 Attachment 2 completed.	Operator notifies CRS of completion of EI-6.8, Attachment 2.	**S U**

Comment:

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

1. N/A

BACKUP AND SUPPLEMENTAL METEOROLOGY WORKSHEET

ANSWER KEY   ANSWER KEY   ANSWER KEY   ANSWER KEY   ANSWER KEY

---

1.   Wind Direction = ___150___ Degrees From

---

2.   Wind Speed = ___11___ mph

---

3.   Stability Class = D

Date: __TODAY__   Time: __NOW__   Completed By: __JOE OPERATOR__

ANSWER KEY   ANSWER KEY   ANSWER KEY   ANSWER KEY   ANSWER KEY

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

MOSPAL 00

DATE/GMT	24/18	25/00	25/06	25/12	25/18	26/00	26/06	26/12
DATE/EST	24/13	24/19	25/01	25/07	25/13	25/19	26/01	26/07
WIND-MP	1111	2109	3303	0910	0711	0813	0811	0610
CLDS-1	10	10	10	10	10	10	8	2
HGT-FT	5200	5450	4750	3750	4650	5500	5600	4500
PAS	C	C	C	C	C	D	D	D

+USINFO BEH, MKG YWZQ
OBSERVATIONS FOR 8AM(13Z)   24-MAY-11

STATION NAME	WIND	PS
BENTON HARBOR, MI	1511	D
MUSKEGON, MI	1011	D

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- The Shift Manager, acting as the Site Emergency Director, has declared an Alert condition.
- A thunderstorm is in progress and the onsite meteorological data system is out of service due to a lightning strike.
- The Shift Manager has printed out data from the WSI Weather System per EI-6.8, "Backup and Supplemental Meteorology."
- Today is May 24th, the current time is 0810.

INITIATING CUES:

The Shift Manager has directed you to complete EI-6.8 step 5.1.10 (i.e. fill out Attachment 2 of EI-6.8) by using the WSI data printout and steps 5.1.7 through 5.1.9. The Shift Manager requires this data to complete EI-3, Attachment 1, Palisades Event Notification Form.

THIS JPM IS TIME CRITICAL

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: SRO ADMIN 1a

TITLE: DETERMINE AVERAGE QUALIFIED CET TEMPERATURE AND SUB-COOLING VALUE

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Determine Primary Coolant System sub-cooled margin using all available methods

Alternate Path: N/A

Facility JPM #: PL-OPS-EOP-024J

K/A: 2.1.7   Importance: RO:4.4   SRO: 4.7

K/A Statement: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

Task Standard: Average CET Temperature correctly calculated and sub-cooling value determined.

Preferred Evaluation Location: Simulator   _X_   In Plant   _____

Preferred Evaluation Method: Perform   _X_   Simulate   _____

References: SOP-34
                EOP Supplement 1

Validation Time: 15 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                        Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-34, revision 22
- EOP Supplement 1, revision 5

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:

- A loss of off-site power has resulted in a Reactor trip from 100% power
- Buses 1C and 1D are energized from their D/Gs
- EOP-8.0 is in use
- The PPC is inoperable

INITIATING CUES:

The CRS has directed you to determine PCS sub-cooling value in accordance with SOP-34, Attachment 5, using <u>all available</u> Qualified CET readings.

EVALUATOR CUE: Provide candidate with a working copy of SOP-34 Attachment 5.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
1.a	Obtain at least 2 Qualified CET readings per core quadrant from the CET recorders.	Operator records qualified CET temperatures as read from the CET recorders (TR-0101A1. TR-0101A2, TR-0101B1, TR-0101B2) on Panel C-11A and the time. At least two (2) qualified CET readings per quadrant required. The readings are recorded in section 2. Per CRS direction in the initiating cue, all 16 readings will be taken.	**S U**
Comment:			
Evaluator Note: Verify data taken by Operator			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
1.b	CALCULATE the average of the temperature readings used.	Operator sums the CET readings (recorded in section 2), then divides the sum by the number of CETs used (8 minimum) to obtain the average CET temperature (recorded in section 2).	**S U**
Comment:			
Evaluator Note: Verify calculation by Operator with attached answer key.			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
1.c	If any individual temperature readings is greater that 15°F higher or lower from the average, then: • Do not utilize that individual temperature reading. • Return to Step 1a.	CET # 23 (3rd quadrant) will be approximately 19°F higher than the average. The candidate will recalculate excluding this reading.	**S U**
Comment:			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
1.d	REFER TO EOP Supplement 1, Pressure Temperature Limit Curves, to determine sub-cooling value utilizing the average temperature calculated in step 1.b.	Operator performs the following: ___ Obtains PCS Pressure reading from PI-0104 ___ Determines subcooling using one of the following methods: • Use EOP Supplement 1 OR Steam Tables to determine saturation temperature for 1750 psia (617°F) and subtract average CET calculated (538°F) to obtain 79°F (± 1°F) • Use EOP Supplement 1 OR Steam Tables to the 25°F subcooled value for 1750 psia (617-25 = 592°F) and then subtract average CET calculated (538°F) to obtain 79°F (± 1°F)	**S U**

Comment:

CRITICAL STEP

| Proc. Step	TASK ELEMENT 5	STANDARD	Grade
n/a	Operator informs CRS of Average Qualified CET Temperature and sub-cooling value.	CRS informed that subcooling value is approximately 80°F.	**S U**

Comment:

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17.
- Enter ED01 (on PIDED03), reactor should auto trip
- Perform actions of EOP-1.0 through section 5.0
- Restore power to Transformer 13, clear D/G trouble alarms and take manual control of ADVs to stabilize temperature
- Have SSG turn off PPC monitors
- Insert overrides for Qualified CET values per attached answer key
- Insert override for PI-0104 to read 1750 psia.
- When natural circulation has developed, freeze Simulator
- Verify qualified CETs data matches answer key
- Place calculator at operator station
- Restore power to Transformer 16
- Enter Overrides for Qualified CET readings on C-11A (refer to answer key)

<u>Answer Key</u>

QUADRANT	QUALIFIED CET #	TIME <u>now</u>	TIME <u>now</u>				
1	**2**	536	536				
	9	547	547				
	10	541	541				
	19	535	535				
2	**5**	539	539				
	11	534	534				
	16	532	532				
	21	532	532				
3	**23**	~~559~~	----				
	25	537	537				
	31	534	534				
	35	534	534				
	27	537	537				
	30	547	547				
4	**33**	540	540				
	36	548	548				
TOTAL		8632	8073				
AVERAGE		539.5	538.2				

Pressure and Temperature Limit Curves
Upper Portion
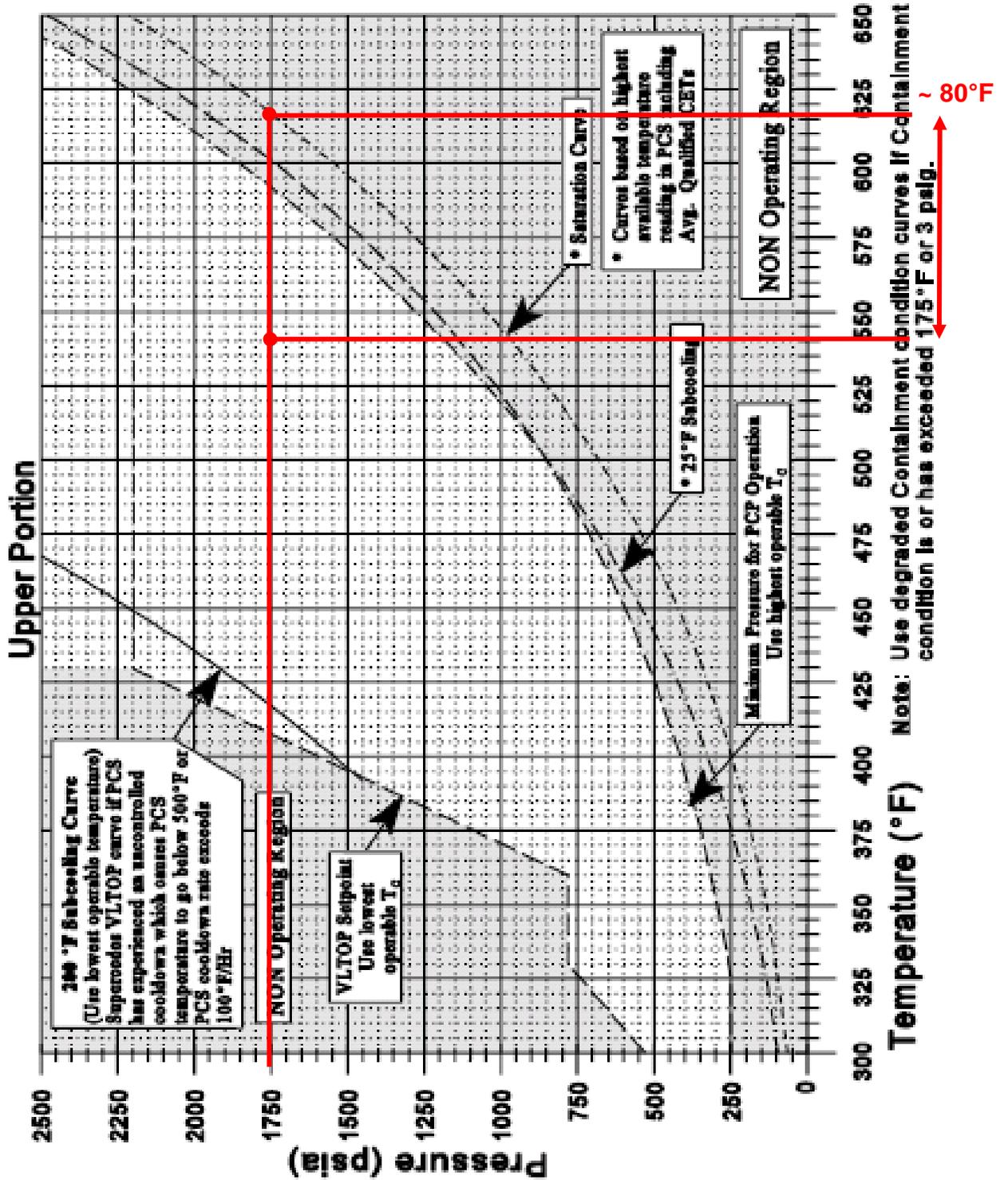
CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- A loss of off-site power has resulted in a Reactor trip from 100% power
- Buses 1C and 1D are energized from their D/Gs
- EOP-8.0 is in use
- The PPC is inoperable

INITIATING CUES:

The CRS has directed you to determine PCS sub-cooling value in accordance with SOP-34, Attachment 5, using <u>all available</u> Qualified CET readings.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: SRO ADMIN 1b

TITLE: MONITOR PCS HEATUP/COOLDOWN WITH THE PPC

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Operate the Palisades Plant Computer System

Alternate Path: N/A

Facility JPM #: PPC-JPM-02

K/A: 2.1.19   Importance: RO: 3.9   SRO: 3.8

K/A Statement: Ability to use plant computers to evaluate system or component status.

Task Standard: PPC setup to monitor the PCS heatup rate and candidate determines
that LCO action statement 3.4.3.A needs to be entered due to heatup
rate being above the limit.

Preferred Evaluation Location: Simulator   __X__   In Plant   _____

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: GOP-2, "MODE 5 To MODE 3 ≥ 525°F"
PO-2, "PCS Heatup/Cooldown Operations"

Validation Time: 20 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                        Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- PO-2, "PCS Heatup/Cooldown Operations"
- PPC Cyclic Printout Pages 391, 392, 393 for at least one-hour showing a heatup rate that exceeds the 40°F/hr Tech Spec limit (see Simulator setup page). Separate each set of cycle printouts and staple.

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

- A Plant refueling has just been completed
- Shutdown Cooling is NOT in service
- PCS temperature is approximately 190°F
- GCL-2, MODE 5 to MODE 3 ≥ 525°F Checklist is in progress
- Two PCPs are in service
- Technical Specification Surveillance Procedure PO-2, PCS Heatup/Cooldown Operations, has just been authorized by the CRS
- No equipment is out of service, all systems are OPERABLE

INITIATING CUES:

The Control Room Supervisor directs you to monitor and record PCS parameters during the heatup using the PPC per PO-2, step 5.1.

EVALUATOR CUE: Provide candidate a working copy of PO-2.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
5.1.1b **5.1.1c**	**SELECT** the "Operator Mode Support" screen from the main menu **SELECT** any of the following, as applicable, to monitor PCS heatup/cooldown rate: ▪ Page 361 "PCS 15 Minute Rate Trend"	Candidate performs one of the following: a. Main menu screen SELECTED, then "Operator Mode Support" screen SELECTED from main menu screen. b. Page 361 "PCS 15 Minute Trend" page SELECTED	**S U**
Comment: *EVALUATOR NOTE: Operator may go straight to PPC page 361 (task element 3).*			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
5.1.1.d.1	**START** 15 minute automatic reports as follows: 1. **DEPRESS** F7 key "HCR Reports."	F7 key "HCR Reports" DEPRESSED	**S U**
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
5.1.1.d.2	**START** 15 minute automatic reports as follows: 2. **SELECT** the "Cyclic Printout Enabled" response	"Cyclic Printout Enabled" SELECTED	**S U**
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
5.1.1.d.3	**START** 15 minute automatic reports as follows: 3. **SELECT** the HCR Reports page from any of the selected heatup/cooldown pages (361, 362, 372, AND 373).	Page 361 "PCS 15 Minute Trend" page SELECTED	S U

Comment:

CRITICAL STEP

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
5.1.1.d.4	**START** 15 minute automatic reports as follows: 4. WHEN the HCR Report page is displayed, SELECT the output device at the bottom right corner of the page by performing one of the following depending on the desired print location: a. TYPE a one (1) AND DEPRESS the "UPDATE" Hardkey to start the reports to print to the control room. b. TYPE a two (2) AND DEPRESS the "UPDATE" Hardkey to start the reports to print to the TSC.	Candidate determines that this step is N/A since "PRINTER_1" is already selected in bottom right-hand corner. Candidate may perform the following: One (1) is TYPED <u>AND</u> "Update" Hardkey is DEPRESSED.	S U

Comment:

NOTE: The Heatup/Cooldown print out is on a 15 minute timer that is always running. When the printout is enabled, the next print timeout could be anywhere from 1 second to 15 minutes later.

EVALUATOR: When candidate has completed this step, hand them the printouts of PPC pages 391, 392, and 393 for the last hour. Tell the candidate that the SE did not review the sheets for the last hour and you have just relieved him/her. Ensure the candidate understands that one hour has elapsed.

CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
5.1.1.d.5	5. **DETERMINE** PCS parameters are within allowable limits at least once every 15 minutes during the heatup/cooldown AND **INITIAL** the PPC Data Sheet. Refer to Step 5.2 and Step 5.3.	Candidate determines that step 5.2 is N/A. Candidate refers to step 5.3 and compares heatup limits in step 6.0 to the heatup rates determined on the PPC printout. Candidate determines that the heatup rate limit of 40°F hour has been exceeded	**S U**

Comment:

CRITICAL STEP (only critical part is determining heatup rate limit has been exceeded.)

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
5.3.1	IF any PCS parameter exceeds its limit or the heatup/cooldown rate exceeds the maximum allowable rate, THEN **PERFORM** the following ...	Candidate determines that LCO 3.4.3 condition A needs to be entered because the heatup rate limit has been exceeded.	**S U**

Comment:

EVALUATOR: When candidate determines that LCO 3.4.3 condition A needs to be entered, end the JPM.

CRITICAL STEP

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- IC-3, Ready to come off S/D Cooling.
- Preparation of PPC Pages for this JPM:
  - Turn on PPC Cyclic Printout
  - Remove SDC from service per SOP-3
  - Allow simulator to run for at least one-hour
  - When at least one-hour of Cyclic Printout pages have finished printing, then preparation is complete
- Prior to adminstering JPM, remove SDC from service per SOP-3.

- **ENSURE PPC CYCLIC PRINTOUT IS _TURNED OFF_ AFTER EACH JPM.**

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- A Plant refueling has just been completed
- Shutdown Cooling is NOT in service
- PCS temperature is approximately 190°F
- GCL-2, MODE 5 to MODE 3 $\geq$ 525°F Checklist is in progress
- Two PCPs are in service
- Technical Specification Surveillance Procedure PO-2, PCS Heatup/Cooldown Operations, has just been authorized by the CRS
- No equipment is out of service, all systems are OPERABLE

INITIATING CUES:

The Control Room Supervisor directs you to monitor and record PCS parameters during the heatup using the PPC per PO-2, step 5.1.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: **SRO ADMIN 2**

TITLE: **REVIEW AND APPROVE A COMPLETED TECHNICAL SPECIFICATION SURVEILLANCE TEST**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Conduct Surveillance Testing

Alternate Path: N/A

Facility JPM #: 2012 NRC EXAM

K/A: 2.2.12   Importance: SRO: 4.1

K/A Statement: Knowledge of Surveillance Procedures

Task Standard: Supervisory Review of MO-29 completed in accordance with MO-29, step 5.3 AND LCO 3.6.6.A entered due to left train Containment Spray inoperable.

Preferred Evaluation Location: ANY   _X_

Preferred Evaluation Method: Perform   _X_   Simulate   _____

References: ADMIN 9.20, "Technical Specification Surveillance and Special Test Program"
MO-29, "Engineered Safety System Alignment"

Validation Time: 20 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                        Signature

Tools/Equipment/Procedures Needed:

- Completed MO-29, "Engineered Safety System Alignment," with one data point for Containment Spray Header pressure (PI-3001) below the acceptance range. Also include a missed signature date.
- ADMIN 9.20, "Technical Specification Surveillance and Special Test Program"
- Technical Specifications
- Technical Specifications Bases
- RED PEN FOR STUDENT USE

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:

- It's Friday night shift, 2130 hours.
- You are the on-shift Shift Engineer.
- MO-29, Engineered Safety System Alignment, was completed at 2115 hours.
- The plant is in MODE 1.

INITIATING CUES:

- The Shift Manager directs you to complete a supervisory review of completed MO-29, "Engineered Safety System Alignment," in accordance with step 5.3 of MO-29.

Evaluator Note: Provide candidate with completed MO-29 with the data point for Containment Spray Header 'B' pressure (PI-3001) below the acceptance range at 61.8 psig. Do <u>not</u> circle the reading in red. Also, include a missed signature date for step 3.1 "Authorization".

EVALUATOR CUE: Hand candidate a complete MO-29 Surveillance Test with one spray header pressure (PI-3001) indication below the acceptance criteria.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
5.3.1.a	**REVIEW** MO-29 to ensure all applicable components have been inspected.	All pages present with all blanks filled in or "N/A" except for the date field of step 3.1 "Authorization".	S U
Comment:			

EVALUATOR NOTE: The missed signature date is <u>not</u> a critical task

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
5.3.1.b	**ENSURE** entries on MO-29 are circled in red for any components found in an incorrect position OR acceptance criteria not met.	Operator reviews section 6.0 of MO-29 and verifies the following: ___ Containment Air Cooler 'A' Fans operated for greater than or equal to 15 minutes. ___ *Containment Spray Header pressure gauges (PI-3001 and PI-3001) greater than or equal to 62.0 psig. ___ "As Found" position of applicable fans, valves, breakers, and controls agrees with "Required Position" listed in MO-29 Checklist (Attachment 1). ___ *All out of tolerance data shall be circled in red.	S U
Comment:			

EVALUATOR NOTE: The containment spray header pressure reading for PI-3001 is below the acceptance range. The candidate must recognize this.

* CRITICAL STEP

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
5.3.1.c	**INITIATE** a Condition Report in accordance with EN-LI-102, Corrective Action Process, for acceptance criteria not met unless at least one of the following conditions exist: 1. Out of tolerance item is controlled by a previously identified LCO. 2. Component is in position resulting from prior Operations review and approval. To allow alternate position of any component, adequate redundancy shall exist to ensure operability of Engineering Safety System Equipment.	Operator determines that this step is applicable and recognizes that a CR should be initiated.	S U

Comment:

EVALUATOR CUE: Inform candidate that CR has been initiated

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
5.3.1.d	IF spray header pressures are less than 62.8 psig, THEN **NOTIFY** System Engineer to determine if Containment Spray Header Fill can wait until the next scheduled performance of MO-29 based on MO-29 trend data analysis. 1. System Engineer: **NOTIFY** Planning/Scheduling and Operations when to schedule ESSO-1, "Containment Spray Header Fill."	Operator notifies System Engineer.	S U

Comment:

EVALUATOR CUE: If asked as System Engineer: report that the containment spray header fill can not wait until the next scheduled performance of MO-29 and they will notify Planning/Scheduling.

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
5.3.1.e	**COMPLETE** Acceptance Criteria and Operability Sheet.	Operator performs the following for the acceptable criteria and operability sheet: ___ * Answers #1 NO and signs and provides explanation on page 2 (i.e., Spray Header pressure PI-3001 is below acceptance range) (signature is <u>not</u> part of the critical step) ___ * Answers #2 NO and signs (signature is <u>not</u> part of the critical step) ___ Completes CAP and WR numbers for #3 ___ Notifies SM/CRS/SE and signs for #4 (signature is <u>not</u> part of the critical step) ___ * Operator reviews LCO 3.6.6A.1 and determines that left train of Containment Cooling system is inoperable and LCO Action 'A.1' of LCO 3.6.6 has been entered. The Yes or NO box will be checked for #5 and justification filled out on page 2. This justification should explain that the plant has 72 hours to restore left train of containment cooling system back to operable status or place the plant in a MODE where the LCO is not applicable.	S U

Comment:

EVALUATOR CUE: If asked, supply candidate with the following:

- *WR#: 02004567 (not required since this is an Operations activity, per ESSO-1, and is not controlled by Work Order process.)*

- *CR#: CR-PLP-2014-99999.*

EVALUATOR CUE: Inform candidate that SM/CRS/SE have been notified.

EVALUATOR CUE: If asked, candidate also performs Step 5. System Engineer will perform Step 6, Tech. Rev.

* CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
5.3.2	On Shift SRO Reviewed Completed by:	Operator signs and dates for SRO Review	**S U**
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- N/A

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- It's Friday night shift, 2130 hours.
- You are the on-shift Shift Engineer.
- MO-29, Engineered Safety System Alignment, was completed at 2115 hours.
- The plant is in Mode 1.

INITIATING CUES:

The Shift Manager directs you to complete a supervisory review of completed MO-29, "Engineered Safety System Alignment," in accordance with step 5.3 of MO-29.

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: SRO ADMIN 3
TITLE: DETERMINE WASTE GAS RELEASE HIGH ALARM SETPOINT

CANDIDATE:

EXAMINER:

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Determine setpoint changes to process radiation monitors

Alternate Path: N/A

Facility JPM #: NEW

K/A: 2.3.11   Importance: RO: 3.8   SRO: 4.3

K/A Statement: Ability to control radiation releases.

Task Standard: Correct setpoint is calculated for Waste Gas release

Preferred Evaluation Location: Simulator   _X_   In Plant   _____

Preferred Evaluation Method: Perform   _X_   Simulate   _____

References: SOP-18A, "Radioactive Waste System"
CH 6.23, "Waste Gas Decay Tank Release"
SOP-38, "Gaseous Process Monitoring System"

Validation Time: 10 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
Signature

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Tools/Equipment/Procedures Needed:

- SOP-18A, "Radioactive Waste System", section 7.5 with placekeeping completed through step g.
- Partially completed form CH 6.23-3
- Calculator

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

- A Containment purge is <u>not</u> in progress.
- RIA-1113, Waste Gas Monitor is operable per DWO-1.
- T-101C, Waste Gas Decay Tank, has been authorized for release.

INITIATING CUES:

- The Shift Manager asks you to determine RIA-1113 HIGH alarm setpoint per SOP-18A steps 7.5.h through 7.5.j.

Evaluator Cue: Provide Operator a working copy of SOP-18A, section 7.5 placekept through step g AND batch release order, Form CH 6.23-3, page 1 only (last page of JPM)

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
7.5.h	Operator reads RIA-1113 background	___ Operator depresses HS-2317 for >1 minute and releases ___ Operator reads background cpm ___ RECORD cpm on CH Form 6.23-3, "WGDT Release Authorization" and checks "Purge RIA-1113" Box	S U
Comment:			
Evaluator Note: Reading should be ~8.3 x 10^1 to 9.5 x 10^1 cpm			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.5.i	PERFORM a source check of RE-1113…	___ DEPRESS and HOLD the Check Source pushbutton on RE-1113 ___ Verify the meter indication rises ___ RELEASE the Check Source pushbutton ___ RECORD cpm on CH Form 6.23-3, "WGDT Release Authorization"	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.5.j	DETERMINE Hi Alarm setpoint. (This is the sum of the observed background and the established release limit provided on Form CH 6.23-3.)	___ Candidate adds RIA-1113 background to the release limit to obtain high alarm setpoint: • 8.3 x 10^1 to 9.5 x 10^1 cpm + 8.5 x 10^3 cpm ___ Determines high alarm setpoint to be 8.6 x 10^3 cpm	S U
Comment:			
Evaluator Note: (Acceptable range is 8.5 – 8.6 x 10^3 cpm).			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
n/a	Operator returns CH form 6.23-3 to Shift Manager for verification of calculation.	Operator reports task is complete.	**S U**
Comment: *Evaluator Note: Role play as SM and inform candidate that you will verify calculation.*			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to any IC
- Ensure V-6A, Main Exhaust Fan, is in service

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- A Containment purge is <u>not</u> in progress.
- RIA-1113, Waste Gas Monitor is operable per DWO-1.
- T-101C, Waste Gas Decay Tank, has been authorized for release.

INITIATING CUES:

- The Shift Manager asks you to determine RIA-1113 HIGH alarm setpoint per SOP-18A steps 7.5.h through 7.5.j.

WGDT RELEASE AUTHORIZATION

Batch Number	**WG-TODAY**
WGDT Number	**T-101C**
Release Pressure	**93** psig
Release Volume	**32.5** m^3
Calculated RIA-1113 Reading	**9.5×10^1** cpm
"b" factor	**10**
RIA-1113 Alarm Setpoint > Bkg	**8.5×10^3** cpm

Release Authorization

Authorized By	*Jane Retssup* Jane Retssup	**Today**
	Printed Name and Signature	Date
Shift Manager/CRS	*Ralph Manager* Ralph Manager	**Today**
	Printed Name and Signature	Date

Control Room Operator

Main Exhaust Fan in Service   V-6A ☑   V-6B ☐   Ensure at least one exhaust fan is operating prior to releasing a WGDT

Purge RIA-1113	☐	
Source Check RIA-1113		cpm
RIA-1113 Alarm Setpoint > Bkg		cpm
RIA-1113 Background	+	cpm
RIA-1113 Alarm Setpt	=	cpm
Alarm Set By		
Alarm Verified By		
Purge RIA-1113 After Release	☐	
Reset Alarm to 2500		
Alarm Reset By		
Alarm Reset Verified By		

Remarks

If RIA-1113 is not operational, effluent releases may continue provided that prior to release:
1. At least two independent samples are analyzed; and
2. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving.

Palisades ODCM Appnedix A, Table A-1, Item 1.a, Action 1

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: SRO ADMIN 4

TITLE: CLASSIFY EVENT

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Classify an Event

Alternate Path: N/A

Facility JPM #: NEW

K/A: 2.4.41   Importance: SRO: 4.6

K/A Statement: (2.4.41) Knowledge of the emergency action level thresholds and classifications.

Task Standard: Event classified as an Alert within 15 minutes and completion of Event Notification Form within an additional 12 minutes.

Preferred Evaluation Location: ANY   __X__

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: EI-3, Communications and Notification Procedure
                EI-1, Emergency Classification and Actions Procedure

Validation Time: 20 minutes   Time Critical: YES

Evaluation Location: Simulator   __X__   In Plant   _____

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                    Signature

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Tools/Equipment/Procedures Needed:

- SEP SUP 1, "Site Emergency Plan Supplement 1 – EAL Wall Charts"
- EI-1, "Emergency Classification and Actions Procedure," Attachment 1
- EI-3, "Communications and Notification Procedure," Attachment 1

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

The Plant is in MODE 6 and fuel shuffles in progress, the following events occur:

- All offsite power is lost

  - Buses 1C and 1D are reenergized by D/G 1-1 and D/G 1-2 respectively

- Air to the Steam Generator (S/G) nozzle dams was lost for several minutes and approximately 90 gallons of PCS drained to the Containment floor

  - Air to S/G nozzle dams has been restored: dams are no longer leaking

- Containment closure was established with the exception that the Equipment Hatch was not closed due to the hatch being inadvertently knocked off it's track

- Shutdown Cooling restoration is delayed and the PCS has risen to 212°F and PCS boil-off has commenced

- Rising counts indicated on RIA-2326 (Normal Range RGEM)

INITIATING CUES:

You are the Shift Manager (acting as the Emergency Plant Manager). You are to classify the event given the above information and complete the Event Notification Form. No previous event declaration has been made.
This JPM is Time Critical.

EVALUATOR CUE: Candidate may use placard of site emergency plan classifications or provide working copy of EI-1 SEP Supp 1.

Proc.Step	TASK ELEMENT 1	STANDARD	Grade

EI-1
 	
6.1.b.1
 	
SEP SUPP 1
	1. Determine the Category in which the Initiating Conditions/symptoms best fit from the list of Categories below:
	
	    A - Abnormal Rad Levels / Radiological Effluent
	
	    C - Cold Shutdown / Refueling System Malfunction
	
	    E - Independent Spent Fuel Storage Installation (ISFSI)
	
	    F - Fission Product Barrier Degradation
	
	    H - Hazards
	
	    S - System Malfunction
		Refers to SEP Supp 1, "MODE 5, 6, or DEF" page and determines Category C applies.	S U

Comment:

START TIME FOR CLASSIFICATION:_____

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
EI-1 **6.1.b.2** **SEP SUPP 1**	2. Use the Category identified above and SEP Supplement 1 to determine which Emergency Action Level (EAL) threshold has been exceeded. Move from the highest classification (left) to lowest classification (right) when determining the classification.	___ Refers to CA4 ___ Determines per Table C-3 that with CONTAINMENT CLOSURE and PCS integrity not established that an UNPLANNED event results in PCS temperature > 200°F for > Table C-3 duration	S U

Comment:

CRITICAL STEP

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
SEP **SUPP 1**	Declares Emergency Classification.	Declares an Alert per CA4 based on status of event.	**S U**
Comment: **END TIME FOR CLASSIFICATION:_____ (START TIME FOR FORM COMPLETION)** **CRITICAL STEP - must be performed within 15 minutes of start of JPM.**			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
EI-1 **6.2.b** **Att 1**	b. Using the "Action" column of Attachment 1, perform each action as M (Mandatory), S (Subsequent), or I (If Needed).	Obtains EI-1, Attachment 1 and performs or delegates actions.	**S U**
Comment: ***EVALUATOR CUE: Another SRO will perform this task.***			

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
EI-3 Att 1	Completes filling out Palisades Event Notification Form.	Palisades Event Notification Form completely filled per attached KEY AND form is approved (Candidate signature/initials, date, and time entered at bottom of form) *	S U

Comment:

EVALUATOR CUE (provide when applicable as Candidate fills out form):

- *Hand Candidate EI-6.7 Attachment 1 (meteorological data)*

- *It is a hot sunny day with no rain in the forecast*

EVALUATOR NOTE: KEY is attached to this JPM.

EVALUATOR NOTE: EI-3, Attachment 2, "Palisades Event Technical Data Sheet" is NOT required during this JPM.

EVALUATOR NOTE: If JPM is conducted in the Simulator, then Candidate may use computer on Control Room island area to prepare this form.

EVALUATOR NOTE: If JPM is conducted in the Simulator, then Candidate may use computer on back-bar of Control Room island area to complete and print this form.

* The following are the critical parts of this step:
- ALERT is checked in "current classification" section
- Date and time filled in "current classification" section
- CA4.1 filled in "reason for classification" section OR Cold Shutdown/Refueling System Malfunction checked in "reason for classification" section
- "YES" checked in Radiological Release in Progress

END TIME FOR FORM COMPLETION:_____

CRITICAL STEP (must be completed within 12 minutes of time listed in Task Element 3)

END OF TASK

PALISADES EVENT NOTIFICATION FORM

☐ **Actual Event**   ☒ **Drill**

Plant Contact Information

Nuclear Power Plant: _____

Plant Communicator: _____ Time of Communication: V.B. _____
                                                                S.O.M. _____
                                                                NRC _____

┌─────────────┐
│   **1**   │
└─────────────┘
Plant Message Number

Calling From: ☐ Control Room   ☐ TSC   ☐ EOF   ☐ Other_____

Call Back Telephone Number: _____

Current Classification

☐ Unusual Event   ☒ Alert   ☐ Site Area Emergency   ☐ General Emergency   ☐ Termination

This Classification was declared as of: Date: **Today**   Time: **Within 15 minutes from start of JPM**

Reason for Classification

☐ Abnormal Rad Levels / Radiological Effluent   ☐ System Malfunctions

☐ Hazards and Other Conditions Affecting   ☒ Cold Shutdown / Refueling System Malfunction
   Plant Safety

                                                  ☐ Independent Spent Fuel Storage
                                                     Installation Events

                                                  ☐ Fission Product Barrier Degradation

IC Number: **CA4.1**

Radiological Release in Progress Due to Event

☒ Yes   ☐ No

Protective Action Recommendations

☒ None

Evacuation of Areas(s):   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 _____

In-Place Shelter of Area(s)   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 _____

PAR based on: ☐ Dose Calculation (Palisades Event Technical Data Sheet required)   ☐ Plant Status   ☐ Security Event

☐ Other _____

Meteorological Data

Wind Direction (degrees): From **270**   To **90**   Wind Speed (MPH): **12**

Stability Class: **B**   Precipitation: ☐ Yes ☒ No

Emergency Director Approval: _____   Date: _____   Time: _____

ANSWER KEY

SIMULATOR OPERATOR INSTRUCTIONS

● No Simulator setup required.

• Prepare EI-6.7 Attachment 1 with the following data and then sign and date form:
  o Wind Speed is 12 mph
  o Wind Direction is from 270 degrees
  o Stablity Class = B

● It is preferred that this JPM be done separately from the simulator. If, by chance, candidate IS in the simulator while doing this JPM, THEN ensure the IC does NOT have a release in progress.

ENSURE ALL DATA IS CLEARED FROM EP NOTIFICATION COMPUTER ON BACK-BAR OF CRS ISLAND PRIOR TO NEXT USE OF THIS JPM.

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

The Plant is in MODE 6 and fuel shuffles in progress, the following events occur:

- All offsite power is lost
  - Buses 1C and 1D are reenergized by D/G 1-1 and D/G 1-2 respectively
- Air to the Steam Generator (S/G) nozzle dams was lost for several minutes and approximately 90 gallons of PCS drained to the Containment floor
  - Air to S/G nozzle dams has been restored: dams are no longer leaking
- Containment closure was established with the exception that the Equipment Hatch was not closed due to the hatch being inadvertently knocked off it's track
- Shutdown Cooling restoration is delayed and the PCS has risen to 212°F and PCS boil-off has commenced
- Rising counts indicated on RIA-2326 (Normal Range RGEM)

INITIATING CUES:

You are the Shift Manager (acting as the Emergency Plant Manager). You are to classify the event given the above information and complete the Event Notification Form. No previous event declaration has been made.

This JPM is Time Critical.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS A

TITLE: GRAVITY FEED BORATION WHILE SHUTDOWN

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform gravity feed boration to PCS while shutdown.

Alternate Path: YES

Facility JPM #: NEW

K/A: 004A4.07   Importance: RO: 3.9   SRO: 3.7

K/A Statement: Ability to manually operate and/or monitor in the control room: Boration/dilution.

Task Standard: Gravity feed at 33 gpm Charging flow for at least two minutes.

Preferred Evaluation Location: Simulator   ___X___   In Plant   _____

Preferred Evaluation Method: Perform   ___X___   Simulate   _____

References: SOP-2A, "Chemical and Volume Control System"

Validation Time: 10 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
              Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-2A, "Chemical and Volume Control System" sections 7.1.1, 7.1.2, and 7.5.3
- SOP-1C, "Primary Coolant System – Heatup" section 7.1.1
- ARP-4, "Primary System Volume Level Pressure Scheme EK-07 (C-12)" window 27

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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 is shutdown in MODE 6 with reactor cavity filled
- All three Charging Pumps are aligned for operation, have been operated within the last 12 hours, and their seal lube systems have been operated and placed in automatic
- Charging Pump P-55B has been started per SOP-1C, "Primary Coolant System – Heatup" steps 7.1.1.e.2 and g
- Gravity Feed Paths have been verified operable by a flow test

INITIATING CUES:

The CRS directs you to borate the PCS for two minutes using Charging Pump P-55B and the gravity feed method from Boric Acid Storage Tank T-53A per SOP-2A, "Chemical and Volume Control System," section 7.5.3.

EVALUATOR CUE: Provide candidate with a working copy of SOP-2A front-end up to page 13 AND Section 7.5.3 (2 pages).

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
7.5.3.a	ENSURE charging flow greater than 33 gpm as indicated by FIA-0212, Charging Line Flow Indicator Alarm.	Candidate determines Charging Pump P-55B is in service and flow is above 33 gpm.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.5.3.b	OPEN Boric Acid Tank Gravity Feed Isolation Valve for tank(s) to be used:	Candidate momentarily places handswitch for MO-2169 to OPEN and eventually observes Red light ON and Green light OFF.	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.5.3.c	CLOSE CV-2155, Make-Up Stop.	Candidate checks handswitch for CV-2155 in CLOSE and observes Red light OFF and Green light ON.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.5.3.d	CLOSE MO-2087, VCT T-54 Outlet.	Candidate holds handswitch for MO-2087 to CLOSE and eventually observes Red light OFF and Green light ON.	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
--	Acknowledge alarm EK-0727 and EK-0735 and refers to ARP.	Candidate acknowledges alarm on Panel C-02 and refers to ARP-4.	S U

Comment:

EVALUATOR CUE: When candidate refers to ARP-4, then provide a working copy of ARP-4 Window 27 and Window 35

EVALUATOR NOTE: Alternate Path begins here: covered in task elements 6 and 7.

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
--	Determine that Charging Pump P-55B has tripped.	Candidate dispatches NPO to report on P-55B pump and breaker status.	S U

Comment:

EVALUATOR CUE: If candidate asks for direction on which procedure to use or action to take, then inform Candidate that CRS directs you to continue with the task.

EVALUATOR CUE: If asked as NPO, report P-55B breaker is open (no overcurrent trips) and pump looks normal (not hot).

EVALUATOR NOTE: If candidate does not send NPO to investigate P-55B status, then GO TO Task Element #8.

EVALUATOR CUE: If requested, provide candidate with a working copy of SOP-2A section 7.1.1.

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
---	Start Charging Pump	Candidate places P-55B handswitch to TRIP and then back to START. Candidate observes Red light On and Green light Off for P-55B.	S U

Comment:

EVALUATOR NOTE: Candidate may use SOP-2A section 7.1.1 to complete this action (not required to meet Task Standard). If this Task Element was performed, then GO TO Task Element #9.

CRITICAL STEP

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
---	Start Charging Pump	Candidate starts P-55A or P-55C by placing respective handswitch to START. Candidate observes Red light On and Green light Off for Charging Pump that was started.	S U

Comment:

EVALUATOR NOTE: Candidate may use SOP-2A section 7.1.1 to complete this action (not required to meet Task Standard).

CRITICAL STEP

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
7.5.3.e	ENSURE CLOSED MO-2160, SIRWT T-58 Outlet To Charging Pp P-55A,B,C.	Candidate observes MO-2160 Red light OFF and Green light ON.	S U

Comment:

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
7.5.3.f	VERIFY charging flow greater the 33 gpm.	Candidate observes FI-0212 flow on Panel C-02 above 33 gpm.	S U

Comment:

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
7.5.3.g.1	RESTORE from Gravity Feed Boration as follows: 1. OPEN desired suction source for Charging Pumps: (a) MO-2087, VCT T-54 Outlet	After two minutes, candidate momentarily places handswitch for MO-2087 to OPEN and eventually observes Red light ON and Green light OFF.	**S U**
Comment: ***EVALUATOR CUE: Desired suction source is the VCT*** CRITICAL STEP			

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
7.5.3.g.2	ENSURE CLOSED: (a) MO-2169, BAST T-53A Gravity Feed Isolation. (b) MO-2170, BAST T-53B Gravity Feed Isolation	Candidate momentarily places handswitch for MO-2169 to CLOSE and eventually observes Red light OFF and Green light ON.	**S U**
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
7.5.3.g.3	IF continued boration from the SIRWT is desired, THEN FLUSH each Charging Pump from the SIRWT for at least five minutes.	Candidate determines step is not applicable.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
7.5.3.g.4	IF continued boration from the VCT is desired, THEN FLUSH each Charging Pump from the VCT for at least five minutes.	Candidate continues to operate Charging Pump for flush.	S U

Comment:

EVALUATOR CUE: Flush is in progress and JPM is complete.

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-20
- Create Event Trigger 1 to trip Charging Pump:
  - Event: .not.ZLO2P(61)….this is MO-2087 red light being OFF
  - Action: IMF CV03B…..this trips P55B
- Create Event Trigger 2 to clear Charging Pump trip when pump restart is attempted:
  - Event: ZDI2P(69)…this is P-55B handswitch taken to TRIP
  - Action: DMF CV03B …..deletes P-55B trip malfunction
- Open Charging Line valves CV-2111, CV-2113, and CV-2115
- Ensure open MO-2087, VCT Outlet
- Start P-55B
- FREEZE and SNAP into a saved IC

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- Plant is shutdown in MODE 6 with reactor cavity filled
- All three Charging Pumps are aligned for operation, have been operated within the last 12 hours, and their seal lube systems have been operated and placed in automatic
- Charging Pump P-55B has been started per SOP-1C, "Primary Coolant System – Heatup" steps 7.1.1.e.2 and g
- Gravity Feed Paths have been verified operable by a flow test

INITIATING CUES:

The CRS directs you to borate the PCS for two minutes using Charging Pump P-55B and the gravity feed method from Boric Acid Storage Tank T-53A per SOP-2A, "Chemical and Volume Control System," section 7.5.3.

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS B

TITLE: MANUALLY INITIATE CONTAINMENT ISOLATION

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform Containment Isolation initiation

Alternate Path: NO

Facility JPM #: BANK

K/A: 103A2.03   Importance: RO: 3.5   SRO: 3.8

K/A Statement: Ability to (a) predict the impacts of the following malfunctions or operations on the containment system and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Phase A and B isolation

Task Standard: Manual Containment Isolation initiated with all pathways having at least one isolation valve closed.

Preferred Evaluation Location: Simulator   __X__   In Plant   _____

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: EOP-4.0, Loss of Coolant Accident
                EOP Supplement 6, Checksheet for Containment Isolation and CCW Restoration

Validation Time: 10 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                    Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

       EOP-4.0, LOCA Recovery, step 13
       EOP Supplement 6, Checksheet for Containment Isolation and CCW Restoration

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:

- A Loss of Coolant Accident has occurred.
- The Reactor has been tripped and EOP 1.0, "Standard Post Trip Actions" have been performed.
- Containment radiation is above 10 R/hr.
- Automatic Containment isolation has not occurred.

INITIATING CUES:

- During performance of EOP 4.0, "Loss of Coolant Accident Recovery", the Control Room Supervisor directs you to manually initiate Containment isolation, referring to Step 13.

Evaluator Cue: Provide candidate with a Working Copy of EOP-4.0, step 13.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
EOP-4.0, 13.a	<u>IF</u> ANY of the following conditions exit: ▪ Containment pressure is greater than or equal to 4.0 psig ▪Any operable Containment Radiation Monitor rises to 1 X 10^1 R/hr, <u>THEN</u> **PERFORM** ALL of the following: a. **VERIFY** "CIS INITIATED" (EK-1126) is alarmed	"CIS INITIATED" (EK-1126) has not alarmed. Either HIGH RADIATION INITIATE pushbuttons on Panel EC-13 pushed: ▪ CHRL-CS ▪ CHRR-CS	**S U**

Comment:

Evaluator Note: Candidate verifies "CIS INITIATED" (EK-1126) is in alarm once pushbutton is pushed, it is permissible, but not necessary, to push both pushbuttons.

CRITICAL STEP

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
EOP-4.0, 13.b	<u>IF</u> ANY of the following conditions exit: ▪ Containment pressure is greater than or equal to 4.0 psig ▪Any operable Containment Radiation Monitor rises to 1 X 10^1 R/hr, <u>THEN</u> **PERFORM** ALL of the following: b. **VERIFY** Containment Isolation, Refer to EOP Supplement 6	EOP Supplement 6 obtained.	**S U**

Comment:

Evaluator Note: Candidate will attempt to use the laminated version of EOP Supplement 6. For exam security purposes, do NOT allow this. Provide candidate with a working copy of EOP Supplement 6.

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
Supp.6, 1.0	ENSURE CLOSED all valves unless otherwise specified by the notes.	Verifies that all valves closed as required, checking them off on the checklist, **except for CWRT Vent Valves, CV-1064 and CV-1065.**	**S U**

Comment:

Evaluator Note: Determining that the CWRT Vent Valves failed to close is the only action needed to satisfactorily perform this critical step.

Evaluator Cue: If asked by candidate what should be done with CV-1064 and CV-1065, RESPONSE: direct candidate to perform EOP Supplement 6.

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
Supp.6, 1.0	ENSURE CLOSED all valves unless otherwise specified by the notes.	CWRT Vent Valves, CV-1064 and CV-1065 have failed to isolate, • Handswitches for both CV-1064 and CV-1065 are placed to close. • CV-1064 is verified closed (green light on), CV-1065 remains open (red light on)	**S U**

Comment:

Evaluator Note: CV-1064 closes, CV-1065 remains open.

Evaluator Note: Placing the handswitch for CV-1064 to close is the critical component of this step.

Evaluator Cue: If asked by candidate, EOP Supplement 6 Step 2.0 is not required.

CRITICAL STEP

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
n/a	Report status of EOP Supplement 6 for Containment Isolation to the CRS.	CRS informed of completion of EOP Supplement 6 and all containment isolation valves are closed, with the exception of CV-1065.	**S U**

Comment:

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

(The following is for more than one JPM):

- Use IC 17 (100% power)
- Enter malfunction RC04 using Event Trigger 1
- Trip Reactor and carry out all EOP 1.0 immediate actions
- Reduce Final Value of RC04 to 10 after SIAS
- Trip MFPs after SIAS
- Verify Containment Radiation is greater than 10R/hr on at least one Containment Area Radiation Monitor
- Place Letdown Orifice Stop valves to close
- Allow at least 10% level reduction in each BAST

Simulator Setup:

Event Number	Event	Action	WORD DESCRIPTION
2	Zdi1p(731)	Dmf wp03a	Handswitch for CV-1064 in close
3	Zdi1p(696)	Dmf ch05b	Right channel CHR push button
4	Zdi1p(696)	Dmf ch05a	Right channel CHR push button
5	Zdi1p(689)	Dmf ch05a	Left channel CHR push button
6	Zdi1p(689)	Dmf ch05b	Left channel CHR push button

Malfunction:	Malfunction Title:	Et:	Delay:	Location:	Ramp:	Value:
RC04	PCS Leak	1	N/A	PIDRC01	N/A	100
CH05A	Auto Initiate Failure Left	N/A	N/A	PIDCH01	N/A	True
CH05B	Auto Initiate Failure Right	N/A	N/A	PIDCH01	N/A	True
RC22	Failed Fuel Element	1	N/A	PIDRC01	N/S	100
WP03A	CV-1064 valve binding	N/A	N/A	PIDWP01	N/A	100
WP03B	CV-1065 valve binding	N/A	N/A	PIDWP01	N/A	100

Overrides:	Overrides Title:
NONE	

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- A Loss of Coolant Accident has occurred.
- The Reactor has been tripped and EOP 1.0, "Standard Post Trip Actions" have been performed.
- Containment radiation is above 10 R/hr.
- Automatic Containment isolation has not occurred.

INITIATING CUES:

During performance of EOP 4.0, "Loss of Coolant Accident Recovery", the Control Room Supervisor directs you to manually initiate Containment isolation, referring to Step 13.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS C

**TITLE: PERFORM POST RAS STEP 54
OF EOP-4.0**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform Post RAS Step 54 of EOP-4.0

Alternate Path: NO

Facility JPM #: NEW

K/A: 006A4.07   Importance: RO: 4.4   SRO: 4.4

K/A Statement: Ability to manually operate and/or monitor in the control room: ECCS
                 Pumps and valves

Task Standard: All Charging Pumps stopped and at least one HPSI Pump remains in
                 operation

Preferred Evaluation Location: Simulator   __X__   In Plant   _____

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: EOP-4.0, "Loss of Coolant Accident Recovery"
               EOP Supplement 39, "Alternate Methods of Reducing PCS Pressure"

Validation Time: 8 minutes   Time Critical: NO

 Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                 Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- EOP Supplement 39, "Alternate Methods of Reducing PCS Pressure"
- EOP-4.0, "Loss of Coolant Accident Recovery," Step 54

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:

- A LOCA has occurred
- The Plant has been tripped and EOP-1.0, "Standard Post Trip Actions," have been completed
- EOP-4.0, "Loss of Coolant Accident Recovery," is in progress
- SIS and CHP have actuated
- Pre-RAS and Post-RAS actions have been taken per EOP Supplement 42
- Auxiliary Spray Valve, CV-2117, is INOPERABLE

INITIATING CUES:
- During performance of EOP-4.0, the Control Room Supervisor directs you to perform Step 54.

EVALUATOR CUE: Provide candidate a Working Copy of EOP-4.0, Step 54
SIMULATOR OPERATOR: Place simulator to RUN when candidate is ready to perform
first task element.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
54.a	IF RAS is initiated, THEN PERFORM the following: a. IF BOTH HPSI Pumps are operating, THEN VERIFY total HPSI Pump flow greater than 100 gpm.	Candidate observes the four HPSI flow indicators on Panel C-13 and concludes that less than 100 gpm total HPSI flow exists.	**S U**
Comment:			

EVALUATOR CUE: Provide candidate a Working Copy of EOP Supplement 39.

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
54..a.1	a.1 IF total HPSI Pump flow less than 100 gpm, THEN PERFORM ALL of the following: 1) STOP ALL Charging Pumps. Refer to EOP Supplement 39, "Alternate Methods of Reducing PCS Pressure," as needed to control PZR pressure. 2) ….	Candidate stops Charging Pumps P-55A, P-55B and P-55C. • May place auto/manual handswitches on Panel C-12 to MANUAL (not required) ○ P-55B ○ P-55C • Trips P-55A, from Panel C-02 • Trips P-55B from Panel C-02 • Trips P-55C from Panel C-02	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade

54.a.1 and **Supplement 39**	a.1 IF total HPSI Pump flow less than 100 gpm, THEN PERFORM ALL of the following:
	1) STOP ALL Charging Pumps. Refer to EOP Supplement 39, "Alternate Methods of Reducing PCS Pressure," as needed to control PZR pressure.
	2) …
		Candidate refers to EOP Supplement 39
		
		• Determines Section 1.0 applies
		
		• Verifies SI throttling criteria met for Degraded Containment conditions
		
		  o PCS greater than the minimum subcooling curve on EOP Supplement 1 for degraded Containment conditions using Qualified CETs
		
		  o Corrected PZR level is greater than 20% (40% for degraded Containment) and controlled
		
		  o At least one S/G is available for PCS heat removal with corrected level being maintained or being restored to between 60% and 70%
		
		  o Operable RVLMS channels indicate PCS level is greater than 102 inches above the bottom of fuel alignment plate (621'8")
			S U

Comment:

EVALUATOR CUE: Provide candidate a Working Copy of EOP Supplement 39

EVALUATOR CUE: If asked as CRS for preference of throttling HPSI Valves or stopping HPSI Pump, ask candidate for recommendation, then approve their recommendation.

EVALUATOR NOTE: If candidate decides to stop a HPSI Pump, then GO TO Task Element #5.

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
Supplement 39	a. Operate ANY of the following valves, one train at a time, to obtain the desired PZR level change: • HPSI Train 1 Loop 1A, MO-3007 • HPSI Train 1 Loop 1B, MO-3009 • HPSI Train 1 Loop 2A, MO-3011 • HPSI Train 1 Loop 2B, MO-3013 • HPSI Train 2 Loop 2B, MO-3062 • HPSI Train 2 Loop 2A, MO-3064 • HPSI Train 2 Loop 1B, MO-3066 • HPSI Train 2 Loop 1A, MO-3068	Candidate closes HPSI Valves one at a time to lower PZR pressure/raise HPSI flow.	S U

Comment:

EVALUATOR NOTE: When PCS pressure falls back below 1470 psia, then total HPSI flow will be above 100 gpm: IF SO, Then GO TO Task Element 6.

CRITICAL STEP

Proc. Step	TASK ELEMENT 5	STANDARD	Grade

54.a.2	a.1 IF total HPSI Pump flow less than 100 gpm, THEN PERFORM ALL of the following:
	   1) …
	   2) IF total HPSI Pump still has flow less than 100 gpm, THEN STOP one HPSI Pump.
		Candidate stops P-66A HPSI Pump.
		
		If HPSI Pump P-66B trip was attempted, candidate informs CRS of failure of P-66B to trip.
			S U

Comment:

EVALUATOR NOTE: HPSI Pump P-66B will not trip if selected; candidate must use HPSI Pump P-66A.

CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
54.b	IF one HPSI Pump is operating, THEN VERIFY the operating HPSI Pump has flow greater than 50 gpm.	Candidate determines that HPSI flow and either: If greater than 50 gpm, then considers task complete OR If less than 50 gpm, then goes to RNO 54.b.1	**S U**

Comment:

EVALUATOR NOTE: If PCS pressure falls back below 1485 psia, then total HPSI flow would be above 50 gpm: IF SO, Then GO TO Task Element 8

CRITICAL STEP(only if one HPSI Pump has already been tripped)

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
54.b.1	IF the operating HPSI Pump has flow less than 50 gpm, THEN PERFORM ALL of the following: 1) STOP ALL Charging Pumps. Refer to EOP Supplement 39, "Alternate Methods of Reducing PCS Pressure," as needed to control PZR pressure. 2) IF the operating HPSI Pump still has flow less than 50 gpm, THEN STOP the HPSI Pump. 3) CONSULT with the TSC for further guidance.	Candidate: determines Step 1) was previously completed Candidate dispatches NPO to manually trip P-66B at it's breaker Candidate informs CRS of TSC notification.	**S U**

Comment:

EVALUATOR NOTE: If PCS pressure falls back below 1485 psia, then total HPSI flow would be above 50 gpm. (not critical since HPSI flow WILL rise to above 50 gpm)

EVALUATOR CUE: If asked as NPO to trip P-66B breaker, acknowledge request

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
n/a	**NOTIFY** the CRS that step 54 actions are completed.	CRS NOTIFIED that step 54 contingency actions are completed.	**S U**

Comment:

EVALUATOR CUE: Repeat back notification.

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

SIMULATOR SETUP:

- Use IC-17

- Enter the following malfunctions and overrides:

MF/OR	Description	Location	Event	Delay	Ramp	Final Value
RC04	PCS Leak into Containment	PIDRC01	1	0	0	100
ED01	Loss of Offsite Power	PIDED03	1	0	0	N/A
CV-2117	PZR Auxiliary Spray Valve handswitch	PNLC02	none	0	0	OFF
P-66B-1	HPSI P-66B Trip	PNLC03	none	0	0	OFF

[Developer's Note: override of HPSI Pump P-66B in setup is necessary since this is dominant pump in simulator model]

Take simulator out of freeze, reactor should automatically trip: carry out the following actions:

NOTE: total time for setup is **over an hour**.

- EOP 1.0 Immediate Actions.

- Perform pre RAS actions in EOP Supplement 42.

- When RAS occurs, then:
    - Perform post-RAS actions of EOP Supplement 42 (no major actions needed)
    - Reduce value for Malfunction RC04 to 7.5 with a 3 minute ramp time
    - Observe PZR refill towards solid conditions and PZR pressure rising to above 1460 psia: this will results in total HPSI flow approaching less than 100 gpm
    - Ensure total HPSI Flow indicated on Panel C-13 is less than 100 gpm

- Freeze simulator and take a snapshot.

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- A LOCA has occurred
- The Plant has been tripped and EOP-1.0, "Standard Post Trip Actions," have been completed
- EOP-4.0, "Loss of Coolant Accident Recovery," is in progress
- SIS and CHP have actuated
- Pre-RAS and Post-RAS actions have been taken per EOP Supplement 42
- Auxiliary Spray Valve, CV-2117, is INOPERABLE

INITIATING CUES:
- During performance of EOP-4.0, the Control Room Supervisor directs you to perform Step 54.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO SYS D

TITLE: BYPASS MSIV CLOSURE

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Bypass MSIV Closure

Alternate Path: YES

Facility JPM #: 2012 NRC EXAM

K/A: 039A4.01   Importance: RO: 2.9   SRO: 2.8

K/A Statement: Ability to manually operate and/or monitor in the control room: Main steam supply valves.

Task Standard: Both MSIV Bypass Valves, MO-0501 and MO-0510, opened with S/G pressure less than 500 psia.

Preferred Evaluation Location: Simulator   ___X___   In Plant   _____

Preferred Evaluation Method: Perform   ___X___   Simulate   _____

References: GOP-9, "MODE 3 ≥ 525°F to MODE 4 or MODE 5"

Validation Time: 25 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                              Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- GOP-9, "MODE 3 ≥ 525°F to MODE 4 or MODE 5" with GCL-9 completed through Step 3.6 and Step 2.15 circled but not slashed.
- ARP-5, "Primary Coolant Pump Steam Generator and Rod Drives Scheme EK-09 (C-12)"

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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 cooldown via the Turbine Bypass Valve, CV-0511, is in-progress per GOP-9, "MODE 3 ≥ 525°F to MODE 4 or MODE 5."
- S/G pressures are approximately 560 psia.

INITIATING CUES:

During performance of GOP-9, "MODE 3 ≥ 525°F to MODE 4 or MODE 5," the CRS directs you to block open the MSIVs per step 3.7 and verify block is successful as S/G pressure continues to lower.

EVALUATOR CUE: Provide candidate with a working copy of GOP-9 with GCL-9 completed through Step 3.3 and Step 2.14 circled but not slashed.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
3.7	<u>WHEN</u> 3 of 4 associated Steam Generator pressure sigmas indicate between 510 and 550 psia and the indicator is between alarm flags, <u>THEN</u> **DEPRESS** the associated pushbutton to bypass MSIV closure: • HS/LPE-50A, BYPASS OF MSIV CLOSURE pushbutton	HS/LPE-50A, BYPASS OF MSIV CLOSURE pushbutton depressed	**S U**
Comment:			

EVALUATOR NOTE: Alarm EK-0970, Steam Gen Valves Isolation Lockout, will alarm when at least one MSIV auto block signal has been blocked (i.e. blocking second MSIV does not change alarm status or cause it to reflash).

EVALUATOR NOTE: Candidate can perform Task Elements 1 and 2 in any order and may perform Task Element 3 as soon as alarm occurs.

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
3.7	<u>WHEN</u> 3 of 4 associated Steam Generator pressure sigmas indicate between 510 and 550 psia and the indicator is between alarm flags, <u>THEN</u> **DEPRESS** the associated pushbutton to bypass MSIV closure: • HS/LPE-50B, BYPASS OF MSIV CLOSURE pushbutton	HS/LPE-50B, BYPASS OF MSIV CLOSURE pushbutton depressed	**S U**
Comment:			

EVALUATOR NOTE: Alarm EK-0970, Steam Gen Valves Isolation Lockout, will alarm when at least one MSIV auto block signal has been blocked (i.e. blocking second MSIV does not change alarm status or cause it to reflash).

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
----	Acknowledge alarm EK-0970 and refer to ARP.	Candidate acknowledges alarm on Panel C-02 and refers to ARP-5.	S U

Comment:

EVALUATOR CUE: Provide a working copy of ARP-5 Window 70

EVALUATOR NOTE: Alternate Path begins here and is covered in task elements 4 through 6

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
----	Determine that both MSIVs auto closed when 2/4 S/G pressures on either S/G went below 500 psia.	Candidate determines that both MSIVs have closed.	S U

Comment:

EVALUATOR CUE: If candidate asks for direction on which procedure to use or action to take, then ask Candidate what they would recommend and the basis for this recommendation:

- *Candidate Responses: 1. Continue with cooldown using Turbine Bypass Valve and opening MSIV bypasses (basis= equivalent to previous method in-use, won't loose water inventory)*
OR use Atmospheric Steam Dump Valves (basis = quicker method but loose water inventory and make noise to environment)

- *EVALUATOR Response: Use procedures and continue the plant cooldown using your recommended method (CV-0511, Turbine Bypass Valve via MSIV Bypass Valves OR using Atmospheric Steam Dump Valves*

EVALUATOR CUE: If candidate asks for Vacuum Pump to be placed in service, acknowledge request and state that this has been completed.

EVALUATOR NOTE: GOP-9 Steps 2.13.b thru d are N/A.

EVALUATOR NOTE: If Candidate is using Turbine Bypass Valve, then
GO TO Task Element #6

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
2.13.e	**OPERATE** ASDVs as necessary to maintain PCS temperature.	Candidate operates ADV Controller HIC-0781A as needed to continue PCS cooldown at rate at or below 60°F/Hr	**S U**

Comment:

EVALUATOR NOTE: If Candidate attempts to perform GOP-9 step 2.13.f (perform GOP-9.0 section 5.0 actions): inform candidate that another operator will complete this task.

EVALUATOR NOTE: If this Task Element is performed, then GO TO Task Element 8.

CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
2.15	**ENSURE OPEN** both MSIV Bypass Valves: • MO-0501, MSIV CV-0501 Bypass • MO-0510, MSIV CV-0510 Bypass	Candidate opens MSIV Bypass Valve • MO-0501	**S U**

Comment:

EVALUATOR NOTE: Candidate may close CV-0511 with PIC-0511 prior to opening the MSIV Bypass Valves.

EVALUATOR NOTE: Order in which candidate opens MSIV bypass valves is not critical.

CRITICAL STEP

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
2.15	**ENSURE OPEN** both MSIV Bypass Valves: • MO-0501, MSIV CV-0501 Bypass • MO-0510, MSIV CV-0510 Bypass	Candidate opens MSIV Bypass Valve: • MO-0510	**S U**

Comment:

EVALUATOR NOTE: Candidate may close CV-0511 with PIC-0511 prior to opening the MSIV Bypass Valves.

EVALUATOR NOTE: Order in which candidate opens MSIV bypass valves is not critical.

CRITICAL STEP

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
N/A	Notify CRS that either 1)both MSIV Bypass Valves are open and cooldown is continuing via TBV <u>OR</u> 2) ADVs are being used to continue plant cooldown.	CRS notified.	**S U**
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-11.
- Insert override for zdi3p(174) to OFF (this is CV-0501-BYP, Bypass of MSIV Closure on Low SG Press, SG 'B' Bypass pushbutton on Panel C-01).
- Trip the reactor.
- Fully open both MSIV Bypass Valves and then latch both MSIV's using remotes MS25 and MS36 on PID MS02.
- Commence a 60°/hr cooldown using CV-0511, TBV.
- Close both MSIV Bypass Valves.
- Annotate/perform other GOP-9 activities up to step 3.7.
- FREEZE when S/G pressures are approximately 555 psia (on sigmas) or 540 psia (on PPC) and SNAP into a saved IC.

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- Plant cooldown via the Turbine Bypass Valve, CV-0511, is in-progress per GOP-9, "MODE 3 $\geq$ 525°F to MODE 4 or MODE 5."
- S/G pressures are approximately 560 psia.

INITIATING CUES:

During performance of GOP-9, "MODE 3 $\geq$ 525°F to MODE 4 or MODE 5," the CRS directs you to block open the MSIVs per step 3.7 and verify block is successful as S/G pressure continues to lower.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS E

TITLE: ALIGN CONTAINMENT AIR COOLERS

CANDIDATE:

EXAMINER:

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Alignment of Containment Air Coolers following fan maintenance

Alternate Path: NO

Facility JPM #: 2012 NRC EXAM

K/A: 022A1.04   Importance: RO: 3.2   SRO: 3.3

K/A Statement: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CCS controls including: Cooling water flow

Task Standard: All four Containment Air Cooling System aligned per SOP-5. Third Service Water Pump started.

Preferred Evaluation Location: Simulator   __X__   In Plant   _____

Preferred Evaluation Method: Perform   __X__   Simulate   _____

References: SOP-5, "Containment Air Cooling"

Validation Time: 10 minutes   Time Critical: NO

 Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                        Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-5, "Containment Air Cooling"

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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 is operating at steady state 100% power.
- VHX-1 Cooling Fans V-1A and V-1B are OFF with Service Water isolated.
- VHX-4 Cooling Fans V-4A and V-4B are OFF with Service Water isolated.
- All CAC Outlet Bypass Valves are properly aligned per SOP-5, "Containment Air Cooling," step 7.1.1.b.1 table.

INITIATING CUES:

The Control Room Supervisor has directed you to align the Containment Air Cooling System to its normal alignment per SOP-5, section 7.1.1 with all fans operating and all inlet and high capacity valves open.

EVALUATOR CUE: Provide candidate with a working copy of SOP-5 (entire procedure)

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
7.1.1.a	**REFER TO** Step 5.2.3 for guidance on Service Water Pump operation.	Candidate refers to step 5.2.3 for guidance on SW pump operation.	S U
Comment:			

EVALUATOR CUE: If asked whether a third Service Water Pump should be started, state that, "If possible, operate with two Service Water Pumps."

EVALUATOR NOTE: Order of valve alignment and fan starts is not critical.

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
7.1.1 b.1	**ENSURE** control valves are positioned as follows: For VHX-4, verify open Inlet Valve CV-0869.	CV-0869 is verified open.	S U
Comment:			

EVALUATOR NOTE: Service Water Pump discharge pressure has been setup low and will lower further when CAC high capacity valves are opened.

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
7.1.1 b.1	**ENSURE** control valves are positioned as follows: For VHX-4, open High Capacity Outlet Valve CV-0867.	High Capacity Outlet Valve CV-0867 is opened.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
7.1.1 **b.1**	**ENSURE** control valves are positioned as follows: For VHX-1 verify Open Inlet Valve CV-0862.	Inlet Valve CV-0862 is verified open.	**S U**
Comment: *EVALUATOR NOTE: Will receive EDG Trouble Alarms on Panel C-11 after Service Water Pump start.* *EVALUATOR NOTE: This step may be performed AFTER Service Water Pump start.*			

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
7.1.1 **b.1**	**ENSURE** control valves are positioned as follows: For VHX-1 open High Capacity Outlet Valve CV-0861.	High Capacity Outlet Valve CV-0861 is opened.	**S U**
Comment: *EVALUATOR NOTE: This step may be performed AFTER Service Water Pump start.* CRITICAL STEP			

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
5.2.3	Monitor Service Water Header pressure and determine that Service Water system pressure is < 50 psig.	Determines that the Standby Service Water Pump P-7C needs to be started because system pressure has lowered to < 50 psig. May need to respond to alarms EK-0551 and EK-0557: Has AO investigate D/G local alarm boards.	**S U**
Comment: *EVALUATOR CUE: When asked as AO report that D/G local alarm panels indicate low raw water pressure. Reading is 24 psig if asked.*			

Proc.Step	TASK ELEMENT 7	STANDARD	Grade
n/a	Obtain SOP-15, Service Water System procedure, section 7.1.1.	Locates SOP-15, Service Water System procedure.	S U
Comment:			
EVALUATOR CUE: Provide candidate with a working copy of SOP-15, section 7.1.1.			

Proc.Step	TASK ELEMENT 8	STANDARD	Grade
SOP-15 7.1.1.a	IF starting the first Service Water Pump, THEN **GO TO** Section 7.1.5.	Candidate determines this step is N/A.	S U
Comment:			

Proc.Step	TASK ELEMENT 9	STANDARD	Grade
SOP-15 7.1.1.b	IF starting the third Service Water Pump, THEN **NOTIFY** Chemistry so that they can recalculate mixing basin discharge flow volume.	Notify Chemistry to recalculate Mixing Basin discharge flow volume.	S U
Comment:			
EVALUATOR CUE: CRS will notify Chemistry of P-7C start so they can recalculate mixing basin discharge flow volume.			

Proc.Step	TASK ELEMENT 10	STANDARD	Grade
SOP-15 7.1.1.c	**ENSURE OPEN** associated pump discharge valve: • P-7C MV-SW104	Dispatch AO to check OPEN P-7C discharge valve MV-SW104.	S U
Comment:			
EVALUATOR (or Simulator Operator) CUE: "MV-SW104 is OPEN"			

Proc.Step	TASK ELEMENT 11	STANDARD	Grade
SOP-15 7.1.1.d	**ENSURE** motor oil levels normal.	Dispatch AO to check P-7C motor oil levels normal.	S U
Comment: *EVALUATOR (or Simulator Operator) CUE: "P-7C Motor oil levels normal"*			

Proc.Step	TASK ELEMENT 12	STANDARD	Grade
SOP-15 7.1.1.e	Remove P-7C from standby by placing Control Switch to TRIP.	P-7C Control Switch placed momentarily in TRIP until standby light extinguishes.	S U
Comment:			

Proc.Step	TASK ELEMENT 13	STANDARD	Grade
SOP-15 7.1.1.f	**START** desired pump from Control Room Handswitch (preferred) or using Handswitch on breaker.	P-7C control switch placed in START and released to mid-position.	S U
Comment: **SIMULATOR OPERATOR: Call in as AO and report that SW Pump P-7C local discharge pressure is 73 psig, and packing leakoff is not excessive. If asked, report that P-7C Basket Strainer DP is 4 psid.** *EVALUATOR NOTE: EK-1144, P-7C Basket Strainer HI dP may alarm and then clear after pump start: candidate should reference ARP-7, but no actions are required.* CRITICAL STEP			

Proc.Step	TASK ELEMENT 14	STANDARD	Grade
---	Verify Service Water Header pressure rises to > 50 psig.	Verify Service Water Header pressure rises to > 50 psig.	S U
Comment:			

EVALUATOR NOTE: Candidate will refer back to SOP-5, 7.1.1.b.2 to complete alignment of Containment Air Coolers. Also, the following four steps may be performed in any order.

Proc.Step	TASK ELEMENT 15	STANDARD	Grade
7.1.1 **b.2**	**ENSURE** all available Containment Air Cooler Fans are operating: For VHX-1 start fan V-1A (SOP-5).	V-1A is started.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 16	STANDARD	Grade
7.1.1 **b.2**	**ENSURE** all available Containment Air Cooler Fans are operating: For VHX-1 start fan V-1B (SOP-5)	V-1B is started.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 17	STANDARD	Grade
7.1.1 **b.2**	**ENSURE** all available Containment Air Cooler Fans are operating: For VHX-4 start fan V-4A (SOP-5)	V-4A is started.	S U
Comment: **CRITICAL STEP**			

Proc.Step	TASK ELEMENT 18	STANDARD	Grade
7.1.1 **b.2**	**ENSURE** all available Containment Air Cooler Fans are operating: For VHX-4 start fan V-4B (SOP-5)	V-4B is started.	**S U**
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 19	STANDARD	Grade
N/A	Notify CRS that Containment Air Coolers are aligned with all High Capacity outlet valves open and all fans running.	CRS notified.	**S U**
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

Reset to IC-17.

Ensure P-7A and P-7B are in service, with P-7C in standby.

Stop V-1A, 1B, 4A, and 4B.

Close VHX-1 High Capacity Outlet, CV-0861.
Close VHX-4 High Capacity Outlet, CV-0867.

Insert SW leak: SW09 in at 50% (at setup).

Create Event Trigger 2: Event = zlo1p(26).and.zlo1p(32), Action – imf sw09 65
{this is for having the red lights on for CVs-0861 and 0867}

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- The plant is operating at steady state 100% power.
- VHX-1 Cooling Fans V-1A and V-1B are OFF with Service Water isolated.
- VHX-4 Cooling Fans V-4A and V-4B are OFF with Service Water isolated.
- All CAC Outlet Bypass Valves are properly aligned per SOP-5, "Containment Air Cooling," step 7.1.1.b.1 table.

INITIATING CUES:

The Control Room Supervisor has directed you to align the Containment Air Cooling System to its normal alignment per SOP-5, section 7.1.1 with all fans operating and all inlet and high capacity valves open.

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS F

TITLE: PERFORM A DIESEL GENERATOR (D/G) VOLTAGE TEST ON 1-1 D/G

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform Diesel Generator Surveillance MO-7A-1 and MO-7A-2

Alternate Path: NO

Facility JPM #: PL-OPS-EDG-005J

K/A: 064A4.06 Importance: RO: 3.9 SRO: 3.9

K/A Statement: Manual start, loading, and stopping of the ED/G

Task Standard: 1-1 D/G Auto Voltage Regulator High and Low Limits verified.

Preferred Evaluation Location: Simulator __X__ In Plant _____

Preferred Evaluation Method: Perform __X__ Simulate _____

References: MO-7A-1, "Emergency Diesel Generator 1-1"

Validation Time: 10 minutes Time Critical: NO

 Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____ UNSAT _____

Comments:

Examiner: _____ Date: _____
                              Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

MO-7A-1, "Emergency Diesel Generator 1-1", Section 5.6

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:
- Diesel Generator 1-1 running unloaded at 60 Hz for fifteen minutes.
- MO-7A-1, "Emergency Diesel Generator 1-1" is in progress; all steps up to 5.6 are completed.
- Month is **January**.
- Plant is in Mode 1.
- Auxiliary Operator is stationed at EC-22, Diesel Generator 1-1 Local Panel.

INITIATING CUES:
- During performance of MO-7A-1, the Control Room Supervisor directs you to perform Section 5.6 "Voltage Regulator Test."

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Operator obtains a copy of MO-7A-1, Section 5.6	MO-7A-1, Section 5.6 obtained	**S U**

Comment:

Evaluator Cue: Provide a working copy of MO-7A-1, Section 5.6.

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
5.6.1	**DETERMINE** the Voltage Regulator Mode Select switch position from the table for the month ….. <u>AND</u> **PERFORM** the following: Voltage Regulator Mode Select Switch Position is "AUTO" for month of January	Operator determines that the Voltage Regulator Mode Select switch position is "AUTO".	**S U**

Comment:

Evaluator Note: The Voltage Regulator Mode Select switch position is determined by the Month of the test.

Evaluator Cue: If asked as System Engineer what switch position to use, CUE that the procedure, MO-7A-1 is to be followed.

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
5.6.1a	<u>IF</u> position is AUTO, <u>THEN</u> **ENSURE** Voltage Regulator Mode Select switch is in the AUTO position (location C-04 panel).	Voltage Regulator Mode Select switch is verified in AUTO position.	**S U**

Comment:

Evaluator Cue: If candidate places this switch in MANUAL, then this task element is a failed critical step.

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
5.6.1b.1	<u>IF</u> position is MANUAL, <u>THEN</u> **PERFORM** the following: …	Operator determines that this step is not applicable.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
5.6.1b.2	IF the plant is in Mode 1, 2, 3, or 4, THEN PERFORM off-site source checks.	Operator determines that this step is not applicable.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
5.6.2	DETERMINE the switch from the table for the performance month …. AND PERFORM the Following:	Operator determines that the Field Rheostat switch on C-04 is to be used.	**S U**

Comment:

Evaluator Note: The Field Rheostat switch on C-04 is determined by the Month of the test.

Evaluator Cue: If asked as System Engineer what switch to use, <u>CUE</u> The procedure, MO-7A-1 is to be followed.

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
5.6.2a	Slowly raise generator voltage to between 2575 VAC and 2625 VAC on EVI-1107L, Local Volt Meter or as directed by the System Engineer.	Operator adjusts generator voltage between 2575 VAC and 2625 VAC on EVI-1107L with the Field Rheostat switch on C-04.	**S U**

Comment:

Evaluator Cue: If asked as System Engineer what generator voltage limits to use, CUE that the procedure, MO-7A-1 is to be followed.

Evaluator Cue: If asked as AO to report local generator voltage, USE voltage indication on C-04 for the local voltage reading.

CRITICAL STEP

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
5.6.2b	**RECORD** generator voltage and field voltage (location EC-22 panel) ▪ Local Volt Meter (EVI-1107L) Volts: _____ ▪ Field Voltage (EVI-1107DC) Volts: _____	Recorded generator and field voltages (from EC-22 panel: Local Volt Meter (EVI-1107L) Volts: <u>2575 to 2625</u> Field Voltage (EVI-1107DC) Volts: <u> 80V </u>	**S U**

Comment:

Evaluator Cue: If asked as AO to report local generator voltage, USE voltage indication on C-04 for the local voltage reading.

Evaluator Cue: If asked as AO to report field voltage, <u>REPORT</u>: field voltage reads 80 V on EVI-1107DC.

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
5.6.2c	Slowly lower generator voltage to between 2275 VAC and 2325 VAC on EVI-1107L, Local Volt Meter or as directed by the System Engineer.	Operator adjusts generator voltage between 2275 VAC and 2325 VAC on EVI-1107L with the Field Rheostat switch on C-04.	**S U**

Comment:

Evaluator Cue: If asked as System Engineer what generator voltage limits to use, CUE that the procedure, MO-7A-1 is to be followed.

Evaluator Cue: If asked as AO to report local generator voltage, USE voltage indication on C-04 for the local voltage reading.

CRITICAL STEP

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
5.6.2d	**RECORD** generator voltage and field voltage (location EC-22 panel) ▪ Local Volt Meter (EVI-1107L0 Volts: _____ ▪ Field Voltage (EVI-1107DC)n Volts: _____	Recorded generator and field voltages (from EC-22 panel: Local Volt Meter (EVI-1107L) Volts: 2275 to 2325 Field Voltage (EVI-1107DC) Volts: __70V_	**S U**

Comment:

Evaluator Cue: If asked as AO to report local generator voltage, USE voltage indication on C-04 for the local voltage reading.

Evaluator Cue: If asked as AO to report field voltage, REPORT: field voltage reads 70 V on EVI-1107DC.

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
5.6.2e	**RAISE** generator voltage to 2400 VAC (2390 VAC – 2410 VAC) on EVI-1107L, Local Volt Meter.	Generator voltage raised to between 2390 VAC and 2410 VAC on EVI-1107L with the Field Rheostat switch on C-04.	S U

Comment:

Evaluator Cue: If asked as AO to report local generator voltage, USE voltage indication on C-04 for the local voltage reading.

CRITICAL STEP

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
5.6.3	**ENSURE** Voltage Regulator Mode Select switch is in AUTO position (location C-04 panel). Performed By: Signed, Time and Dated Verified By: Signed, Time and Dated	Voltage Regulator Mode Select switch verified in the AUTO position Performed By: N/A Verified By: Signed, Time and Dated	S U

Comment:

Evaluator Cue: Operator will not sign the Performed By line, the Verified By line will be signed (Voltage Selector switch in proper position and not manipulated)

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
n/a	Notify CRS that 1-1 D/G Voltage Regulator Test has been completed per Section 5.6 of MO-7A-1, for 1-1 D/G.	CRS notified that Section 5.6 of MO-7A-1 for Voltage Regulator Test Complete.	S U

Comment:

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Any at power IC can be used.
- Start EDG 1-1 in UNIT.
- Clear Local Alarm gauge board on PIDED08, using ED27.

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- Diesel Generator 1-1 running unloaded at 60 Hz for fifteen minutes.
- MO-7A-1, "Emergency Diesel Generator 1-1" is in progress; all steps up to 5.6 are completed.
- Month is **January**.
- Plant is in Mode 1.
- Auxiliary Operator is stationed at EC-22, Diesel Generator 1-1 Local Panel.

INITIATING CUES:

During performance of MO-7A-1, the Control Room Supervisor directs you to perform Section 5.6 "Voltage Regulator Test."

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS G

TITLE: ADJUST RIA-1049 SETPOINT

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Adjust RIA-1049 Alarm Setpoint

Alternate Path: NO

Facility JPM #: 2012 NRC EXAM

K/A: 073A4.01 Importance: RO: 3.9 SRO: 3.9

K/A Statement: Ability to manually operate and/or monitor in the control room: Effluent release

Task Standard: RIA-1049 high alarm set to 1100 cpm.

Preferred Evaluation Location: Simulator ___X___ In Plant _____

Preferred Evaluation Method: Perform ___X___ Simulate _____

References: SOP-37, "Process Liquid Monitor System"

Validation Time: 10 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____ Date: _____
Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-37, 'Process Liquid Monitor System"

Also see **Simulator Operator Instructions** (later page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:

- Release Order, Form CH 6.21-3 (batch card) has been prepared. The following RE-1049 data has already been entered on this form:
  - RE-1049 Check Source reading = 6.6 E6 cpm
  - High alarm setpoint net cpm = 640
  - RE-1049 background cpm = 460
  - RIA-1049 alarm setpoint cpm = 1100

- Breaker 34 on EY-01 is closed.
- Attachment 3, Checklist 37, Table "Digital Rate Meter Instruments" for RIA-1049, Digital Rate Meter has been performed.

INITIATING CUES:

The CRS directs you to set up Radwaste Discharge Monitor, RIA-1049 High Alarm Setpoint using SOP-37 Section 7.3.2 to a setpoint of 1100 cpm (hand candidate prepared Release Order).

EVALUATOR CUE: Provide candidate with a working copy of SOP-37, section 7.3.2

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
a	**PUSH** HIGH pushbutton on front of RIA-1049 and read current High Alarm Setpoint.	"High Alarm" push button on the front of RIA-1049 pushed and current high alarm setpoint is read as 2.70E3 CPM.	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
b	**PULL** RIA-1049 out from the panel about six inches (6") to access the control buttons.	RIA-1049 pulled out from panel about 6 inches.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
c	**VERIFY** Function switch is set to "0" as seen on right side of switch.	Checks right side of Function Switch is set to "0".	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
d	**PRESS** ENTER button to display High Alarm setpoint.	"Enter" button pressed and one digit blinking.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
e	**SET** the High Alarm setpoint by performing the following as necessary: • IF selecting another digit, THEN **PRESS** the DIGIT pushbutton. • IF changing the digit value, THEN **PRESS** the VALUE pushbutton until value desired for that digit is displayed.	Digit and Value pushbuttons manipulated as necessary to set the high alarm setpoint at 1.10E3.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
f	WHEN entire display indicates desired trip setpoint, THEN: (a) **PRESS** ENTER pushbutton.	Enter button pressed.	S U
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
f	WHEN entire display indicates desired trip setpoint, THEN: (b) **PUSH** monitor back into panel.	Monitor pushed back into panel.	S U
Comment:			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
g	**PRESS** HIGH pushbutton on front of RIA-1049 to verify high alarm setpoint is correct.	"High Alarm" push button pressed and 1.10E3 CPM trip setpoint verified.	S U
Comment:			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
h	**PRESS** ALARM ACK button to clear any high alarms that may have come in.	Alarm Ack pushed and Alarms clear.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
N/A	Notify the CRS that RIA-1049 High Alarm Setpoint is 1100 cpm.	CRS is notified.	**S U**
Comment:			

EVALUATOR CUE: As CRS, repeat back the notification.

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Any IC

- Ensure RIA-1049 high alarm setpoint is set at 2.61E3 cpm PRIOR TO performing this JPM and AFTER it is completed (as appropriate).

- Fill out Release Order, form CH 6.21-3 (procedure CH 6.21, attachment 3) as follows:

> CH 6.21, Attachment 3, page 1 of 2.
>
> In the first section of the form, fill in the following:
>
>> Batch = LRW-Today
>>
>> Tank = T-91
>>
>> % released = 70%
>>
>> Volume released (gal) = 51100
>>
>> Minimum required Dilution Water Pumps = 1
>>
>> Minimum required Service Water Pumps = 2
>>
>> Maximum permitted release rate (gpm) = 250
>>
>> Authorization Shift Manager = any signature; Date = today
>
> In the second section of the form, Control Room Operator pre-release section, fill in the following:
>
>> Check both DW pumps operating
>>
>> Check P-7A and P-7B SW pumps operating
>>
>> RE-1049 Check Source reading = 6.6 E6 cpm
>>
>> High alarm setpoint net cpm = 640
>>
>> RE-1049 background cpm = 460
>>
>> RIA-1049 alarm setpoint cpm = 1100
>>
>> Control Room Operator = any signature, Date = today

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- Release Order, Form CH 6.21-3 (batch card) has been prepared. The following RE-1049 data has already been entered on this form:
  - RE-1049 Check Source reading = 6.6 E6 cpm
  - High alarm setpoint net cpm = 640
  - RE-1049 background cpm = 460
  - RIA-1049 alarm setpoint cpm = 1100

- Breaker 34 on EY-01 is closed.
- Attachment 3, Checklist 37, Table "Digital Rate Meter Instruments" for RIA-1049, Digital Rate Meter has been performed.

INITIATING CUES:

The CRS directs you to set up Radwaste Discharge Monitor, RIA-1049 High Alarm Setpoint using SOP-37 Section 7.3.2 to a setpoint of 1100 cpm.

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS H

TITLE: TRANSFER SHIELD COOLING COILS

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Operate the Shield Cooling System

Alternate Path: YES

Facility JPM #: BANK

K/A: G2.1.30   Importance: RO: 4.4   SRO: 4.0

K/A Statement: Ability to locate and operate components, including local controls

Task Standard: Shield Cooling Coil transferred to 'A' in-service and at least one Shield Cooling Pump operating.

Preferred Evaluation Location: Simulator _X__   In Plant   _____

Preferred Evaluation Method: Perform   _X__   Simulate   _____

References: SOP-29, "Shield Cooling System"
ARP-8, "Safeguards Safety Injection and Isolation Scheme EK-13 (EC-13)"

Validation Time: 10 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                        Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

  SOP-29, "Shield Cooling System," section 7.1.2
  ARP-8, "Safeguards Safety Injection and Isolation Scheme EK-13 (EC-13),"
  windows 1, 2, and 3

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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 is at full power
- 'B' Shield Cooling Coil is in service per SOP-29, Shield Cooling System, section 7.1.1.

INITIATING CUES:

The CRS directs you to transfer Shield Cooling Coils per SOP-29, Shield Cooling System, section 7.1.2.

Evaluator Cue: Provide a working copy of SOP-29, Section 7.1.2.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
7.1.2.a	CHECK Shield Cooling System in operation (refer to Section 7.1.1).	No actions needed since this is status provided in initial conditions.	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
b	OPEN Inlet Valve for coil set to be placed in operation: Coil A CV-0932 Coil B CV-0934	Coil A CV-0932 opened using key #141: red light ON, green light OFF	S U

Comment:

Evaluator Note: EK-1303, "Reactor Shield Clg Lo Flo," may alarm and then clear when this step is performed. Use of ARP not required to complete Critical portion of this step.

CRITICAL STEP

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
c	CLOSE Inlet Valve for coil set to be removed from operation: Coil A CV-0932 Coil B CV-0934	Coil B CV-0934 closed using key #142: red light OFF, green light ON	S U

Comment:

Evaluator Cue: If candidate references ARP-8, provide working copy of appropriate alarm windows (1, 2, and or 3).

Evaluator Note: When CV-0934 red light goes off, then P-77A will trip.
CRITICAL STEP

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
d	CHECK Annunciator EK-1303, "Reactor Shield Clg Lo Flo" CLEAR.	EK-1303 checked and IS alarming. The following alarms are also alarming: EK-1301, Shield CLG Pumps Trip EK-1302, Shield CLG Pumps Disch Low Press	**S U**

Comment:

Evaluator Cue: If asked as CRS for direction, respond to follow procedures.

EVALUATOR NOTE: Alternate Path begins here: covered in task elements 5 and 6.

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
ARP-8	Window EK-1301 actions: • ENSURE running standby Shield Cooling Pump P-77A OR P-77B • PLACE control switch for tripped pump to TRIP position	P-77B handswitch taken to START and then released: red light ON, green light OFF P-77A handswitch taken to TRIP and released **(NOT a critical task element)**	**S U**

Comment:

CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
ARP-8	Window EK-1302 actions: • ENSURE running standby Shield Cooling Pump P-77A OR P-77B • CHECK Shield Cooling Surge Tank T-62 level normal Window EK-1303 actions: • CHECK running Shield Cooling Pump P-77A OR P-77B	T-62 level checked: level is stable.	**S U**

Comment:

Evaluator Note: 1ˢᵗ action in each alarm is same action as in Task Element #5

Candidate may check Containment Sump level.

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
--	Report to CRS status of Shield Cooling System.	Reports 'A' Coil is in service and 'B' Coil has been removed from service. P-77B was manually started and is in service since P-77A tripped and P-77B did not auto start.	S U
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to any at power IC.

- Create Event Trigger 1 (red light going off on CV-0934, 'B' Shield Clg Coil Inlet):
  Event: .not.zlo1p(113) Action: leave blank

- Create Event Trigger 2 (when P-77B HS taken to START position):
  Event: zdi1p(121) Action: dor P-77B-1

- Create Event Trigger 3 (when P-77A HS taken to TRIP position):
  Event: zdi1p(106) Action: dmf ANN-K-13-01

- Insert the following overrides on Panel C-08:
  - P-77B-1, Shield Clg P-77B Standby, final value = OFF
  - Tie the following to Event Trigger #1:
    - P-77A-2, Shield Clg P-77A Trip, final value = ON
    - P-77A-4, Shield Clg P-77A NA Close, final value =OFF
    - ANN-K-13-01, Reactor Shield CLG Pump Trip, final value = ON

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- Plant is at full power
- 'B' Shield Cooling Coil is in service per SOP-29, Shield Cooling System, section 7.1.1.

INITIATING CUES:

The CRS directs you to transfer Shield Cooling Coils per SOP-29, Shield Cooling System, section 7.1.2

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS I

TITLE: ENERGIZE BUS 1C FROM STARTUP TRANSFORMER 1-2 LOCALLY

CANDIDATE:

EXAMINER:

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform Actions Specified In Alternate Safe Shutdown Procedure (AOP-41)

Alternate Path: YES

Facility JPM #: PL-OPS-ONP-014J

K/A: 068AA1.10   Importance: RO: 3.7   SRO: 3.9

K/A Statement: Ability to operate/or monitor the following as they apply to the Control
                Room Evacuation: Power distribution: ac and dc

Task Standard: Bus 1C is energized from Startup Transformer 1-2

Preferred Evaluation Location: Simulator   ____   In Plant   __X__

Preferred Evaluation Method: Perform   ____   Simulate   __X__

References: AOP-41, "Alternate Safe Shutdown Procedure"
               EOP Supplement 29, "Restore Buses 1C, 1D, 1E From Offsite Power"

Validation Time: 15 minutes   Time Critical: NO

 Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                   Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

> AOP-41, "Alternate Safe Shutdown Procedure," Step 15.1.a
> EOP Supplement 29, "Restore Buses 1C, 1D, 1E From Offsite Power,"
> Section 3.0, Locally Energize Bus 1C and 1D From Startup XFRM 1-2

Also see **Simulator Operator Instructions** (last page of this document).

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:

- Control Room is not habitable.
- Reactor has been tripped and all rods have been inserted into the core.
- Bus 1C and Bus 1D are de-energized.
- Startup Power Transformer 1-2 is available.
- The control power circuit for breaker 152-106 has been damaged.

INITIATING CUES:

During performance of AOP-41, "Alternate Safe Shutdown Procedure" Step 15.1.a, the CRS directs you to energize Bus 1C from Startup Transformer 1-2 locally using EOP Supplement 29 section 3.0.

Evaluator Cue: Provide a Working Copy of EOP Supplement 29.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	**LOCATE** EOP Supplement 29	EOP Supplement 29 **LOCATED**	**S U**
Comment:			

Evaluator Cue: If asked, provide candidate a Working Copy of AOP-41 step 15.1.a.

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
3.0 **1.a**	IF Bus 1C is <u>NOT</u> **ENERGIZED**, <u>THEN</u> **PERFORM** the following: a. **ENSURE OPEN** Safeguards/Station Power Incoming Breaker to Bus 1C, 152-105	**ENSURES OPEN** Safeguards/Station Power Incoming Breaker 152-105 is open by **VERIFYING** Breaker 152-105 position indication inside the breaker cubicle indicates **OPEN**	**S U**

Comment:

Evaluator Note: The breaker status lights for breakers 152-105, 152-106 and 152-107 will not be lit due to breaker 72-307 being tripped

Evaluator Cue: If asked about the breaker status lights for breakers 152-105, 152-106 or 152-107, cue that they are not lit.

Evaluator Cue: If the position indication inside of 152-105 is checked, cue that breaker 152-105 indicates OPEN

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
3..0 **1.b**	IF Bus 1C is <u>NOT</u> **ENERGIZED**, <u>THEN</u> **PERFORM** the following: b. **OBTAIN** a Remote-Local-Transfer switch handle from the cubicle above Dilution Water Pump Breaker, 152-102	**DESCRIBES/OBTAINS** the Remote-Local-Transfer switch handle from cubicle above the Dilution Water Pump Breaker (152-102).	**S U**

Comment:

CRITICAL STEP

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
3.0 1.c	IF Bus 1C is NOT **ENERGIZED**, THEN **PERFORM** the following: c. PLACE Remote-Local-Transfer switch, HS-152-106RLTS, to the LOCAL position to isolate Startup Power Incoming Breaker to Bus 1C, 152-106	Simulates or describes **PLACING** HS-152-106 RLTS in "LOCAL" position	S U

Comment:

Evaluator Cue: *After simulated operation of the Remote-Local-Transfer switch, the breaker 152-106 status lights on front of breaker door remain* NOT *lit (i.e. red, white, and green lights are* NOT *illuminated).*

CRITICAL STEP

EVALUATOR NOTE: Alternate Path begins here: covered in task element 5.

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
3.0 **1.d.1)**	IF Bus 1C is NOT **ENERGIZED**, THEN **PERFORM** the following: d. IF breaker status lights do NOT light after operating the Remote-Local-Transfer switch, THEN **PERFORM** the following: 1) **ENSURE CLOSED** Control Power Breaker 72-307 on Panel D11A	Operator simulates or describes **PLACING** Breaker 72-307 to the "TRIP" position. AND Operator simulates or describes **PLACING** Breaker 72-307 to the "CLOSE" position	**S U**

Comment:

Evaluator Note: The breaker status lights for breakers 152-105, 152-106 and 152-107 will be lit when breaker 72-307 is closed.

Evaluator Cue: *When operator indicates that he would open Panel D11A to check breaker 72-307, cue him that the handle is in between open and closed.*

Evaluator Cue: I*f operator contacts CRS to request permission to reset and close breaker 72-307, cue him that he has CRS permission.*

Evaluator Cue: *When operator indicates that breaker 72-307 will be placed to the tripped position and then to close, cue that the breaker is all the way to the right.*

Evaluator Cue: *When operator checks the breaker status lights on the front on 152-106, cue that breaker 152-106 the green and white light status lights are lit.*

CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade

3.0
 	
1.d.2)
	IF Bus 1C is <u>NOT</u> **ENERGIZED**, <u>THEN</u> **PERFORM** the following:
	
	    d. <u>IF</u> breaker status lights do NOT light after operating the Remote-Local-Transfer switch, <u>THEN</u> **PERFORM** the following:
	
	      2) **INSPECT** the following fuses:
	
	        ▪ 152-106 Charging Motor Circuit FUZ/1106-2
	
	        ° LOCAL TRANSFER FUSE FUZ/A1106-3
		Determines this step not applicable since the breaker status lights came back on.
		
		<u>OR</u>
		
		Operator **VERIFIES** the 152-106 Charging Motor Circuit FZ/1106-2 and LOCAL TRANSFER FUSE FZ/A1106-3 fuses are not damaged
			S U

Comment:

*Evaluator Cue: **<u>IF</u> operator simulates opening breaker door, then** provide operator with CUE SHEET #2A (provide Sheet #2B if candidate cannot read fuse block). <u>IF</u> operator simulates opening door above breaker cubical, then provide CUE SHEET#2C*

Evaluator Note: Operator should point to Charging Motor fuses (upper left) and Local Transfer Fuse (above breaker cubical)

*Evaluator Cue: **If fuses checked for damage, cue the operator:** "Fuses are not damaged."*
Actual cue will be dependent on method of checking (e.g. fuse checking flashlight is lit).

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
3.0 **1.e**	**REMOVE** the 152-106 CLOSE AND TRIP CIRCUIT FUZ/A1106-1 fuses from Startup Power Incoming Breaker to Bus 1C, 152-106	Simulates or describes **REMOVING** the "152-106 CLOSE AND TRIP CIRCUIT FUZ/A1106-1" fuses by pulling them from the fuse holder	S U

Comment:

*Evaluator Cue: **When operator simulates opening breaker door, then** provide operator with CUE SHEET #2A (provide Sheet #2B if candidate cannot read fuse block) (if not provided in Task Element 6). **When operator points to Close and Trip fuses (upper right), then cue the operator:** "152-106 CLOSE AND TRIP CIRCUIT FUZ/A1106-1 **fuses are removed."***

CRITICAL STEP

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
3.0 **1.f**	**PLACE** the local breaker handswitch for Startup Power Incoming breaker to Bus 1C, 152-106 to the CLOSE position to energize Bus 1C	Simulates or describes **PLACING** the local breaker hand switch for Startup Power Incoming Breaker 152-106 to "CLOSE" position	S U

Comment:

Evaluator Note/Cue: Candidate shall determine that use of protective clothing is required per EN-IS-123 Attachment 9.3 page 41 table (see below): use follow-up question after JPM is complete if candidate does not note requirements during step simulation. Cue that use of Arc Face Shield and FR clothing is being simulated.

Evaluator Cue: Red light on breaker 152-106 is illuminated. Clothing requirements are NOT part of the critical step.

CRITICAL STEP

VOLTAGE LEVEL >1kV (Switchgear) – Miscellaneous Activities					
Task	Shock & Flash Protection				
	Voltage Rated Gloves	Arc Face Shield	FR Clothing	Hood	Flash Suit
Operating circuit breakers – door closed		X	X		
Opening/closing hinged covers to expose >1kV		X	X		
Removing/installing circuit breakers (after racking down or out)	Risk extremely low non-melting flammable fabric required				
Racking breakers remotely (outside the flash protection boundary)					
Removing temporary protective grounds (tags/locks in place)					
Working on control circuits while within the restricted approach boundary of exposed energized equipment >600V	Complete Attachment 9.9 – Electrical Job Hazards Analysis				

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
n/a	**NOTIFY** the CRS that Bus 1C is energized from Startup Power	CRS **NOTIFIED** that Bus 1C is energized from Startup Power	S U

Comment:

END OF TASK

CANDIDATE CUE SHEET #2C

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

CANDIDATE CUE SHEET #2B

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

CANDIDATE CUE SHEET #2A

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

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- Control Room is not habitable.
- Reactor has been tripped and all rods have been inserted into the core.
- Bus 1C and Bus 1D are de-energized.
- Startup Power Transformer 1-2 is available.
- The control power circuit for breaker 152-106 has been damaged.

INITIATING CUES:

During performance of AOP-41, "Alternate Safe Shutdown Procedure" Step 15.1.a, the CRS directs you to energize Bus 1C from Startup Transformer 1-2 locally using EOP Supplement 29 section 3.0.

NRC REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I SYS J

TITLE: MANUALLY START FIRE PUMP P-9A

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Manually start P-9A Fire Pump

Alternate Path: YES

Facility JPM #: ISDB-JPM-01

K/A: 086A3.01   Importance: RO: 2.9   SRO: 3.3

K/A Statement: Ability to monitor automatic operation of the Fire Protection System including starting mechanisms of fire water pumps.

Task Standard: P-9A is in service

Preferred Evaluation Location: Simulator   _____   In Plant   __X___

Preferred Evaluation Method: Perform   _____   Simulate   __X___

References: SOP-21, "Fire Protection System"

Validation Time: 10 minutes   Time Critical: NO

Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT   _____ UNSAT _____

Comments:

Examiner: _____   Date: _____
                                Signature

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SOP-21, "Fire Protection System"

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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 is shutdown for a refueling outage.
- A fire at the Cooling Towers requires the use of P-9A, Fire Water Pump, which has NOT automatically started.
- Jockey Pump P-13 is operating and there are NO Service Water Booster Pumps (P-25A/B/C) in service.

INITIATING CUES:

- The Shift Manager has directed you to manually start Fire Water Pump P-9A per SOP-21.

Evaluator Cue: Provide candidate a working copy of SOP-21 (entire procedure).

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locates correct procedure section	SOP-21, Section 7.2.1 LOCATED.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.2.1.a	Press START pushbutton on Local Control Panel	Operator simulates pressing START push button on local control panel.	**S U**
Comment: **Evaluator Cue: P-9A is not operating or discharge pressure is zero.**			

EVALUATOR NOTE: Alternate Path begins here: covered in task elements 3 thru 5.

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.2.1.b.1	Pull the Manual Operator "T" handle all the way out to start mechanically	Operator simulates pulling the manual operator "T" handle all the way out and holding in this position.	**S U**
Comment: **CRITICAL STEP**			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.2.1.b.2	ROTATE the MANUAL LATCH handle counter-clockwise in order to latch the MANUAL OPERATOR T HANDLE.	Operator simulates rotating the manual latch handle counter-clockwise and releases the manual operator "T" handle.	**S U**
Comment:			
Evaluator Cue: Manual Latch handle is rotated counter-clockwise.			
CRITICAL STEP			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
----	Verify P-9A is operating	Operator verifies pump operating.	**S U**
Comment:			
Evaluator Cue: P-9A is operating and discharge pressure is 153 psig.			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
7.2.1.c	IF Attachment 2 is in effect, THEN STOP selected Service Water Booster Pump	Operator determines that this step is N/A because Fire Jockey Pump, P-13, was in service.	**S U**
Comment:			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
n/a	Operator notifies the Control Room that P-9A has been manually started.	Control Room notified.	**S U**
Comment:			

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- N/A

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- The Plant is shutdown for a refueling outage.
- A fire at the Cooling Towers requires the use of P-9A, Fire Water Pump, which has NOT automatically started.
- Jockey Pump P-13 is operating and there are NO Service Water Booster Pumps (P-25A/B/C) in service.

INITIATING CUES:

- The Shift Manager has directed you to manually start Fire Water Pump P-9A per SOP-21.

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: RO/SRO-I/SRO-U SYS K

TITLE: SUPPLY ALTERNATE SUCTION SOURCE TO AFW PUMP P-8C

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Supply AFW Pumps From Alternate Source IAW EOP Supplement 31

Alternate Path: NO

Facility JPM #: PL-OPS-EOP-011J

K/A: CE/E06EA1.1   Importance: RO: 4.0   SRO: 3.9

K/A Statement: Ability to operate and/or monitor the following as they apply to loss of the (Loss of Feedwater): Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.

Task Standard: AFW pump, P-8C, has suction from the Service Water system and its low suction pressure trip reset.

Preferred Evaluation Location: Simulator   _____   In Plant   _X__

Preferred Evaluation Method: Perform   _____   Simulate   _X__

References: EOP Supplement 31, "Supply AFW Pumps from Alternate Sources"

Validation Time: 20 minutes   Time Critical: NO

 Candidate: _____

Time Start: _____   Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT_____   UNSAT _____

Comments:

Examiner: _____   Date: _____
                           Signature

Tools/Equipment/Procedures Needed:

EOP Supplement 31, "Supply AFW Pumps from Alternate Sources"

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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:

- A Reactor trip has occurred.
- Loss of all Feedwater has occurred and Auxiliary Feedwater Pumps, P-8A and P-8B, are not available.
- Condensate Storage Tank, T-2, has a very large hole at the bottom of the tank and is empty.
- AFW Pump, P-8C, has tripped on low suction pressure.
- P-8C Start Select Switch HS-P8C is in the MANUAL position.
- Chemistry has been notified that Service Water will be supplied to the Steam Generators.

INITIATING CUES:

The CRS gives you a locked valve key and directs you to complete section 1.0, steps 1 through 7, of EOP Supplement 31, "Supply AFW Pumps from Alternate Sources," to supply Service Water to P-8C.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locate copy of EOP Supplement 31 and obtain a locked valve key from control room.	EOP Supplement 31 is located.	S U

Comment:

Evaluator Cue: Provide the candidate with a working copy of EOP Supplement 31.

Evaluator Cue: Inform the candidate that they have a simulated locked valve key.

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
1.0.1	PLACE P-8C Start Select Switch HS-P-8C to MANUAL.	Operator determines this step has been completed per initial conditions.	S U

Comment:

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
1.0.2	UNLOCK MV-FW750, AFW Pump P-8C Supply from SWS.	Operator simulates unlocking MV-FW750	S U

Comment:

Evaluator Cue: MV-FW750 is unlocked.

CRITICAL STEP

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
1.0.3	THROTTLE OPEN MV-FW750, AFW Pump P-8C Supply from SWS until water issues from Leak-off valve P-8C Supply from SWS Leak Test, MV-FW759.	Operator simulates throttling open MV-FW750 and looks for leakage from leak-off valve MV-FW759.	S U

Comment:

Evaluator Cue: MV-FW750 is throttled open and water is issuing from MV-FW759.

CRITICAL STEP

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
1.0.4	WHEN water issues from P-8C Supply from SWS Leak Test, MV-FW759, THEN CLOSE MV-FW759.	Operator simulates closing MV-FW759.	**S U**

Comment:

Evaluator Cue: When candidate simulates closing MV-FW759, cue that valve will not turn any further to the right and water is not issuing from MV-FW759.

CRITICAL STEP

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
1.0.5	OPEN MV-FW750, AFW Pump P-8C Supply from SWS.	Operator simulates fully opening MV-FW750.	**S U**

Comment:

Evaluator Cue: When candidate simulates MV-FW750 open, then cue that valve will not turn any further to the left.

CRITICAL STEP

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
1.0.6	UNLOCK AND OPEN AFW Pump P-8C Supply from SWS MV-FW750A.	___ Simulates unlocking MV-FW750A ___ Simulates opening MV-FW-750A	**S U**

Comment:

Evaluator Cue: MV-FW-750A is unlocked. When candidate simulates MV-FW750A open, then cue that valve will not turn any further to the left.

CRITICAL STEP

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
1.0.7	NOTIFY Control Room Supervisor or Nuclear Control Operator P-8C AFW pump service water supply is aligned.	Operator simulates notifying the Control Room Supervisor or Nuclear Control Operator that P-8C, AFW pump, is aligned to service water.	**S U**

Comment:

END OF TASK

SIMULATOR OPERATOR INSTRUCTIONS

- N/A

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- A Reactor trip has occurred.
- Loss of all Feedwater has occurred and Auxiliary Feedwater Pumps, P-8A and P-8B, are not available.
- Condensate Storage Tank, T-2, has a very large hole at the bottom of the tank and is empty.
- AFW Pump, P-8C, has tripped on low suction pressure.
- P-8C Start Select Switch HS-P8C is in the MANUAL position.
- Chemistry has been notified that Service Water will be supplied to the Steam Generators.

INITIATING CUES:

The CRS gives you a locked valve key and directs you to complete section 1.0, steps 1 through 7, of EOP Supplement 31, "Supply AFW Pumps from Alternate Sources," to supply Service Water to P-8C.