

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: ADM 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: NO

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

K/A: 2.1.7 Importance: RO: 3.7 SRO: 4.4

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, revision 22
EOP Supplement 1, revision 5

Validation Time: 8.5 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT UNSAT

Comments:

Examiner: _____
Signature

Date: _____

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
- PCS Pressure is 1750 psia

INITIATING CUES:

- The CRS has directed you to determine PCS sub-cooling value in accordance with SOP-34, Attachment 5, using all 16 CET readings.

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: <ul style="list-style-type: none"> Do not utilize that individual temperature reading. Return to Step 1a. 	CET # 5 (2 nd 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 ____ Plots pressure reading versus Average CET reading obtained in step 1.b on EOP Supplement 1, page 1 to determine subcooling value	S U
Comment: Evaluator Note: Inform operator that PI-0104 reads 1750 psia. Evaluator Note: Subcooling value is obtained from EOP Supplement 1 page 5 by finding saturation temperature for 1750 psia (617°F) and subtracting average CET calculated (540°F) to obtain 77°F. Candidate may also subtract average CET calculated from the 25°F subcooling temperature (592°F) from EOP Supplement 1 and adding 25 (52 + 25 = 77). 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

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
- PCS Pressure is 1750 psia

INITIATING CUES:

The CRS has directed you to determine PCS sub-cooling value in accordance with SOP-34, Attachment 5, using all 16 CET readings.

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-17.
- Enter ED08 (on PIDE03) and manually trip the Reactor.
- 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.
- When natural circulation has developed, freeze Simulator.
- Record qualified CETs on SOP-34 Attachment 5. Use this data for answer key.
- Place calculator at operator station.
- Restore power to Transformer 16.

QUALIFIED CET CALCULATION FORM

1. INSTRUCTIONS

- a. **OBTAIN** at least two (2) qualified CET readings per core quadrant from the CET recorders.
- b. **CALCULATE** the average of the temperature readings used.
- c. IF any individual temperature reading is greater than 15°F higher or lower than the average temperature, THEN:
 1. Do not utilize that individual temperature reading.
 2. Return to Step 1a.
- d. **REFER TO** EOP Supplement 1, Pressure Temperature Limit Curves, to determine subcooling value utilizing the average temperature calculated in Step 1b.

2. DATA RECORDING/CALCULATIONS

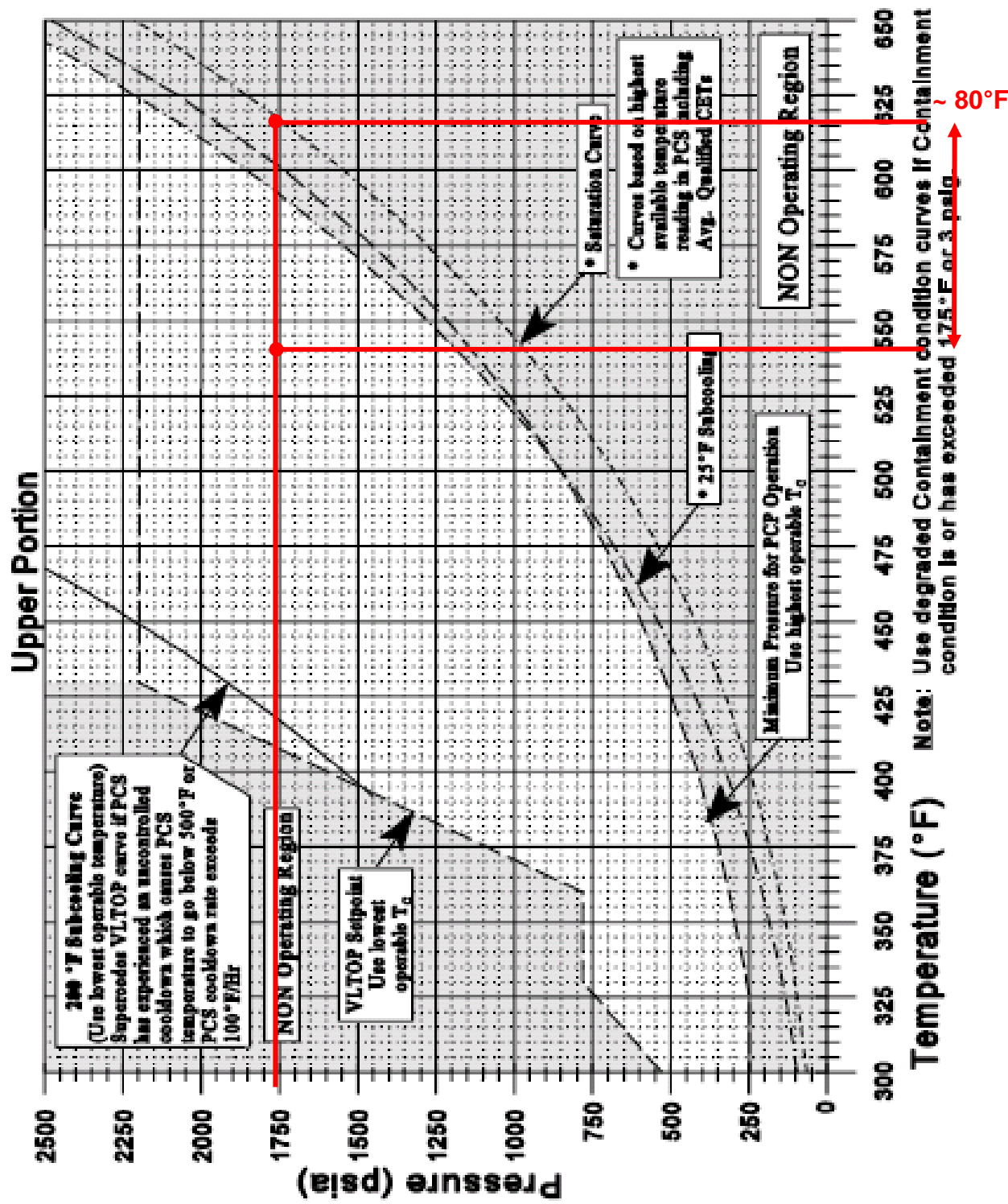
QUADRANT	QUALIFIED CET #	TIME 1 hour ago	TIME 45 min ago	TIME 30 min ago	TIME 15 min ago	TIME _____	TIME _____
1	2	537	536	538	536		
	9	553	552	552	548		
	10	542	543	542	543		
	19	537	536	538	536		
2	5	540	541	540	541		
	11	536	536	537	536		
	16	535	534	535	534		
	21	534	535	533	535		
3	23	545	548	551	554		
	25	537	538	537	538		
	31	535	535	534	535		
	35	535	535	536	535		
4	27	538	537	538	537		
	30	547	546	547	546		
	33	541	542	540	542		
	36	550	552	551	552		
TOTAL		8646	8646	8649	8648		
AVERAGE		540	540	541	541		

Answer Key

All answers are $\pm 2^{\circ}\text{F}$

QUADRANT	QUALIFIED CET #	TIME 1 hour ago	TIME 45 min ago	TIME 30 min ago	TIME 15 min ago	TIME now	TIME now
1	2	537	536	538	536	537	537
	9	553	552	552	548	548	548
	10	542	543	542	543	543	543
	19	537	536	538	536	537	537
2	5	540	541	540	541	540	540
	11	536	536	537	536	536	536
	16	535	534	535	534	535	535
	21	534	535	533	535	535	535
3	23	545	548	551	554	559	----
	25	537	538	537	538	537	537
	31	535	535	534	535	535	535
	35	535	535	536	535	535	535
4	27	538	537	538	537	538	538
	30	547	546	547	546	547	547
	33	541	542	540	542	541	541
	36	550	552	551	552	550	550
TOTAL		8646	8646	8649	8648	8653	8094
AVERAGE		540	540	540	541	541	540

Pressure and Temperature Limit Curves



REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: ADM 1b

**TITLE: CALCULATE BLEND RATIO FOR MAKEUP
TO SIRWT**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Perform Safety Injection Refueling Water Tank Operations

Alternate Path: NO

Facility JPM #: NEW

K/A: 2.1.34 Importance: RO: 2.3 SRO: 2.9

K/A Statement: Ability to maintain primary and secondary plant chemistry within allowable limits.

Task Standard: Correct volume of Boric Acid and Primary Makeup Water Calculated for addition to SIRWT

Preferred Evaluation Location: Any X

Preferred Evaluation Method: Perform X Simulate

References: SOP-2A, revision 64
Technical Data Book, figure 8.2, revision 3

Validation Time: 12 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

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Tools/Equipment/Procedures Needed:

- SOP-2A, revision 64
- Calculator
- Pencil and paper

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

- Safety Injection Refueling Water Storage Tank boron concentration = 2149ppm
- Safety Injection Refueling Water Storage Tank level = 96%
- Boric Acid Storage Tank T-53A boron concentration = 12,524ppm

INITIATING CUES:

- The Control Room Supervisor directs you to perform SOP-2A section 7.6.1.a to calculate the volumes of Boric Acid and Primary Makeup water needed to raise SIRWT level by 3000 gallons, maintaining current SIRWT boron concentration.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Operator locates correct procedure	SOP-2A section 7.6.1 located	S U
Comment: Evaluator Cue: Provide references			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
7.6.1.a Caution	During makeup operations to the SIRWT: 1. Makeup to the volume control tank is not available. 2. Opening CV-2155, Boric Acid Blender Outlet Control Valve, will inject the blended batch intended for the SIRWT into the PCS. 3. Additions that exceed 2500 ppm may result in exceeding boron concentration limits of Technical Specifications LCO 3.5.4. SITs may also be affected during fill and drain operations	Operator reviews caution	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.6.1.a.1	To determine the amount of boric acid and primary makeup water to be transferred to SIRW tank, REFER TO the following formulas: $\text{SIRW Tank Volume} = (\% \text{ meter reading} \times 2797) + 18,646$ Where: $\text{SIRW Tank Volume} = \text{SIRW total gallons}$ $\% \text{ meter reading} = \text{LIA-0332A or LIA-0331.}$	Operator calculates the following: Amount of volume to add = 3000 gallons (give in initial conditions)	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.6.1.a.2	Blend Ratio = (BAST ppm/SIRW ppm) - 1 Where: Blend Ratio = gallons of PMW per 1 gallon of concentrated Boric Acid BAST ppm = 12,524 SIRWT ppm = 2149	Operator calculates the following: $(12,524/2149) - 1 = 4.83$ (allow 4.80 – 4.85)	S U
Comment: Evaluator Note: Allow 4.80 to 4.85 CRITICAL STEP			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
7.6.1.a.3	Gallons of concentrated boric acid to add = Total Volume Makeup to SIRW/(Blend Ratio + 1) Where: Total Volume Makeup to SIRWT = Desired SIRWT level in gallons minus current level in gallons Blend Ratio = gallons of PMW per 1 gallon of concentrated Boric Acid	Operator calculates the following: $3000/(4.83 + 1) = 514.6$ gal of boric acid	S U
Comment: Evaluator Note: Allow 512.5 – 517 CRITICAL STEP			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
7.6.1.a.4	Gallons of PMW to add = Total volume makeup to SIRWT - Gallons of Boric Acid to add Where: Total Volume Makeup to SIRWT = Desired SIRWT level in gallons minus current level in gallons Gallons of Boric Acid to Add = Item 3. above	Operator calculates the following: $3000 - 514.6 = 2485.4$ gal	S U
Comment: Evaluator Note: Allow 2480 – 2490 CRITICAL STEP			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
n/a	Operator informs Control Room Supervisor of the volume of boric acid and primary makeup water to add.	CRS informed of the following volumes: Primary Makeup Water: 2485.4 gal Concentrated Boric Acid: 514.6 gal	S U
Comment: Evaluator Note: Allow 2480 – 2490 gal for Primary Makeup Water and 512.5 – 517 gal for Boric Acid Evaluator Cue: Role play as CRS			

END OF TASK

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- Safety Injection Refueling Water Storage Tank boron concentration = 2149ppm
- Safety Injection Refueling Water Storage Tank level = 96%
- Boric Acid Storage Tank T-53A boron concentration = 12,524ppm

INITIATING CUES:

- The Control Room Supervisor directs you to perform SOP-2A section 7.6.1.a to calculate the volumes of Boric Acid and Primary Makeup water needed to raise SIRWT level by 3000 gallons, maintaining current SIRWT boron concentration.

SIMULATOR OPERATOR INSTRUCTIONS

- N/A

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: ADM 2

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

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Conduct Surveillance Testing

Alternate Path: NO

Facility JPM #: APWC-JPM-10

K/A: 2.2.12 Importance: RO: 3.0 SRO: 3.4

K/A Statement: Knowledge of Surveillance Procedures

Task Standard: Supervisory Review of MO-29 completed in accordance with MO-29,
step 5.3

Preferred Evaluation Location: Any X

Preferred Evaluation Method: Perform X Simulate

References: ADMIN 9.20, revision 23
MO-29, revision 35

Validation Time: 30 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

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Tools/Equipment/Procedures Needed:

- Completed MO-29, revision 35, “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 and a missed place keeping mark.
- ADMIN 9.20, revision 23
- Technical Specifications
- Technical Specifications Bases

READ TO CANDIDATE

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INITIAL CONDITIONS:

- It’s Friday night; “C” shift, 2130 hours.
- You are an on-shift SRO.
- 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 in accordance with step 5.3 of MO-29.

Evaluator Note: Provide candidate with completed MO-29 with one data point for Containment Spray Header pressure below the acceptance range. Do not circle the reading in red. Also include a missed signature date for step 3.1 “Authorization”.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locate correct procedure	Locate completed MO-29.	S U
Comment: 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 2	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 3	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 4	STANDARD	Grade
5.3.1.c	<p>INITIATE an Action Request in accordance with NMC Fleet Procedure FP-PA-ARP-01, "Action Request Process," for acceptance criteria not met unless at least one of the following conditions exist:</p> <ol style="list-style-type: none"> 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 CAP should be initiated.	S U
<p>Comment:</p> <p>Evaluator Cue: Inform candidate that CAP has been initiated</p>			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
5.3.1.d	COMPLETE Acceptance Criteria and Operability Sheet.	<p>Operator performs the following for the acceptable criteria and operability sheet:</p> <p>___ * Answers #1 NO and signs and provides explanation on page 2 (i.e., Spray Header pressure PI-3001 is below acceptance range)</p> <p>___ * Answers #2 NO and signs</p> <p>___ Completes CAP and WR numbers for #3</p> <p>___ Notifies SM/CRS/SE and signs for #4</p> <p>___ * Operator reviews LCO 3.6.6 and determines that left train of Containment Cooling system is inoperable and LCO Action 'A' of LCO 3.6.6 has been entered. The 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.</p>	S U
<p>Comment:</p> <p>Evaluator Cue: If asked, supply candidate with the following:</p> <ul style="list-style-type: none"> • WR#: 01004567 • CR#: PLP-2007-09888 (not required since this is an Operations activity, per ESSO-1, and is not controlled by Work Order process. <p>Evaluator Cue: If asked, candidate also performs Step 5. System Engineer will perform Step 6, Tech. Rev.</p> <p>Evaluator Cue: Inform candidate that SM/CRS/SE have been notified.</p> <p>* CRITICAL STEP</p>			

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

END OF TASK

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- It's Friday night; "C" shift, 2130 hours.
- You are an on-shift SRO.
- 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 in accordance with step 5.3 of MO-29.

SIMULATOR OPERATOR INSTRUCTIONS

- N/A

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: ADM 3

**TITLE: VERIFY WASTE GAS RELEASE HIGH
ALARM SETPOINT**

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Direct setpoint changes to process radiation monitors

Alternate Path: NO

Facility JPM #: PL-OPS-RMS-002J

K/A: 2.3.8 Importance: RO: 2.3 SRO: 3.2

K/A Statement: Knowledge of the process for performing a planned gaseous radioactive release.

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, revision 41
HP 6.6, revision 20
SOP-38, revision 23

Validation Time: 20 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT UNSAT

Comments:

Examiner: _____
Signature

Date: _____

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Tools/Equipment/Procedures Needed:

- SOP-18A, revision 41
- Partially completed form HP 6.6-3
- Calculator

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

READ TO CANDIDATE

DIRECTION TO CANDIDATE:

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INITIAL CONDITIONS:

- A Containment purge is NOT in progress.
- RIA-1113, Waste Gas Monitor is operable per DWO-1.
- T-101C, Waste Gas Decay Tank, has been authorized for release.
- The NCO has performed the Control Room Operator actions of Form HP 6.6-3, WGDT Release Authorization for Waste Gas Batch number 07-013-G, including calculating and setting the HIGH alarm setpoint.

INITIATING CUES:

- The NCO asks you to verify RIA-1113 Background Reading per SOP-18A 7.5.g and HIGH alarm setpoint per SOP-18A step 7.5.i.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Obtain partially completed Authorized Batch Release Order from Shift Manager	Obtains batch release	S U
Comment: Evaluator Note: Role play as the NCO and ask candidate to approve high alarm setpoint. Provide the batch release order, Form HP 6.6-3, page 1 only (last page of JPM) CRITICAL STEP			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
n/a	Operator obtains correct procedure	SOP-18A step 7.5.g is obtained	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
7.5.g	Operator reads RIA-1113 background	___ Operator depresses HS-2317 for 1 minute and releases ___ Operator reads background $\sim 8.5 \times 10^1$ cpm	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
7.5.i	DETERMINE Hi Alarm setpoint. (This is the sum of the observed background and the established release limit provided on Form HP 6.6-3.)	___ SRO adds RIA-1113 background to the release limit to obtain high alarm setpoint: • 8.5×10^1 cpm + 8.5×10^3 cpm ___ Determines high alarm setpoint to be 8.59×10^3 cpm <u>not</u> 1.7×10^4 cpm	S U
Comment: Evaluator Note: (Acceptable range is $8.4 - 8.75 \times 10^3$ cpm). CRITICAL STEP			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
n/a	Operator returns HP form 6.6-3 to NCO for re-calculation.	Operator recognizes that high alarm setpoint must be re-calculated by NCO and does not sign form.	S U
Comment: Evaluator Note: Role play as NCO and inform candidate that you will re-calculate.			

END OF TASK

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

- A Containment purge is NOT in progress.
- RIA-1113, Waste Gas Monitor is operable per DWO-1.
- T-101C, Waste Gas Decay Tank, has been authorized for release.
- The NCO has performed the Control Room Operator actions of Form HP 6.6-3, WGDT Release Authorization for Waste Gas Batch number 07-013-G, including calculating and setting the HIGH alarm setpoint.

INITIATING CUES:

- The NCO asks you to verify RIA-1113 Background Reading per SOP-18A 7.5.g and HIGH alarm setpoint per SOP-18A step 7.5.i.

SIMULATOR OPERATOR INSTRUCTIONS

- Reset to IC-20
- Ensure V-6A, Main Exhaust Fan, is in service

WGDT RELEASE AUTHORIZATIONWGDT # T-101C Batch Number 07 - 013 - G

Isolation Date 09/12/07 Time 1200	Release Volume 32.5 m³
Isolation Pressure 93 psig	Gamma Conc 7.24E⁻⁵ μCi/cc
Release Pressure 93 psig	Expected RIA-1113 RDG 9.5 x 10¹ cpm

Qtr $\Sigma A_i/C_i$ 0.1 (must be < 0.5)Year-to-Date $\Sigma A_i/C_i$ 0.24 (must be < 1.0)

APPROVAL TO RELEASE

RIA-1113 Release Limit 8.5E⁻³ cpmRETS Analyst Jane Retssup Today / 0815Shift Manager Ralph Manager Today / 0840

C O N T R O L R M O P E R	Main Exhaust Fan
	In Service V-6A <input checked="" type="checkbox"/> V-6B <input type="checkbox"/> <i>I/S fan</i>
	Purge RIA-1113 <input checked="" type="checkbox"/>
	Source Check RIA-1113 (6.2 X 10³) cpm
	RIA-1113 Release Limit (8.5 x 10³) cpm
	RIA-1113 Background + (8.5 x 10¹) cpm
	RIA-1113 Alarm Setpt = (1.7 x 10⁴) cpm
	Alarm Set By:
	Alarm Verified By:
	Purge RIA-1113 After Release <input type="checkbox"/>
	Reset Alarm to 2500 cpm
	Alarm Reset By:
	Alarm Reset Verified By:

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 Appendix A, Table A-1, Item 1.a Action 1.

Remarks:

REGION III

INITIAL LICENSE EXAM

JOB PERFORMANCE MEASURE

JPM: ADM 4

TITLE: CALCULATE OFF SITE DOSE RATE

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Calculate Off Site Dose

Alternate Path: NO

Facility JPM #: PL-OPS-SEP-003J

K/A: 2.4.40 Importance: RO: 2.3 SRO: 4.0

K/A Statement: Knowledge of the SRO's responsibilities in emergency plan implementation.

Task Standard: Off Site Dose Calculated Correctly

Preferred Evaluation Location: Simulator ☒ In Plant ☐

Preferred Evaluation Method: Perform ☒ Simulate ☐

References:EI-6.0, Revision 9

Validation Time: 15 minutes Time Critical: NO

Candidate: _____

Time Start: _____ Time Finish: _____

Performance Time: _____ minutes

Performance Rating: SAT _____ UNSAT _____

Comments:

Examiner: _____
Signature

Date: _____

EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- EI-6.0, revision 9
- Quick Dose Assessment Computer with attached printer

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 plant trip occurred approximately 1 hour ago.
- Reactor and Containment conditions are normal and stable.
- A radioactive release is currently in progress via the plant stack.
- RGEM is operable and "Alert" alarm has been in on RIA-2326, normal range noble gas stack monitor for 65 minutes.
- PC dose assessment computer programmed with "Offsite" Dose Assessment program is available and functioning and is connected to a printer.
- RMC has verified stack activity is consistent with the Radiation Monitor reading.
- It is currently raining outside.
- An Alert has been declared
- The SED will review EI-6.13 to determine any additional requirements, and assign other personnel to complete and process EI-3 notification forms.

INITIATING CUES:

- During the performance of EI-2.1, Emergency Actions/Notifications/Responsibilities", you have been directed to perform offsite dose estimates, using the "quick" method of EI-6.0, Section 6.1 and Attachment 1 and turn in printed Palisades Event Technical Data Sheet to SED.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Correct Procedure located	EI-6.0, section 6.1 located	S U
Comment:			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
6.1.1	The "Quick Method" Dose Assessment is intended for use by the Control Room staff during the initial phases of an event when a quick offsite dose calculation or protective action recommendation is required	Operator reviews note	S U
Comment:			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
6.1.2	<p>Due to the limitations of the "Quick Method," the following prerequisites must be met:</p> <ul style="list-style-type: none"> • The release is through the Plant Stack or Atmospheric Steam Dump/Code • Safety Relief Valves. • The RGEM system or Main Steam Gamma Monitors are operational (depending on release path). • The Reactor is currently at power or was shutdown within the last 2 hours. • An IBM PC computer with the "Offsite" Dose Assessment program installed and a printer, tied directly to the computer are available. 	Operator determines prerequisites are met via information given in Initial Conditions.	S U
Comment:			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
6.1.3	IF the above prerequisites are met, THEN use Attachment 1 to perform the "Quick Method" Dose Assessment with meteorology from the PPC	Operator locates attachment 1	S U
Comment: 			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
2.1	Obtain meteorological data from the PPC, page 351 or from the Dose Assessment Main Menu via the Met tower (Selection #9). Stability Class (STAB) ____ A-G Wind Speed (WS10 or WS60) ____ MPH Wind Direction (WD10 or WD60) ____ (°From)	Data recorded as follows: Stability Class (STAB) C Wind Speed (WS10 or WS60) 8 Wind Direction (WD10 or WD60) 270°	S U
Comment: Evaluator Note: (WS60 and WD60 should only be used if WS10 or WD10 are not available.) CRITICAL STEP			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
2.2	Obtain noble gas release rate	On back of Panel C-11A, determines noble gas release rate (QN) is 1.0E-2 (8E-3 to 1.2E-2) Ci/sec using RIA-2326, Normal Range Stack Monitor and records.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
2.3	Obtain iodine release rate.	Calculates iodine release rate (Q1) of 1.0E-5 (8E-6 to 1.2E-5) Ci/sec and records.	S U
Comment: Evaluator Note: Note: Value determined by dividing noble gas release rate by 1000. CRITICAL STEP			

EVALUATOR NOTE: Steps 2.4, 2.5 and 2.6 are completed via step 3.4

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
3.1	Initiate the Offsite Dose Assessment Program on the IBM compatible PC:	If the computer is ON, operator will reboot by pressing CTRL, DEL, and ALT keys simultaneously. If the computer is OFF, operator will turn power ON by pressing the power switch on the master power board.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
3.2	Select Option 1 "Palisades Dose Assessment Program" from the menu.	The Palisades Dose Assessment Main Menu is displayed.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
3.3	Select Option 7 "Execute Dose Model" to allow inputting data.	Selects Option 7 from Offsite Dose Assessment menu.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
3.4	Input the data obtained in Section 2.0 and press <Enter>.	Operator inputs the following data: ___ Noble gas release rate = 1.0E-2 (8E-3 to 1.2E-2) ___ Iodine release rate (Q1) = 1.0E-5 (8E-6 to 1.2E-5) ___ Stability Class (STAB) = C ___ Wind Speed (WS10 or WS60) = 8 ___ Wind Direction (WD10 or WD60) = 270° ___ E-Bar = 0.7 MeV/dis (from step 2.4) ___ Release duration = 2.0 hours (from step 2.5) ___ Release height = 0.0 meters (from step 2.6) ___ Then presses <Enter>	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
3.5	IF the output display indicates that "PAGs ARE EXCEEDED," THEN:	Operator determines that this step is not applicable because PAGs are not exceeded.	S U
Comment:			

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
3.6	IF the output display indicates that "PAGs ARE NOT EXCEEDED," THEN:	Operator determines this to be applicable because PAGs are not exceeded.	S U
Comment:			

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
3.6.a	Print the emergency notification forms using Option 8 then sub-option 2 on the Palisades Dose Assessment Main Menu.	Technical Data Sheet is printed and handed to Site Emergency Director.	S U
<p>Comment:</p> <p>Evaluator Note: Role Play as Site Emergency Director.</p> <p>Evaluator Note: Candidate is required to print the Event Technical Data Sheet for the dose assessment. Sub-option 3 can additionally be selected to print an Event Notification Form.</p>			

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
3.6.b	Review Emergency Implementing Procedure EI-6.13...	Not required	S U
<p>Comment:</p> <p>Evaluator Cue: Inform candidate that the Site Emergency Director is reviewing Protective Action Recommendations.</p>			

END OF TASK

CANDIDATE CUE SHEET

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

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SIMULATOR OPERATOR INSTRUCTIONS

- IC-11.
- Enter MF RM07V for RIA-2326 (Final Value = 54.5 with 10 sec ramp).
- Ensure dose assessment computer is working properly with paper in the printer.
- Wait for RGEM to alert alarm on RIA-2326 and wait for it to steady out at about 1.0 E-2 Ci/sec (2 E+4 cpm).
- Enter the data into the dose assessment computer and print out results to use as a key, if desired.
- Consider making a CAE for the following Met Data: (not required, only an option)
 - Stability Class: C
 - Wind Speed: 8
 - Wind Direction: 270°