

**PALISADES**  
**2017 INITIAL LICENSE EXAM**  
**JOB PERFORMANCE MEASURE**

**JPM: RO ADMIN 1**

**TITLE: DETERMINE AVERAGE QUALIFIED  
CET TEMPERATURE AND  
SUBCOOLING VALUE**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Determine average qualified CET temperature and subcooling value.

Alternate Path: No

Facility JPM #: 2007 NRC Exam (modified)

K/A: G2.1.23      Importance:      RO: 4.3      SRO: 4.4

K/A Statement: Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Task Standard: Average CET Temperature correctly calculated and subcooling value determined.

Preferred Evaluation Location: Simulator  In Plant

Preferred Evaluation Method: Perform  Simulate

References: SOP-34, Palisades Plant Computer (PCC) System  
EOP Supplement 1, Pressure and Temperature Limit Curves

Validation Time: 17 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, Palisades Plant Computer (PCC) System
- EOP Supplement 1, Pressure and Temperature Limit Curves

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:**

- The Plant is at 100% power.
- The PPC is inoperable.

**INITIATING CUES:**

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

**Time Start:** \_\_\_\_\_

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. <ul style="list-style-type: none"> <li>At least two (2) qualified CET readings per quadrant required. The readings are recorded in section 2.</li> </ul>	S U
<p><b>Comment:</b>  <b>Evaluator Note:</b> Verify data taken by Operator, the initiating cue, all 16 readings will be taken.</p> <p><b>CRITICAL STEP</b></p>			

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
<p><b>Comment:</b>  <b>Evaluator Note:</b> Verify calculation by Operator with attached answer key.</p>			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
1.c	If any individual temperature readings is greater than 15°F higher or lower from the average, then: <ul style="list-style-type: none"> <li>Do not utilize that individual temperature reading.</li> <li>Return to Step 1a.</li> </ul>	CET #25 (3rd quadrant) will be approximately 17°F lower than the average.  The candidate will recalculate excluding this reading.	S U
<p><b>Comment:</b>  <b>CRITICAL STEP</b></p>			

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: <ul style="list-style-type: none"> <li>Obtains PCS Pressure reading from initial conditions</li> <li>Plots pressure reading versus Average CET reading obtained in step 1.b on EOP Supplement 1, page 1 to determine subcooling value</li> </ul>	S U
<p><b>Comment:</b>  <b>Evaluator Note:</b> <i>Subcooling value is obtained from EOP Supplement 1 page 1 by finding saturation temperature for 2060 psia (640°F) and subtracting average CET calculated (590.8 to 591°F) to obtain 49°F.</i></p> <p><b>CRITICAL STEP: Determine subcooling value within +/- 5°F.</b></p>			

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 49°F.	S U
<p><b>Comment:</b></p>			

**Time Stop:** \_\_\_\_\_

**END OF TASK**

## **SIMULATOR OPERATOR INSTRUCTIONS**

- Reset to IC-150.
- Change CET #25 to read 572°F.

# 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					577	577
	9					591	591
	10					591	591
	19					588	588
2	5					598	598
	11					590	590
	16					601	601
	21					603	603
3	23					586	586
	25					572	--
	31					584	584
	35					590	590
4	27					593	593
	30					591	591
	33					589	589
	36					590	590
TOTAL						9435	8862
AVERAGE						589.7	590.8

**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						
	9						
	10						
	19						
2	5						
	11						
	16						
	21						
3	23						
	25						
	31						
	35						
4	27						
	30						
	33						
	36						
TOTAL							
AVERAGE							



## CANDIDATE CUE SHEET

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

### INITIAL CONDITIONS:

- The Plant is at 100%.
- The PPC is inoperable.

### INITIATING CUES:

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

**PALISADES**

**2017 INITIAL LICENSE EXAM**

**JOB PERFORMANCE MEASURE**

**JPM: RO ADMIN 2**

**TITLE: REVIEW AN EQUIPMENT TAGOUT FOR P-7A SERVICE WATER PUMP**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Review a prepared equipment tagout for taking the P-7A Service Water pump out of service for discharge basket strainer cleaning.

Alternate Path: No

Facility JPM #: N/A (new)

K/A: 2.2.13 Importance: RO: 4.1 SRO: 4.3

K/A Statement: Knowledge of tagging and clearance procedures

Task Standard: Review a prepared equipment tagout for taking the P-7A Service Water pump out of service for discharge basket strainer cleaning.

Preferred Evaluation Location: Classroom  In Plant

Preferred Evaluation Method: Perform  In Plant

References: EN-OP-102, Protective and Caution Tagging  
SOP-15, Service Water System  
Palisades P&ID drawings  
Palisades Electrical drawings

Validation Time: 7 minutes Time Critical: NO

Candidate: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Finish: \_\_\_\_\_

Performance Time: \_\_\_\_\_ minutes

Performance Rating: SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Comments:

Examiner: \_\_\_\_\_ Date: \_\_\_\_\_

**EXAMINER COPY ONLY**

Tools/Equipment/Procedures Needed:

- EN-OP-102, Protective and Caution Tagging
- SOP-15, Service Water System
- Palisades P&ID drawings
- Palisades Electrical drawings

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:**

- An NCO prepared a paper-based tagging order for taking the P-7A Service Water Pump out of service to support discharge strainer basket cleaning.
- The NCO who prepared the tagout had to leave due to being ill.

**INITIATING CUES:**

The Shift Manager has directed you to review a prepared tagging order for the P-7A Service Water Pump discharge strainer basket cleaning.

**Time Start:** \_\_\_\_\_

**Evaluator Note:** EN-OP-102 is to be provided to applicant at the start of the JPM, along with the prepared copy of the tagging order. Do not provide SOP-15 unless the applicant requests it.

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
EN-OP-102 5.6	Reviews the prepared tagout per Section 5.3 (Tagout Preparation).	Obtains EN-OP-102 and uses Section 5.3 to review the prepared tagout.	S U
<b>Comment:</b>			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
N/A	Refer to procedures (EN-OP-102 and/or SOP-15) to determine the proper equipment tagout sequence.	Applicant may use either of the following procedures to determine the tagout sequence: <ul style="list-style-type: none"> <li>EN-OP-102 Att. 9.2 combined with station electrical and mechanical drawings.</li> <li>SOP-15 Section 8.1.1 to remove Service Water Pumps from service</li> </ul>	S U
<b>Comment:</b> <i>Evaluator Cue: Provide the applicant with SOP-15 if requested. Guidance to remove pump P-7A from service is detailed in Section 8.1.1.</i>			

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
SOP-15 8.1.1.a & b	<ul style="list-style-type: none"> <li>Stop Service Water Pump P-7A per SOP-15 and ensure pump is not in standby.</li> <li>Place local control switch at Screenhouse Entrance in OFF and NO Tag control switch</li> </ul>	<ul style="list-style-type: none"> <li>Verifies tagging order Step 1 is correct.</li> <li>1-CSW-Pump-P-7A local control switch NO Tag</li> </ul>	S U
<b>Comment:</b>			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
SOP-15 8.1.1.b	Place control room control switch to TRIP and CAUTION Tag	<ul style="list-style-type: none"> <li>Verifies tagging order Step 2 is correct.</li> <li>1-CSW-CKTBRK-15-204CS control room control switch CAUTION Tag</li> </ul>	S U

**Comment:**

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
SOP-15 8.1.1.c	Identifies incorrect Service Water Pump (P-7C) breaker is racked to disconnect with DANGER Tag	<ul style="list-style-type: none"> <li>Verifies tagging order Step 3 is incorrect.</li> <li>Verifies incorrect breaker is tagged out of service and breaker racked is for P-7C, not P-7A.</li> <li>Recognizes that breaker 152-204 should be tagged out.</li> </ul>	S U

**Comment:**  
*Evaluator Cue: Acknowledge report of error.*  
**CRITICAL STEP**

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
SOP-15 8.1.1.d	Identifies that Service Water Pump P-7A discharge valve MV-SW102 is incorrectly positioned.	<ul style="list-style-type: none"> <li>Verifies tagging order Step 4 is incorrect.</li> <li>Identifies MV-SW102 is incorrectly tagged in the OPEN position.</li> <li>Determines correct action and position is to unlock and Close P-7A Discharge Valve MV-SW102 and place Danger Tag</li> </ul>	S U

**Comment:**  
*Evaluator Cue: Acknowledge report of error.*  
**CRITICAL STEP**

Proc.Step	TASK ELEMENT 7	STANDARD	Grade
SOP-15 8.1.1.e	Identifies position and tag errors on P-7A Recirculation Valve MV-SW342	<ul style="list-style-type: none"> <li>Verifies tagging order Step 5 is incorrect.</li> <li>Identifies MV-SW342 is incorrectly tagged locked closed and not closed.</li> <li>Identifies MV-SW342 is incorrectly NOT tagged and should be DANGER Tagged.</li> </ul>	S U

**Comment:**  
*Evaluator Cue: Acknowledge report of error.*  
**CRITICAL STEP**

*Time Finish:* \_\_\_\_\_

**END OF TASK**

## **SIMULATOR OPERATOR INSTRUCTIONS**

- **None required.**



**CANDIDATE CUE SHEET**

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

**CANDIDATE CUE SHEET**

**INITIAL CONDITIONS:**

- An NCO prepared a paper-based tagging order for taking the P-7A Service Water Pump out of service to support discharge strainer basket cleaning.
- The NCO who prepared the tagout had to leave due to being ill.

**INITIATING CUES:**

The Shift Manager has directed you to review a prepared tagging order for the P-7A Service Water Pump discharge strainer basket cleaning.

**Tagout Tag List**

**raisades**

**Clearance: 1R23-1**

**!!!!!!! DO NOT HANG OR CLEAR TAGS USING THIS TAGOUT TAG LIST !!!!!!!!**

**Tagout: CSW -010- -BS-1318**

**1/18/2017 17:50:46**

Tag Type	Equipment	Pla Seq	Placement Configuration	Place. 1st Verif date/time	Place. 2nd Verif date/time	Rest Seq	Rest. Config. *As Left (If Diff.) * Notes	Rest. 1st Verif date/time	Rest. 2nd Verif date/time
No Tag	1-CSW -PUMP -P-7A * Equipment Description * Equipment Location * SERVICE WATER PUMP * TB -0590 -T136 - - - -EAST WALL BY SCREENHOUSE ENTRANCE	1	OFF/NOT IN STANDBY * P-7A INOPERABLE/UNAV			5	OPERABLE * TO BE CONSIDERED OPERABLE FOLLOWING TEST START.		
Caution	1-CSW -CKTBRK-152-204CS * SERVICE WATER PUMP P-7A MANUAL SWITCH * AB -0625 -A325 - - - -EC-08 PANEL/CONTROL ROOM	2	* P-7A TAGGED OUT			4	AVAILABLE		
Danger	1-CSW -CKTBRK-152-205 * SW PUMP P-7C * AB -0607 -223 -H -26 - -EA-12 1D SWITCHGEAR ROOM	3	IN DISCONNECT			3	IN CONNECT AND OPEN		
Danger	1-CSW -VALVE -MV-SW102 * SW PUMP P-7A DISCHARGE * TB -0590 -T136 - - - -SCREENHOUSE ON SW DISCHARGE PIPING	4	LOCKED OPEN			2	LOCKED OPEN		
No Tag	1-CSW -VALVE -MV-SW342 * SW PUMP P-7A MINI-FLOW * TB -0590 -T136 - - - -SCREENHOUSE BY SW PUMPS	5	LOCKED CLOSED			1	LOCKED CLOSED		

Component	Note No.	Note Text
1-CSW -PUMP -P-7A	81	Refer to Admin 4.02 for Protected Equipment Sign, Label or Barrier usage on redundant equipment.
1-CSW -PUMP -P-7A	87	Refer to Admin 4.02 for Work Control High Risk Guidelines.
1-CSW -PUMP -P-7A	97	Maintenance Rule related equipment. Refer to Maintenance Rule Scoping Document for Unavailability/Functionality information.
1-CSW -PUMP -P-7A	137	Record for Maintenance Rule Unavailability time.
1-CSW -VALVE -MV-SW102	5	EOP COMPONENT

**!!!!!!! DO NOT HANG OR CLEAR TAGS USING THIS TAGOUT TAG LIST !!!!!!!!**

**Component to be Worked:**

1-CSW -FILTER-BS-1318  
P-7A SERVICE WATER PUMP BASKET STRAINER  
TB -0590 -T136 - - - -SCREENHOUSE IN FRONT OF P-7A

**Description:**

CLEAN P-7A BASKET STRAINER (BS-1318).

**Placement Inst.:**

TS ACTION 3.7.8.A.1 COMPLETION TIME 72 HRS (Applies in Modes 1, 2, 3, & 4)

P-7A OFF AND NOT IN STANDBY

**Hazards:**

SERT #1: VERIFY ACCEPTABLE PRESSURE ON PI-1322.

**Restoration Inst.:**

RTS PER SOP-15 AND VERIFY NO LEAKS ON BS-1318.

M-213, E-3 SH1, E-154 SH3

**Tagout Attributes:**

Attribute Description	Attribute Value
Plant Mode Required for this Tagout	Any Mode
LCO Action Statement Entry	YES
Appendix R	YES
GOP-14 Requirements	
Maintenance Rule Applicable	YES
Tagout prepare issues:	Emergent Tagout after T-2
50.59 Screening Attached	
Tagout Ops Walkdown Complete	not required

**Work Order-Task List:**

**Tagout Verification:**

Status	Description	Name	Verification Date
Prepared	Prepared	Moceri, Virginia L	1/18/2017 17:48:33
Reviewed	Reviewed		
Approved	Approved		
Tags Hung & Verified	Tags Hung & Verified		
Removal Approved	Removal Approved		
Tags Removed & Verified	Tags Removed & Verified		

**PALISADES**  
**2017 INITIAL LICENSE EXAM**  
**JOB PERFORMANCE MEASURE**

**JPM: RO ADMIN 3**

**TITLE: DETERMINATION OF WHETHER RWP  
DOSE LIMITS WILL BE EXCEEDED**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Determination of whether RWP Dose Limits Will Be Exceeded

Alternate Path: NO

Facility JPM #: N/A (new)

K/A: G.2.3.7                    Importance:      RO: 3.5                    SRO: 3.6

K/A Statement: Ability to comply with Radiation Work Permit requirements during normal and abnormal conditions.

Task Standard: Determine that the RWP dose limits will be violated by performing the given task.

Preferred Evaluation Location: ANY           

Preferred Evaluation Method: Perform         Simulate     

References: Radiological Survey Sheet, 570 WESG  
RWP 20170002

Validation Time: 10 minutes      Time Critical: NO

Candidate: \_\_\_\_\_

Time Start: \_\_\_\_\_      Time Finish: \_\_\_\_\_

Performance Time: \_\_\_\_\_ minutes

Performance Rating: SAT \_\_\_\_\_      UNSAT \_\_\_\_\_

Comments:

Examiner: \_\_\_\_\_      Date: \_\_\_\_\_

## Tools/Equipment/Procedures Needed:

- Radiological Survey Sheet, 570 WESG
- RWP 20170002
- Calculator

**EXAMINER COPY ONLY**

## 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 has recently shut down and is on shutdown cooling
- P-67B LPSI Pump was started and a moderate leak was identified from the drain valve MV-ES515.
- The CRS desires to dispatch an NPO to investigate and repair the drain valve.
- The NPO currently has 7 mR accumulated dose under RWP 20170002 Task 01 on this shift.
- It is estimated that the NPO will spend the following time in the WESG room in the general area of the P-67B pump skid:
  - 12 minutes in communication with the Control room via the radio
- It is estimated that the NPO will spend 21 minutes inside the P-67B pump skid contaminated area as follows:
  - 3 minutes investigating the drain valve leak
  - 6 minutes attempting to tighten the drain valve
  - 12 minutes to complete venting the pump after pump restart
  - Note: Drain valve MV-ES515 is approximately 30 cm from HS-11
  - Note: Casing vent valve MV-ES535 is approximately 30 cm from HS-10
- It is estimated that the NPO will pick up 2 mR in transit during this task.

**INITIATING CUE:**

Your task is to, based on the radiological information provided, determine if the NPO could perform the task while currently signed in on RWP 20170002 Task 01.

Time Start: \_\_\_\_\_

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
----	Calculate dose received in general area around pump skid.	Identify dose field is 5mR/hr and calculate dose received to be 1mR	<b>S U</b>
<p><b>Comment:</b>  <math>(5\text{mR/hr}) \times (1\text{hr}/60\text{min}) \times 12\text{min} = 1\text{ mR}</math>  <b>Evaluator Cue:</b> <i>If applicant asks, direct applicant to general area around pump skid to be 5 mR/hr.</i></p>			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
----	Calculate dose received investigating drain valve leak	Identify dose field is 300/20 mR/hr and calculate dose received during drain valve leak investigation to be 1 mR (use 20 mR/hr based on cue sheet)	<b>S U</b>
<p><b>Comment:</b>  <math>(20\text{mR/hr}) \times (1\text{hr}/60\text{min}) \times 3\text{min} = 1\text{ mR}</math>  <b>CRITICAL STEP:</b> Applicant must determine that 20 mR/hr is correct based on the cue provided. Applicant should not use the on-contact dose value of 300 mR/hr (this will violate the RWP).</p>			

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
----	Calculate dose received repairing the drain valve leak	Identify dose field is 300/20 mR/hr and calculate dose received during drain valve leak repair to be 2 mR (use 20 mR/hr based on cue sheet)	<b>S U</b>
<p><b>Comment:</b>  <math>(20\text{mR/hr}) \times (1\text{hr}/60\text{min}) \times 6\text{min} = 2\text{ mR}</math>  <b>CRITICAL STEP:</b> Applicant must determine that 20 mR/hr is correct based on the cue provided. Applicant should not use the on-contact dose value of 300 mR/hr (this will violate the RWP).</p>			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
----	Calculate dose received venting the pump	Identify dose field is 430/50 mR/hr and calculate dose received during pump venting to be 10 mR (use 50 mR/hr based on cue sheet)	<b>S U</b>
<p><b>Comment:</b>  <math>(50\text{mR/hr}) \times (1\text{hr}/60\text{min}) \times 12\text{min} = 10\text{ mR}</math>  <b>CRITICAL STEP:</b> Applicant must determine that 50 mR/hr is correct based on the cue provided. Applicant should not use the on-contact dose value of 430 mR/hr (this will violate the RWP).</p>			

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
----	Determine total accumulated dose for the NPO	Determines total accumulated dose for the NPO: <ul style="list-style-type: none"> <li>▪ Prior/existing dose on this shift = 7 mR</li> <li>▪ Transit dose = 2 mR</li> <li>▪ General area dose = 1 mR</li> <li>▪ Leak investigation = 1 mR</li> <li>▪ Leak repair = 2 mR</li> <li>▪ Pump venting = 10 mR</li> </ul> Total dose accumulated for NPO = 23 mR	<b>S U</b>
<b>Comment:</b>			

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
----	Determines that NPO cannot perform the task with the provided time estimates without exceeding the RWP dose allotments.	Determines NPO will exceed RWP allowed dose accumulation of 20 mR.	<b>S U</b>
<b>Comment:</b>			
<b>CRITICAL STEP</b>			

**Time Stop:** \_\_\_\_\_

**END OF TASK**



## **SIMULATOR OPERATOR INSTRUCTIONS**

- **None required**

**CANDIDATE CUE SHEET**

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

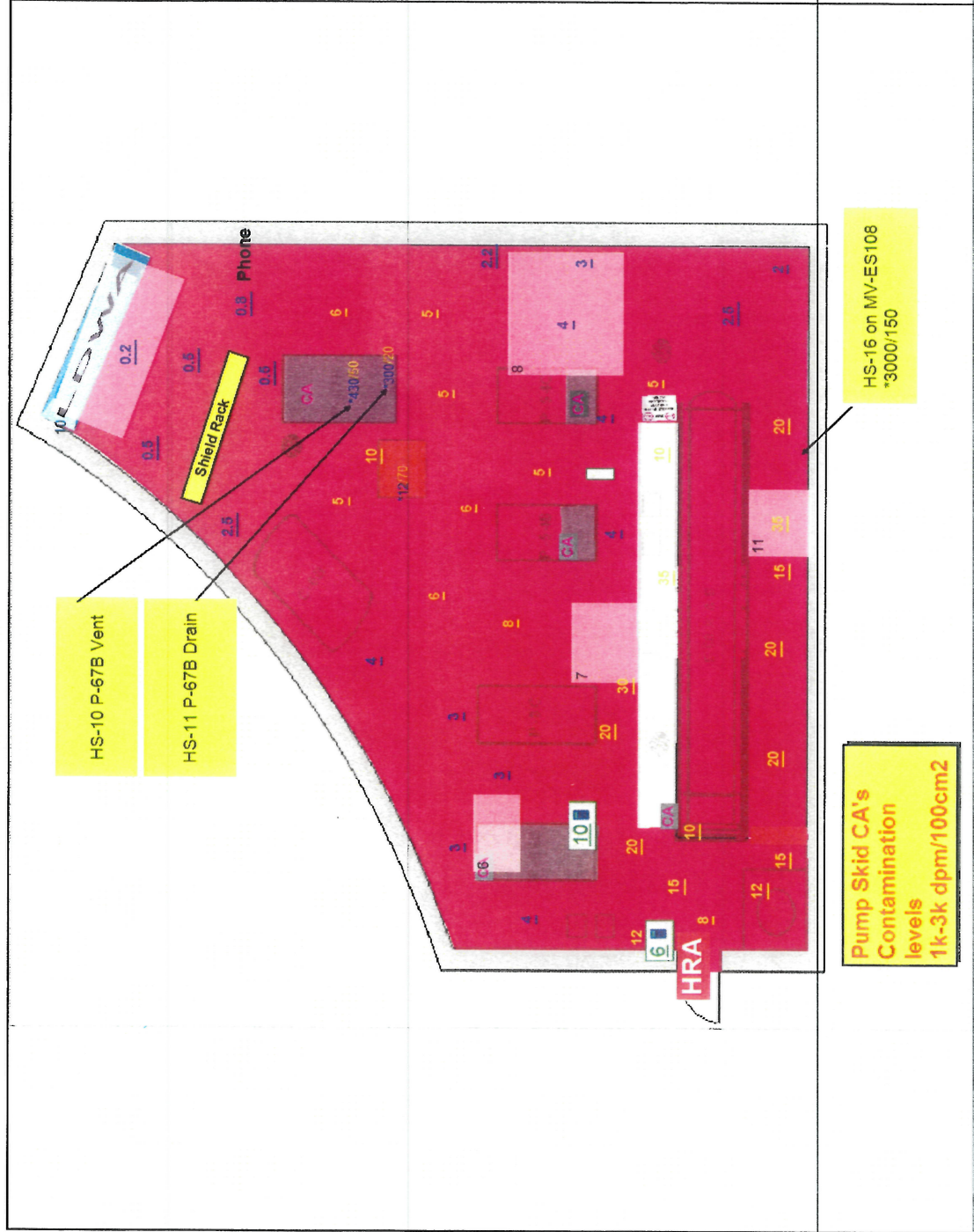
**CANDIDATE CUE SHEET****INITIAL CONDITIONS:**

- The Plant has recently shut down and is on shutdown cooling
- P-67B LPSI Pump was started and a moderate leak was identified from the drain valve MV-ES515.
- The CRS desires to dispatch an NPO to investigate and repair the drain valve.
- The NPO currently has 7 mR accumulated dose under RWP 20170002 Task 01 on this shift.
- It is estimated that the NPO will spend time the following time in the WESG room in the general area of the P-67B pump skid:
  - 12 minutes in communication with the Control room via the radio
- It is estimated that the NPO will spend 21 minutes inside the P-67B pump skid contaminated area as follows:
  - 3 minutes investigating the drain valve leak
  - 6 minutes attempting to tighten the drain valve
  - 12 minutes to complete venting the pump after pump restart
  - Note: Drain valve MV-ES515 is approximately 30 cm from HS-11
  - Note: Casing vent valve MV-ES535 is approximately 30 cm from HS-10
- It is estimated that the NPO will pick up 2 mR in transit during this task.

**INITIATING CUE:**

Your task is to, based on the radiological information provided, determine if the NPO could perform the task while currently signed in on RWP 20170002 Task 01.

PLP



**Template:**

Blank

**Map:**

570 WESG

Unit: Unit 1

Building: Aux Building

Elevation: 570

Room: West Engineered Safeguards

All Radiation values are in mrem/hr unless otherwise noted

Smear contamination values in DPM/100cm<sup>2</sup> unless otherwise noted

☐ Smear < 1000 DPM H.S. - denotes Hot Spot

\*12/13 denotes gamma contact / 30cm


12.5 denotes gamma general area, T denotes RADS telemetry

\*75 B denotes beta contact dose rate

\*12 denotes gamma contact dose rate

(1) denotes smear locations

**RADIOLOGICAL WORK PERMIT**

<b>RWP Title:</b> OPERATIONS DEPARTMENT ROUTINE ACTIVITIES		<b>RWP No.:</b> 20170002 Rev. 00	
<b>Comments:</b> OPERATIONS DEPARTMENT ROUTINE ACTIVITIES  Scope: The scope of this Radiation Work Permit (RWP) is to perform Operations routine activities, walkdowns and inspections, valve manipulations, Technical Specification tests, LLRT and various preventative maintenance (PM) activities. This RWP is for activities that do not involve complex radiological conditions and work in areas less than 100,000 dpm/100 cm2.		 20170002	
<b>RWP Type:</b> GENERAL	<b>RWP Status:</b> APPROVED	<b>Begin Date:</b> 1/1/2017	<b>Close On Date:</b> 12/31/2017
<b>Prepared By:</b> SCHOUT, MARK A		<b>Job Supervisor:</b> MULFORD	
<b>Estimated Dose:</b> 1,404.0 mrem	<b>Estimated Hours:</b> 6,148.00	<b>Actual Dose:</b>	<b>Actual Hours:</b>
Locations			
Buildings	Elevations	Rooms	
Auxiliary Building	ALL	Auxillary Building Miscellaneous (All Elevations)	
Dry Fuel Storage PADS	ALL	North ISFSI Pad	
Dry Fuel Storage PADS	ALL	East ISFSI Pad	
Out Buildings	ALL	Satellite RCA's	
Out Buildings	ALL	North Storage Building	
Out Buildings	ALL	East Radwaste Building	
Out Buildings	ALL	South Radwaste Building	
Radiological Conditions			
Description	Value	Unit	
Airborne Radioactivity	<0.3	DAC	
Alpha Contamination	<100	DPM/100 CM2	
Beta/Gamma Contamination	<100K	DPM/100 CM2	
Whole Body Dose Rates	<125	MILLIREM/HOUR	
Tasks			
Task	Description	Status	
1	ROUTINE OPERATOR ACTIVITIES	Active	
2	TRAINEE ACTIVITIES	Active	
3	MANAGEMENT/NCO WALKDOWNS	Active	
4	TECH SPEC SURVEILLANCE TESTS	Active	
5	TAGGING	Active	
Requirements			
Requirement Groups	Requirement Descriptions		
N/A			

## RADIOLOGICAL WORK PERMIT

<b>RWP Title:</b> OPERATIONS DEPARTMENT ROUTINE ACTIVITIES	<b>RWP No.:</b> 20170002 Rev. 00	
<b>Additional Instructions</b>		
<p><b>Instruction 1:</b> This RWP allows entry into High Radiation Areas. This RWP allows High Radiation Area (HRA) entry and a HRA access briefing is required.</p> <p>The following Radiologically Controlled Areas (RCA) are not allowed on this Radiation Work Permit -</p> <ol style="list-style-type: none"> <li>1. No Locked High Radiation Area entry is allowed on this RWP.</li> <li>2. No Airborne Radioactivity Area entry is allowed on this RWP.</li> <li>3. No High Contamination Area entry is allowed on this RWP.</li> <li>4. No entrance into level 3 alpha areas is allowed on this RWP.</li> </ol>		
<p><b>Instruction 2:</b></p> <ol style="list-style-type: none"> <li>1. Surveys will be performed on a routine basis and personnel are to review and be knowledgeable of current radiological conditions and low dose waiting areas (LDWA) in their work area.</li> <li>2. Protective clothing not required unless working in a contaminated area or handling contaminated materials.</li> </ol>		
<p><b>Instruction 3:</b></p> <ol style="list-style-type: none"> <li>1. SRDs equipped with alarm amplification devices (high noise) required in areas requiring hearing protection.</li> <li>2. Self monitoring of your SRD is required. Radiation Workers are to read their SRD at least every 30 minutes in a Radiation Area and every 15 minutes in a High Radiation Area.</li> <li>3. It is the expectation that you stop and place your work in a safe condition and exit the RCA at 80% of the accumulated dose alarm set point.</li> </ol>		
<b>Approvals</b>		
<b>Approver Title</b>	<b>Name</b>	<b>Date</b>
ALARA REVIEW	MAYS, VIVIAN E	11/29/2016
RWP PREPARER	SCHOUT, MARK A	11/29/2016
RP SUPERVISOR	SMITH, JEFFREY L	11/30/2016
<b>Attachments</b>		
N/A		

**RADIOLOGICAL WORK PERMIT**

<b>Task Number: 1</b>		<b>RWP No.:</b> 20170002 <b>Rev.:</b> 00	
<b>Task Description:</b> ROUTINE OPERATOR ACTIVITIES		<b>Task Status:</b> Active	
<b>Estimate Dose:</b> 869.00		<b>Estimate Hours:</b> 4,995.00	
<b>Hi-Rad:</b> Yes		<b>Hot Particle:</b> No	<b>Locked Hi-Rad:</b> No
<b>Alarm Settings</b>			
<b>Dose Alarm (mrem)</b>		<b>20.00</b>	<b>Dose Rate (mrem/hr)</b>
			<b>125.00</b>
<b>Requirements</b>			
<b>Requirement Groups</b>		<b>Requirement Descriptions</b>	
COVERAGE		Intermittent RP Coverage	
DOSIMETRY		Whole body DLR and SRD required for entry	
EXPOSURE CONTROL		Use Low Dose Waiting Areas whenever possible to minimize exposure.	
Miscellaneous Requirements		See Additional Instructions	
PROTECTIVE CLOTHING		Class 1 dress with lab coat for contamination levels < 10,000 dpm/100cm <sup>2</sup>	
		Class 2 dress with hood for contamination levels < 100,000 dpm/100cm <sup>2</sup>	
RESPIRATORY		Respiratory protection is not required.	
<b>Additional Instructions</b>			
<b>Instruction 1:</b> Worker Instructions: 1. Inform RP prior to starting work and making changes in work location or job scope. 2. Papers in addition to Class 2 Dress are required if contamination area activities involve significant climbing, crawling or kneeling. 3. Contact RP prior to accessing any area above 8 feet. 4. Workers not actively engaged in work activities should retreat to a lower dose rate area or exit the RCA. 5. Contact RP prior to opening any Radioactive Material containers. 6. Contact RP prior to entering areas not routinely surveyed (i.e. overhead areas, beneath grating, etc...) for current Radiological conditions. 7. A catch containment is required for contaminated system draining. 8. Contact Radiation Protection (RP) prior to performing valve or equipment manipulations that will result in the movement of radioactive liquids, gasses, or radioactive waste. 9. Utilize a faceshield as directed by RP.			
<b>Instruction 2:</b> RP Technician Instructions: 1. Intermittent RP Coverage - validate radiological conditions. 2. Ensure radioactive material is properly labeled prior to placing into a storage container. 3. Ensure bags of rad trash, tools, and parts are properly tagged or labeled and removed from the work area if affecting general area dose rates. 4. Ensure radiological boundaries are expanded as necessary to facilitate work activities and allow sufficient space for entry/egress. 5. Ensure a sufficient number of smears are analyzed for alpha contamination and perform posting and monitoring in accordance with EN-RP-108, "Radiation Protection Posting" and EN-RP-122, "Alpha Monitoring".			
<b>Instruction 3:</b> Stop work criteria: 1. SRD dose alarm or an unanticipated dose rate alarm. 2. Airborne radioactivity greater than or equal to 0.3 DAC. 3. Beta/Gamma contamination greater than or equal to 100K dpm/100cm <sup>2</sup> . 4. Alpha contamination greater than or equal to 100 dpm/100cm <sup>2</sup> . 5. Changes in work scope that are not supported by the bounds of this RWP.			
<b>Instruction 4:</b>			
<b>Other Instructions:</b>			

## RADIOLOGICAL WORK PERMIT

**Task Number:** 1

**RWP No.:**  
20170002  
**Rev.:** 00

Attachments

N/A



## RADIOLOGICAL WORK PERMIT

<b>Task Number: 2</b>		<u>RWP No.:</u> 20170002 <u>Rev.:</u> 00	
<u>Task Description:</u> TRAINEE ACTIVITIES		<u>Task Status:</u> Active	
<u>Estimate Dose:</u> 50.00		<u>Estimate Hours:</u> 345.00	
<u>Hi-Rad:</u> Yes	<u>Hot Particle:</u> No	<u>Locked Hi-Rad:</u> No	<u>Hi-Contamination:</u> No
Alarm Settings			
<u>Dose Alarm</u> (mrem)	10.00	<u>Dose Rate</u> (mrem/hr)	125.00
Requirements			
Requirement Groups	Requirement Descriptions		
COVERAGE	Intermittent RP Coverage		
DOSIMETRY	Whole body DLR and SRD required for entry		
EXPOSURE CONTROL	Use Low Dose Waiting Areas whenever possible to minimize exposure.		
Miscellaneous Requirements	See Additional Instructions		
PROTECTIVE CLOTHING	Class 1 dress with lab coat for contamination levels < 10,000 dpm/100cm <sup>2</sup> Class 2 dress with hood for contamination levels < 100,000 dpm/100cm <sup>2</sup>		
RESPIRATORY	Respiratory protection is not required.		
Additional Instructions			
<p><b>Instruction 1:</b> Worker Instructions:</p> <ol style="list-style-type: none"> <li>1. Inform RP prior to starting work and making changes in work location or job scope.</li> <li>2. Papers in addition to Class 2 Dress are required if contamination area activities involve significant climbing, crawling or kneeling.</li> <li>3. Contact RP prior to accessing any area above 8 feet.</li> <li>4. Workers not actively engaged in work activities should retreat to a lower dose rate area or exit the RCA.</li> <li>5. Contact RP prior to opening any Radioactive Material containers.</li> <li>6. Contact RP prior to entering areas not routinely surveyed (i.e. overhead areas, beneath grating, etc...) for current Radiological conditions.</li> <li>7. A catch containment is required for contaminated system draining.</li> <li>8. Contact Radiation Protection (RP) prior to performing valve or equipment manipulations that will result in the movement of radioactive liquids, gasses, or radioactive waste.</li> <li>9. Utilize a faceshield as directed by RP.</li> </ol>			
<p><b>Instruction 2:</b> RP Technician Instructions:</p> <ol style="list-style-type: none"> <li>1. Intermittent RP Coverage - validate radiological conditions.</li> <li>2. Ensure radioactive material is properly labeled prior to placing into a storage container.</li> <li>3. Ensure bags of rad trash, tools, and parts are properly tagged or labeled and removed from the work area if affecting general area dose rates.</li> <li>4. Ensure radiological boundaries are expanded as necessary to facilitate work activities and allow sufficient space for entry/egress.</li> <li>5. Ensure a sufficient number of smears are analyzed for alpha contamination and perform posting and monitoring in accordance with EN-RP-108, "Radiation Protection Posting" and EN-RP-122, "Alpha Monitoring".</li> </ol>			
<p><b>Instruction 3:</b> Stop work criteria:</p> <ol style="list-style-type: none"> <li>1. SRD dose alarm or an unanticipated dose rate alarm.</li> <li>2. Airborne radioactivity greater than or equal to 0.3 DAC.</li> <li>3. Beta/Gamma contamination greater than or equal to 100K dpm/100cm<sup>2</sup>.</li> <li>4. Alpha contamination greater than or equal to 100 dpm/100cm<sup>2</sup>.</li> </ol> <p>Changes in work scope that are not supported by the bounds of this RWP.</p>			
<b>Instruction 4:</b>			
<b>Other Instructions:</b>			



### RADIOLOGICAL WORK PERMIT

**Task Number: 2**

**RWP No.:**  
20170002  
**Rev.: 00**

**Attachments**

N/A

## RADIOLOGICAL WORK PERMIT

<b>Task Number: 3</b>		<u>RWP No.:</u> 20170002 <u>Rev.:</u> 00	
<b>Task Description:</b> MANAGEMENT/NCO WALKDOWNS		<b>Task Status:</b> Active	
<b>Estimate Dose:</b> 32.00		<b>Estimate Hours:</b> 202.00	
<b>Hi-Rad:</b> Yes		<b>Hot Particle:</b> No	<b>Locked Hi-Rad:</b> No
<b>Alarm Settings</b>			
<b>Dose Alarm (mrem)</b>		<b>10.00</b>	<b>Dose Rate (mrem/hr)</b>
			<b>125.00</b>
<b>Requirements</b>			
<b>Requirement Groups</b>		<b>Requirement Descriptions</b>	
COVERAGE		Intermittent RP Coverage	
DOSIMETRY		Whole body DLR and SRD required for entry	
EXPOSURE CONTROL		Use Low Dose Waiting Areas whenever possible to minimize exposure.	
Miscellaneous Requirements		See Additional Instructions	
PROTECTIVE CLOTHING		Class 1 dress with lab coat for contamination levels < 10,000 dpm/100cm <sup>2</sup>	
		Class 2 dress with hood for contamination levels < 100,000 dpm/100cm <sup>2</sup>	
RESPIRATORY		Respiratory protection is not required.	
<b>Additional Instructions</b>			
<p><b>Instruction 1:</b> Worker Instructions:</p> <ol style="list-style-type: none"> <li>1. Inform RP prior to starting work and making changes in work location or job scope.</li> <li>2. Papers in addition to Class 2 Dress are required if contamination area activities involve significant climbing, crawling or kneeling.</li> <li>3. Contact RP prior to accessing any area above 8 feet.</li> <li>4. Workers not actively engaged in work activities should retreat to a lower dose rate area or exit the RCA.</li> <li>5. Contact RP prior to opening any Radioactive Material containers.</li> <li>6. Contact RP prior to entering areas not routinely surveyed (i.e. overhead areas, beneath grating, etc..) for current Radiological conditions.</li> <li>7. A catch containment is required for contaminated system draining.</li> </ol>			
<p><b>Instruction 2:</b> RP Technician Instructions:</p> <ol style="list-style-type: none"> <li>1. Intermittent RP Coverage - validate radiological conditions.</li> <li>2. Ensure a sufficient number of smears are analyzed for alpha contamination and perform posting and monitoring in accordance with EN-RP-108, "Radiation Protection Posting" and EN-RP-122, "Alpha Monitoring".</li> </ol>			
<p><b>Instruction 3:</b> Stop work criteria:</p> <ol style="list-style-type: none"> <li>1. EAD dose alarm or an unanticipated dose rate alarm.</li> <li>2. Airborne radioactivity greater than or equal to 0.3 DAC.</li> <li>3. Beta/Gamma contamination greater than or equal to 100K dpm/100cm<sup>2</sup>.</li> <li>4. Alpha contamination greater than or equal to 100 dpm/100cm<sup>2</sup>.</li> <li>5. Changes in work scope that are not supported by the bounds of this RWP.</li> </ol>			
<b>Instruction 4:</b>			
<b>Other Instructions:</b>			
<b>Attachments</b>			
N/A			

## RADIOLOGICAL WORK PERMIT

<b>Task Number: 4</b>		<u>RWP No.:</u> 20170002 <u>Rev.:</u> 00	
<u>Task Description:</u> TECH SPEC SURVEILLANCE TESTS		<u>Task Status:</u> Active	
<u>Estimate Dose:</u> 270.00		<u>Estimate Hours:</u> 366.00	
<u>Hi-Rad:</u> Yes		<u>Hot Particle:</u> No	<u>Locked Hi-Rad:</u> No
<u>Alarm Settings</u>			
<u>Dose Alarm</u> (mrem)		20.00	<u>Dose Rate</u> (mrem/hr)
			125.00
<u>Requirements</u>			
<u>Requirement Groups</u>		<u>Requirement Descriptions</u>	
COVERAGE		Intermittent RP Coverage	
DOSIMETRY		Whole body DLR and SRD required for entry	
EXPOSURE CONTROL		Use Low Dose Waiting Areas whenever possible to minimize exposure.	
Miscellaneous Requirements		See Additional Instructions	
PROTECTIVE CLOTHING		Class 1 dress with lab coat for contamination levels < 10,000 dpm/100cm <sup>2</sup>	
		Class 2 dress with hood for contamination levels < 100,000 dpm/100cm <sup>2</sup>	
RESPIRATORY		Respiratory protection is not required.	
<u>Additional Instructions</u>			
<p><b>Instruction 1:</b> Worker Instructions:</p> <ol style="list-style-type: none"> <li>1. Inform RP prior to starting work and making changes in work location or job scope.</li> <li>2. Papers in addition to Class 2 Dress are required if contamination area activities involve significant climbing, crawling or kneeling.</li> <li>3. Contact RP prior to accessing any area above 8 feet.</li> <li>4. Workers not actively engaged in work activities should retreat to a lower dose rate area or exit the RCA.</li> <li>5. Contact RP prior to opening any Radioactive Material containers.</li> <li>6. Contact RP prior to entering areas not routinely surveyed (i.e. overhead areas, beneath grating, etc...) for current Radiological conditions.</li> <li>7. A catch containment is required for contaminated system draining.</li> <li>8. Contact Radiation Protection (RP) prior to performing valve or equipment manipulations that will result in the movement of radioactive liquids, gasses, or radioactive waste.</li> </ol>			
<p><b>Instruction 2:</b> RP Technician Instructions:</p> <ol style="list-style-type: none"> <li>1. Intermittent RP Coverage - validate radiological conditions.</li> <li>2. Ensure radioactive material is properly labeled prior to placing into a storage container.</li> <li>3. Ensure bags of rad trash, tools, and parts are properly tagged or labeled and removed from the work area if affecting general area dose rates.</li> <li>4. Ensure radiological boundaries are expanded as necessary to facilitate work activities and allow sufficient space for entry/egress.</li> <li>5. Ensure a sufficient number of smears are analyzed for alpha contamination and perform posting and monitoring in accordance with EN-RP-108, "Radiation Protection Posting" and EN-RP-122, "Alpha Monitoring".</li> </ol>			
<p><b>Instruction 3:</b> Stop work criteria:</p> <ol style="list-style-type: none"> <li>1. SRD dose alarm or an unanticipated dose rate alarm.</li> <li>2. Airborne radioactivity greater than or equal to 0.3 DAC.</li> <li>3. Beta/Gamma contamination greater than or equal to 100K dpm/100cm<sup>2</sup>.</li> <li>4. Alpha contamination greater than or equal to 100 dpm/100cm<sup>2</sup>.</li> <li>5. Changes in work scope that are not supported by the bounds of this RWP.</li> </ol>			
<b>Instruction 4:</b>			
<b>Other Instructions:</b>			

### RADIOLOGICAL WORK PERMIT

<b>Task Number:</b> 4	<u>RWP No.:</u> 20170002 <u>Rev.:</u> 00
<b>Attachments</b>	
N/A	

## RADIOLOGICAL WORK PERMIT

<b>Task Number: 5</b>			<b>RWP No.:</b> 20170002 <b>Rev.:</b> 00	
<b>Task Description:</b> TAGGING			<b>Task Status:</b> Active	
<b>Estimate Dose:</b> 183.00		<b>Estimate Hours:</b> 240.00		
<b>Hi-Rad:</b> Yes		<b>Hot Particle:</b> No	<b>Locked Hi-Rad:</b> No	
<b>Alarm Settings</b>				
<b>Dose Alarm (mrem)</b>		<b>20.00</b>	<b>Dose Rate (mrem/hr)</b>	
<b>125.00</b>				
<b>Requirements</b>				
<b>Requirement Groups</b>		<b>Requirement Descriptions</b>		
COVERAGE		Intermittent RP Coverage		
DOSIMETRY		Whole body DLR and SRD required for entry		
EXPOSURE CONTROL		Use Low Dose Waiting Areas whenever possible to minimize exposure.		
Miscellaneous Requirements		See Additional Instructions		
PROTECTIVE CLOTHING		Class 1 dress with lab coat for contamination levels < 10,000 dpm/100cm <sup>2</sup>		
		Class 2 dress with hood for contamination levels < 100,000 dpm/100cm <sup>2</sup>		
RESPIRATORY		Respiratory protection is not required.		
<b>Additional Instructions</b>				
<p><b>Instruction 1:</b> Worker Instructions:</p> <ol style="list-style-type: none"> <li>1. Inform RP prior to starting work and making changes in work location or job scope.</li> <li>2. Papers in addition to Class 2 Dress are required if contamination area activities involve significant climbing, crawling or kneeling.</li> <li>3. Contact RP prior to accessing any area above 8 feet.</li> <li>4. Workers not actively engaged in work activities should retreat to a lower dose rate area or exit the RCA.</li> <li>5. Contact RP prior to opening any Radioactive Material containers.</li> <li>6. Contact RP prior to entering areas not routinely surveyed (i.e. overhead areas, beneath grating, etc...) for current Radiological conditions.</li> <li>7. A catch containment is required for contaminated system draining.</li> <li>8. Contact Radiation Protection (RP) prior to performing valve or equipment manipulations that will result in the movement of radioactive liquids, gasses, or radioactive waste.</li> </ol>				
<p><b>Instruction 2:</b> RP Technician Instructions:</p> <ol style="list-style-type: none"> <li>1. Intermittent RP Coverage - validate radiological conditions.</li> <li>2. Ensure radioactive material is properly labeled prior to placing into a storage container.</li> <li>3. Ensure bags of rad trash, tools, and parts are properly tagged or labeled and removed from the work area if affecting general area dose rates.</li> <li>4. Ensure radiological boundaries are expanded as necessary to facilitate work activities and allow sufficient space for entry/egress.</li> <li>5. Ensure a sufficient number of smears are analyzed for alpha contamination and perform posting and monitoring in accordance with EN-RP-108, "Radiation Protection Posting" and EN-RP-122, "Alpha Monitoring".</li> </ol>				
<p><b>Instruction 3:</b> Stop work criteria:</p> <ol style="list-style-type: none"> <li>1. SRD dose alarm or an unanticipated dose rate alarm.</li> <li>2. Airborne radioactivity greater than or equal to 0.3 DAC.</li> <li>3. Beta/Gamma contamination greater than or equal to 100K dpm/100cm<sup>2</sup>.</li> <li>4. Alpha contamination greater than or equal to 100 dpm/100cm<sup>2</sup>.</li> <li>5. Changes in work scope that are not supported by the bounds of this RWP.</li> </ol>				
<b>Instruction 4:</b>				
<b>Other Instructions:</b>				

### RADIOLOGICAL WORK PERMIT

**Task Number: 5**

**RWP No.:**  
**20170002**  
**Rev.:** 00

**Attachments**

N/A

**PALISADES**

**2017 INITIAL LICENSE EXAM**

**JOB PERFORMANCE MEASURE**

**JPM: RO ADMIN 4**

**TITLE: PERFORM EMERGENCY NOTIFICATIONS**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Make emergency notifications as required by the Site Emergency Plan

Alternate Path: No

Facility JPM #: 1999 NRC Exam

K/A: G2.4.43 Importance: RO: 3.2 SRO: 3.8

K/A Statement: Knowledge of emergency communications systems and techniques

Task Standard: Demonstrate the ability to make emergency notifications using the emergency plan.

Preferred Evaluation Location: ANY

Preferred Evaluation Method: Perform  Simulate

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

Validation Time: 9 minutes Time Critical: YES

Candidate: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Finish: \_\_\_\_\_

Performance Time: \_\_\_\_\_ minutes

Performance Rating: SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Comments:

Examiner: \_\_\_\_\_ Date: \_\_\_\_\_



Tools/Equipment/Procedures Needed:

- EI-1, Emergency Classification and Actions Procedure
- Partially completed EI-1 Att 1 for ALERT (steps 1-3 complete)
- EI-3, Communications and Notification Procedure
- Completed EI-3 Att 1

## EXAMINER COPY ONLY

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 Shift Manager, who is acting as the Emergency Plant Manager, has declared an ALERT.

**INITIATING CUES:**

The Shift Manager has directed you make all initial emergency notifications required by the Site Emergency Plan.

**This JPM is Time Critical.**

**Time Start:** \_\_\_\_\_

**Evaluator Cue:** Provide applicant with a working copy of EI-1 Att 1 for an ALERT, with steps 1-3 completed and provide completed EI-3 Att 1 (Notification 1) for an ALERT.

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
5.3.1.f	Per EI-3, verify Emergency Notification Form is approved (initialed) by the Emergency Director	Form checked for Emergency Director initials.	S U
Comment:			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
5.3.1.b	Notify Van Buren County	Van Buren County Sheriff contacted, within 15 min. of emergency declaration.	S U
Comment:			

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
N/A	Relay information on Emergency Notification Form to Van Buren County	<ul style="list-style-type: none"> <li>• Correct information relayed</li> <li>• Name of person contacted entered on Emergency Notification Form (<i>not time critical</i>)</li> <li>• Documents time of Van Buren County notified in "VB" block.</li> </ul>	S U
Comment: <b>Time Critical Stop:</b> _____ <b>CRITICAL STEP: Time critical (with 15 minutes from the start of the JPM) to transmit this information to Van Buren County.</b>			

Proc.Step	TASK ELEMENT 4	STANDARD	Grade
5.3.1.b	Notify the State of Michigan	State of Michigan contacted, within 15 min. of emergency declaration.	S U
Comment:			

Proc.Step	TASK ELEMENT 5	STANDARD	Grade
-----------	----------------	----------	-------

N/A	Relay information on Emergency Notification Form to the State of Michigan	<ul style="list-style-type: none"> <li>• Correct information relayed</li> <li>• Name of person contacted entered on Emergency Notification Form. (<i>not time critical</i>)</li> <li>• Documents time of the State of Michigan notified in "SOM" block.</li> </ul>	S U
<p>Comment:  <b>Time Critical Stop:</b> _____</p> <p><b>CRITICAL STEP: Time critical (with 15 minutes from the start of the JPM) to transmit this information to the State of Michigan.</b></p>			

Proc.Step	TASK ELEMENT 6	STANDARD	Grade
5.3.1.b	Notify the NRC	NRC contacted using the direct line to NRC Operations Center.	S U
<p>Comment:</p>			

Proc.Step	TASK ELEMENT 7	STANDARD	Grade
N/A	Relay information on Emergency Notification Form to the NRC.	<ul style="list-style-type: none"> <li>• Correct information relayed</li> <li>• Name of person contacted entered on Emergency Notification Form. (<i>not time critical</i>)</li> <li>• Documents time of NRC notified in "NRC" block</li> </ul>	S U
<p>Comment:</p> <p><b>Evaluator Cue:</b> Inform the candidate that the NRC does not desire continuous contact at this time.</p> <p><b>Evaluator Cue:</b> Inform applicant that another operator will take care of faxing the forms.</p> <p><b>CRITICAL STEP:</b> transmit this information to the NRC</p>			

Proc.Step	TASK ELEMENT 8	STANDARD	Grade
N/A	Notify the Emergency Director that notifications are complete.	Emergency Director notified of initial notification completion.	S U
<p>Comment:</p>			

**Time Stop:** \_\_\_\_\_

## END OF TASK

## **SIMULATOR OPERATOR INSTRUCTIONS**

- **None required.**

## **CANDIDATE CUE SHEET**

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

### **INITIAL CONDITIONS:**

The Shift Manager, who is acting as the Emergency Plant Manager, has declared an ALERT.

### **INITIATING CUES:**

The Shift Manager has directed you make all initial emergency notifications required by the Site Emergency Plan.

**This JPM is Time Critical.**

**PALISADES**

**2017 INITIAL LICENSE EXAM**

**JOB PERFORMANCE MEASURE**

**JPM: SRO ADMIN 1**

**TITLE: REVIEW COMPLETED PROCEDURE TO  
DETERMINE AVERAGE QUALIFIED CET  
TEMPERATURE AND SUBCOOLING  
VALUE**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Review a completed procedure to determine the average qualified CET temperatures and subcooling value.

Alternate Path: NO

Facility JPM #: N/A

K/A: G2.1.23 Importance: RO: 4.3 SRO: 4.4

K/A Statement: Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Task Standard: Determine errors in the completed procedure to calculate average qualified CET Temperatures and sub-cooling value determined.

Preferred Evaluation Location: Simulator  In Plant

Preferred Evaluation Method: Perform  Simulate

References: SOP-34, Palisades Plant Computer (PPC) System  
EOP Supplement 1, Pressure and Temperature Limit Curves

Validation Time: 20 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, Palisades Plant Computer (PPC) System
- EOP Supplement 1, Pressure and Temperature Limit Curves

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
- An NCO was directed to determine PCS sub-cooling value in accordance with SOP-34, Attachment 5, using all available CET readings.

**INITIATING CUES:**

The CRS has directed you to review the completed SOP-34, Attachment 5, to determine PCS sub-cooling value and has turned it in for review. Review all time periods of the completed procedure, verify the current PCS sub-cooling value, and determine any required actions.



Time Start: \_\_\_\_\_

Proc. Step	TASKELEMENT 1	STANDARD	Grade
1.a	Verify at least 2 Qualified CET readings per core quadrant from the CET recorders.	Determines that: <ul style="list-style-type: none"> <li>At least 2 QCET readings were obtained from all Quadrants.</li> </ul>	S U
<p><b>Comment:</b>  <i>Evaluator Note:</i> Verify calculation by Operator with attached answer key.</p> <p><i>Evaluator Cue:</i> After applicant identifies that only 2 CET readings were obtained from Quadrants 1 and 3, inform applicant that the missing readings were unavailable.</p>			

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). <ul style="list-style-type: none"> <li>Determines average for 15 minutes ago is incorrect (correct value is 542°F).</li> <li>May determine average values for 1 hour ago and just now are incorrect due to using invalid CET values (see task element 3).</li> </ul>	S U
<p><b>Comment:</b>  <i>Evaluator Note:</i> Verify calculation by Operator with attached answer key.</p> <p><b>CRITICAL STEP: Determine incorrect average value for 15 mins ago and recalculates correct average of the temperature readings.</b></p>			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
1.c	If any individual temperature readings is greater than 15°F higher or lower from the average, then: <ul style="list-style-type: none"> <li>Do not utilize that individual temperature reading.</li> <li>Return to Step 1a.</li> </ul>	<ul style="list-style-type: none"> <li>Determines that CET #9 taken 1 hour ago was &gt; 15°F from the average and should not have been used. Recalculates correct average temp.</li> <li>Determines that CET #23 taken just now was &gt; 15°F from the average and should not have been used. Recalculates correct average temp.</li> </ul>	S U
<p><b>Comment:</b>  <b>CRITICAL STEP: Determines CET values recorded for #9 from 1 hour ago and #23 from time now are erroneous and should not have been used. Applicant determines that the average of the temperature for 1 hour ago and time now are incorrect and recalculates correct average of the temperatures.</b></p>			

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: <ul style="list-style-type: none"> <li>Obtains PCS Pressure reading from initial conditions.</li> <li>Plots pressure reading versus Average CET reading obtained in step 1.b on EOP Supplement 1, page 1 to determine subcooling value (~540°F).</li> <li>Determines subcooling value of ~77°F</li> <li>Determines NCO was incorrect and used curve for minimum pressure for PCP operation.</li> </ul>	S U
<p><b>Comment:</b></p> <p><i><b>Evaluator Note:</b> 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.</i></p> <p><b>CRITICAL STEP: Determine subcooling value (~59°F) incorrect and determine correct subcooling value (~77°F) within +/- 2.5°F. Applicant corrects the sub-cooling value on SOP-34, Attachment 5. (May be verbal to inform CRS.)</b></p>			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
n/a	Consults Tech Specs when applicant determines the CETs not recorded are inoperable.	Reviews LCO 3.3.7 and determine that 4 CETs are required to be operable in each quadrant and enters the following: <ul style="list-style-type: none"> <li>LCO 3.3.7 Cond A for Quadrant 1 and 3 (30 day restoration).</li> <li>LCO 3.3.7 Cond C for Quadrant 3 (7 day restoration)</li> </ul>	S U
<p><b>Comment:</b></p> <p><i><b>Evaluator Cue:</b> If applicant asks if the CETs not recorded are operable, inform the applicant that per the initial conditions, all available CET reading were recorded..</i></p> <p><b>CRITICAL STEP: Applicant determines correct LCO required actions.</b></p>			

Time Stop: \_\_\_\_\_

**END OF TASK**

## **SIMULATOR OPERATOR INSTRUCTIONS**

- None required.

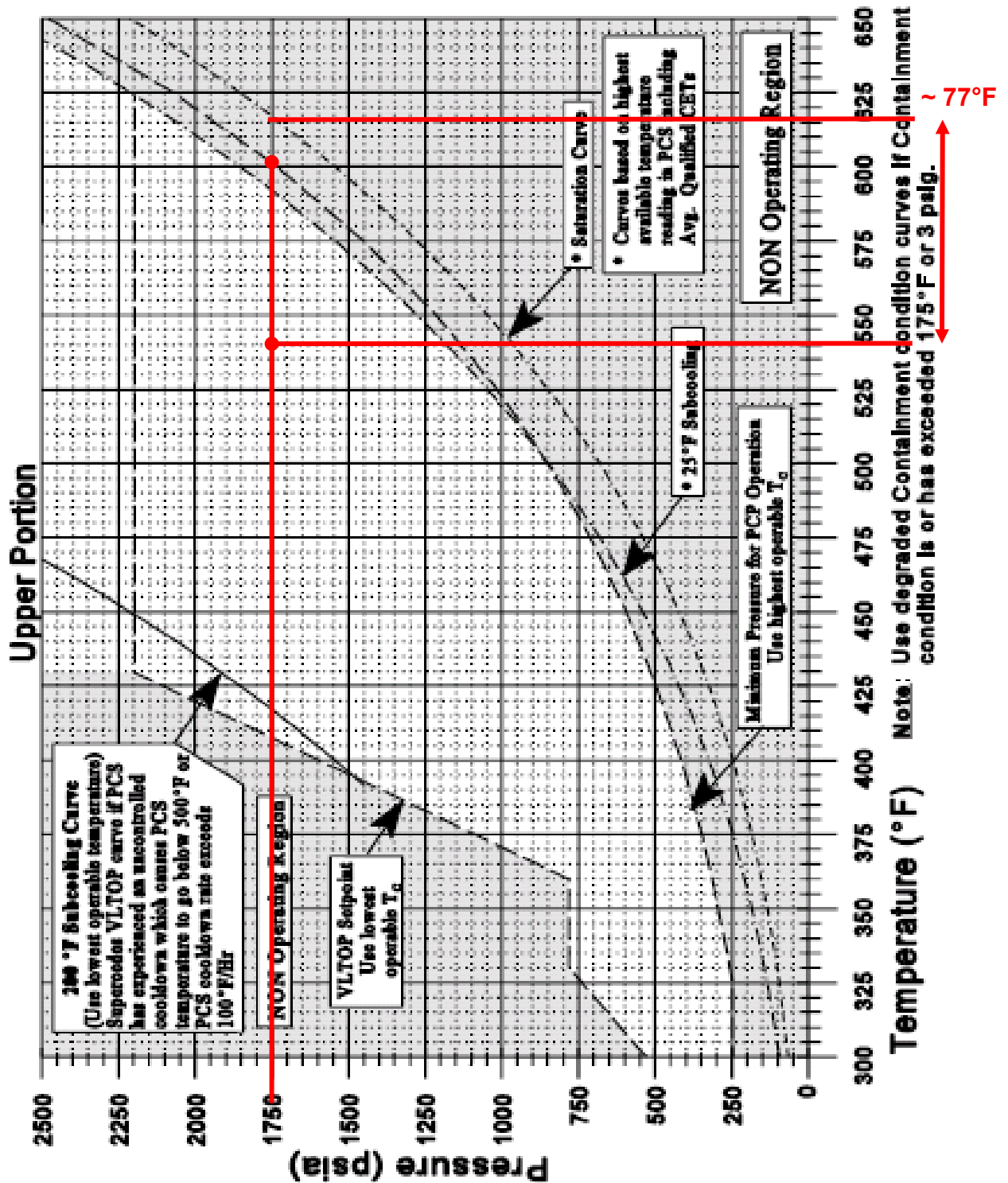
# Answer Key

*Average values should be +/- 2°F*

QUADRANT	QUALIFIED CET #	TIME 1 hour ago	TIME 45 min ago	TIME 30 min ago	TIME 15 min ago	TIME now	TIME now
<b>1</b>	<b>2</b>	537	536	538	536	537	
	<b>9</b>	<b>557</b>	552	556	548	548	
	<b>10</b>						
	<b>19</b>	537	536	538	536	537	
<b>2</b>	<b>5</b>	540	541	540	541	540	
	<b>11</b>	536	536	537	536	536	
	<b>16</b>	535	534	535	534	535	
	<b>21</b>	534	535	533	535	535	
<b>3</b>	<b>23</b>	545	548	551	554	<b>559</b>	
	<b>25</b>						
	<b>31</b>	539	547	545	544	541	
	<b>35</b>						
<b>4</b>	<b>27</b>	538	537	538	537	538	
	<b>30</b>	547	546	547	546	547	
	<b>33</b>	541	542	540	542	541	
	<b>36</b>	550	552	551	552	550	
TOTAL		<b>7036 / 6479</b>	7042	7049	7041	<b>7044 / 6485</b>	
AVERAGE		<b>541 / 540</b>	542	542	<b>544 / 542</b>	<b>542 / 540</b>	

**Out of bounds QCET values for #9 and #23 must be rejected and not used.**  
**Average value from 15 min ago is incorrect.**

# Pressure and Temperature Limit Curves



**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.

*Subcooling determined to be ~ 59°F.*

2. **DATA RECORDING/CALCULATIONS**

QUADRANT	QUALIFIED CET #	TIME 1 hour ago	TIME 45 min ago	TIME 30 min ago	TIME 15 min ago	TIME NOW	TIME _____
<b>1</b>	<b>2</b>	537	536	538	536	537	
	<b>9</b>	557	552	556	548	548	
	<b>10</b>						
	<b>19</b>	537	536	538	536	537	
<b>2</b>	<b>5</b>	540	541	540	541	540	
	<b>11</b>	536	536	537	536	536	
	<b>16</b>	535	534	535	534	535	
	<b>21</b>	534	535	533	535	535	
<b>3</b>	<b>23</b>	545	548	551	554	559	
	<b>25</b>						
	<b>31</b>	539	547	545	544	541	
	<b>35</b>						
<b>4</b>	<b>27</b>	538	537	538	537	538	
	<b>30</b>	547	546	547	546	547	
	<b>33</b>	541	542	540	542	541	
	<b>36</b>	550	552	551	552	550	
<b>TOTAL</b>		7036	7042	7049	7041	7044	
<b>AVERAGE</b>		541	542	542	544	542	

## 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
- An NCO was directed to determine PCS sub-cooling value in accordance with SOP-34, Attachment 5, using all available CET readings.

### INITIATING CUES:

The CRS has directed you to review the completed SOP-34, Attachment 5, to determine PCS sub-cooling value and has turned it in for review. Review all time periods of the completed procedure, verify the current PCS sub-cooling value, and determine any required actions.

**PALISADES**

**2017 INITIAL LICENSE EXAM**

**JOB PERFORMANCE MEASURE**

**JPM: SRO Admin 2**

**TITLE: Determine Shift Staffing Requirements**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_



JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Determine the Shift Staffing Requirements following an illness

Alternate Path: No

Facility JPM #:

K/A: G2.1.5 Importance: RO: 2.9 SRO: 3.9

K/A Statement: Ability to use procedures related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.

Task Standard: Based on given conditions, determine that the applicable Plant Staffing Levels are not met.

Preferred Evaluation Location: Classroom   X   In Plant       

Preferred Evaluation Method: Perform   X   Simulate       

References: Administrative Procedure 4.00, Operations Organization, Responsibilities, and Conduct  
EN-OP-115, Conduct of Operations, Attachment 9.6  
Palisades Specific  
10 CFR Part 50.54  
Technical Specifications 5.2

Validation Time: 10 minutes Time Critical: NO

Candidate: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Finish: \_\_\_\_\_

Performance Time: \_\_\_\_\_ minutes

Performance Rating: SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Comments:

Examiner: \_\_\_\_\_  
PALISADES NUCLEAR PLANT

Date: \_\_\_\_\_

## EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- Normal Control Room references.

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.
- It is night shift on Christmas Day.
- The Operations Manager has authorized maximizing time off during Christmas Eve and Christmas Day.
- ONLY the SE/STA is qualified as STA.
- The shift complement at the beginning of the night shift (0000) was:
  - (1) Shift Manager
  - (1) Control Room Supervisor
  - (1) Shift Engineer/Shift Technical Advisor (SE/STA)
  - (3) Nuclear Control Operators
  - (6) Nuclear Plant Operators
  - (1) Chemistry Technician
  - (1) Radiation Safety Technician (EMT)
  - Required number of Security personnel
- At 0300 the SE/STA is taken to the hospital by the Radiation Safety Technician (EMT) due to an allergic reaction to something he has eaten.

**INITIATING CUES:**

You are the Shift Manager. Determine if staffing requirements are met and explain your decision and required actions, if any.

**Time Start:** \_\_\_\_\_

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
N/A	Identifies Shift Staffing requirements IAW EN-OP-115 Att 9.6 Section 1.  Verifies SE/STA position is not satisfied.	Determine that in Modes 1-4, the following crew composition is required: <ul style="list-style-type: none"> <li>• 3 SRO (1 must be SE/STA qualified) (<i>not satisfied due to 0 SE/STA</i>)</li> <li>• 3 NCO</li> <li>• 6 NPO</li> </ul>	S U
<b>Comment:</b> <b>CRITICAL STEP</b>			

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
N/A	Identifies Plant Staffing requirements IAW TS 5.2  Verifies Rad Safety Tech position is not satisfied.	Determines that a Radiation Safety Tech is required and none are on site.	S U
<b>Comment:</b> <b>CRITICAL STEP</b>			

**Time Stop:** \_\_\_\_\_

**END OF TASK**

## **SIMULATOR OPERATOR INSTRUCTIONS**

- **None required.**

**CANDIDATE CUE SHEET**

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

**CANDIDATE CUE SHEET****INITIAL CONDITIONS:**

- The plant is operating at steady state 100% power.
- It is night shift on Christmas Day.
- The Operations Manager has authorized maximizing time off during Christmas Eve and Christmas Day.
- ONLY the SE/STA is qualified as STA.
- The shift complement at the beginning of the night shift (0000) was:
  - (1) Shift Manager
  - (1) Control Room Supervisor
  - (1) Shift Engineer/Shift Technical Advisor (SE/STA)
  - (3) Nuclear Control Operators
  - (6) Nuclear Plant Operators
  - (1) Chemistry Technician
  - (1) Radiation Safety Technician (EMT)
  - Required number of Security personnel
- At 0300 the SE/STA is taken to the hospital by the Radiation Safety Technician (EMT) due to an allergic reaction to something he has eaten.

**INITIATING CUES:**

You are the Shift Manager. Determine if staffing requirements are met and explain your decision and required actions, if any.

**PALISADES**

**2017 INITIAL LICENSE EXAM**

**JOB PERFORMANCE MEASURE**

**JPM: SRO ADMIN 3**

**TITLE: DETERMINE AND PERFORM THE  
APPLICABLE TECHNICAL  
SPECIFICATION ACTIONS**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Determine any applicable Tech Specs and perform Admin Proc 4.11 actions to determine whether a loss of safety function exists.

Alternate Path: No

Facility JPM #: N/A (new)

K/A: G2.2.22                      Importance:      RO: 4.0      SRO: 4.7

K/A Statement: Knowledge of limiting conditions for operations and safety limits.

Task Standard: Determine any applicable Tech Specs and perform Admin Proc 4.11 actions to determine whether a loss of safety function exists.

Preferred Evaluation Location: Simulator  In Plant

Preferred Evaluation Method: Perform  Simulate

References: Tech Spec LCO 3.0.6  
Tech Spec LCO 3.7.5  
Tech Spec LCO 3.7.6  
Admin Proc 4.11

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:

- Technical Specifications
- Admin Proc 4.11

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:**

- The Plant is at 100% power.
- A Forklift has struck the side of Condensate Storage Tank (CST)
- CST level has dropped to ~37% and is now stable.

**INITIATING CUES:**

You are to review the initial conditions for operability and determine any applicable Technical Specifications and, if applicable, perform the actions of Admin Proc 4.11.



**Time Start:** \_\_\_\_\_

**Evaluator Cue:** *If applicant asks, inform the applicant that no AFW System alarms are in.*

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
5.1.1	Determine LCO 3.7.6 is applicable due to inadequate CST level	Review LCO 3.7.6 and determine LCO 3.7.6 Cond A is applicable for insufficient CST inventory.	S U
<p><b>Comment:</b>  <i><b>Evaluator Cue:</b> If/when applicant attempts to verify backup water sources available to satisfy LCO 3.7.6.A.1, question applicant what the backup sources are. When applicant correctly states backup sources of Service Water and Fire Protection, inform the applicant that these sources are operable.</i></p>			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
2.a	Review and perform Admin Proc 4.11 and perform Attachment 1 "Technical Specifications Job-Aid"	Determine LCO 3.7.6 Cond A is applicable.	S U
<p><b>Comment:</b>  <i><b>Evaluator Cue:</b> Inform applicant that Admin Proc 4.11 Att 1 Steps 2.b-e are not to be performed.</i></p>			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
5.1.2 & 5.1.3	Enter LCO 3.7.6 Cond A and apply the following required actions: <ul style="list-style-type: none"> <li>A.1 – Verify operability of backup water supplies w/in 4 hours and once every 12 hours after.</li> <li>A.2 – Restore CST volume to within limit w/in 7 days</li> </ul>	Enter LCO 3.7.6 Cond A and apply the following required actions: <ul style="list-style-type: none"> <li>A.1 – Verify operability of backup water supplies w/in 4 hours and once every 12 hours after.</li> <li>A.2 – Restore CST volume to within limit w/in 7 days</li> </ul>	S U
<p><b>Comment:</b>  <i><b>Evaluator Cue:</b> If/when applicant attempts to verify backup water sources available to satisfy LCO 3.7.6.A.1, question applicant what the backup sources are. When applicant correctly states backup sources of Service Water and Fire Protection, inform the applicant that these sources are operable.</i></p> <p><b>CRITICAL STEP: Enter and perform actions of LCO 3.7.6 Cond A.</b></p>			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
5.2.1.a & b	Identify that the LCO 3.7.6 directs no direct entry into any supported system LCOs	Identify that the LCO 3.7.6 directs no direct entry into any supported system LCOs	S U
<p><b>Comment:</b></p>			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
5.1.4	Identify that the AFW system is a supported system of the CST using Admin Proc 4.11 Att 2 (page 6 of 11)	Determine that the AFW System is inoperable as a supported system, using Admin Proc 4.11 Att 2.	S U
<b>Comment:</b>			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
5.2.1	Identify that the supported pumping system (AFW) is inoperable solely due to the supported system inoperability (insufficient CST level) and invoke LCO 3.0.6.	Applicant can use Admin Proc 4.11 Att 4 flowchart to invoke LCO 3.0.6 to LCO 3.7.5.  Determine that the AFW System is inoperable solely due to insufficient CST level and do NOT perform LCO 3.7.5 Cond A actions.	S U
<b>Comment:</b> <b>CRITICAL STEP: Determine AFW System is inoperable and invoke LCO 3.0.6 such that the required actions of LCO 3.7.5 are not required to be performed.</b>			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
5.3.1	Using Admin Proc 4.11 Att 3, determine neither safety function is lost. <ul style="list-style-type: none"> <li>• Provide sufficient water &amp; NPSH for AFW Pump Operability</li> <li>• Provide sufficient water inventory for plant cooldown</li> </ul>	Determine neither safety function is lost per Admin Proc 4.11 Att 3.  Applicant may refer to SOP-12 or EOP Supplement 19 to determine CST level must be > 10% to determine the AFW Pump low suction pressure trip seal-in feature is not enabled and sufficient NPSH remains available (System does not require venting).	S U
<b>Comment:</b> <b>CRITICAL STEP: Determine neither safety function is lost.</b>			

Time Stop: \_\_\_\_\_

## END OF TASK

## **SIMULATOR OPERATOR INSTRUCTIONS**

- None required.

# CANDIDATE CUE SHEET

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

## INITIAL CONDITIONS:

- The Plant is at 100% power.
- A Forklift has struck the side of Condensate Storage Tank (CST)
- CST level has dropped to ~18% and is now stable.

## INITIATING CUES:

You are to review the initial conditions for operability and determine any applicable Technical Specifications and, if applicable, perform the actions of Admin Proc 4.11.

**PALISADES**  
**2017 INITIAL LICENSE EXAM**  
**JOB PERFORMANCE MEASURE**

**JPM: SRO ADMIN 4**

**TITLE: RESPOND TO STACK EFFLUENT  
RADIATION ALARMS**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

---

Task: Respond to Stack Effluent Radiation Alarms

Alternate Path: N/A

Facility JPM #: 2009 Audit

K/A: G2.3.13                      Importance:      RO: 3.4                      SRO: 3.8

K/A Statement: Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.

Task Standard: RANGE selector switch on Remote Control Panel JIC-2301B on C-11A placed in HIGH RANGE position and ODCM Appendix A Table A-1 Action 3 entered.

Preferred Evaluation Location: Simulator  In Plant

Preferred Evaluation Method: Perform  Simulate

References: ARP-33, Auxiliary Systems Scheme EK-02 (C-11A)  
SOP-38, Gaseous Process Monitoring System

Validation Time: 11 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:

- ARP-33, Auxiliary Systems Scheme EK-02 (C-11A)
- SOP-38, Gaseous Process Monitoring System

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:**

- The Plant is at 100% power.
- Alarm EK-0231, "STACK EFF RAD C-169/C-172 FAIL/TROUBLE" has just annunciated.

**INITIATING CUES:**

The CRS has directed you to respond to the alarms on Panel C-11A.

**Time Start:** \_\_\_\_\_

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
	ARP-33 located for EK-0231	ARP-33 in hand	<b>S U</b>
<b>Comment:</b>			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
<b>ARP-33 window 31</b>	CHECK RIAs for failed channel.  CHECK the following on RGEM Control Panel on back of C-11A: <ul style="list-style-type: none"> <li>• VERIFY C-169 power switch is "ON"</li> <li>• VERIFY sample pump operating</li> <li>• VERIFY "Low Flow" alarm clear</li> </ul>	RGEM Panel checked. <ul style="list-style-type: none"> <li>• RIA-2326 determined to be failed low.</li> </ul>	<b>S U</b>
<b>Comment:</b> <b>CRITICAL STEP: Determine correct rad monitor.</b>			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
<b>ARP-33 window 31</b>	REFER TO Palisades Offsite Dose Calculation Manual, Table 1-1.	ODCM Table 1-1 located	<b>S U</b>
<b>Comment:</b> <i>Evaluator Cue: When applicant informs CRS, then direct candidate to consult ODCM for applicable actions.</i>			



Proc. Step	TASK ELEMENT 8	STANDARD	Grade
ODCM	Determine applicable actions from ODCM Table 1-1.	Candidate recognizes that ODCM Table 1-1 Action 3 determined to be applicable: <ul style="list-style-type: none"> <li>• With the number of channels operable less than required by the Minimum Operable Channels requirement, effluent releases via this pathway may continue provided grab samples are taken at least once per 12 hours and these samples are analyzed for gross activity within 24 hours.</li> <li>• Applicant may inform Chemistry of need to perform grab samples.</li> </ul>	<b>S U</b>
<p><b>Comment:</b></p> <p><i>Evaluator Cue: Act as CRS and acknowledge the report.</i></p> <p><i>Evaluator Cue: As Chemistry, acknowledge report to take grab samples.</i></p> <p><b>CRITICAL STEP: Determine ODCM Table 1-1 Action 3 is applicable.</b></p>			

**Time Stop:** \_\_\_\_\_

**END OF TASK**

## **SIMULATOR OPERATOR INSTRUCTIONS**

- Reset to IC-150
- Insert malfunction RM08V (RIA-2326 Low Radiation) on PID RM06
- Acknowledge alarms on Panel C-11A.

# CANDIDATE CUE SHEET

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

## INITIAL CONDITIONS:

- The Plant is at 100% power.
- Alarm EK-0231, "STACK EFF RAD C-169/C-172 FAIL/TROUBLE" has just annunciated.

## INITIATING CUES:

The CRS has directed you to respond to the alarms on Panel C-11A.

**PALISADES**  
**2017 INITIAL LICENSE EXAM**  
**JOB PERFORMANCE MEASURE**

**JPM: SRO ADMIN 5**

**TITLE: DETERMINE PROTECTIVE  
ACTION RECOMMENDATIONS  
(PARS) FOR AN EVENT**

CANDIDATE: \_\_\_\_\_

EXAMINER: \_\_\_\_\_

JOB PERFORMANCE MEASURE  
DATA PAGE

Task: Determine the applicable PARs for an event

Alternate Path: No

Facility JPM #: N/A (new)

K/A: G2.4.44 Importance: RO: 2.4 SRO: 4.4

K/A Statement: Knowledge of emergency plan protective action recommendations

Task Standard: Given a change in plant and meteorological conditions, determine PARs; evacuation of Areas 1, 2, 3 and lake area 6 within 15 minutes.

Preferred Evaluation Location: ANY

Preferred Evaluation Method: Perform  Simulate

References: SEP Supp 1, "Site Emergency Plan Supplement 1 – EAL Wall Charts"  
EI-3, "Communications and Notifications"  
EI-6.7, "Plant Site Meteorological System"  
EI-6.13, "Protective Action Recommendations for Offsite Populations"

Validation Time: 6 minutes Time Critical: YES

Candidate: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Finish: \_\_\_\_\_

Performance Time: \_\_\_\_\_ minutes

Performance Rating: SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Comments:

Examiner: \_\_\_\_\_  
Signature

Date: \_\_\_\_\_

## EXAMINER COPY ONLY

Tools/Equipment/Procedures Needed:

- SEP SUP 1, "Site Emergency Plan Supplement 1 – EAL Wall Charts"
- EI-3, "Communications and Notifications"
- EI-6.7, "Plant Site Meteorological System," Attachment 1
- EI-6.13, "Protective Action Recommendations for Offsite Population"
- EI-3, Attachment 1 completed for notification #1
- Completed Dose Assessment form

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:

- An event occurred which resulted in the declaration of General Emergency FG1.1.
  - A Loss of the Primary Coolant System (PCS)
  - A Loss of Containment (CNMT)
  - A Potential Loss of the Fuel Clad Barrier (FC)
- Initial PARs resulted in an Initial Evacuation of Area 1 and lake area 6.

#### INITIATING CUES:

You are the Shift Manager (acting as the Emergency Plant Manager). You are to determine PARs and complete the Palisades Event Notification Form for the change in rapidly deteriorating plant / meteorological conditions, as follows:

- Containment High Range Radiation Monitors indicate 30,000 R/hr.
- Field Monitoring Teams report a dose of 1.3 R/hr at the site boundary.
- Initial dose assessment reviews support the Field Monitoring Team's survey.
- Meteorological data as given on EI-6.7 Att 1, "Plant Site Meteorological System Worksheet."

**This JPM is Time Critical.**

**Time Start:** \_\_\_\_\_

Proc.Step	TASK ELEMENT 1	STANDARD	Grade
El-6.13	Refers to El-6.13, "Protective Action Recommendations for Offsite Populations"	Obtain El-6.13 and determine that Att 2 must be used for FOLLOW UP PARs to determine if a change is warranted.	S U

**Comment:**

**Start Time for Determination of PARs:** \_\_\_\_\_

**Evaluator Cue:** Candidate may use El-6.13 Att 1 / 2 Wall-Chart placard or provide working copy of El-6.13 in its entirety.

Proc.Step	TASK ELEMENT 2	STANDARD	Grade
El-6.13 Att 2	Determines additional FOLLOW UP PARs (0 to 5 miles)	<ul style="list-style-type: none"> <li>• Determines Initial PAR has been made.</li> <li>• Determines conditions requiring classification of a GE are met.</li> <li>• Determines Rapidly Progressing Severe Accident was NOT declared during the Initial PAR evaluation (initial conditions stated <b>Initial Evacuation of Area 1 and lake area 6 only</b>).</li> <li>• Determines HG4.1 or HG4.2 not declared.</li> <li>• Determines Containment HRRMs not &lt; 20,000 R/hr.</li> <li>• Determines FOLLOW UP PARs are to be applied per Column 3, FOLLOW UP.                             <ul style="list-style-type: none"> <li>• Evacuates Areas 1,2,3 and lake area 6</li> </ul> </li> </ul>	S U

**Comment:**

**Evaluator Note:** Applicant may incorrectly diagnose that a Rapidly Progressing Severe Accident was progressing based on given conditions (1.3 R/hr at the site boundary) in the initiating cue, which would result in evacuating unnecessary areas. These conditions were not present at the time of the INITIAL PAR evaluation and should not be considered for FOLLOW UP PARs.

**CRITICAL STEP**

Proc.Step	TASK ELEMENT 3	STANDARD	Grade
<p><b>EI-6.13 Att 2</b></p>	<p>Determines additional DOSE PARs (0 to 5 miles)</p>	<ul style="list-style-type: none"> <li>• Using plant/meteorological conditions from the initiating cue, determine that PARs must be expanded based on dose assessment to areas in the 10 mile EPZ that exceed PAGs</li> <li>• Uses 0-5 miles as the initiating cue stated the site boundary.</li> <li>• Determines DOSE PARs are to be applied per Column 3, DOSE.                             <ul style="list-style-type: none"> <li>• Evacuates Areas 1,2,3 and lake area 6.</li> </ul> </li> </ul>	<p><b>S U</b></p>
<p><b>Comment:</b>  <b>End Time for PAR:</b> _____</p> <p><b>Evaluator Note:</b> End Time for PARs should be when applicant correctly determines Evacuation of Areas 1, 2, 3 and lake area 6 per EI-6.13 Att 2, Column 3 based on FOLLOW UP and DOSE sections.</p> <p><b>Evaluator Note:</b> Applicant may incorrectly chose to use the DOSE column 4 (5 to 10 miles), which would result in evacuating unnecessary areas.</p> <p><b>CRITICAL STEP - must be performed within 15 minutes of the start of the JPM</b></p>			



Proc.Step	TASK ELEMENT 4	STANDARD	Grade
<p><b>EI-3</b> <b>Att 1</b></p>	<p>Completes filling out Palisades Event Notification Form.</p>	<p>Palisades Event Notification Form completely filled per attached KEY AND form is approved (Candidate signature/initials, date, and time entered at bottom of form) *</p>	<p><b>S U</b></p>
<p><b>Comment:</b>  <b>Evaluator Note:</b> <i>EI-3, Attachment 2, "Palisades Event Technical Data Sheet" is NOT required during this JPM.</i>   <b>Evaluator Note:</b> <i>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.</i>   <b>Evaluator Note: KEY is attached to this JPM.</b>                      * The following are the critical parts of this step:</p> <ul style="list-style-type: none"> <li>• <i>General Emergency is checked in "current classification" section</i></li> <li>• <i>Date and time filled in "current classification" section</i></li> <li>• <i>FG1.1 filled in "reason for classification" section OR Fission Product Barrier Degradation checked in "reason for classification" section</i></li> <li>• <i>"YES" checked in Radiological Release in Progress</i></li> <li>• <i>Areas 1, 2, 3 and lake area 6 checked for Evacuation of Areas</i></li> <li>• <i>"YES" checked on PARs based on dose projections</i></li> </ul> <p><b>CRITICAL STEP</b></p>			

**Time Stop:** \_\_\_\_\_

**END OF TASK**

**ANSWER KEY**  
**PALISADES EVENT NOTIFICATION FORM**

<input type="checkbox"/> Actual Event	<input checked="" type="checkbox"/> Drill
<b>Plant Contact Information</b>	
Nuclear Power Plant: <u>Palisades</u>	
Plant Communicator: _____	Time of Communication: V.B. _____ S.O.M. _____ NRC _____
<div style="border: 1px solid black; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <span style="font-size: 48px; font-weight: bold;">2</span> </div> Plant Message	
Number Calling From: <input type="checkbox"/> Control Room <input type="checkbox"/> TSC <input type="checkbox"/> EOF <input type="checkbox"/> Other _____ Call Back Telephone Number: _____	
<b>Current Classification</b>	
<input type="checkbox"/> Unusual Event <input type="checkbox"/> Alert <input type="checkbox"/> Site Area Emergency <input checked="" type="checkbox"/> General Emergency <input type="checkbox"/> Termination	
This Classification was declared as of:    Date: <b>Today</b> Time: <b>Within 15 minutes from start of JPM</b>	
<b>Reason for Classification</b>	
<input type="checkbox"/> Abnormal Rad Levels / Radiological Effluent  <input type="checkbox"/> Hazards and Other Conditions Affecting Plant Safety	<input type="checkbox"/> System Malfunctions  <input type="checkbox"/> Cold Shutdown / Refueling System Malfunction  <input type="checkbox"/> Independent Spent Fuel Storage Installation Events  <input checked="" type="checkbox"/> Fission Product Barrier Degradation
IC Number: <b>FG1.1</b>	
<b>Radiological Release in Progress Due to Event</b>	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Protective Action Recommendations</b>	
<input type="checkbox"/> None <b>Recommend the following protective actions; implement the State of Michigan KI plan and all other areas monitor and prepare.</b>	
Evacuation of Areas(s): <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
In-Place Shelter of Area(s): <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
Clear Lake Area(s): <input checked="" type="checkbox"/> 6 (L) <input type="checkbox"/> 7 (L)	
PAR based on Dose Calculations (complete and provide EMD 32b) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
PARs beyond 10 Miles (complete and provide EMD 32b) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
<b>Meteorological Data</b>	
Wind Direction (degrees): From <b>260</b> To <b>80</b>	Wind Speed (MPH): <b>19</b>
Stability Class: <b>B</b>	Precipitation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Emergency Director Approval: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

## **SIMULATOR OPERATOR INSTRUCTIONS**

- No Simulator setup required.
- Prepare EI-3, Attachment 1 completed for notification #1
- Prepare Dose Assessment form
- Prepare EI-6.7 Attachment 1 with the following data and then sign and date form:
  - Wind Speed is 19 mph
  - Wind Direction is from 260 degrees
  - Stability 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:

- An event occurred which resulted in the declaration of General Emergency FG1.1.
  - A Loss of the Primary Coolant System (PCS)
  - A Loss of Containment (CNMT)
  - A Potential Loss of the Fuel Clad Barrier (FC)
- Initial PARs resulted in an Initial Evacuation of Area 1 and lake area 6.

## INITIATING CUES:

You are the Shift Manager (acting as the Emergency Plant Manager). You are to determine PARs and complete the Palisades Event Notification Form for the change in rapidly deteriorating plant / meteorological conditions, as follows:

- Containment High Range Radiation Monitors indicate 30,000 R/hr.
- Field Monitoring Teams report a dose of 1.3 R/hr at the site boundary.
- Initial dose assessment reviews support the Field Monitoring Team's survey.
- Meteorological data as given on EI-6.7 Att 1, "Plant Site Meteorological System Worksheet."

**This JPM is Time Critical.**