

NRC REGION III
INITIAL LICENSE EXAM
JOB PERFORMANCE MEASURE

JPM: RO, SRO-U SYSTEM c

TITLE: OPEN PORV BLOCK VALVES

CANDIDATE: _____

EXAMINER: _____

JOB PERFORMANCE MEASURE
DATA PAGE

Task: Open PORV Block Valves

Alternate Path: YES

Facility JPM #: NEW

K/A: 010A2.03 Importance: RO: 4.1 SRO: 4.2

K/A Statement: Ability to (a) predict the impacts of the following malfunctions or operations on the PZR PCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: PORV failures.

Task Standard: At least one PORV in service per SOP-1B, Attachment 6.

Preferred Evaluation Location: Simulator In Plant

Preferred Evaluation Method: Perform Simulate

References: SOP-1B, Primary Coolant System – Cooldown

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:

- SOP-1B, Attachment 6, Opening of PORV Isolation Valves, Rev. 8
- GCL 9-1, Mode 3 \geq 525°F To Mode 4 Or Mode 5 Checklist, Rev. 28

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 has been taken off-line, with the reactor tripped.

P-8A Auxiliary Feedwater Pump is in service supplying feedwater to both S/Gs.

PCS boron has been verified at Cold Shutdown concentration.

GCL-9-1, Mode 3 \geq 525°F To Mode 4 Or Mode 5 Checklist, is complete through step 2.10.

INITIATING CUES:

The CRS directs you to open the PORV Isolation Valves, MO-1042A and MO-1043A, per step 2.11 of GCL-9-1, Mode 3 \geq 525°F To Mode 4 Or Mode 5 Checklist.

Proc. Step	TASK ELEMENT 1	STANDARD	Grade
n/a	Locate GCL 9-1	GCL-9-1 located.	S U
<p>Comment: <i>Evaluator provides the operator a working copy GCL 9-1, completed through Step 2.10.</i></p>			

Proc. Step	TASK ELEMENT 2	STANDARD	Grade
GCL 9-1, Sep 2.11	<p>OPEN PORV Isolation Valves. Refer to SOP-1B, Attachment 6, Opening Of PORV Isolation Valves.</p> <ul style="list-style-type: none"> ▪ MO-1042A ▪ MO-1043A 	SOP-1B, Att. 6 located	S U
<p>Comment: <i>Evaluator provides the operator a working copy of SOP-1B, Attachment 6.</i></p>			

Proc. Step	TASK ELEMENT 3	STANDARD	Grade
2.0a.1	<p>ENSURE the following conditions:</p> <ol style="list-style-type: none"> 1. HS-1042B (HS-1043B), PZR to Quench Tank T-73 in CLOSE position. 	HS-1042B (HS-1043B) checked in CLOSE position.	S U
<p>Comment:</p>			

Proc. Step	TASK ELEMENT 4	STANDARD	Grade
2.0a.2	ENSURE the following conditions: 2. MO-1042A (MO-1043A), Power Relief Valve Isolation closed.	MO-1042A (MO-1043A) checked closed.	S U
Comment:			

Proc. Step	TASK ELEMENT 5	STANDARD	Grade
2.0a.3	ENSURE the following conditions: 3. PCS pressure control established: SOP-1 2010 to 2100 psia	PCS pressure checked between 2010 and 2100 psia	S U
Comment:			

Proc. Step	TASK ELEMENT 6	STANDARD	Grade
2.0b	PLACE HS-1042B (HS-1043B), PZR Quench Tank T-73 to OPEN for approximately 15 seconds, AND THEN PLACE to CLOSE, leaving handswitch in CLOSE position when complete.	HS-1042B (HS-1043B) placed to OPEN for approx. 15 seconds AND THEN HS-1042B (HS-1043B) placed to CLOSE, with handswitch left in CLOSE position.	S U
Comment: NOTE: Operator can do either "channel" first. Typically the left side valve operations (non-parentheses) are completed first. CRITICAL STEP			

Proc. Step	TASK ELEMENT 7	STANDARD	Grade
2.0c	<p>OPERATE HS-1042A (HS-1043A), Power Relief Valve Isolation intermittently to the OPEN position until either of the following conditions is observed:</p> <ol style="list-style-type: none"> 1. MO-1042A (MO-1043A) red position indication lamp lights (indicates valve is 5% open, green position indication lamp is also lighted at this point). 2. PRV-1042B (PRV-1043B), Power Operated Relief opens <u>AND</u> then reseats, <u>THEN</u> repeat Step 2.0c. 	HS-1042A (HS-1043A) operated intermittently until red light lights.	S U
<p>Comment:</p> <p>NOTE: 5 seconds after MO-1042A (MO-1043A) has a red light, associated PORV will open and stay open. This will require the block valve to be closed.</p> <p>CRITICAL STEP</p>			

Proc. Step	TASK ELEMENT 8	STANDARD	Grade
1.0a.1	<p><u>IF</u> a PORV opens during performance of Step 2.0c <u>AND</u> the applicable PCS pressure action limit is exceeded (SOP-1, 1800 psia), <u>THEN</u> the following actions shall be taken:</p> <ol style="list-style-type: none"> 1. CLOSE affected PORV Isolation Valve. 	MO-1042A (MO-1043A), PORV Isolation Valve closed.	S U
<p>Comment:</p> <p>NOTE: 5 seconds after MO-1042A (MO-1043A) has a red light, associated PORV will open, necessitating closing its block valve that was opened.</p> <p>Evaluator: Operator action by procedure states that if 1800 psia is exceeded, affected PORV Isolation Valve must be closed. Operator should close valve before this pressure is reached.</p> <p>CRITICAL STEP</p>			

Proc. Step	TASK ELEMENT 9	STANDARD	Grade
n/a	<p>The following alarms annunciate with PORV opening:</p> <ol style="list-style-type: none"> 1. EK-1373, SV AND/OR PORV OPEN, (Audible Acoustic Monitor alarm on back of Panel C-11A in alarm from FI-1042B Accelerometer (#4) Hi noise). 2. EK0743, Pressurizer PWR Operated Relief Valve Discharge HI Temp (TIA-0106, Relief and Safety Valve Discharge Temp, reads up-scale). 	<p>Following alarms are acknowledged:</p> <ol style="list-style-type: none"> 1. EK-1373, Operator Action: Refer to ONP-18; Follow Up Action: Check Acoustic Monitor Panel for open valve; Check TIA-0106 discharge temperature; Refer to ONP-23.1. 2. EK-0743, Operator Action: Refer to ONP-23.1; Follow Up Action: Evaluate desired position of MO-1042A; Refer to LCOs; Refer to ORM. 3. Acoustic Monitor ‘Reset’ pushbutton pushed to silence audible Acoustic Monitor alarm (PORV MOV Block Valve must be closed, for alarm to clear). 	S U

Comment:

NOTE: Alarms do not affect this JPM. PORV MOV Block valve must be closed by procedure. Operator should acknowledge and consult ARPs.

Evaluator Cue: If Operator begins to reference ONPs, STATE: Follow in-use SOP, ONPs will be referenced/entered if PCS leakage or loss of PZR pressure control remain evident.

Evaluator Cue: If Operator begins to reference LCOs, STATE: Another Operator will reference Technical Specifications and the ORM (Operating Requirements Manual).

Proc. Step	TASK ELEMENT 10	STANDARD	Grade
1.0a.2	<p><u>IF</u> a PORV opens during performance of Step 2.0c <u>AND</u> the applicable PCS pressure action limit is exceeded (SOP-1, 1800 psia), <u>THEN</u> the following actions shall be taken:</p> <ol style="list-style-type: none"> 2. RESTORE PCS pressure as directed by CRS. 	<p>PCS pressure restored to band as directed by CRS.</p>	S U

Comment:

Evaluator Cue: GIVE PCS pressure band of 2010 to 2100 psia, if asked by operator.

CRITICAL STEP

Proc. Step	TASK ELEMENT 11	STANDARD	Grade
1.0a.3	<p><u>IF</u> a PORV opens during performance of Step 2.0c <u>AND</u> the applicable PCS pressure action limit is exceeded (SOP-1, 1800 psia), <u>THEN</u> the following actions shall be taken:</p> <p>3. When directed by CRS, repeat Section 2.0 to open PORV Isolation Valve one additional time</p>	<p>Since PORV still indicates open, the operator will NOT perform this step.</p>	<p>S U</p>

Comment:

Evaluator Cue: If asked direction concerning repeating the steps with the PORV, direct them to perform the other PORV.

NOTE: The same sequence as above will be repeated, with the parentheses swapped for the other “channel”. The following operation will not cause a PORV opening.

Proc. Step	TASK ELEMENT 12	STANDARD	Grade
2.0a.1	<p>ENSURE the following conditions:</p> <p>1. (HS-1042B) HS-1043B, PZR to Quench Tank T-73 in CLOSE position.</p>	<p>(HS-1042B) HS-1043B checked in CLOSE position.</p>	<p>S U</p>

Comment:

Proc. Step	TASK ELEMENT 13	STANDARD	Grade
2.0a.2	<p>ENSURE the following conditions:</p> <p>2. (MO-1042A) MO-1043A, Power Relief Valve Isolation closed.</p>	<p>(MO-1042A) MO-1043A checked closed.</p>	<p>S U</p>

Comment:

Proc. Step	TASK ELEMENT 14	STANDARD	Grade
2.0a.3	ENSURE the following conditions: 3. PCS pressure control established: SOP-1 2010 to 2100 psia	PCS pressure checked between 2010 and 2100 psia	S U
Comment: NOTE: this PCS pressure band can be that which was set in JPM Task Element Step 9.			

Proc. Step	TASK ELEMENT 15	STANDARD	Grade
2.0b	PLACE (HS-1042B) HS-1043B, PZR Quench Tank T-73 to OPEN for approximately 15 seconds, AND THEN PLACE to CLOSE, leaving handswitch in CLOSE position when complete.	(HS-1042B) HS-1043B placed to OPEN for approx. 15 seconds AND THEN (HS-1042B) HS-1043B placed to CLOSE, with handswitch left in CLOSE position.	S U
Comment: CRITICAL STEP			

Proc. Step	TASK ELEMENT 16	STANDARD	Grade
2.0c	<p>OPERATE (HS-1042A) HS-1043A, Power Relief Valve Isolation intermittently to the OPEN position until either of the following conditions is observed:</p> <ol style="list-style-type: none"> 1. (MO-1042A) MO-1043A red position indication lamp lights (indicates valve is 5% open, green position indication lamp is also lighted at this point). 2. (PRV-1042B) PRV-1043B, Power Operated Relief opens <u>AND</u> then reseats, <u>THEN</u> repeat Step 2.0c. 	(HS-1042A) HS-1043A operated intermittently until red light lights.	S U
<p>Comment: NOTE: PORV does not open and stays closed.</p> <p>CRITICAL STEP</p>			

Proc. Step	TASK ELEMENT 17	STANDARD	Grade
2.0d	<p><u>IF</u> (PRV-1042B) PRV-1043B, Power Operated Relief opens <u>AND</u> then reseats, <u>THEN</u> repeat Step 2.0c.</p>	Determines that this step does not apply.	S U
<p>Comment:</p>			

Proc. Step	TASK ELEMENT 18	STANDARD	Grade
2.0e	<p><u>WHEN</u> the following conditions exist,</p> <p>1. (MO-1042A) MO-1043A, Power Relief Valve Isolation is 5% open (red position indication lamp lit).</p> <p>2. (PRV-1042B) PRV-1043B, Power Operated Relief is closed.</p> <p><u>THEN FULLY OPEN</u> (MO-1042A) MO-1043A, Power Relief Isolation.</p>	(MO-1042A) MO-1043 A to the full open position.	S U
<p>Comment:</p> <p>CRITICAL STEP</p>			

Proc. Step	TASK ELEMENT 19	STANDARD	Grade
2.0f	Repeat this attachment for remaining PORV Channel Isolation Valve.	Operator asks if CRS wants this done.	S U
<p>Comment:</p> <p>Evaluator Cue: If asked by operator to open other channel PORV block valve, <u>REPLY</u> no for the present time.</p>			

Proc. Step	TASK ELEMENT 20	STANDARD	Grade
n/a	Notify the CRS that one PORV Block Valve is open.	CRS notified that one PORV Block Valve is open.	S U
<p>Comment:</p>			

END OF TASK

CANDIDATE CUE SHEET

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

INITIAL CONDITIONS:

The Plant has been taken off-line, with the reactor tripped.

P-8A Auxiliary Feedwater Pump is in service supplying feedwater to both S/Gs.

PCS boron has been verified at Cold Shutdown concentration.

GCL-9-1, Mode 3 \geq 525°F To Mode 4 Or Mode 5 Checklist, is complete through step 2.10.

INITIATING CUES:

The CRS directs you to open the PORV Isolation Valves, MO-1042A and MO-1043A, per step 2.11 of GCL-9-1, Mode 3 \geq 525°F To Mode 4 Or Mode 5 Checklist.

SIMULATOR OPERATOR INSTRUCTIONS

- IC-69
- MFPs tripped, P-8A, AFWP, inservice.
- NOP and NOT (2060#, 532 F)
- Banks of backup PZR heaters secured for reduced spray flow (GCL 9-1, step 2.8)
- Two PCPs secured with associated PZR Spray Valves closed (GCL-9-1, Steps 2.9 and 2.10)
- Double charging and letdown inservice.
- Cover gas valved out to VCT, N₂ tag next to VCT vent switch

USE CAE or:

Location	Description	Delay	Ramp	Event	Value	Final	Insert Time
Malfunctions:							
(NONE)							
RC 19	PORV Relief Valve Partially Lifts	5 sec.				100	Trigger 1
RC 20	PORV Relief Valve Partially Lifts	5 sec.				100	Trigger 2
Remotes:							
CV-1042B-R	PORV Relief Valve Open Light ON	5 sec.				ON	Trigger 1
CV-1043B-R	PORV Relief Valve Open Light ON	5 sec.				ON	Trigger 2
Overrides:							
(NONE)							
Triggers:							
Number	Event	Action		Description			
1	ZLO2P(16).and..not.et_array(2)						
2	ZLO2P(19).and..not.et_array(1)	set thkkarc20=1.0					
3							
4							