

Job Performance Measure "D" Alternate

Facility: **Vogtle**

Task No: V-LO-TA-12004

Task Title: Cool Down the RCS Using RHR Train A

JPM No: V-NRC-JP-13011-HL17

K/A Reference: 005A4.01 RO 3.6 SRO 3.4

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ Plant _____

NOTE: For time considerations, the Candidates may be allowed to "pre-brief" this JPM and allowed to review 13011-1 prior to starting the JPM.

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A plant cooldown from Mode 4 to Mode 5 is in progress in accordance with UOP 12006-C, Section C.

Train A RHR has been placed in service for cooldown per 13011-1, "Residual Heat Removal System".

RHR Train A Letdown has been established and RHR Train A warm-up is complete.

Initiating Cue: The SS has directed you to initiate full flow to the RCS and cooldown the RCS to $310^{\circ}\text{F} \pm 2^{\circ}\text{F}$ and stabilize RCS temperature within that band.

Task Standard: Candidate initiates full RHR flow to the RCS, cools down the RCS to 310°F and stabilizes RCS temperature.

Required Materials: 13011-1, "Residual Heat Removal System" Ver. 69.0. Section 4.3 performed through step 4.3.8 for warm-up of RHR Train A. Section 4.5 for placing RHR letdown in service is also completed. These steps will be initialed off by an exam team member.

General References: None

Time Critical Task: No

Validation Time: 12 minutes

SIMULATOR SETUP:

Simulator Setup:

Reset to IC # 220 for HL-17 NRC Exam
(SNAP # TO BE DETERMINED LATER)

Simulator Setup from Scratch:

1. Reset to 21 (BOL mode 4)
2. Ensure both trains of CCW in service
3. Set RF RH01A1 to NORMAL
4. Set RF RH01A2 to NORMAL
7. Set RF RH07C to IN
9. Adjust steam dumps to obtain a 0 deg F/hr cooldown rate if necessary
10. Set RF SI10 A to Rkout
11. Set RF RH2 and place RHR letdown in service.
12. Set potentiometer for FIC-0618 to 3.2
13. Perform section 4.3 through step 4.3.8
14. Ack/Reset alarms
15. Freeze simulator

Note to Simulator Operator: Remove green dots from Train A QEAB annunciators.

Setup time: 3 minutes

Performance Information

Critical steps denoted with an asterisk

Step 4.3.9 WHEN RHR warm up is completed, initiate full flow to the RCS as follows:

NOTES

- >3200 gpm indicated flow ensures >3000 gpm actual flow for all temperatures.
- 3000 gpm RHR flow is required for Mode 6.

Standard: Candidate reads notes.

Comment:

CAUTION

If the RCS is under vacuum, a minimum flow rate of about 1200 gpm for 3 minutes is needed to refill the voided section of RHR discharge piping. 1500 gpm should NOT be exceeded during the refill period. Flow rates are to be adjusted very slowly any time flow is being increased due to possible water hammer concerns.

Standard: Candidate reads caution again and it still does not apply.

Comment:

***Step 4.3.9 a. Throttle open the RHR HEAT EXCH BYPASS for Train A using 1-FIC-618A to the desired flow rate (nominally 3000 gpm).**

Standard: Candidate depresses the UP arrow pushbutton on 1-FIC-618A until flow is approximately 3000 gpm on 1FI-0618A.

Comment:

Step 4.3.9 b. Verify the RHR PMP-A MINIFLOW ISO VLV 1-FV-0610 closes.

Standard: Candidate verifies 1HS-0610 GREEN Light - ON
RED Light - OFF

Comment:

CAUTION

The RHR Heat Exchanger Train A Bypass Flow Controller Potentiometer should be set for a minimum flow of 3000 gpm (Pot setting: 3.6 for 3000 gpm, 4.1 for 3200 gpm) prior to placing controller in AUTO. The potentiometer setting for the desired flow rate (gpm) is approximately equal to $(\text{Desired Flow}/5000)^2 \times 10$.

Standard: Candidate reads caution.

Comment:

***Step 4.3.9 c. Sets RHR Heat Exchanger Train A Bypass Flow Controller Potentiometer to 3.6 (3000 gpm) or 4.1 (3200 gpm).**

Place the RHR TRN-A HEAT EXCH BYPASS Flow Controller 1-FIC-0618A in AUTO if desired.

NOTE to examiner: The snap has the pot set at 3.2 which is set too low. The candidate will be required to manipulate to pot to the correct setpoint.

Standard: Candidate verifies potentiometer set for 3.6 or 4.1 and depresses the AUTO/MAN pushbutton and verifies the AUTO portion of the light illuminates.

Comment:

NOTE

During Solid Plant conditions, only 1-PIC-0131 should be used for letdown flow control and 1-HV-0128 should remain in the FULL OPEN position.

Standard: Candidate reads note

Comment:

Step 4.3.9 d. Adjust the LOW PRESSURE LETDOWN Controller 1-PIC-0131 and/or LETDOWN FROM RHR Control Valve 1-HC-0128 as required to maintain desired letdown flow.

Standard: Candidate adjusts 1-HC-128 as necessary to maintain 100 gpm flow on 1-FI-0132C. 1-PIC-0131 may be also adjusted to control flow.

Comment:

***Step 4.3.9 e. Slowly throttle RHR TRN A HEAT EXCH OUTLET using 1-HIC-606A to establish desired RCS cooling.**

CUE: If asked, “Refer to initial conditions”.

Standard: Candidate depresses and releases the UP arrow pushbutton on 1-HIC-606A in increments allowing 1-FIC-0618A to adjust to maintain 3000 gpm and monitors cooldown rate and RCS cold leg temperatures to verify cooldown rate is rising.

Candidate stabilizes RCS temperature at $315^{\circ}\text{F} \pm 2^{\circ}\text{F}$

Comment:

Step 4.3.10 IF RCS cooling using both RHR trains is desired, place the second train in service:

IF RHR B is in STANDBY READINESS, use Section 4.4.

IF RHR B is NOT in STANDBY READINESS, use Section 5.3.

CUE: If asked, “Refer to initial conditions”.

Standard: Candidate determines both trains are not desired.

Comment:

Step 4.3.11 Establish RCS Cool down per 12006 C, "Unit Cool down To Cold Shutdown."

CUE: Another operator will perform the Unit Cooldown to Cold Shutdown.

Standard:

Comment:

Terminating cue: Candidate returns initiating cue sheet

Verification of Completion

Job Performance Measure No. V-NRC-JP-13011-HL17

Examinee's Name:

Examiner's Name:

Date Performed:

Number of Attempts:

Time to Complete:

Question Documentation:

Question: _____

Response: _____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

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