OPS EXAM

SYSTEM JPM'S

FINAL = DRAFT

NRC ILT EXAM
JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To An Uncoupled Control Rod

TASK NUMBER: 4000040401

JPM NUMBER: NRC-JPM-001 (Source: Direct HC Exam Bank 305H-JPM.BF011-00)

ALTERNATE PATH: [X]

K/A NUMBER: 201003 A2.02

IMPORTANCE FACTOR: 3.7 (RO) 3.8 (SRO)

APPLICABILITY:
EO [ ] RO [X] STA [ ] SRO [X]

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-ST.BF-0001 Rev 27
HC.OP-AB.IC-0001 Rev 4

TOOLS, EQUIPMENT AND PROCEDURES:
OD-7 print out of rod positions, Signed on copy of HC.OP-ST.BF-0001 for rod 10-15 ONLY.

VALIDATED JPM COMPLETION TIME: (11) Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author

NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To An Uncoupled Control Rod

TASK NUMBER: **4000040401**

INITIAL CONDITIONS:

1. The Plant is operating at 100% power.
2. Maintenance was performed on the position indication circuit of rod 10-15
3. The maintenance is complete.
4. As part of the retest requirements, performance of HC.OP-ST.BF-0001 Control Rod Drive Exercise – Weekly is required for control rod 10-15 only.
5. The "ON DUTY" Reactor Engineer has been notified that control rod 10-15 will be exercised IAW HC.OP-ST.BF-0001.
6. The Reactor Engineer has approved exercising rod 10-15 at 100% power.
7. An OD-7 printout of current control rod positions has been generated.
8. Stall flows are NOT required.

INITIATING CUE:

Exercise control rod 10-15 IAW HC.OP-ST.BF-0001.

Successful Completion Criteria:

1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains procedure HC.OP-ST.BF-0001.	**Examiner Cue: PROVIDE the Operator with the mark-up copy of HC.OP-ST.BF-0001.**		
		Operator reviews precautions and limitations.	Operator reviews precautions and limitations. **Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.**		
		Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1.		
	5.1	**LOG** test start time in the Control Room log(s).	Operator requests the procedure be logged in the Control Room log. **Examiner Cue: The start time for HC.OP-ST.BF-0001 for retest of rod 10-15 only, has been logged in the Control Room log.** Operator then initials the step. **Examiner Note:** It is not critical to initial the procedure steps.		
	5.2	**ENSURE** all prerequisites of Section 2.0 are satisfied.	Operator ensures that all prerequisites have been satisfied. **Examiner Cue: If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.** Operator then initials the step.		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.3	**ENSURE** Attachment 1, Section 1.0 has been completed AND Regular Surveillance OR Retest is indicated.	Operator observes Attachment 1, Section 1.0 has been completed AND Retest is indicated. Operator then initials the step.		
	5.4	**OBTAIN** a computer printout of the current Control Rod positions. (e.g. OD-7)	Operator observes an OD-7 printout has been generated. Operator then initials the step.		
	5.5	**OBSERVE** proper response of the Nuclear Instrumentation while withdrawing OR inserting all Control Rods.	Operator reviews the requirement to observe proper response of the Nuclear Instrumentation while withdrawing OR inserting all Control Rods. Operator then initials the step.		
* #	5.6	START TIME: _____ **SELECT** a withdrawn Control Rod AND **RECORD** the initial Control Rod position on Attachment 2.	Operator presses ROD SELECT MODULE 10-15 pushbutton and records the initial rod position of 48 on Attachment 2. The operator then initials the appropriate procedure step.		
	5.7	**OBSERVE** approximately 6 gpm total flow through both the insert AND withdraw Stabilizing Valves as indicated on CRID's point B2117. **[70044199]**	Operator observes approximately 6 gpm total flow through both the insert AND withdraw Stabilizing Valves as indicated on CRID's point B2117. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

• #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.8	**INSERT** the selected Control Rod one notch (or as directed by Reactor Engineering) AND **PERFORM** the following: [**T/S 4.1.3.1.2, T/S 4.1.3.7**]	Operator mometarily presses the ROD MOTION CONTROLS INSERT pushbutton.		
	5.8.1	**ENSURE** proper operation of the RPIS.	Operator observes the CONTROL ROD POSITION FOUR ROD DISPLAY, RWM, or CRIDS indicates control rod movement to position 46. The operator then initials the appropriate procedure steps.		
	5.8.2	IF a Control rod is inadvertently positioned at other than the desired position, THEN **IMPLEMENT** the associated guidance contained in the Reactor Engineering Weekly Guidance AND **CONTACT** Reactor Engineering.	**Examiner Cue: IF the Operator requests Reactor Engineering guidance, THEN instruct the Operator to return the control rod to position 48.**		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.8.3	IF the control rod does not insert to the next notch after one attempt, **PERFORM** the following: A. **HOLD** the INSERT PB until the control rod reaches the desired position. THEN **RELEASE** INSERT PB. B. **RECORD** the control rod AND problem description in "Remarks Section" of Attachment 1.	The Operator should not need to execute this action, and marks the step as N/A (not applicable). If the Operator does need to perform the step, then the step is initialed.		
*	5.8.4	**INDICATE** the condition of RPIS indication on Attachment 2.	Operator then indicates the RPIS indication is SAT on Attachment 2. The operator then initials the appropriate procedure step.		
	5.9	IF the position recorded in Step 5.6 is an intermediate position, THEN **PERFORM** Step 5.9.1, otherwise, **GO TO** Step 5.9.2 to return the control rod to its original position:	Operator determines the position recorded in Step 5.6 is NOT an intermediate position, continues at step 5.9.2 to return the control rod to its original position. The operator then initials the appropriate procedure step.		
*	5.9.2	**WITHDRAW** the control rod to position 48 AND **PERFORM** the following while giving the selected Control Rod a continuous withdraw signal: **[T/S 4.1.3.6, T/S 4.1.3.7]**	Operator simultaneously presses AND holds both the WITHDRAW pushbutton AND the CONTINUOUS WITHDRAW pushbutton.		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		A. **OBSERVE** the following as indication of the Control Rod being coupled: 1. ROD OVERTRAVEL alarm does NOT annunciate.	Operator observes OHA C6-F3 ROD OVERTRAVEL DOES annunciate.		
		2. Red Full Out light illuminates on the Full Core Display.	Operator observes the red FULL OUT light on the Full Core Display EXTINGUISHES.		
		3. RPIS indicates the Control Rod is full out (48).	Operator observes RPIS does NOT indicate position 48.		
		4. Proper response of the Nuclear Instrumentation while withdrawing the Control Rod.	Operator recognizes the expected response of the Nuclear Instrumentation while withdrawing the Control Rod. **Examiner Note:** The expected response for a rod from 46 to 48 is negligible.		
*		B. **INDICATE** on Attachment 2 the condition of Coupling Check.	Operator indicates the coupling check is UNSAT on Attachment 2. The operator then initials the appropriate procedure steps.		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		C. **PERFORM** the following for stall flow:	Based on the Initial Conditions, Operator determines Stall Flow is NOT required. Operator marks the step "N/A". **Examiner Note:** Due to the failed coupling check, this step may not be performed until later, or may not be performed at all.		
*		D. IF the CRD over travels, THEN **IMPLEMENT** HC.OP-AB.IC-0001(Q), Control Rod.	Operator informs the CRS of uncoupled control rod and entry condition into HC.OP-AB.IC-0001. **Examiner Cue: Acknowledge the report and DIRECT the Operator to implement Condition D of HC.OP-AB.IC-0001.** **Examiner Note:** Repeating back the order is NOT critical.		
*		HC.OP-AB.IC-0001 Symptoms • Rod Travels Past Position 48 • OHA C6-F3 ROD OVERTRAVEL	Operator recognizes uncoupled rod and informs CRS. **Examiner Cue: Repeat back the report from the Operator and direct the Operator to implement Condition D of HC.OP-AB.IC-0001 Control Rod** Operator repeats back the order. **Examiner Note:** Repeating back the order is NOT critical.		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		HC.OP-AB.IC-0001 Condition D Uncoupled Rod and Movement Permitted by RWM	N/A	N/A	N/A
	D.1	**OBTAIN** Reactor Engineering guidance to recouple the Control Rod.	Operator request Reactor Engineering guidance to recouple the Control Rod. **Examiner Cue: INFORM the Operator that Reactor Engineer is direction is to INSERT control rod 10-15 to position 44 using single notch insertions.** Operator repeats back the order.		
	D.2	IF Reactor Engineering guidance CANNOT be obtained, THEN **RECOUPLE** the Control Rod as follows:	Operator determines step D.2 is NOT applicable.		
* #		a. **INSERT** the CRD no more than 2 notches from the point of discovery.	Operator inserts rod 10-15 to position 44 using single notch insertion. **Examiner Note:** Due to the rod being at Overtravel, it will take three single notch insertions to insert the rod to 44. The first insertion will settle the rod at 48 and may bring in OHA C6-E3. **Examiner Cue: IF necessary, THEN DIRECT the Operator to continue single notch insertions until rod 10-15 is at position 44.**		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
* #		b. **WITHDRAW** the Control Rod to its original position AND **VERIFY** expected response.	Operator withdraws rod 10-15 to position 48, verifying expected response. **Examiner Note:** The expected response for a rod from 44 to 48 is negligible. **Examiner Cue: IF the Operator requests whether to use single notch or continuous withdraw, THEN DIRECT the Operator to use single notch withdraw.**		
* #		c. **PERFORM** a coupling check on the associated control rod IAW ST.BF-0001.	Operator performs coupling check IAW HC.OP-ST.BF-0001. **Examiner Cue: PROVIDE the Operator with a second copy of HC.OP-ST.BF-0001 to refer to for the second coupling check.**		
		HC.OP-ST.BF-0001	N/A	N/A	N/A
*	5.9.2	**WITHDRAW** the control rod to position 48 AND **PERFORM** the following while giving the selected Control Rod a continuous withdraw signal: **[T/S 4.1.3.6, T/S 4.1.3.7]**	Operator simultaneously presses AND holds both the WITHDRAW pushbutton AND the CONTINUOUS WITHDRAW pushbutton.		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		A. **OBSERVE** the following as indication of the Control Rod being coupled: 1. ROD OVERTRAVEL alarm does NOT annunciate.	Operator observes OHA C6-F3 ROD OVERTRAVEL does NOT annunciate.		
		2. Red Full Out light illuminates on the Full Core Display.	Operator observes the red FULL OUT light on the Full Core Display illuminates.		
		3. RPIS indicates the Control Rod is full out (48).	Operator observes RPIS indicates the Control Rod is full out (48).		
		4. Proper response of the Nuclear Instrumentation while withdrawing the Control Rod.	Operator recognizes the expected response of the Nuclear Instrumentation while withdrawing the Control Rod. **Examiner Note:** The expected response for a rod at 48 is negligible.		

NAME: _____
DATE: _____

SYSTEM: **Control Rod and Drive Mechanism**
TASK: **Respond To An Uncoupled Control Rod**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		B. **INDICATE** on Attachment 2 the condition of Coupling Check.	Operator indicates the coupling check is SAT on Attachment 2. The operator then initials the appropriate procedure steps. **Examiner Note: The Operator may either transition back to HC.OP-AB.IC-0001 step D.3 at this point OR the Operator may mark HC.OP-ST.BF-0001 steps 5.9.2.C & D as N/A (not applicable) and then complete steps 5.9.2.E & F prior to transitioning back to HC.OP-AB.IC-0001 step D.3. Either course of action is acceptable.**		
		HC.OP-AB.IC-0001 Condition D Uncoupled Rod and Movement Permitted by RWM	N/A	N/A	N/A
	D.3	**RESTRICT** all further withdrawals of this rod to Single Notch movement until repairs have been completed. STOP TIME: _____	Operator informs the CRS that all further withdrawals of this rod should be restricted to Single Notch movement until repairs have been completed. **Examiner Cue: Repeat back report from Operator and give the Terminating Cue.**		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

NRC ILT EXAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To An Uncoupled Control Rod

TASK NUMBER: 4000040401

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

INITIAL CONDITIONS:

1. The Plant is operating at 100% power.
2. Maintenance was performed on the position indication circuit of rod 10-15
3. The maintenance is complete.
4. As part of the retest requirements, performance of HC.OP-ST.BF-0001 Control Rod Drive Exercise – Weekly is required for control rod 10-15 only.
5. The "ON DUTY" Reactor Engineer has been notified that control rod 10-15 will be exercised IAW HC.OP-ST.BF-0001.
6. The Reactor Engineer has approved exercising rod 10-15 at 100% power.
7. An OD-7 printout of current control rod positions has been generated.
8. Stall flows are NOT required.

INITIATING CUE:

Exercise control rod 10-15 IAW HC.OP-ST.BF-0001.

INITIAL CONDITIONS

IC

Initial	

_____ **INITIALIZE** the simulator to IC#95.

_____ **SELECT** rod 34-03 (or any rod except 10-15) on the Rod Select Module.

PRIOR TO TRAINING (Test RMU set points, procedures, panel levels)

Initial	Description

_____ **ENSURE** two copies of HC.OP-ST.BF-0001 are available, marked up for rod 10-15 ONLY, and with Step 5.1 initialed.

_____ **ENSURE** OD-7 for IC#95 is available.

_____ **COMPLETE** Attachment 2 "Simulator Ready-for-Training/Examination Checklist" of NC.TQ-DG.ZZ-0002(Z).

EVENT TRIGGERS

Initial	ET #	Description	
	1	EVENT ACTION: COMMAND: PURPOSE:	**lcvposx(29) > 770** // Rod 10-15 Overtravel Senses 10-15 withdrawn past 48.
	2	EVENT ACTION: COMMAND: PURPOSE:	**et_array(1) >= 1.0 && lcvposx(29) < 740** // Rod 10-15 Overtravel and inserted **dmf cd041015** Deletes uncoupled rod after it has been inserted more than one notch IAW AB

NRC ILT EXAM
JOB PERFORMANCE MEASURE
JPM/SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CD041015 Rod 10-15 Uncoupled	---	---	NONE	---	---

REMOTE/FULL FUNCTION SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

I/O OVERRIDE SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
				NONE		

59					48	48	48	48	48	48	48				
55				48	48	24	48	48	48	24	48	48			
51			48	48	48	48	48	48	48	48	48	48	48		
47		48	48	14	48	48	48	0	48	48	48	14	48	48	
43	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
39	48	24	48	48	48	0	48	48	48	0	48	48	48	24	48
35	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
31	48	48	48	0	48	48	48	0	48	48	48	0	48	48	48
27	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
23	48	24	48	48	48	0	48	48	48	0	48	48	48	24	48
19	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
15		48	48	14	48	48	48	0	48	48	48	14	48	48	
11			48	48	48	48	48	48	48	48	48	48	48		
07				48	48	24	48	48	48	24	48	48			
03					48	48	48	48	48	48	48				
	02	**06**	**10**	**14**	**18**	**22**	**26**	**30**	**34**	**38**	**42**	**46**	**50**	**54**	**58**

DISABLE
FULL OUT
DISPLAY

NRC ILT EXAM
JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Residual Heat Removal / LPCI Injection Mode

TASK: Respond to RPV level unknown / RPV Flooding

TASK NUMBER:

JPM NUMBER: NRC-JPM-002 **(New JPM)**

ALTERNATE PATH: [X]

K/A NUMBER: 203000.K5.02

IMPORTANCE FACTOR: 3.5 (RO) 3.7 (SRO)

APPLICABILITY:
EO [ ] **RO** [ ] **STA** [ ] **SRO** [X]

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-EO.ZZ-0101 Rev 10 & HC.OP-EO.ZZ-0206 Rev 6

TOOLS, EQUIPMENT AND PROCEDURES: HC.OP-EO.ZZ-0101 & HC.OP-EO.ZZ-0206

VALIDATED JPM COMPLETION TIME: 20 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: _____

APPROVAL:

NRC Exam Author _____ **NRC Chief Examiner**

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] **SAT** [ ] **UNSAT**

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal / LPCI Injection Mode

TASK: Respond to RPV level unknown / RPV Flooding

TASK NUMBER:

INITIAL CONDITIONS:

1. The simulator is currently in FREEZE.
2. The plant was operating at 100% power.
3. A small break LOCA/LOOP just occurred.
4. The reactor automatically scrammed as required and all control rods fully inserted.
5. Initial SCRAM actions are complete and the mode switch is in shutdown.
6. All Emergency Diesel Generators automatically started and energized their respective 4 kV bus.
7. Reactor pressure is about 800 psig and lowering very slowly through the break.
8. Drywell pressure is about 5 and rising.
9. HPCI, RCIC, SLC, & CRD are unavailable and **NOT** recoverable.
10. There is currently **NO** injection to the RPV.
11. The RHR & CS systems are the **ONLY** systems available for injection.
12. EOP-0101 has been entered and the Reactor Level Control Leg (RC/L) is being executed.
13. EOP-0101 step RC/L-1 was just checked off and **ALL** of the RPV level indications are behaving erratically with some level indicators showing a rising trend while others are showing a lowering trend.

INITIATING CUE:

You are the CRS and you have just been informed that **ALL** RPV level instruments have failed and that RPV level is **UNKNOWN.** Continue in the RPV Level Control Leg of EOP-0101 beginning at step **RC/L-2**, AND take action as needed to assure adequate core cooling.

Take a few minutes to orient yourself in the simulator & determine the procedural actions that need to be taken. **WHEN** you state that you are ready, **THEN** the simulator will be taken out of FREEZE and you will execute the required procedural actions as the Reactor Operator.

Notify me when you are ready to take the simulator out of FREEZE.

Successful Completion Criteria:
1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		START TIME:_____	Start time should be logged after the operator has reviewed the initial conditions and repeated the task back. **Examiner Cue: WHEN the Operator has had a chance to get oriented in the simulator & procedures AND is ready to proceed, THEN notify the simulator operator to take the simulator out of freeze.** **Examiner Note:** It is not critical to initial or check off the procedure steps.		
*	EOP-0101 RC/L-2	IF while executing the following step: RPV level **CANNOT** be determined, THEN **EXIT** RC/L AND **ENTER** EOP-0206.	**Critical step:** **This override step applies all the time while executing EOP-0101. Once the Operator reads this step, then the Operator must exit EOP-0101 and enter EOP-0206 to flood the RPV. With RPV level unknown, RPV flooding is required to assure adequate core cooling.**		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	EOP-0206 RF-1	IF while executing the following steps: • The reactor is NOT shutdown under all conditions without boron, THEN **EXIT** this procedure AND **ENTER** EOP-0206A. • RPV level can be determined AND the reactor is shutdown under all conditions without boron, THEN **EXIT** this procedure AND **ENTER** EOP-0101. • Drywell pressure CANNOT be maintained below **65 psig** OR Containment water level CANNOT be maintained below **67 ft**, THEN **TERMINATE** RPV injection from sources outside primary containment **NOT** required for adequate core cooling.	The Operator reads this override step and continues in EOP-206. **Examiner note:** None of the conditions apply at this time. The override step remains in force throughout the procedure; however, none of the conditions in the override should occur during the JPM.		
#	EOP-0206 RF-2	Is Supp Level above **0 in.**?	The Operator answers **YES** and continues to RF-3.		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
#	EOP-0206 RF-3	Irrespective of cooldown rate, OPEN 5 ADS valves, DEFEAT PCIG isolation interlocks if necessary.	The Operator will attempt to open 5 ADS valves; however, "C" ADS valve will fail to open. The Operator recognizes that the "C" ADS valve failed to open and continues to step RF-4. The operator should check that RPV pressure is dropping. The Operator may call out to defeat the isolation, but this may be done later and is not critical for this JPM if not called out. **Examiner note:** The Operator must verify 5 ADS valves are open by observing the acoustic position indication on the PAMS panel. The RED light indications right next to the control switches ONLY monitors power to the solenoids NOT valve position. **Examiner note:** The Operator may immediately open a non-ADS SRV without reference to EOP-0206, which satisfies RF-4 & RF-5, and this is SATISFACTORY.		
#	EOP-0206 RF-4	Can 5 ADS valves be opened?	The Operator will answer NO and proceed to step RF-5.		
#	EOP-0206 RF-5	**OPEN** SRVs <u>UNTIL</u> 5 SRVs are open.	The Operator will open NON-ADS SRVs until 5 SRVs are open.		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
#	EOP-0206 RF-6	Can at least 5 SRVs be opened?	The Operator will answer **YES** and proceed to RF-7.		
#	EOP-0206 RF-7	**CLOSE** the following valves: • MSIVs • MSL Drains • RCIC Steam Line Isolation Valves	The Operator verifies that the valves are closed. The valves should already be closed due to RPV level below -129 inches.		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

• #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	EOP-0206 RF-8	**COMMENCE** AND irrespective of pump NPSH limits: **RAISE** injection into the RPV UNTIL: At least 5 SRVs are open AND RPV press is not lowering AND RPV press is at least **50 psig** above Supp Chamber Press	**Critical Step:** **The Operator ensures that ALL Low Pressure ECCS Pumps start and inject at the MAXIMUM flow rate UNTIL:** **At least 5 SRVs are open** **AND** **RPV press is not lowering** **AND** **RPV press is at least 50 psig above Supp Chamber Press** **Examiner note:** The Operator may either manually start and inject or verify automatic start and inject. Once the RF-8 step conditions are met, then, and only then, is adequate core cooling assured. Reducing ECCS flow before the stated conditions are met is UNSATISFACTORY.		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	EOP-0206 RF-9	Are at least 5 SRVs open?	**Critical Step:** **The Operator answers YES and proceeds to RF-10. It would be UNSATISFACTORY to enter NO since that would require the unnecessary entry into SAG (Severe Accident Guidelines). In addition, if the Operator has NOT opened 5 SRVs at this point, then that would also be UNSATISFACTORY since adequate core cooling is NOT assured.**		
# *	EOP-0206 RF-10	Can RPV Press be maintained at least **50 psig** above Supp Chamber Press?	**Critical step:** **The Operator answers YES and proceeds to step RF-12. Once again, it would be UNSATISFACTORY to enter NO since that would require the unnecessary entry into SAG (Severe Accident Guidelines).**		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	EOP-0206 RF-12	**CONTROL** injection to maintain at least 5 SRVs open AND RPV Press at least **50 psig** above Supp Chamber Press BUT as low as practicable.	**Critical step:** **Once adequate core cooling is achieved, THEN the Operator should begin to throttle or otherwise control injection flow to maintain 5 SRVs open AND RPV Press at least 50 psig above Supp Chamber Press BUT "as low as practicable". Failure to reduce flow to "as low as practicable" will expose the SRVs and downstream tailpipes to unnecessary and potentially damaging hydraulic loads. It is acceptable to reduce flow with less than 5 SRVs open or have RPV pressure drop to less than 50 psig above Supp Chamber Press for short periods of time while reducing injection flow to "as low as practicable" *provided* that the Operator PROMPTLY recognizes the condition and increases injection flow to reestablish adequate core cooling. UNSATISFACTORY performance would include failing to take any action to reduce flow to "as low as practicable", OR allowing injection flow to be reduced such that adequate core cooling is not assured without taking PROMPT action to restore adequate core cooling.**		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal / LPCI Injection Mode**
TASK: **Respond to RPV level unknown / RPV Flooding**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		STOP TIME: _____	**Examiner Cue:** **The JPM may be terminated when injecting <u>AND</u>:** **At least 5 SRVs are open** **<u>AND</u>** **RPV press is not lowering** **<u>AND</u>** **RPV press is at least 50 psig above Supp Chamber Press** **<u>AND</u>** **The Operator attempts to maintain injection flow as low as practicable while maintaining the conditions above.**		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

NRC ILT EXAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal / LPCI Injection Mode

TASK: Respond to RPV level unknown / RPV Flooding

TASK NUMBER:

QUESTION: _____

RESPONSE: _____

RESULT: ☐ **SAT** ☐ **UNSAT**

QUESTION: _____

RESPONSE: _____

RESULT: ☐ **SAT** ☐ **UNSAT**

Simulator Setup:

- Per JPM initial conditions.
- "C" ADS valve fail to open.
- Override auto ADS.
- In freeze to start.

INITIAL CONDITIONS:

1. The simulator is currently in FREEZE.
2. The plant was operating at 100% power.
3. A small break LOCA/LOOP just occurred.
4. The reactor automatically scrammed as required and all control rods fully inserted.
5. Initial SCRAM actions are complete and the mode switch is in shutdown.
6. All Emergency Diesel Generators automatically started and energized their respective 4 kV bus.
7. Reactor pressure is about 800 psig and lowering very slowly through the break.
8. Drywell pressure is about 5 and rising.
9. HPCI, RCIC, SLC, & CRD are unavailable and **NOT** recoverable.
10. There is currently **NO** injection to the RPV.
11. The RHR & CS systems are the **ONLY** systems available for injection.
12. EOP-0101 has been entered and the Reactor Level Control Leg (RC/L) is being executed.
13. EOP-0101 step RC/L-1 was just checked off and **ALL** of the RPV level indications are behaving erratically with some level indicators showing a rising trend while others are showing a lowering trend.

INITIATING CUE:

You are the CRS and you have just been informed that **ALL** RPV level instruments have failed and that RPV level is **UNKNOWN.** Continue in the RPV Level Control Leg of EOP-0101 beginning at step **RC/L-2**, AND take action as needed to assure adequate core cooling.

Take a few minutes to orient yourself in the simulator & determine the procedural actions that need to be taken. **WHEN** you state that you are ready, **THEN** the simulator will be taken out of FREEZE and you will execute the required procedural actions as the Reactor Operator.

Notify me when you are ready to take the simulator out of FREEZE.

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Main Turbine

TASK: Roll The Main Turbine To Rated Speed

TASK NUMBER: 2450100101

JPM NUMBER: NRC-JPM-003 (Source: Direct HC Bank 305H-JPM.AC-004-00)

ALTERNATE PATH: [X]

K/A NUMBER: 241000 A3.18

IMPORTANCE FACTOR: 3.0 (RO) 3.0 (SRO)

APPLICABILITY:
EO [ ] RO [X] STA [ ] SRO [X]

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.AC-0001 Rev 54

TOOLS, EQUIPMENT AND PROCEDURES:

VALIDATED JPM COMPLETION TIME: 20 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author _____ NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: N/A

JPM PERFORMED BY: _____ **GRADE:** [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Main Turbine

TASK: Roll The Main Turbine To Rated Speed

TASK NUMBER: **2450100101**

INITIAL CONDITIONS:

1. The plant is operating at about 19% power. A Reactor startup is in progress
2. Preparations are complete to roll the main turbine.
3. The System Load Dispatcher has been notified of the impending roll.
4. The Plant Historian is available to monitor temperatures required in step 5.3.7.
5. No checks at 800 rpm are required.
6. Main Turbine has been on the Turning Gear with condenser pressure > 1.5" HgA for 6 hours.
7. The TBEO has been briefed and is standing by at the Front Standard.

INITIATING CUE:

You are an Extra NCO.
Roll the Main Turbine to 1800 RPM in accordance with HC.OP-SO.AC-0001.

Successful Completion Criteria:
1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains procedure HC.OP-SO.AC-0001.	Operator obtains the correct procedure.		
		Operator reviews precautions and limitations.	Operator reviews precautions and limitations. **Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.** **Examiner Note:** It is not critical to initial the procedure steps, nor complete Attachment 1.		
		Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.3.1.		
	5.3.1	**ENSURE** that all prerequisites have been satisfied IAW Section 2.3.	Operator ensures that all prerequisites have been satisfied. **Examiner Cue: If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.**		
	5.3.2	START TIME:_____ **ENSURE** that the lift pumps, Turning Gear Oil and Motor Suction Pump are running.	Operator observes the TURNING GEAR OP111 START, MOTOR SUCTION OP108 START, and LIFT PUMPS AP110 START through JP110 START lights are illuminated and associated STOP lights are extinguished. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.3.3	AFTER observing XR7052 TURBINE TEMPERATURE- EXPANSION recorder (Point #4 - FIRST STAGE SHELL-LOWER INNER SURFACE) on 10C650E **SELECT** turbine startup rate based on the following criteria:	Operator observes Point #4 on XR7052 TURBINE TEMPERATURE-EXPANSION recorder reads between 250-350 degF.		
		A. For starting AND loading a warm turbine - (first stage shell temp between 250-350°F),	Operator determines this step applies based on observed First Stage temperature.		
*		• **SELECT** Control, Speed-Load	Operator selects Control, Speed-Load on the DEHC HMI. The operator then initials the appropriate procedure step.		
*		• **SELECT** Speed Control, Acceleration RPM/Min Med (90)	Operator selects Speed Control, Acceleration RPM/Min Med (90) . The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		B. For starting AND loading a hot turbine - (first stage shell temp is greater than 350°F), • **SELECT** Control, Speed-Load • **SELECT** Speed Control, Acceleration RPM/Min Fast (180)	Operator determines this step does not apply, marks step "N/A". **Examiner Note:** It is critical only that the Operator does NOT select Fast (180).		
	5.3.4	**NOTIFY** System Load Dispatcher of pending Turbine roll.	Based on Initial Conditions, Operator determined this step is already complete. **Examiner Cue: IF the Operator contacts the System Load Dispatcher, THEN ACKNOWLEDGE the communication.** The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.3.5	**CHECK** the following indicators at Turbine and Front Standard (local): • Bearing Header (1CB-PI-3128) - approximately 25 psig, minimum pressure 20 psig. • Main Pump Suction (1CB-PI-3070) - 15 to 25 psig. • **CHECK** for oil flow at all 14 bearing drain sightglasses.	Operator contacts TBEO to complete this step. **Examiner Cue: REPORT the following as TBEO:** • **Bearing Header pressure is 25 psig** • **Main Pump Suction pressure is 20 psig** • **Have oil flow at all 14 bearing drain sightglasses** The operator then initials the appropriate procedure step.		
	5.3.6	**ADJUST** TIC2423 MAIN TURBINE LUBE OIL TEMP CONTROLLER to maintain oil temperature between 110-120°F for rated speed operation (Local Panel 10C105).	Operator directs TBEO adjust TIC-2423 to maintain temperature between 110-120 degF. **Examiner Cue: TRIGGER ET-2, <u>THEN</u> REPORT TIC-2423 has been set to maintain 115 degF.** The operator then initials the appropriate procedure step.		
	5.3.7	<u>IF</u> CRIDS Historian is NOT available <u>THEN</u> **PREPARE** the CRIDS computer to trend the following parameters: (Use Group Display Mode)	Operator determines CRIDS Historian IS available based on given Initial Conditions, marks step "N/A".		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.3.8	**MONITOR** Turbine Bearing temperatures and vibration during Turbine roll by referring to CRIDS page display #40 TURB/GEN BRG & LUBE OIL, which should be displayed on one CRT Screen. [**CD-053B**]	Operator ensures CRIDS page #40 is displayed on at least one CRT. The operator then initials the appropriate procedure step.		
	5.3.9	WHILE rolling the Main Turbine from turning gear to 1800 rpm in the following steps CLOSELY **MONITOR** all Main Turbine parameters in the CR AND **DIRECT** field operator(s) to listen for rubbing or unusual noises, and check for steam leaks and bearing oil flows.	Operator reads this step. The operator then initials the appropriate procedure step.		
	5.3.10	AFTER observing the parameters and operational requirements listed in Attachment 1 **ROLL** the Main Turbine as follows:	Operator reviews Attachment 1.		
		A. **SELECT** Control , Valve Limiters	Operator selects Control , Valve Limiters on DEHC HMI. The operator then initials the appropriate procedure step.		
		B. **VERIFY** the following: • All CV's, IV's and MSV's are CLOSED	Operator verifies that all CV's, IV's, and MSV's are closed. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		• Valves are properly positioned per Attachment 7.	Operator verifies that the first valve listed in Attachment 7 is positioned properly for a TURB RESET on the plant computer. THEN: **Examiner Cue: Once the Operator demonstrates the ability to verify correct valve position, THEN cue the Operator that "all other valves are in the required position".** The operator then initials the appropriate procedure step.		
		• Valve Position Limiter - NOT LIMITING is displayed.	Operator verifies Valve Position Limiter - NOT LIMITING is displayed The operator then initials the appropriate procedure step.		
		• Annunciator D3-D5, EHC Panel 10C363 is extinguished.	Operator verifies Annunciator D3-D5, EHC Panel 10C363 is extinguished. **Examiner Cue: IF the Operator questions the red stripe on the alarm window, THEN cue the Operator that "the alarm is correctly reflecting plant conditions".** The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		C. IF EITHER of the following occur during the performance of the following step, THEN IMMEDIATELY **TRIP** the turbine: • Turbine speed increases rapidly beyond the 100 rpm hold point • CV's open before the IV's	Operator reads this step. The operator then initials the appropriate procedure step.		
		D. **SELECT** Control , Speed-Load	Operator selects Control , Speed-Load on DEHC HMI. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		E. **SELECT** Speed Cmd RPM Low (100), AND **OBSERVE** the following: • MSV #2 opens immediately AND WHEN MSV #2 is full open, MSV #1, #3 and #4 open slowly. • IV #1, #3, and #5 open slowly AND WHEN IV #1, #3 and #5 are full open, IV #4, #2 and #6 (respectively) open. • Turbine Speed (RPM) is increasing as the Turbine accelerates. • Turbine rolls off of turning gear (TURNING GEAR - DISENGAGED).	Operator selects Speed Cmd RPM Low (100) while observing the following: • MSV #2 opens immediately AND WHEN MSV #2 is full open, MSV #1, #3 and #4 open slowly. • IV #1, #3, and #5 opens slowly AND WHEN IV #1, #3 and #5 are full open, IV #4, #2 and #6 (respectively) open. • SPEED INCREASING is ON as the Turbine accelerates. • Turbine rolls off of turning gear (TURNING GEAR - ENGAGED is OFF). **Examiner Note:** It is critical to select Speed Cmd RPM Low (100).		
*		F. **WHEN** Turbine Speed indicates 90-100 rpm at Digital EHC HMI panel, **CHECK** for any abnormal vibration, expansion, bearing temperatures, etc.	Operator checks for any abnormal vibration, expansion, bearing temperatures. **Examiner Cue: REPORT as TBEO 100 rpm checks are SAT in the field.**		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

• #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		G. **PERFORM** the following: 1. **OBSERVE** Point #4 FIRST STAGE SHELL - LOWER INNER SURFACE TEMPERATURE.	Operator checks Point #4 temperature.		
•		2. **OBSERVE** the following points are NOT in the "RED BAND" area: a) Point #15 DIFFERENTIAL EXPANSION ROTOR LONG (CRIDS PT A2531- MN TURB DIFF EXPN value can be used using point #15's acceptance band). b) Point #16 ROTOR EXPANSION ROTOR LONG (field measurements may be used in lieu of point 16 if approved by Production Engineering).	**Examiner Note:** Red Band areas are: Point 15: 0.00 - 0.30 AND 0.70 - 1.00 Point 16: 0.00 - 0.15 AND 1.81 - 2.00 Operator recognizes Point 15 and/or CRIDS point A2531 are in the "RED BAND". **Examiner Cue: ACKNOWLEDGE any report of Point 15 being in the RED BAND.**		

NAME: _____
DATE: _____

SYSTEM: **Main Turbine**
TASK: **Roll The Main Turbine To Rated Speed**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		3. IF the First Stage Shell temperature is less than 250°F OR IF expansion detector XR7052, Points #15 & #16, are in the "Red Band" area while "Rolling" the Turbine, THEN **TRIP** the turbine AND **PREWARM** the HP Turbine Shell, IAW section 5.2 of this procedure. STOP TIME: _____	Operator determines need to trip the turbine and informs the CRS. **Examiner Cue: IF Operator reports the need to trip the turbine, THEN DIRECT the operator to follow the procedural guidance.** Operator trips the main turbine. **Examiner Note:** Tripping the Main Turbine is the critical portion.		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

NRC ILT EXAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Main Turbine

TASK: Roll The Main Turbine To Rated Speed

TASK NUMBER: 2450100101

QUESTION: _____

RESPONSE: _____

RESULT: ☐ SAT ☐ UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ SAT ☐ UNSAT

INITIAL CONDITIONS:

1. The plant is operating at about 19% power. A Reactor startup is in progress
2. Preparations are complete to roll the main turbine.
3. The System Load Dispatcher has been notified of the impending roll.
4. The Plant Historian is available to monitor temperatures required in step 5.3.7.
5. No checks at 800 rpm are required.
6. Main Turbine has been on the Turning Gear with condenser pressure > 1.5" HgA for 6 hours.
7. The TBEO has been briefed and is standing by at the Front Standard.

INITIATING CUE:

You are an Extra NCO.
Roll the Main Turbine to 1800 RPM in accordance with HC.OP-SO.AC-0001.

1. INITIAL CONDITIONS

1.1 IC 98

Initial	
_____	**ESTABLISH** a simulator IC ready to roll the Main Turbine and & 41/2 bypass valves open.
_____	**ENSURE** Main Turbine First Stage Temp 250-350 degF.
_____	**PERFORM** SO.AC-0001 up to 5.3.1.

1.2 PREP FOR TRAINING (e.g. RVI setpoints, procedures, desk covers)

Initial	Description
_____	**INITIAL** SO.AC-0001
_____	**COMPLETE** Attachment 2 "Simulator Ready-for-Training/Examination Checklist" of NC.TQ-DG.ZZ-0002(Z).

1.3 EVENT TRIGGERS

Initial	ET #	Description	
	1	EVENT ACTION: COMMAND: PURPOSE:	tuns >= 90 // Main Turbine >90 rpm

MALFUNCTION SUMMARY						
Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	NM204033B LPRM Failed Downscale	---	---	NONE	---	0%*
	TU02 Main Turbine Diff Expansion	---	---	ET-1	40%	20%

REMOTE/FIELD FUNCTION SUMMARY						
Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	TU03 Main Turbine Lube Oil temp	---	---	ET-2	---	115

I/O OVERRIDE SUMMARY						
Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
				NONE		

*Maintains LPRM DOWNSCALE OHA locked in to prevent distracting operator with nuisance alarms.

NRC ILT EXAM
JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Residual Heat Removal

TASK: Respond To A Loss Of Shutdown Cooling

TASK NUMBER: 4000400401

JPM NUMBER: NRC-JPM-0004 (Source: Direct HC Bank 305H-JPM.BC-003-03)

ALTERNATE PATH: [ ]

K/A NUMBER: 205000 A2.06

IMPORTANCE FACTOR: 3.4 (RO) 3.5 (SRO)

APPLICABILITY:
EO [ ] RO [X] STA [ ] SRO [X]

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.RPV-0009, Rev 05

TOOLS, EQUIPMENT AND PROCEDURES:

VALIDATED JPM COMPLETION TIME: 8 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author

NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Respond To A Loss Of Shutdown Cooling

TASK NUMBER: **4000400401**

INITIAL CONDITIONS:

1. The plant was is OPCON 4.
2. The reactor has been shutdown for 200 hours.
3. 'B' RHR pump was in shutdown cooling at 10,000 gpm for several days.
4. RCS temperature was 100 degF.
5. A worker inadvertently tripped the 'B' RHR pump breaker locally.
6. The breaker has been inspected and is undamaged.
7. The Shutdown Cooling suction line did NOT isolate.
8. The pump has been tripped for 15 minutes.
9. HC.OP-AB.RPV-0009 Shutdown Cooling is being implemented.

INITIATING CUE:

Perform Condition A of HC.OP-AB.RPV-0009.
The required shutdown cooling flow for the 'B' RHR pump is between 9500 -10,000 gpm.

Successful Completion Criteria:
1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal**
TASK: **Respond To A Loss Of Shutdown Cooling**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains procedure HC.OP-AB.RPV-0009.	Operator obtains the correct procedure.		
		Operator determines beginning step of the procedure	Operator determines beginning step to be A.1.		
	A.1	START TIME: _____ IF below 200°F, THEN **PERFORM** the following:	Operator determines step A.1 applies.		
	A.1.a	**ESTIMATE** time to reach 200°F IAW Figure 1.	**Examiner Cue: Inform the Operator that "another Operator has determined that time to reach 200°F is between 2.25 and 2.5 hours".**		
	A.1.b	IF RCS temperature is expected to rise above 200°F, THEN **IMPLEMENT** Condition D.	Operator determines RCS temperature is not expected to rise above 200°F.		
	A.2	IF the Shutdown Cooling suction line was isolated, THEN **PERFORM** the following:	Operator determines step A.2 does not apply.		
	A.3	IF necessary, dispatch operators to manually open HV-F008 and/or HV-F009. **[CD-065X]**	Operator determines it is *NOT* necessary to dispatch operators to manually open HV-F008 and/or HV-F009.		
# •	A.4.a	Restore the tripped RHR pump as follows: a. **CLOSE** F015A(B).	Operator presses the HV-F015B DECR pushbutton until the OPEN light extinguishes.		

NAME: _____
DATE: _____

SYSTEM: **Residual Heat Removal**
TASK: **Respond To A Loss Of Shutdown Cooling**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	A.4.b	b. **RESTART** RHR Pump A(B).	Operator presses the BP202 START pushbutton and observes the RUNNING indicator illuminates and the STOPPED indicator extinguishes.		
# *	A.4.c	c. IMMEDIATELY **THROTTLE OPEN** F015A(B) to establish Shutdown Cooling flow between 3000 gpm and 10,000 gpm. STOP TIME: _____	Operator presses HV-F015B INCR pushbutton until Shutdown Cooling flow is between 9500 gpm and 10,000 gpm.		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

NRC ILT EXAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Respond To A Loss Of Shutdown Cooling

TASK NUMBER: 4000400401

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

INITIAL CONDITIONS:

1. The plant was is OPCON 4.
2. The reactor has been shutdown for 200 hours.
3. 'B' RHR pump was in shutdown cooling at 10,000 gpm for several days.
4. RCS temperature was 100 degF.
5. A worker inadvertently tripped the 'B' RHR pump breaker locally.
6. The breaker has been inspected and is undamaged.
7. The Shutdown Cooling suction line did NOT isolate.
8. The pump has been tripped for 15 minutes.
9. HC.OP-AB.RPV-0009 Shutdown Cooling is being implemented.

INITIATING CUE:

Perform Condition A of HC.OP-AB.RPV-0009.
The required shutdown cooling flow for the 'B' RHR pump is between 9500 -10,000 gpm.

I. INITIAL CONDITIONS

IC 16	
Initial	
_____	**INITIALIZE** the simulator to IC-16; Condition 4, Shutdown Cooling in service, RCS temp 103 degF.
_____	**ENSURE** 'B' RHR pump is in shutdown cooling at 10,000 gpm IAW SO.BC-0002.
_____	**SET** Monitor Item **rh:bkr(2) = f** to trip the 'B' RHR pump.

II. PREP FOR TRAINING (i.e. EMI set points, procedures, bezel covers)

Initial	Description
_____	**PLACE** red bezel covers on the BC-HV-F027B AND the BC-HV-F007B.
_____	**COMPLETE** Attachment 2 "Simulator Ready-for-Training/Examination Checklist" of NC.TQ-DG.ZZ-0002(Z).

NRC ILT EXAM
JOB PERFORMANCE MEASURE:

STATION: Hope Creek

SYSTEM: Feedwater

TASK: Place A Water Seal On The "A" & "B" Feedwater Headers

TASK NUMBER: 4000510401

JPM NUMBER: NRC-JPM-005 (Direct HC Bank 305H-JPM.AE004-00)

ALTERNATE PATH: [X]

K/A NUMBER: 223001 A2.01

IMPORTANCE FACTOR: 4.3 (RO) 4.4 (SRO)

APPLICABILITY:
EO [ ] RO [X] STA [ ] SRO [X]

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.CONT-0001, Rev 0
HC.OP-SO.AE-0001, Rev 48

TOOLS, EQUIPMENT AND PROCEDURES:
Keys for RCIC HVF013 and HPCI HV8278

VALIDATED JPM COMPLETION TIME: (8) Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author

NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Feedwater

TASK: Place A Water Seal On The "A" & "B" Feedwater Headers

TASK NUMBER: **4000510401**

INITIAL CONDITIONS:

1. The plant was at 100% power when a LOCA with indications of major fuel failure occurred.
2. The plant is depressurized.
3. The HPCI and RCIC jockey pumps are available.
4. RPV water level is being maintained with Core Spray pumps by another operator.
5. HC.OP-AB.CONT-0001 Condition D is being implemented.

INITIATING CUE:

Place a water seal on both the 'A' AND 'B' feedwater headers IAW HC.OP-SO.AE-0001.

Successful Completion Criteria:
1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Feedwater**

TASK: **Place A Water Seal On The "A" & "B" Feedwater Headers**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains procedure HC.OP-SO.AE-0001.	Operator obtains the correct procedure.		
		Operator reviews precautions and limitations.	Operator reviews precautions and limitations. **Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.**		
		Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.16.1.		
	5.16.1	**ENSURE** all prerequisites of Section 2.16 are satisfied.	Operator ensures that all prerequisites have been satisfied. **Examiner Note:** The procedural flow can be confusing. The Initial Conditions state that the HPCI and RCIC jockey pumps are available, and the initial cue directs the Operator to place a seal on the "A" & "B" Feedwater headers, so the correct procedural sequence would be to perform step 5.16.2 followed by 5.16.3 based on this information. *However*, while executing step 5.16.2.B, the HPCI jockey pump will become unavailable. This will require that the Operator transition directly to step 5.16.4 to seal the "A" & "B" headers using the RCIC jockey pump.		

NAME: _____
DATE: _____

SYSTEM: **Feedwater**
TASK: **Place A Water Seal On The "A" & "B" Feedwater Headers**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.16.2	START TIME: _____ IF a water seal is to be maintained on the A Feedwater line, THEN **PERFORM** the following:	Based on the Initiating Cue, Operator determines a water seal IS to be maintained on the A Feedwater line.		
		A. **ENSURE** HV-F074A, FW OUTBD ISLN CHK VLV, is closed.	Operator observes the FW SPLY LINE A OUTBD ISLN CHK VLV CLOSE light is illuminated and HVF074A OPEN light is extinguished. **Examiner Note:** Operator may press the CLOSE pb to remove the open assist from the check valve.		
*		B. **ENSURE** HV-F032A, FW INLET CHK VLV, is closed.	Operator presses the FW SPLY LINE A INLET CHK V CLOSE pb and observes the CLOSE light illuminates and the HVF032A OPEN light extinguishes. Operator recognizes HPCI Jockey Pump trip by OHAs and OVLD/PWR FAIL indication. Operator informs CRS of HPCI Jockey pump trip. **Examiner Cue: Direct the Operator to place a water seal on the 'A" & 'B' Feedwater lines using the RCIC jockey pump.**		
		Operator determines beginning step of the procedure.	Operator determines that a transition to step 5.16.4 is required.		

NAME: _____
DATE: _____

SYSTEM: **Feedwater**
TASK: **Place A Water Seal On The "A" & "B" Feedwater Headers**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.16.4	IF a water seal is to be maintained on the A & B Feedwater lines AND the HPCI Jockey Pump is unavailable, THEN **PERFORM** the following:	N/A	N/A	N/A
		A. **ENSURE** HV-F074A , FW OUTBD ISLN CHK VALVE, AND HV-F074B, FW OUTBD ISLN CHK VALVE, are closed.	Operator observes the FW SPLY LINE A OUTBD ISLN CHK VLV green CLOSE light is illuminated and HVF074A red OPEN light is extinguished. Operator observes the FW SPLY LINE B OUTBD ISLN CHK VLV green CLOSE light is illuminated and HVF074B red OPEN light is extinguished. **Examiner Note:** Operator may press the CLOSE pb to remove the open assist from the check valve		
*		B. **ENSURE** HV-F032A, FW INLET CHK VALVE, AND HV-F032B, FW INLET CHK VALVE, are closed.	Operator observes the FW SPLY LINE A INLET CHK V green CLOSE light is illuminated and the red HVF032A OPEN light is extinguished. **Examiner Note:** The F032A was previously closed. Operator presses the FW SPLY LINE B INLET CHK V CLOSE pushbutton and observes the green CLOSE light illuminates and the red HVF032B OPEN light extinguishes.		

NAME: _____
DATE: _____

SYSTEM: **Feedwater**
TASK: **Place A Water Seal On The "A" & "B" Feedwater Headers**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
* #		C. **PLACE** the keylock switch for HV-4144, FW LINE CROSS-TIE ISLN VLV, in the OPEN position to arm the control switch.	Operator inserts key and places the Keylock switch for the HV-4144, FW CROSS TIE LINE ISLN, in the ON position **Examiner Note:** OHA B3-D2 FEEDWATER LINE FILL ALT MODE will alarm.		
*		D. **OPEN** HV-4144, FW LINE CROSS-TIE ISL VLV.	Operator presses the FW CROSS TIE LINE ISLN HV4144 OPEN pushbutton and observes the red OPEN light illuminates and the green CLOSED light extinguishes.		
* #		E. **PLACE** the NORM/BYPASS Keylock Switch for BD-HV-F013, RCIC PUMP DSCH TO FW, in the BYPASS position to arm the Control Switch.	Operator inserts key and places the Keylock switch for the RCIC HVF013 in the BYPASS position. **Examiner Note:** OHA B3-D2 FEEDWATER LINE FILL ALT MODE will alarm.		
*		F. **OPEN** BD-HV-F013, RCIC PUMP DSCH TO FW.	Operator presses the RCIC HVF013 OPEN pushbutton and observes the red OPEN light illuminates and the green CLSD light extinguishes.		
		G. **OPEN** BD- HV-F012, RCIC PUMP DSCH VLV.	Operator observes the RCIC HVF012 red OPEN light is illuminated and green CLSD light is extinguished.		

NAME: _____
DATE: _____

SYSTEM: **Feedwater**
TASK: **Place A Water Seal On The "A" & "B" Feedwater Headers**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		H. WHEN required, THEN **START** BP228, RCIC JOCKEY PUMP.	Operator observes the RCIC JOCKEY PUMP red RUNNING light is illuminated and green STOPPED light is extinguished.		
	5.16.5	IF a water seal is to be maintained on the A & B Feedwater lines AND the RCIC Jockey Pump is unavailable, THEN **PERFORM** the following: STOP TIME: _____	Based on current conditions, Operator determines that this step does not apply.		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

NRC ILT EXAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Feedwater

TASK: Respond To Rising Drywell Pressure

TASK NUMBER: 4000510401

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

INITIAL CONDITIONS:

1. The plant was at 100% power when a LOCA with indications of major fuel failure occurred.
2. The plant is depressurized.
3. The HPCI and RCIC jockey pumps are available.
4. RPV water level is being maintained with Core Spray pumps by another operator.
5. HC.OP-AB.CONT-0001 Condition D is being implemented.

INITIATING CUE:

Place a water seal on both the 'A' AND 'B' feedwater headers IAW HC.OP-SO.AE-0001.

INITIAL CONDITIONS

[illegible]

Initial	
____	**INITIALIZE** the simulator to 100% power, MOL.
____	**INSERT** Malfunction **CR01** at **100%**.
____	WHEN MSL Radiation levels reach 3xNFPB, THEN **INSERT** Malfunction **MS01** at 100%.
____	**IMPLEMENT** EOP-101 and EOP-102.
____	**ENSURE** MSIVs are closed.
____	**TRIP** all PCPs and SCPs.
____	**ESTABLISH** RPV water level control with Core Spray.

PREP FOR TRAINING (i.e., RM, User Guide, procedures, lesson plans)

Initial	Description
____	**ENSURE** a copy of HC.OP-SO.AE-0001 is available.
____	**ENSURE** Mode Switch key is removed.
____	**COMPLETE** Attachment 2 "Simulator Ready-for-Training/Examination Checklist" of NC.TQ-DG.ZZ-0002(Z).

EVENT TRIGGERS

Initial	ET #	Description	
	1	EVENT ACTION: COMMAND: PURPOSE:	**fwvspckx(1) <= 0.0** // F032A Closed Triggers loss of HPCI Jockey pump
	2	EVENT ACTION: COMMAND: PURPOSE:	

NRC ILT EXAM
JOB PERFORMANCE MEASURE
JPM/SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CR01 Fuel Cladding Failure	---	---	NONE	---	100%
	MS01 Steam Line Break Inside Containment	---	---	NONE	---	100%
	RM9635 DAPA 'A'	---	---	NONE	---	5211
	RM9636 DAPA 'B'	---	---	NONE	---	5185
	AN-B1E4 Cry Wolf HPCI JOCKEY PUMP TRBL	---	---	ET-1	---	---
	AN-B1F3 Cry Wolf HPCI COMPONENT O/PF	---	---	ET-1	---	---

REMOTE/FIELD FUNCTION SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	IA10 Temporary Air Compressor	---	---	NONE	---	RUN

I/O OVERRIDE SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	9S139 A DI AP228 START PB	---	---	ET-1	---	OFF
	9S138 A LO AP228 OVLD/PWR FAIL	---	---	ET-1	---	ON
	9DS111 B LO AP228 STOP light	---	---	ET-1	---	OFF
	9M6 R AO HPCI Jockey Pump Disch Press	---	---	ET-1	---	0

NRC ILT EXAM
JOB PERFORMANCE MEASURE:

STATION: Hope Creek

SYSTEM: Reactor Protection System

TASK: Respond To A Reactor Protection System Malfunction

TASK NUMBER: 4000110401

JPM NUMBER: NRC-JPM-006 (Direct HC Bank 305H-JPM.SB-010-03)

ALTERNATE PATH: [ ]

K/A NUMBER: 212000 A2.01

IMPORTANCE FACTOR: 3.7 (RO) 3.9 (SRO)

APPLICABILITY:
EO [ ] RO [X] STA [ ] SRO [X]

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.IC-0003, Rev 01

TOOLS, EQUIPMENT AND PROCEDURES:

VALIDATED JPM COMPLETION TIME: 5 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author _____ NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Reactor Protection System

TASK: Respond To A Reactor Protection System Malfunction

TASK NUMBER: **4000110401**

INITIAL CONDITIONS:

1. The plant was operating at 100% power when the 'A' RPS MG set tripped due to a bearing problem.
2. Restoration of the 'A' RPS MG set is not possible at this time.
3. There is no damage to the 'A' RPS bus.

INITIATING CUE:

Perform Condition A of HC.OP-AB.IC-0003.
Restoration of isolated equipment is not necessary at this time.

Successful Completion Criteria:
1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Reactor Protection System**
TASK: **Respond To A Reactor Protection System Malfunction**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains procedure	Operator obtains the correct procedure.		
		Operator determines beginning step of the procedure.	Operator determines correct beginning step to be A.1.		
*	A.1	START TIME: _____ **RESTORE** Normal Power to the affected Bus. (if possible)	Operator determines restoration of Normal Power to the bus is not possible IAW Initial Conditions provided.		
		CAUTIONS: **1. The RPS MG Set Transfer Switch is a "Break before Make" type switch. Positioning it to the wrong position will result in a full scram.**	Operator reviews Caution 1.		
	A.2	IF Normal Power cannot be restored: a. **VERIFY** Alternate Power is available.	Operator verifies Alternate Power is available by observing the ALTERNATE A FEED light on 10C610 is illuminated. **Examiner Cue: If contacted as the NEO to verify Alternate power is available, REPORT Alternate power appears to be available.**		

NAME: _____
DATE: _____

SYSTEM: **Reactor Protection System**
TASK: **Respond To A Reactor Protection System Malfunction**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *		b. **TRANSFER** Power to the Alternate Power Supply by POSITIONING the RPS MG SET TRANSFER SWITCH to the Alternate position. **[CD324X]**	Operator turns the RPS MG SET TRANSFER SWITCH to the ALT A position.		
# *	A.3	**RESET** the 1/2 Scram as follows: a. **TURN** the key for the Affected RPS channel(s) to the RESET position. b. **TURN** the key BACK to NORMAL.	Operator turns the key for the RPS A1 Trip Logic to RESET and back to NORMAL. Operator turns the key for the RPS A2 Trip Logic to RESET and back to NORMAL. **Examiner Note: This step must be performed AFTER the 'A' RPS bus is transferred to Alternate.**		
		c. **VERIFY** the Scram is reset.	Operator verifies the scram is reset by observing the following: • RPS TRIP LOGIC A1 and A2 NORMAL/RESET lights are illuminated • All four PILOT SCRAM VALVE SOLENOID LOGIC A NORMAL lights are illuminated • REACTOR SCRAM TRIP LOGIC A1 and A2 OHAs are no longer illuminated		

NAME: _____
DATE: _____

SYSTEM: **Reactor Protection System**
TASK: **Respond To A Reactor Protection System Malfunction**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	A.4	IF the MSIV's are OPEN THEN **RESET** the tripped NSSSS Logic as follows: a. **PRESS** the NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC A(B,C,D) RESET Pb.	Operator presses the NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC A and NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM TRIP LOGIC C RESET pushbuttons. **Examiner Note: This step must be performed AFTER the 'A' RPS bus is transferred to Alternate.**		
		b. **VERIFY** MSIV TRIP LOGIC TRIPPED goes off. STOP TIME:_____	Operator verifies the MSIV TRIP LOGIC TRIPPED lights for LOGIC A and LOGIC C are extinguished.		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Reactor Protection System

TASK: Respond To A Reactor Protection System Malfunction

TASK NUMBER: 4000110401

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

INITIAL CONDITIONS:

1. The plant was operating at 100% power when the 'A' RPS MG set tripped due to a bearing problem.
2. Restoration of the 'A' RPS MG set is not possible at this time.
3. There is no damage to the 'A' RPS bus.

INITIATING CUE:

Perform Condition A of HC.OP-AB.IC-0003.
Restoration of isolated equipment is not necessary at this time.

I. INITIAL CONDITIONS

(Optional)

Initial	
_____	**INITIALIZE** the simulator to 100% power, MOL.
_____	**INSERT** malfunction **RP02A**.
_____	AFTER RWCU trips and conditions stabilize, **ACKNOWLEDGE** all overhead and RM11 alarms.

PREP FOR TRAINING (e.g., RM11 setpoints, procedures, bezel covers)

Initial	Description
_____	**COMPLETE** Attachment 2 "Simulator Ready-for-Training/Examination Checklist" of NC.TQ-DG.ZZ-0002(Z).

EVENT TRIGGERS

Initial	ET #	Description	
	1	EVENT ACTION: COMMAND: PURPOSE:	
	2	EVENT ACTION: COMMAND: PURPOSE:	

NRC ILT EXAM
JOB PERFORMANCE MEASURE
JPM/SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RP02A RPS MG set A failure	---	---	NONE	---	---

REMOTE/FIELD FUNCTION SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	AN17 A4-F3 Off Gas Recomb Pnl 00C327	00:00:00	00:00:00	NONE	NORM	NORM
	NM04 APRM A gain (Range: 0.800 -1.30)	00:00:00	00:00:00	NONE	1.178	1.2
	NM06 APRM C gain (Range: 0.800 -1.30)	00:00:00	00:00:00	NONE	1.227	1.25
	NM08 APRM E gain (Range: 0.800 -1.30)	00:00:00	00:00:00	NONE	1.208	1.23
	NM05 APRM B gain (Range: 0.800 -1.30)	00:00:00	00:00:00	NONE	1.184	1.195
	NM07 APRM D gain (Range: 0.800 -1.30)	00:00:00	00:00:00	NONE	1.171	1.175
	NM09 APRM F gain (Range: 0.800 -1.30)	00:00:00	00:00:00	NONE	1.187	1.19
	AN29 D1-C5 Fuel Pool F/D Panel 10C305	00:00:00	00:00:00	NONE	NORM	NORM

I/O OVERRIDE SUMMARY

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

NRC ILT EXAM
JOB PERFORMANCE MEASURE

STATION: HOPE CREEK

SYSTEM: Filtration, Recirculation and Ventilation System (FRVS)

TASK: Manually Place FRVS In Service

TASK NUMBER: 2610030101

JPM NUMBER: NRC-JPM-007 (Source: Modified HC Bank 305H-JPM.GU-001-09)

ALTERNATE PATH: [X]

K/A NUMBER: 288000.A2.05

IMPORTANCE FACTOR: 2.6 (RO) 2.7 (SRO)

APPLICABILITY:
EO [ ] RO [X] STA [ ] SRO [X]

EVALUATION SETTING/METHOD: Simulator / Perform

REFERENCES: HC.OP-SO.GU-0001, Rev. 23

TOOLS AND EQUIPMENT:

VALIDATED JPM COMPLETION TIME: 9 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author

NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the OS or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: N/A

JPM PERFORMED _____ **GRADE:** [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Filtration, Recirculation and Ventilation System (FRVS)

TASK: Manually Place FRVS In Service

TASK NUMBER: 2610030101

INITIAL CONDITIONS:

1. The plant is operating at 100% power.
2. Heating steam has been lost to the power block.
3. Outside air temperature is <32°F.
4. To prevent freezing the heating coils, Rx Building ventilation must be removed from service.
5. FRVS is in standby.
6. Radiation Protection has been notified that FRVS will be placed in service.

INITIATING CUE:

Manually place FRVS in service using the A, B, C & DV213 FRVS Recirculation Fans, and the AV206 FRVS Vent Fan.

Successful Completion Criteria:

1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains/locates procedure HC.OP-SO.GU-0001.	Operator locates the proper procedure.		
		Operator reviews Precautions and Limitations.	Operator reviews precautions and limitations and initials each Precaution and Limitation in the space provided in the procedure. **Examiner Cue: If excessive time is taken reviewing Precautions and Limitations, inform operator that all are satisfied.** **Examiner Note:** It is NOT critical to initial Atttachment 1 or the procedure steps.		
		Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.3.1.		
	5.3.1	**ENSURE** that all prerequisites have been satisfied IAW Section 2.3.	Operator reviews Prerequisites, completes Section 2 of Attachment 1, and initials each Prerequisite in the space provided in the procedure. **Examiner Cue: If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.**		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		START TIME:_____			
	5.3.2	**VERIFY** AUTO Mode for the following FRVS Recirculation Fans: • FRVS Recirculation Fan AV213 • FRVS Recirculation Fan BV213 • FRVS Recirculation Fan CV213 • FRVS Recirculation Fan DV213 • FRVS Recirculation Fan EV213 • FRVS Recirculation Fan FV213	Operator observes that the AUTO indicator is illuminated and the LOCKOUT indicator is extinguished for the following FRVS Recirculation Fans: FRVS RECIRCULATION FAN AV213 FRVS RECIRCULATION FAN BV213 FRVS RECIRCULATION FAN CV213 FRVS RECIRCULATION FAN DV213 FRVS RECIRCULATION FAN EV213 FRVS RECIRCULATION FAN FV213 The operator then initials the appropriate procedure steps.		
# *	5.3.3	**START** 1 FRVS Vent Fan as follows: A. Momentarily **PRESS** the MAN push-button for A(B)V206 FRVS Vent Fan.	Operator depresses the MAN PB for AV206 FRVS Vent fan and observes the MAN indicator is illuminated. The operator then initials the appropriate procedure step.		
		B. **OBSERVE** alarm BOP SAFETY SYS OUT OF SVCE.	Operator observes annunciator D1-A4 alarm state and acknowledges alarm. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *		C. Momentarily **PRESS** the A(B)V206 START push-button for A(B)V206 FRVS Vent Fan.	Operator depresses the AV206 START PB and observes the AV206 START indicator is illuminated and the STOP indicator is extinguished. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *		D. **OBSERVE** an indicated flow of approximately 9000 cfm on FR-9426A(B) for the running FRVS Vent Fan.	Operator observes FR-9426A for indication of flow (10C650E). The Operator should report that flow is too low. **Examiner Cue: IF the Operator reports that the fan flow is too low without a recommendation, THEN ask the Operator for a recommendation and record the response in the comments section of this JPM record.** **IF the Operator recommends that the "A" fan be secured, THEN cue the Operator to "secure the "A" FRVS Vent Fan AND continue to place FRVS in service". This is the SATISFACTORY action to take.** **IF the Operator recommends continuing in the procedure despite the low flow condition, THEN cue the Operator to "continue in the procedure". This course of action is UNSATISFACTORY.** **In addition, IF the Operator fails to recognize the low flow condition or otherwise continues in the procedure despite the low flow condition, THEN this is UNSATISFACTORY.**		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		The Operator secures the "A" FRVS Vent Fan, THEN returns to step 5.3.3.A	The Operator depresses the AV206 STOP PB. The Operator may refer to step 5.4.3 B & C to shutdown the fan or the Operator may just take the action. Either course of action is acceptable. **Examiner Cue: IF the Operator asks if the "A" FRVS Vent Fan should be placed in automatic mode, THEN cue the Operator to "leave the fan in manual for now". IF the Operator places the fan in automatic at this point without asking, THEN that action is NOT critical.** **Critical Step: The critical aspect is to shutdown the "A" FRVS Vent Fan.** The Operator should then return to step 5.3.3.A to continue placing FRVS in service using the "B" FRVS Vent Fan.		
# *	5.3.3	**START** 1 FRVS Vent Fan as follows: A. Momentarily **PRESS** the MAN push-button for A(B)V206 FRVS Vent Fan.	Operator depresses the MAN PB for BV206 FRVS Vent fan and observes the MAN indicator is illuminated. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		B. **OBSERVE** alarm BOP SAFETY SYS OUT OF SVCE.	Operator observes annunciator D1-A4 alarm state and acknowledges alarm. **Examiner Note:** This alarm may already be in due if "A" Fan was previously left in manual mode. The operator then initials the appropriate procedure step.		
# *		C. Momentarily **PRESS** the A(B)V206 START push-button for A(B)V206 FRVS Vent Fan.	Operator depresses the BV206 START PB and observes the BV206 START indicator is illuminated and the STOP indicator is extinguished. The operator then initials the appropriate procedure step.		
# *		D. **OBSERVE** an indicated flow of approximately 9000 cfm on FR-9426A(B) for the running FRVS Vent Fan.	Operator observes FR-9426B for indication of flow (10C650E).		
# *		E. **PRESS** the AUTO LEAD PB for the inservice FRVS Vent Fan AND **INITIAL** Attachment 1.	Operator depresses BV206 AUTO LEAD PB and observes the AUTO LEAD indicator is illuminated. The operator then initials Attachment 1 and the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		F. **PRESS** the AUTO PB for the out of service FRVS Vent Fan AND **INITIAL** Attachment 1.	Operator depresses AV206 AUTO PB and observes the AUTO indicator is illuminated. **Examiner Cue: IF the Operator asks if AV206 should be placed in AUTO, THEN cue the Operator to "place AV206 in AUTO". IF the Operator leaves the AV206 in MANUAL without asking for direction, THEN that action is SATISFACTORY.** The operator then initials Attachment 1 and the appropriate procedure step.		
#	5.3.4	**PERFORM** the following to remove the Reactor Building Ventilation System from service: A. **PERFORM** the following at Aux Building HVAC Panel 10C382:	**EXAMINER NOTE:** Step 5.3.4.A is performed at local Aux. Bldg. HVAC Panel 10C382. Operator directs the Building Operator to remove RBVS in accordance with Step 5.3.4. **EXAMINER CUE: Report as Equipment Operator that Reactor Building Ventilation is secured.** The operator then initials the appropriate procedure steps.		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		B. **CLOSE** the following dampers at Panel 10C651E: • HD9370A, REACTOR BLDG OUTBD SPLY	Operator depresses the CLOSE PB for HD9370A and observes the CLOSE indicator is illuminated and the OPEN indicator is extinguished. The operator then initials the appropriate procedure step.		
*		• HD9414A, REACTOR BLDG INBD EXCH	Operator depresses the CLOSE PB for HD9414A and observes the CLOSE indicator is illuminated and the OPEN indicator is extinguished. The operator then initials the appropriate procedure step.		
*		• HD9370B, REACTOR BLDG INBD SPLY	Operator depresses the CLOSE PB for HD9370B and observes the CLOSE indicator is illuminated and the OPEN indicator is extinguished. The operator then initials the appropriate procedure step.		
*		• HD9414B, REACTOR BLDG OUTBD EXCH	Operator depresses the CLOSE PB for HD9414B and observes the CLOSE indicator is illuminated and the OPEN indicator is extinguished. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	5.3.5	**START** 4 FRVS Recirculation Fans as follows: A. **MOMENTARILY PRESS** A(B,C,D,E,F)V213 START PB for the desired fans.	One at a time, the Operator depresses the START PB for A, B, C, and D recirc fans and observes the START indicator is illuminated and the STOP indicator is extinguished. **Examiner Note:** The initiating cue calls specifically for the A, B, C, and D Recirculation fans to be placed in service. The operator then initials the appropriate procedure steps.		
		B. **OBSERVE** an indicated flow of approximately 30,000 cfm on FR-9377 for each of the running fans.	After the starting each recirc fan, the Operator observes that each recirc fan started indicates 30,000 CFM, on FR-9377 A(B, C, D) The operator then initials the appropriate procedure step.		
		C. **MONITOR** the following: • PDR-9377 FRVS DIFF PRESS for indication of ≤ 6.0" W.G. for each operating Air Filter Unit	Operator observes that each PDR-9377A (B, C, D) indicates ≤ 6.0" W.G. for each operating Air Filter unit. The operator then initials the appropriate procedure step.		
		• PDR-9425A(B) FRVS-VENT System Filter D/P ≤ 3.0" W.G.	Operator observes that each PDR-9425A, FRVS-VENT System Filter D/P ≤ 3.0" W.G. The operator then initials the appropriate procedure step.		

NAME: _____
DATE: _____

SYSTEM:
TASK:

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.3.6	**PERFORM** independent verification that the system is aligned IAW Attachment 1. STOP TIME:_____	Operator requests an independent verification of the system alignment.		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete".

INITIAL CONDITIONS:

1. **The plant is operating at 100% power.**
2. **Heating steam has been lost to the power block.**
3. **Outside air temperature is <32°F.**
4. **To prevent freezing the heating coils, Rx Building ventilation must be removed from service.**
5. **FRVS is in standby.**
6. **Radiation Protection has been notified that FRVS will be placed in service.**

INITIATING CUE:

Manually place FRVS in service using the A, B, C & DV213 FRVS Recirculation Fans, and the AV206 FRVS Vent Fan.

NRC ILT EXAM
JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Primary Containment Instrument Gas

TASK: Defeat The PCIS Isolation Of The Non-1E Instrument Gas Header

TASK NUMBER: 2000510504

JPM NUMBER: NRC-JPM-008 (Source: Direct HC Bank 305H-JPM.KL002-08)

ALTERNATE PATH: [ ]

K/A NUMBER: 223002.K4.08

IMPORTANCE FACTOR: 3.3 (RO) 3.7 (SRO)

APPLICABILITY:
EO [ ] RO [X] STA [ ] SRO [X]

EVALUATION SETTING/METHOD: Auxiliary Building /Simulate

REFERENCES: HC.OP-EO.ZZ-0311, Revision 6

TOOLS, EQUIPMENT AND PROCEDURES:
EOP-311 Implementation Kit, Key(s) specified in section 4.0 of HC.OP-EO.ZZ-0311
VALIDATED JPM COMPLETION TIME: 8 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author

NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Defeat The PCIS Isolation Of The Non-1E Instrument Gas Header

TASK NUMBER: **2000510504**

INITIAL CONDITIONS:

1. The plant has experienced an ATWS.
2. RPV water level is stabilized at -150 inches.
3. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being implemented.
4. Implementation of HC.OP-EO.ZZ-0311, Defeating Primary Containment Instrument Gas Isolation Interlocks is required.
5. The Control Room has completed Section 5.1 of HC.OP-EO.ZZ-0311.

INITIATING CUE:

Defeat the PCIS Isolation of the Non-1E Instrument Gas Header IAW HC.OP-EO.ZZ-0311.

Successful Completion Criteria:
1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Primary Containment Instrument Gas**
TASK: **Defeat The PCIS Isolation Of The Non-1E Instrument Gas Header**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains procedure HC.OP-EO.ZZ-0311.	Operator obtains the correct procedure.		
		Operator reviews precautions and limitations.	Operator reviews precautions and limitations. **Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.**		
*	4. 4.1 4.2	**<u>Equipment Required</u>** Key #9 for EOP locker in OSC (**OBTAIN** from OS office or break red key holder glass in OSC) EOP-311 implementation kit (EOP locker in OSC) Contents: 2 Banana plug jumpers 2 Lugged jumpers (if banana jacks are unavailable) 1 Screwdriver 1 Flashlight 2 Bags for Relays Key #177 for cabinets in lower relay room	Operator obtains the following required equipment: 1. Key #9 for EOP locker in OSC (obtain from SM office or break red key holder glass in OSC) 2. EOP-311 implementation kit from EOP locker in OSC **Examiner Note:** After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location.		
		Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.2.		

NAME: _____
DATE: _____

SYSTEM: **Primary Containment Instrument Gas**
TASK: **Defeat The PCIS Isolation Of The Non-1E Instrument Gas Header**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.2.1	**ENSURE** all prerequisites have been satisfied IAW section 2.2.	Operator determines from Initial Conditions that Prerequisites are complete. **Examiner Cue: If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.**		
*	5.2.2	START TIME:_____ **REMOVE** relay 11-14-1 from cabinet 1C-C 652 Bay 11, Front (Lower Relay Rm El 102, Relay group 14, relay 1 - see Attachment 3).	Operator locates cabinet 1C-C-652 Bay 11 and removes relay 11-14-1 (relay group 14, Relay 1). **Examiner Cue: The relay you identified is removed.**		
*	5.2.3	**INSTALL** jumper from terminal 4-2-1-5 to terminal 4-2-1-4 (Cabinet 1C-C 657 Bay 4, Front, second group of terminal blocks from the top, terminal block 1, terminals 4 and 5) (see Attachment 4).	Operator locates terminals 4-2-1-5 and 4-2-1-4 in cabinet 1C-C-657-Bay 4 and installs a jumper. **Examiner Cue: A jumper has been installed between the terminals you indicated.**		
*	5.2.4	**REMOVE** relay 11-4-3 from cabinet 1D-C 652 Bay 11, Rear (Lower Relay Rm El 102, Relay group 4, relay number 3 - see Attachment 5)	Operator locates cabinet 1D-C-652 Bay 11 and removes relay 11-4-3 (relay group 4, relay number 3). **Examiner Cue: The relay you identified is removed.**		

NAME: _____
DATE: _____

SYSTEM: **Primary Containment Instrument Gas**
TASK: **Defeat The PCIS Isolation Of The Non-1E Instrument Gas Header**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	5.2.5	**INSTALL** jumper from terminal 4-2-2-17 to terminal 4-2-2-16 (Cabinet 1D-C 657 Bay 4, Front, second group of terminal blocks from the top, terminal block 2, terminals 16 and 17 - see Attachment 6). STOP TIME: _____	Operator locates terminals 4-2-2-17 and 4-2-2-16 in cabinet 1DC-657-Bay 4 and installs a jumper. **Examiner Cue: A jumper has been installed between the terminals you indicated.**		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Defeat The PCIS Isolation Of The Non-1E Instrument Gas Header

TASK NUMBER: 2000510504

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

INITIAL CONDITIONS:

1. The plant has experienced an ATWS.
2. RPV water level is stabilized at -150 inches.
3. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being implemented.
4. Implementation of HC.OP-EO.ZZ-0311, Defeating Primary Containment Instrument Gas Isolation Interlocks is required.
5. The Control Room has completed Section 5.1 of HC.OP-EO.ZZ-0311.

INITIATING CUE:

Defeat the PCIS Isolation of the Non-1E Instrument Gas Header IAW HC.OP-EO.ZZ-0311.

NRC ILT EXAM
JOB PERFORMANCE MEASURE
JPM/SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

NRC ILT EXAM
JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: DC Electrical Distribution

TASK: Perform a DC Load shed during Station Blackout

TASK NUMBER:

JPM NUMBER: NRC-JPM-009 **(New JPM)**

ALTERNATE PATH: [ ]

K/A NUMBER: 295003.AA1.04

IMPORTANCE FACTOR: 3.6 (**RO**) 3.7 (**SRO**)

APPLICABILITY:
EO [ ] **RO** [X] **STA** [ ] **SRO** [X]

EVALUATION SETTING/METHOD: Field/Perform

REFERENCES: HC.OP-AB.ZZ-0135 Rev 26

TOOLS, EQUIPMENT AND PROCEDURES: HC.OP-AB.ZZ-0135

VALIDATED JPM COMPLETION TIME: 10 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: _____

APPROVAL:

NRC Exam Author _____ **NRC Chief Examiner**

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] **SAT** [ ] **UNSAT**

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: DC Electrical Distribution

TASK: Perform a DC Load shed during Station Blackout

TASK NUMBER:

INITIAL CONDITIONS:

1. The plant is in OPCON 3.
2. A loss of all offsite and onsite AC power occurred 15 minutes ago.
3. HC.OP-AB.ZZ-0135, STATION BLACKOUT //LOSS OF OFFSITE POWER//DIESEL GENERATOR MALFUNCTION has been completed through step 4.5.6.

INITIATING CUE:

Perform a DC load shed IAW Attachment 3 of HC.OP-AB.ZZ-0135.

Successful Completion Criteria:

1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **DC Electrical Distribution**
TASK: **Perform a DC Load shed during Station Blackout**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains a copy of procedure HC.OP-AB.ZZ-0135.	Operator obtains the correct procedure.		
		START TIME:_____	Start time should be logged after the operator has reviewed the initial conditions and repeated the task back. **Examiner Note:** It is not critical to initial the procedure steps. The operator then initials the appropriate procedure step.		
*	4.5.7.	**IMPLEMENT** Attachment 3, Radwaste Building Actions.	The Operator simulates performance of Attachment 3 of HC.OP-AB.ZZ-0135 (see attached facsimile). **The critical component of this task is to locate and simulate opening <u>ALL</u> of the breakers listed on Attachment 3 of HC.OP-AB.ZZ-0135.**		
		STOP TIME: _____	**Examiner Cue:** **The JPM may be terminated when the Operator reports that Attachment 3 of HC.OP-AB.ZZ-0135 is complete.**		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

NRC ILT EXAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: DC Electrical Distribution

TASK: Perform a DC Load shed during Station Blackout

TASK NUMBER: ??????

QUESTION: _____

RESPONSE: _____

RESULT: ☐ **SAT** ☐ **UNSAT**

QUESTION: _____

RESPONSE: _____

RESULT: ☐ **SAT** ☐ **UNSAT**

TRAINING ONLY

ATTACHMENT 3
RAD WASTE BUILDING ACTIONS [CD-675F]
Page 1 of 1
DC LOAD SHEDDING

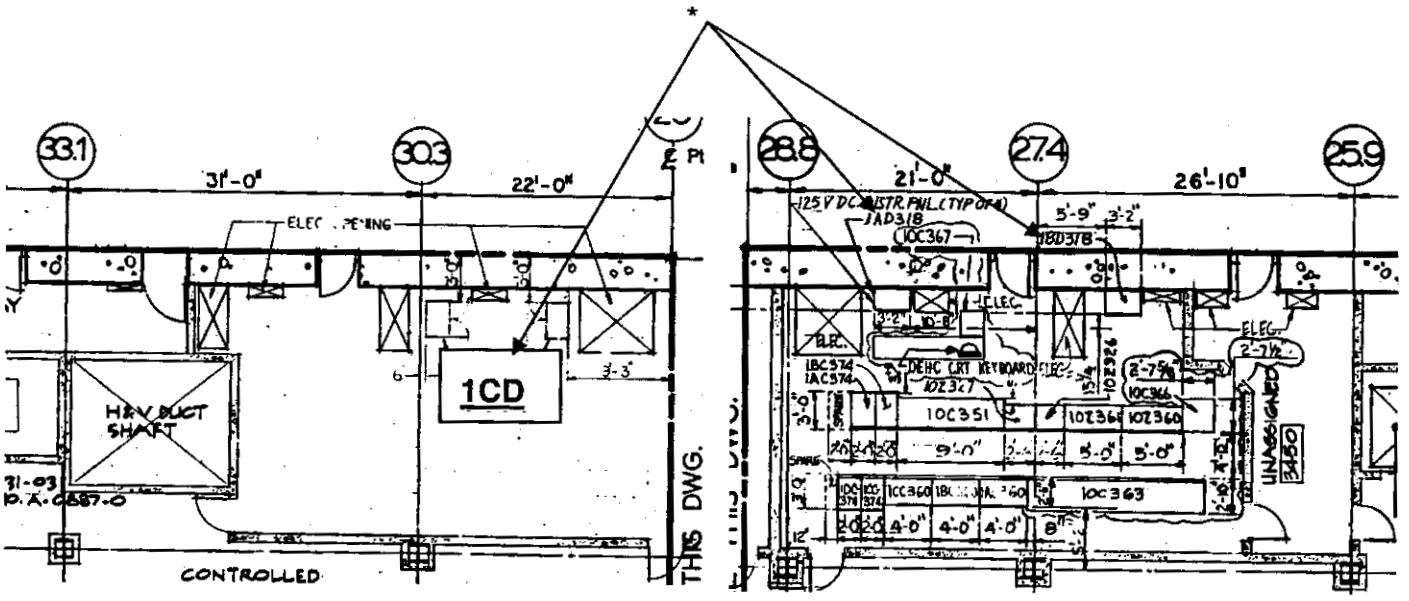
1. **OPEN** the circuit breakers identified in the following tables. All are ARC Flash Category 0.

LOCATION	PANEL #	CIRCUIT #	LOAD (840 W)
124' Radwaste RM 3449	1BD318 *	12	STA SERV XFMR A PROT 1BC654
		19	TACS SOLV 1AC658A
		24	PNL,BUS PROT 1DC654D
		27	STA SERV XFMR PROT PNL 1EC654A

LOCATION	PANEL #	CIRCUIT #	LOAD (580 W)
124' Radwaste RM 3449	1AD318 *	12	STA SRV XFMR A PROT PNL 1BC654
		27	STA SERV C PROT RLY 1EC654B
		28	PNL,BUS PROT 1DC654C RLY

LOCATION	PANEL #	CIRCUIT #	LOAD (840 W)
124' Radwaste RM 3432	1DD318 *	11	PNL,BUS PROT 1DC654B B/U
		12	STA SERV XFMR PROT PNL 1CC654B
		14	PROCESS INST CAB 10C613
		27	STA SERV XFMR PROT PNL 1FC654A

LOCATION	PANEL #	CIRCUIT #	LOAD (570 W)
124' Radwaste RM 3432	1CD318 *	11	PNL,BUS PROT 1DC654A
		12	XFMR B PROTECT REC PNL 1CC654A
		14	CAB,FDWTR & RECIRC INST 10C612
		27	STA SERV XFMR D PNL 1FC654B



INITIAL CONDITIONS:

1. The plant is in OPCON 3.
2. A loss of all offsite and onsite AC power occurred 15 minutes ago.
3. HC.OP-AB.ZZ-0135,STATION BLACKOUT //LOSS OF OFFSITE POWER//DIESEL GENERATOR MALFUNCTION has been completed through step 4.5.6.

INITIATING CUE:

Perform a DC load shed IAW Attachment 3 of HC.OP-AB.ZZ-0135.

NRC ILT EXAM
JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Safety Auxiliaries Cooling Water

TASK: Respond To A SACs Malfunction

TASK NUMBER: 4000780401

JPM NUMBER: NRC-JPM-010 (Source: Direct HC Bank 305H-JPM.EG-003-12)

ALTERNATE PATH: [ ]

K/A NUMBER: 400000 A2.01

IMPORTANCE FACTOR: 3.3 (RO) 3.4 (SRO)

APPLICABILITY:
EO [ ] **RO** [X] **STA** [ ] **SRO** [X]

EVALUATION SETTING/METHOD: In Plant/Simulate

REFERENCES: HC.OP-AB.COOL-0002, Rev 1
HC.OP-SO.EG-0001, Rev 38

TOOLS, EQUIPMENT AND PROCEDURES:
Annotated copy of HC.OP-SO.EG-0001, valve locking devices.

VALIDATED JPM COMPLETION TIME: 11 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

APPROVAL:

NRC Exam Author _____ NRC Chief Examiner

CAUTION: **No plant equipment shall be operated during the performance of a JPM without the following:**
1. **Permission from the SM or Unit CRS;**
2. **Direct oversight by a qualified individual (determined by the individual granting permission based on plant conditions).**
3. **Verification of the "as left" condition by a qualified individual.**

ACTUAL JPM COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION: _____ Minutes

JPM PERFORMED BY: _____ **GRADE:** [ ] **SAT** [ ] **UNSAT**

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Safety Auxiliaries Cooling Water

TASK: Respond To A SACs Malfunction

TASK NUMBER: **4000780401**

INITIAL CONDITIONS:

1. SACS Loop B has been declared inoperable.
2. HC.OP-AB.COOL-0002, Safety/Turbine Auxiliaries Cooling System, is being implemented.
3. Components are being realigned IAW Section 5.12 of HC.OP-SO.EG-0001.
4. The 'D' EDG Coolers AND Room Coolers have been cross tied to the 'A' SACS loop IAW HC.OP-SO.EG-0001 Attachment 3 Part A.

INITIATING CUE:

Cross Tie the 'D' FRVS Recirculation Unit to the 'A' SACS Loop in the sequence presented in HC.OP-SO.EG-0001 Attachment 3 Part B.
WCM update and tagging will be performed by another operator.

Successful Completion Criteria:
1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

NAME: _____
DATE: _____

SYSTEM: **Safety Auxiliaries Cooling Water**
TASK: **Respond To A SACs Malfunction**

# •	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains/locates procedure HC.OP-SO.EG-0001.	Operator locates the proper procedure.		
		Operator reviews precautions and limitations.	Operator reviews precautions and limitations. **Examiner Cue: If excessive time is taken reviewing Precautions and Limitations, inform operator that all are satisfied.**		
# •	ATT.3 10	START TIME: _____ FRVS CLG COIL DVH-213 LP B SUP 1-EG-V689 LOCKED CLOSED	**Examiner Note:** The sequence critical portion of the following steps is to close the 1-EG-V689 AND 1-EG-V692 BEFORE opening the 1-EG-V703 OR 1-EG-V702. Locking the valves is NOT critical. Operator unlocks and closes 1-EG-V689, reinstalls a locking device on valve. **Examiner Cue: The lock has been removed from the valve indicated. The valve indicated has been rotated in the direction stated and has come to hard stop. The lock is installed on the valve indicated.** **Examiner Note:** Support operator's requests for Verifier.		

NAME: _____
DATE: _____

SYSTEM: **Safety Auxiliaries Cooling Water**
TASK: **Respond To A SACs Malfunction**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	ATT.3 11	FRVS CLG COIL DVH-213 LP B RTN 1-EG-V692 LOCKED CLOSED	Operator unlocks and closes 1-EG-V692, reinstalls a locking device on valve. **Examiner Cue: The lock has been removed from the valve indicated. The valve indicated has been rotated in the direction stated and has come to hard stop. The lock is installed on the valve indicated.** **Examiner Note:** Support operator's requests for Verifier.		
# *	ATT.3 12	FRVS CLG COIL DVH-213 LP A SUP 1-EG-V703 LOCKED OPEN	Operator unlocks and opens 1-EG-V703, reinstalls a locking device on valve. **Examiner Cue: The lock has been removed from the valve indicated. The valve indicated has been rotated in the direction stated and has come to hard stop. The lock is installed on the valve indicated.** **Examiner Note:** Support operator's requests for Verifier.		

NAME: _____
DATE: _____

SYSTEM: **Safety Auxiliaries Cooling Water**
TASK: **Respond To A SACs Malfunction**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
# *	ATT.3 13	FRVS CLG COIL DVH-213 LP A RET 1-EG-V702 LOCKED OPEN STOP TIME:_____	Operator unlocks and opens 1-EG-V702, reinstalls a locking device on valve. **Examiner Cue: The lock has been removed from the valve indicated. The valve indicated has been rotated in the direction stated and has come to hard stop. The lock is installed on the valve indicated.** **Examiner Note:** Support operator's requests for Verifier.		

Terminating Cue: Repeat back message from the operator on the status of the JPM, and then state "This JPM is complete"

NRC ILT EXAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Safety Auxiliaries Cooling Water

TASK: Respond To A SACs Malfunction

TASK NUMBER: 4000780401

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

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RESPONSE: _____

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INITIAL CONDITIONS:

1. SACS Loop B has been declared inoperable.
2. HC.OP-AB.COOL-0002, Safety/Turbine Auxiliaries Cooling System, is being implemented.
3. Components are being realigned IAW Section 5.12 of HC.OP-SO.EG-0001.
4. The 'D' EDG Coolers AND Room Coolers have been cross tied to the 'A' SACS loop IAW HC.OP-SO.EG-0001 Attachment 3 Part A.

INITIATING CUE:

Cross Tie the 'D' FRVS Recirculation Unit to the 'A' SACS Loop in the sequence presented in HC.OP-SO.EG-0001 Attachment 3 Part B.
WCM update and tagging will be performed by another operator.