

# JOB PERFORMANCE MEASURE

~~STATION~~ek

~~SYSTEM~~Recirculation

~~TASK~~Form Scoop Tube Positioner Lock-up Operation

~~TASK NUMBER:~~

~~BEN NUMBER:~~

~~NOPIBEP~~BB03E

~~ALTERNATE PATH:~~ ☐

APPLICABILITY:

X ~~SEA~~

☐☐☐☐

~~DEVELOPED BY:~~ \_\_\_\_\_  
Instructor

~~REVIEWED BY:~~ \_\_\_\_\_  
Operations Representative

~~APPROVED BY:~~ \_\_\_\_\_  
Training Department

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC S-1**REV:** 01**SYSTEM:** Reactor Recirculation**TASK NUMBER:** 2020080101**TASK:** Perform Scoop Tube Positioner Lock-up Operation**ALTERNATE PATH:** ☒**K/A NUMBER:** 202002 A2.05**IMPORTANCE FACTOR:** 3.1 3.1**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.RPV-0001, Rev 12

HC.OP-SO.BB-0002, Rev 78

**TOOLS, EQUIPMENT AND PROCEDURES:** Annotated copy of HC.SO.BB-0002.**ESTIMATED COMPLETION TIME:** 25 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Reactor Recirculation**TASK:** Perform Scoop Tube Positioner Lock-up Operation**TASK NUMBER:** 2020080101**INITIAL CONDITIONS:**

1. The plant was at 80% Reactor Power with power ascension in progress.
2. The SPRI guidance is valid.
3. A control signal failure caused the 'A' Reactor Recirc Pump Motor/Generator Scoop Tube to lock-up.
4. The 'A' Reactor Recirc pump was placed in Scoop Tube Positioner Lockup Operation IAW HC.OP-SO.BB-0002.
5. I&C has repaired the control signal failure.
6. An NCO is stationed at the 'A' Reactor Recirc Pump Motor/Generator Scoop Tube Positioner.
7. Manual adjustment of the 'A' Reactor Recirc Scoop Tube has been terminated.
8. The 'A' Reactor Recirc Scoop Tube Positioner Power Switch is ON.

**INITIATING CUE:**

Reset the Scoop Tube lockup on the 'A' Reactor Recirc pump.

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> OPERATOR REPEATS BACK INITIATING CUE:  START TIME:				
	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 5.9.1			
5.9.1	ENSURE all prerequisites have been satisfied IAW Section 2.9.	Operator ensures prerequisites are satisfied.			

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.9.4	Using Attachment 3, <b>DETERMINE</b> the desired SIC-621A(B) SPEED DEMAND for the actual SPEED indicated on SIC-621A(B).	Operator determines the <b>desired</b> SIC-R621A SPEED DEMAND to be 58-62% IAW Attachment 3.  <b>Examiner Note:</b> The target SPEED DEMAND is 60%. Some leeway has been added for meter readability and the potential interpolation of Attachment 3 data.	*		
5.9.5	<b>PRESS</b> SIC-R621A(B) SPD CONT INCREASE <u>OR</u> DECREASE pushbutton as necessary to obtain the desired SIC-621A(B) SPEED DEMAND from Step 5.9.4.	Operator presses the SIC-R621A LOOP A SPD INCR and/or DECR pb until SIC-R621A SPEED DEMND matches the SPEED DEMAND from Step 5.9.4.  <b>Examiner Note:</b> $\pm 2\%$ of the operator determined desired value is acceptable. For example, if the operator determined 52% was desired, 50-54% would be acceptable.	* #		
5.9.6	<b>PRESS</b> SCOOP TUBE TRIP RESET <u>AND ENSURE</u> SCOOP TUBE LOCK-UP light extinguishes.	Operator presses the Pump A TRIPS RESET PB.	* #		
		Operator observes that the SCOOP TUBE LOCK-UP light is extinguished.			
		Operator observes 'A' Recirc Pump speed and Reactor power rising.			
	<b>HC.OP-AB.RPV-0001</b> Single Reactor Recirc Pump runaway.				

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1	<b>PRESS</b> the SCOOP TUBE TRIP Pushbutton for the affected Recirc Pump Controller.	Operator presses the Pump A SCOOP TUBE TRIP pushbutton. <b>Examiner Note:</b> The Scoop Tube may have already tripped due to control signal failure high. If the Scoop Tube is already tripped, it is not critical to push the SCOOP TUBE TRIP pushbutton.	* #		
2	<b>PLACE</b> BOTH Recirc Pump individual controllers in MANUAL.	Operator observes the SIC-R621A MAN AND SIC-R621B MAN is illuminated and AUTO is extinguished. <b>Examiner Note:</b> Since SIC-R621A and B are already in Manual, it is not critical to press the MAN pushbuttons.			
3	<b>REDUCE</b> the <u>NON</u> -affected Reactor Recirc Pump Speed to Reduce Power to Pre-Transient value.	Operator presses the SIC-R621B LOOP B SPD DECR pb until reactor power is $\leq 80\%$ .	* #		

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete,  <u>OR</u> the JPM has been terminated for other reasons,  <u>THEN RECORD</u> the STOP time.</p> <p>(It is not necessary to observe the operator take actions for the resulting Recirc Pump vibration alarms, take local control of the scoop tube, or evaluate Tech Specs.)</p> <p><b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p><b>STOP TIME:</b></p>				

JOB PERFORMANCE MEASURE  
OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC S-1

TASK: Perform Scoop Tube Positioner Lock-up Operation

TASK NUMBER: 2020080101

QUESTION: \_\_\_\_\_

---

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

---

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. The plant was at 80% Reactor Power with power ascension in progress.
2. The SPRI guidance is valid.
3. A control signal failure caused the 'A' Reactor Recirc Pump Motor/Generator Scoop Tube to lock-up.
4. The 'A' Reactor Recirc pump was placed in Scoop Tube Positioner Lockup Operation IAW HC.OP-SO.BB-0002.
5. I&C has repaired the control signal failure.
6. An NCO is stationed at the 'A' Reactor Recirc Pump Motor/Generator Scoop Tube Positioner.
7. Manual adjustment of the 'A' Reactor Recirc Scoop Tube has been terminated.
8. The 'A' Reactor Recirc Scoop Tube Positioner Power Switch is ON.

**INITIATING CUE:**

Reset the Scoop Tube lockup on the 'A' Reactor Recirc pump.

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## I. INITIAL CONDITIONS:

### I.C.

<i>Initial</i>	
	<b>INITIALIZE</b> the simulator to 80% power, MOL.
	<ul style="list-style-type: none"> <li>○ <b>REDUCE</b> Reactor Recirc pump speeds to 60% (It is critical that 'A' Recirc pump speed is 60%).</li> <li>○ <b>INSERT</b> 9B rods to 00.</li> </ul>
	<b>PRESS</b> the REACTOR RECIRCULATION PUMP A TRIPS SCOOP TUBE TRIP pushbutton.
	<b>ENSURE</b> SIC-R621A AND SIC-R621B are in Manual.
	<b>REDUCE</b> SIC-R621A Demand Output by 4% AND allow SIC-R621A SPEED DEMAND to saturate low.
	<b>ENSURE</b> SIC-R620 MAST CONT OUTPUT A SELECT is selected.
	REMOVE Crossflow from service by toggling <b>Remote Function PP04</b> to Not Applied.

### PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	<b>INITIAL</b> a copy of HC.OP-SO.BB-0002 Section 5.5 for the 'A' Reactor Recirc Pump.
	<b>COMPLETE</b> Simulator Ready-for-Training/Examination Checklist.
	<b>ENSURE</b> Data Collection is trending the following parameters:
	<ul style="list-style-type: none"> <li>• APRM Power Channel A</li> </ul>

### EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: rr:k5(1) >= 1.0 // 'A' Recirc Scoop Tube Trip Reset COMMAND: PURPOSE: Triggers 'A' Recirc Runaway
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

## MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	<b>RR08A</b> 'A' Recirc Pump Runaway	---	---	ET-1	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---

## REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---

## I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	---	---	---
		---	---	---	---	---

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC S-1

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC S-1**REV#:** 01**TASK:** Perform Scoop Tube Positioner Lock-up Operation

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - \_\_\_\_\_ a. verify cues both verbal and visual are free of conflict
  - \_\_\_\_\_ b. ensure performance time is accurate

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Core Spray

**TASK:** Manually Start the Core Spray System

**TASK NUMBER:** 2090030101

**JPM NUMBER:** 2013 NRC S-2

**REV #:** 1

**SAP BET:** NOH05JPBE05E

**ALTERNATE PATH:** ☒

**APPLICABILITY:**

EO

☐

RO

☒

STA

☐

SRO

☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC S-2**REV:** 1**SYSTEM:** Core Spray**TASK NUMBER:** 2090030101**TASK:** Manually Start the Core Spray System**ALTERNATE PATH:** ☒**K/A NUMBER:** 209001 A4.01**IMPORTANCE FACTOR:** 3.8 3.7**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.ZZ-0001 Attachment 5 Rev. 25**TOOLS, EQUIPMENT AND PROCEDURES:** None**ESTIMATED COMPLETION TIME:** 7 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Core Spray**TASK:** Manually Start the Core Spray System**TASK NUMBER:** 2090030101**INITIAL CONDITIONS:**

1. The plant has experienced a loss of all offsite power coincident with a small break LOCA.
2. A and C Emergency Diesel Generators have failed to start.
3. HPCI has just tripped.
4. Reactor pressure is approximately 500 psig and lowering.
5. Reactor level is approximately -70 inches and lowering.

**INITIATING CUE:**

Restore reactor level to RPV Level 2 to Level 8 band with B Core Spray Loop. The simulator is in FREEZE until you are ready to begin.

JPM: 2013 NRC S-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER</b> <b>OPERATOR REPEATS BACK</b> <b>INITIATING CUE:</b>  <b>START TIME:</b>				
	Operator obtains/locates procedure HC.OP-AB.ZZ-0001, Attachment 5.	Operator obtains the correct procedure.			
1.0	IF an Initiation Signal is present, THEN <b>PERFORM</b> the following:	Operator determines that an Initiation Signal is present based on overhead annunciators B3-A1/A2/A3/A4, CORE SPRAY PUMP AUTO START are in alarm.			
1.0.A.	<b>ENSURE</b> B Core Spray Pump is RUNNING.	Operator observes the B Core Spray Pump is not running.			
		Operator depresses the BP206 START push button.	*		

JPM: 2013 NRC S-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes that B Core Spray Pump is running.			
1.0.B.	<b>ENSURE</b> D Core Spray Pump is RUNNING.	Operator observes the D Core Spray Pump is not running.			
		Operator depresses the DP206 START push button.	*		
		Operator observes that D Core Spray Pump is running.			
1.0.C.	<b>ENSURE</b> HV-F015B is CLOSED.	Operator observes that HV-F015B is CLOSED.			
1.0.D.	<b>ENSURE</b> HV-F004B is OPEN.	Operator observes that HV-F004B is OPEN.			

JPM: 2013 NRC S-2

Rev: 1

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.E.	WHEN REACTOR PRESSURE is < 461 psig, <b>ENSURE</b> HV-F005B is OPEN.	Operator observes Reactor Pressure.			
		Operator observes that HV-F005B did not open with Reactor pressure below 461 psig.			
1.0.F.	<b>PERFORM</b> the following as necessary to control Reactor Level:				
1.0.F. 1	<b>PRESS</b> HV-F005B AUTO OPEN OVRD.	Operator depresses the HV-F005B AUTO OPEN OVRD pb.			
		Operator observes that HV-F005B AUTO OPEN OVRD illuminates.			
1.0.F. 2	<b>CYCLE</b> HV-F005B as necessary to control Reactor Level.	Operator depresses the HV-F005B OPEN pb.	* #		
		Operator observes the HV-F005B red OPEN light illuminates and the green CLSD light extinguishes.			

JPM: 2013 NRC S-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.G.	WHEN flow is > 775 gpm, <b>ENSURE</b> HV-F031B is CLOSED.	Operator observes Core Spray System B flow on FI-R601B to be >775 gpm.			
	<b>Examiner Note:</b> HV-F031 has failed to auto close.	Operator observes HV-F031B is open.			
		Operator depresses the HV-F031B CLOSE pb.			
		Operator observes the HV-F031B green CLSD light illuminates and the red OPEN light extinguishes.			

JPM: 2013 NRC S-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete,  <u>OR</u> the JPM has been terminated for other reasons,  <u>THEN RECORD</u> the STOP time.</p> <p><b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p><b>STOP TIME:</b></p>				
N/A	TASK STANDARD:	Operator restores reactor level to RPV Level 2 to Level 8 band with B Core Spray Loop.			

JOB PERFORMANCE MEASURE  
OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC S-2

TASK: Manually Start the Core Spray System

TASK NUMBER: 2090030101

QUESTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

**JOB PERFORMANCE MEASURE****INITIAL CONDITIONS:**

1. The plant has experienced a loss of all offsite power coincident with a small break LOCA.
2. A and C Emergency Diesel Generators have failed to start.
3. HPCI has just tripped.
4. Reactor pressure is approximately 500 psig and lowering.
5. Reactor level is approximately -70 inches and lowering.

**INITIATING CUE:**

Restore reactor level to RPV Level 2 to Level 8 band with B Core Spray Loop. The simulator is in FREEZE until you are ready to begin.

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## I. INITIAL CONDITIONS:

### I.C.

Initial	
	Insert below listed malfunctions.
	Take simulator out of freeze.
	Place Mode Switch in Shutdown.
	Inhibit ADS.
	Let vessel water level drop to approximately -70 inches.
	Reduce reactor pressure to approximately 500 psig.
	Freeze the simulator.
	<b>ENSURE</b> associated Schedule file open and running.
	<b>ENSURE</b> associated Events file open.

### PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
	<b>COMPLETE</b> Simulator Ready-for-Training/Examination Checklist.

### EVENT FILE:

Initial	ET #	
	4	Event code: ZDCS31CB >=1.0 Description: HV-F031B Close PB pressed // Deletes stuck open min-flow valve.
		Event code: Description:
		Event code: Description:

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

## MALFUNCTION SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert malfunction DG02A	Diesel generator A failure
	None	None	Insert malfunction DG02C	Diesel generator C failure
	None	None	Insert malfunction HP03	HPCI turbine trip
	None	None	Insert malfunction CS03B	Core spray HV-F005B fail to auto open
	None	None	Insert malfunction CS04B	Core spray pump B fail to auto start
	None	None	Insert malfunction CS04D	Core spray pump D fail to auto start
	None	None	Insert malfunction EG12 on event 1	Loss of all off site power
	None	None	Insert malfunction RR31A1 to 10.00000 on event 2	Recirc loop A small break [V] (10%~60 gpm, 100%~600 gpm)
	None	None	Insert malfunction RR31A2 to 0 on event 2	Recirc loop A large break [V] (10%~6000 gpm, 100%~60000 gpm)
	None	None	Insert malfunction MS01 to 9.00000 on event 3	Steam line break in drywell

## REMOTE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert remote RH19B to FAIL_CLOSE	RH19 HV-F017B RHR INJ VALVE
	None	None	Insert remote RH19D to FAIL_CLOSE	RH19 HV-F017D RHR INJ VALVE

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

OVERRIDE SCHEDULE:

<i>Initial</i>	@Time	Event	Action	Description
	None	None	Insert override 8S29_B_LO to Off on event 4	HV-F031B CLOSED (LO)
	None	None	Insert override 8S29_C_LO to On on event 4	HV-F031B OPEN (LO)

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC S-2

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC S-2**REV#:** 01**TASK:** Manually Start the Core Spray System

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.  
Knowledge and Abilities (K/A) is identified, and is  $\geq 3.0$  (LOR) or  $\geq 2.5$  (ILT) or justification is
- \_\_\_\_\_ 2. provided.
- \_\_\_\_\_ 3. License level identified. (SRO,RO,STA,NLO)
- \_\_\_\_\_ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- \_\_\_\_\_ 5. Initial setup conditions are identified.
- \_\_\_\_\_ 6. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 7. Task standards for successful completion are identified.  
Critical steps meet the criteria for critical steps and are identified with an asterisk (\*). Sequence
- \_\_\_\_\_ 8. Critical Steps are identified with a pound sign (#).
- \_\_\_\_\_ 9. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.
- \_\_\_\_\_ 10. Procedure(s) referenced by this JPM match the most current revision of that procedure.
- \_\_\_\_\_ 11. Cues both verbal and visual are complete and correct.  
Performance standards are specific in exact control and indication nomenclature (switch
- \_\_\_\_\_ 12. position, meter reading) even if these criteria are not specified in the procedural step.  
Statements describing important actions or observations that should be made by the operator
- \_\_\_\_\_ 13. are included (if required.)
- \_\_\_\_\_ 14. Validation time is included.
- \_\_\_\_\_ 15. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** High Pressure Coolant Injection

**TASK:** Place HPCI In Full Flow Recirc

**TASK NUMBER:** 2060180201

**JPM NUMBER:** 2013 NRC S-3

**REV #:** 1

**SAP BET:** NOH05JPBJ06E

**ALTERNATE PATH:** ☐

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC S-3**REV:** 1**SYSTEM:** High Pressure Coolant Injection**TASK NUMBER:** 2060180201**TASK:** Place HPCI In Full Flow Recirc**ALTERNATE PATH:** ☐**K/A NUMBER:** 206000 A4.06**IMPORTANCE FACTOR:** 4.3 4.3**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.ZZ-0001 Rev 25**TOOLS, EQUIPMENT AND PROCEDURES:****ESTIMATED COMPLETION TIME:** 12 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_**DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** High Pressure Coolant Injection**TASK:** Place HPCI In Full Flow Recirc**TASK NUMBER:** 2060180201**INITIAL CONDITIONS:**

1. The Reactor has scrammed due to a spurious Group 1 isolation.
2. All control rods are full in.
3. RCIC was manually initiated and is injecting to the RPV.
4. Reactor water level is approximately -15 inches and slowly rising.
5. Reactor pressure is being controlled with Lo-Lo Set.
6. RHR loop B is in suppression pool cooling.
7. Another operator is taking the HC.OP-DL.ZZ-0026, Attachment 3.m, Suppression Chamber Average Water Temp 5 Minute Log.

**INITIATING CUE:**

Place HPCI into the Full Flow Test Mode and initiate a plant cooldown with a target pressure band of 500 to 700 psig.

JPM: 2013 NRC S-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 11

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue:  START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-AB.ZZ-0001 Attachment 6.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 1.0.			
1.0	IF HPCI is NOT in the Injection mode of operation PERFORM the following:	N/A			
1.0.A	ENSURE OP216 VAC TK VACUUM PUMP is RUNNING.	Operator presses the OP216 START pb.			STAR Y N
		Operator observes the red RUNNING light illuminates.			

JPM: 2013 NRC S-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 11

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.B	ENSURE HV-F059 is OPEN.	Operator presses the HV-F059 OPEN pb.	* #		STAR Y N
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			
1.0.C	ENSURE HPCI AND RCIC Suctions are lined up to the CST.	Operator observes the HPCI HV-F004 OPEN light is illuminated and green CLSD light is extinguished.			
		Operator observes the RCIC HV-F010 OPEN light is illuminated and green CLSD light is extinguished.			
1.0.D	PRESS HV-F008 INCR PB for $\approx$ 20 seconds.	Operator presses HV-F008 INCR pb for approximately 20 seconds.	* #		STAR Y N
		Operator observes the HV-F008 OPEN light illuminates.			

JPM: 2013 NRC S-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 11

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.E	ADJUST FIC-R600 HPCI FLOW setpoint to 1000 gpm.	Operator presses the LOWER SETPOINT pb on the FIC-R600 controller until the pointer is on 1000 gpm.	* #		STAR Y N
1.0.F	SIMULTANEOUSLY PERFORM the following:	N/A			
1.0.F. 1	START AUXILIARY OIL PUMP	Operator presses the AUXILIARY OIL PUMP OP213 START pb.	* #		
		Operator observes the red RUNNING light illuminates.			
1.0.F. 2	PRESS FD-HV-F001 OPEN Pushbutton	Operator presses the HV-F001 OPEN pb.	* #		
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			

JPM: 2013 NRC S-3

Rev: 11

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.G	IMMEDIATELY OPEN AP-HV-F011.	Operator presses the AP-HV-F011 OPEN pb.	* #		
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			
1.0.H	WHEN Discharge Pressure turns ADJUST FIC-R600 setpoint to 3000 gpm.	Operator observes HPCI Pump Discharge Pressure on PI-R601-E41 (red) indicator rises and lowers.			STAR Y N
		Operator presses the RAISE SETPOINT or LOWER SETPOINT pbs as necessary to obtain a flow setpoint of 3000 gpm.	*		

JPM: 2013 NRC S-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 11

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.I	THROTTLE HV-F008 AND ADJUST FIC-R600 setpoint, as necessary, up to and including full flow rate, to control HPCI pump parameters/reactor pressure.	Operator presses the HV-F008 INCR or DECR pbs and/or RAISE SETPOINT or LOWER SETPOINT pbs as necessary to adjust pump parameters.			STAR Y N
		Operator observes reactor pressure lowering.			
<b>CUE</b>	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state " <b>This JPM is complete</b> ".  <b>STOP TIME:</b>	N/A			
<b>N/A</b>	<b>TASK STANDARD:</b>	Operator places HPCI in Full Flow Test at approximately rated flow.			

JOB PERFORMANCE MEASURE  
 OPERATOR TRAINING PROGRAM  
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: BJ006

TASK: Place HPCI In Full Flow Recirc

TASK NUMBER: 2060180201

QUESTION: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. The Reactor has scrammed due to a spurious Group 1 isolation.
2. All control rods are full in.
3. RCIC was manually initiated and is injecting to the RPV.
4. Reactor water level is approximately -15 inches and slowly rising.
5. Reactor pressure is being controlled with Lo-Lo Set.
6. RHR loop B is in suppression pool cooling.
7. Another operator is taking the HC.OP-DL.ZZ-0026, Attachment 3.m, Suppression Chamber Average Water Temp 5 Minute Log.

**INITIATING CUE:**

Place HPCI into the Full Flow Test Mode and initiate a plant cooldown with a target pressure band of 500 to 700 psig.

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## **I. INITIAL CONDITIONS:**

### **I.C.**

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	Place Mode Switch to S/D.
	Stabilize RPV level at approximately 30 inches with RFPs. Do NOT allow water lvl to drop to lvl 2.
	Arm and depress channels A and D NSSSS, then disarm. (Simulates spurious Group 1 isolation)
	Manually initiate RCIC, runback flow controller setpoint to maintain RPV level at approximately 32 inches.
	Place "B" RHR in Suppression Pool Cooling.
	Freeze simulator.

### **PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)**

Initial	Description
	ENSURE Mode Switch key is removed.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

### **EVENT FILE:**

Initial	ET #	Description
	1	<div>Event code:</div> <div>Description:</div>

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

## MALFUNCTION SCHEDULE:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val

## REMOTE SCHEDULE:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val

## I/O OVERRIDE SCHEDULE:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC S-3

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC S-3**REV#:** 1**TASK:** Place HPCI In Full Flow Recirc

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.  
Knowledge and Abilities (K/A) is identified, and is  $\geq 3.0$  (LOR) or  $\geq 2.5$  (ILT) or justification is
- \_\_\_\_\_ 2. provided.
- \_\_\_\_\_ 3. License level identified. (SRO,RO,STA,NLO)
- \_\_\_\_\_ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- \_\_\_\_\_ 5. Initial setup conditions are identified.
- \_\_\_\_\_ 6. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 7. Task standards for successful completion are identified.  
Critical steps meet the criteria for critical steps and are identified with an asterisk (\*). Sequence
- \_\_\_\_\_ 8. Critical Steps are identified with a pound sign (#).
- \_\_\_\_\_ 9. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.  
Procedure(s) referenced by this JPM match the most current revision of that
- \_\_\_\_\_ 10. procedure.
- \_\_\_\_\_ 11. Cues both verbal and visual are complete and correct.  
Performance standards are specific in exact control and indication nomenclature  
(switch position, meter reading) even if these criteria are not specified in the
- \_\_\_\_\_ 12. procedural step.
- \_\_\_\_\_ 13. Statements describing important actions or observations that should be made by the  
operator are included (if required.)
- \_\_\_\_\_ 14. Validation time is included.
- \_\_\_\_\_ 15. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

**VALIDATED BY:**Qualification Level Required: RO

Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Residual Heat Removal

**TASK:** Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

**TASK NUMBER:** 2050120101

**JPM NUMBER:** 2013 NRC S-4

**REV #:** 1

**SAP BET:** NOH05JPBC15E

**ALTERNATE PATH:** ☒

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC S-4**REV:** 1**SYSTEM:** Residual Heat Removal**TASK NUMBER:** 2050120101**TASK:** Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop**ALTERNATE PATH:** ☒**K/A NUMBER:** 205000 A4.03**IMPORTANCE FACTOR:**

3.6	3.5
-----	-----

**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-SO.BC-0002 Rev. 28**TOOLS, EQUIPMENT AND PROCEDURES:** None.**ESTIMATED COMPLETION TIME:** \_\_\_\_\_ Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Residual Heat Removal**TASK:** Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop**TASK NUMBER:** 2050120101**INITIAL CONDITIONS:**

1. The plant is in OPCIION 4.
2. The reactor has been shutdown for 200 hours.
3. 'B' RHR pump has been in shutdown cooling at 10,000 gpm for several hours.
4. RCS temperature is 100 degF.
5. A SACS and SSW loops are aligned to support the evolution.
6. BC-HV-F007A and BC-HV-F027A have been tagged closed to support the evolution.
7. Flush of A RHR Loop is not required.
8. Field operators have been briefed and are standing by on location.

**INITIATING CUE:**

You are an extra NCO.

Transfer RHR Shutdown Cooling to the A RHR loop.

HC.OP-SO.BC-0002 is complete up to step 5.3.5.

The required shutdown cooling flow for the 'A' RHR pump is between 9500 -10,000 gpm.

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE:  START TIME:				
	Operator obtains procedure HC.OP-SO.BC-0002	Operator obtains the correct procedure.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	IF excessive time is taken reviewing precautions and limitations, THEN INFORM operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.3.5.			

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.5.	<b>SECURE</b> the inservice Shutdown Cooling Loop as follows:	N/A			
5.3.5. A	<b>ENSURE</b> 1-BC-V262 (1-BC-V212), ECCS Jockey Pmp D(C) DISCH to RHR Loop B(A) is LOCKED OPEN (local), AND <b>INITIAL</b> Attachment 1.	Operator contacts Equipment Operator and directs opening 1-BC-V262.			
<b>CUE</b>	<b>The valve is in the position requested.</b>	N/A			
	<b>NOTE</b> Steps 5.3.5.B through 5.3.5.C should be performed in rapid succession.	Operator reads NOTE.			
5.3.5. B	<b>CLOSE</b> BC-HV-F015B(A) RHR LOOP B(A) RET TO RECIRC AND <b>INITIAL</b> Attachment 1.	Operator presses and holds the BC-HV-F015B RHR LOOP B RET TO RECIRC CLSD pb.	*		

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.5. C	WHEN BC-HV-F015B(A) RHR LOOP B(A) RET TO RECIRC is fully closed, THEN, IMMEDIATELY <b>STOP</b> B(A)P202 RHR PUMP.	Operator observes the BC-HV-F015B RHR LOOP B RET TO RECIRC CLSD light illuminated and OPEN is extinguished.			
		Operator presses BP202 RHR PUMP STOP pb.	*		

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.5. D	<b>CLOSE</b> BC-HV-F006B(A) RHR PMP B(A) SUCT FROM RECIRC AND <b>INITIAL</b> Attachment 1.	Operator presses the BC-HV-F006B RHR PMP B(A) SUCT FROM RECIRC CLSD pb.			
		Operator observes the BC-HV-F006B RHR PMP B(A) SUCT FROM RECIRC CLSD light illuminated and OPEN is extinguished.			
5.3.6.	<b>ENSURE</b> SACS is in service to the RHR Heat Exchanger for the RHR loop to be placed in service IAW HC.OP-SO.EG-0001(Q).	Operator observes the HV-2512A OPEN light illuminated and CLSD light extinguished.			
		Operator observes RHR A HX SACS Flow approximately 9000 gpm.			

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<p><b>CAUTION</b> Manual OR automatic opening of BC-HV-F007A(B) RHR PMP A(B) MIN FLOW MOV will drain Reactor Vessel to Suppression Pool.</p> <p>If BC-HV-F015 A(B) RHR LOOP A(B) RET TO RECIRC does NOT open immediately to establish flow, then the RHR pump should be secured.</p> <p>BC-HV-F027A(B) RHR LOOP A(B) SUPP POOL SPRAY HDR ISLN MOV will drain the Reactor Vessel to the Suppression Pool if opened while the associated RHR pump is in shutdown cooling.</p>	Operator reads CAUTION.			

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.7.	<b>START</b> RHR PUMP A(B)P202 AND IMMEDIATELY <b>THROTTLE</b> OPEN BC-HV-F015A(B) RHR LOOP A(B) RET TO RECIRC LOOP UNTIL FI-R603A(B) OR FR-R608A(B) - CRIDS A3137(A3139), LOOP A(B) FLOW indicates $\approx$ 3000 gpm.	Operator presses the AP202 START pb.	*		
		Operator observes the AP202 START light illuminated and STOP light extinguishes.			
	<b>Examiner Note:</b> F015A will fail closed and not establish flow. Operator should secure the pump.	Operator immediately presses and holds the BC-HV-F015A RHR LOOP A RET TO RECIRC LOOP OPEN pb.			
		Operator observes the CLSD light remains illuminated.			
		Operator observes the FI-R603A OR FR-R608A - CRIDS A3137, LOOP A FLOW indicates 0 gpm.			

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator determines CAUTION applies.			
		Operator presses AP202 STOP pb.	*		
<b>CUE</b>	<p><u>WHEN</u> operator informs you the task is complete,  <u>OR</u> the JPM has been terminated for other reasons,  <u>THEN RECORD</u> the STOP time.</p> <p><b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p><b>STOP TIME:</b></p>				
<b>N/A</b>	<b>TASK STANDARD:</b>	Operator lines up and starts A RHR pump in Shutdown Cooling. When the F015A fails to open, the operator stops the A RHR pump.			

JOB PERFORMANCE MEASURE  
 OPERATOR TRAINING PROGRAM  
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC S-4

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

TASK NUMBER: 2050120101

QUESTION: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. The plant is in OPCON 4.
2. The reactor has been shutdown for 200 hours.
3. 'B' RHR pump has been in shutdown cooling at 10,000 gpm for several hours.
4. RCS temperature is 100 degF.
5. A SACS and SSW loops are aligned to support the evolution.
6. BC-HV-F007A and BC-HV-F027A have been tagged closed to support the evolution.
7. Flush of A RHR Loop is not required.
8. Field operators have been briefed and are standing by on location.

**INITIATING CUE:**

You are an extra NCO.

Transfer RHR Shutdown Cooling to the A RHR loop.

HC.OP-SO.BC-0002 is complete up to step 5.3.5.

The required shutdown cooling flow for the 'A' RHR pump is between 9500 -10,000 gpm.

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## I. INITIAL CONDITIONS:

### I.C.

Initial	
	<b>INITIALIZE</b> the simulator to an OPCON 4 IC with 'B' RHR in Shutdown Cooling at 10,000 gpm and an RCS temp of $\approx 100$ degF.
	<b>OPEN</b> BC-HV-F007B breaker
	<b>OPEN</b> BC-HV-F027B breaker
	<b>ENSURE</b> BC-HV-F003A is closed.
	<b>ENSURE</b> BC-HV-F004A is closed.
	<b>ENSURE</b> BC-HV-F007A is closed.
	<b>ENSURE</b> EG-HV-2512A is open.
	<b>ENSURE</b> BC-HV-F006A is open.
	<b>ENSURE</b> associated Schedule File is loaded.
	<b>OPEN</b> BC-HV-F007A breaker using ET-1.
	<b>OPEN</b> BC-HV-F027A breaker using ET-2.

### PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
	<b>PLACE</b> red bezel covers on the BC-HV-F007B <u>AND</u> the BC-HV-F027B.
	<b>PLACE</b> red bezel covers on the BC-HV-F007A <u>AND</u> the BC-HV-F027A.
	<b>MARK</b> procedure HC.OP-SO.BC-0002 complete up to step 5.3.4.

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## REMOTE SCHEDULE:

<i>Initial</i>	@Time	Event	Action	Description
	None	None	Insert remote RH30B to TAGGED	RH30 HV-F007B RHR Pump A Min Flow Valve
	None	None	Insert remote ET006 to RACK_CLOSE	ET006 GROUP 3B HV-F027B RHR Supp. Pool Spray
	None	None	Insert remote RH30A to TAGGED on event 1	RH30 HV-F007A RHR Pump A Min Flow Valve
	None	None	Insert remote ET005 to RACK_CLOSE on event 2	ET005 GROUP 3B HV-F027A RHR Supp. Pool Spray
	None	None	Insert remote RH29A to FAIL_CLOSE	RH29 GROUP 3E HV-F015A RHR SDC Return Isol

## JOB PERFORMANCE MEASURE

**REVISION HISTORY****JPM NUMBER:** 2013 NRC S-4

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC S-4**REV#:** 1**TASK:** Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.  
Knowledge and Abilities (K/A) is identified, and is  $\geq 3.0$  (LOR) or  $\geq 2.5$  (ILT) or justification is
- \_\_\_\_\_ 2. provided.
- \_\_\_\_\_ 3. License level identified. (SRO,RO,STA,NLO)
- \_\_\_\_\_ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- \_\_\_\_\_ 5. Initial setup conditions are identified.
- \_\_\_\_\_ 6. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 7. Task standards for successful completion are identified.  
Critical steps meet the criteria for critical steps and are identified with an asterisk (\*). Sequence
- \_\_\_\_\_ 8. Critical Steps are identified with a pound sign (#).
- \_\_\_\_\_ 9. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.  
Procedure(s) referenced by this JPM match the most current revision of that
- \_\_\_\_\_ 10. procedure.
- \_\_\_\_\_ 11. Cues both verbal and visual are complete and correct.  
Performance standards are specific in exact control and indication nomenclature  
(switch position, meter reading) even if these criteria are not specified in the
- \_\_\_\_\_ 12. procedural step.  
Statements describing important actions or observations that should be made by the
- \_\_\_\_\_ 13. operator are included (if required.)
- \_\_\_\_\_ 14. Validation time is included.
- \_\_\_\_\_ 15. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Primary Containment

**TASK:** Suppression Chamber Makeup From Service Water Loop B

**TASK NUMBER:**

**JPM NUMBER:** 2013 NRC S-5

**REV #:** 1

**SAP BET:**

**ALTERNATE PATH:** ☐

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek

**JPM NUMBER:** 2013 NRC S-5

**REV:** 01

**SYSTEM:** Primary Containment

**TASK NUMBER:**

**TASK:** Suppression Chamber Makeup From Service Water Loop B

**ALTERNATE PATH:** ☐

**K/A NUMBER:** 223001 A2.11

**IMPORTANCE FACTOR:** 3.6 3.8

**APPLICABILITY:**

**RO SRO**

EO ☐ RO ☒ STA ☐ SRO ☒

**EVALUATION SETTING/METHOD:** Simulator/Perform

**REFERENCES:** HC.OP-EO.ZZ-0314 Rev. 05

**TOOLS, EQUIPMENT AND PROCEDURES:** HC.OP-EO.ZZ-0314

**ESTIMATED COMPLETION TIME:** \_\_\_\_\_ Minutes

**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes

**JPM PERFORMED BY:** \_\_\_\_\_

**GRADE:** ☐ SAT ☐ UNSAT

**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes

**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes

**REASON, IF JPM UNSATISFACTORY:**

**EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Primary Containment

**TASK:** Suppression Chamber Makeup From Service Water Loop B

**TASK NUMBER:**

**INITIAL CONDITIONS:**

1. Suppression Chamber level is 70 inches and normal means of make-up are unavailable.
2. RHR Pump BP202 is shutdown and is not required to assure adequate core cooling.

**INITIATING CUE:**

Restore suppression chamber level using Suppression Chamber Make-up from Service Water Loop B.

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Primary Containment**TASK: **Suppression Chamber Makeup From Service Water Loop B**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER</b> Operator repeats back the Initiating Cue: <b>START TIME:</b>	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-EO.ZZ-0314.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<u>IF</u> excessive time is taken reviewing precautions and limitations, <u>THEN INFORM</u> operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.2.1.			

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Primary Containment**TASK: **Suppression Chamber Makeup From Service Water Loop B**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.1	START TIME: _____ <b>ENSURE</b> that all prerequisites have been satisfied IAW Section 2.2 of this procedure.	Operator Verifies Prerequisites.			
5.2.2.	<b>CLOSE</b> BC-HV-F003B //RHR HX SHELL SIDE OUTLET MOV//	The operator depresses the close pushbutton for BC-HV-F003B	* #		
		The operator observes that the CLOSED indicator illuminates and the OPEN indicator extinguishes			
5.2.3.	<b>VERIFY</b> CLOSED BC-HV-F048B //B RHR HX SHELL SIDE BYP MOV//	Operator verifies closed BC-HV-F048B	#		
5.2.4	<b>OPEN</b> EA-HV-2238 SERVICE WATER LOOP B EMERG M/U OUTBD ISLN (10C651).	The operator depresses the open pushbutton for EA-HV-2238.	* #		
		The operator observes that the OPEN indicator illuminates and the CLOSED indicator extinguishes			

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Primary Containment**TASK: **Suppression Chamber Makeup From Service Water Loop B**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.5	<b>ENSURE</b> breaker 52-222082 is CLOSED, (to allow 1EAHV-F073 to be opened).	The operator calls booth to ensure breaker 52-222082 is closed	#		
5.2.6	<b>OPEN</b> EA-HV-F073 SERVICE WATER LOOP B EMERG M/U INBD ISLN (10C651).	The operator depresses the open pushbutton for EA-HV-F073	* #		
		The operator observes that the OPEN indicator illuminates and the CLOSED indicator extinguishes			
5.2.7	<b>OPEN</b> BC-HV-F075 //SSWS TO RHR LOOP B SUP MOV//.	The operator depresses the open pushbutton for BC-HC-F075	* #		
		The operator observes that the OPEN indicator illuminates and the CLOSED indicator extinguishes.			
5.2.8	WHILE diverting the Service Water flow to the Suppression Chamber, <b>MONITOR</b> temperatures of all on-service, SACS and RACS cooling loads.	Operator monitors temperatures			

JPM: 2013 NRC S-5

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: **Primary Containment**TASK: **Suppression Chamber Makeup From Service Water Loop B**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.9	<b>THROTTLE</b> OPEN BC-HV-F024B //RHR LOOP B TEST RET MOV// to control suppression chamber fill rate	Operator depresses the open pushbutton for BC-HV-F024B.	* #		
5.2.10	<b>MONITOR</b> Service Water Pump BP502 and/or DP502 Motor Amps and Vibration for indications of pump run-out due to increased system flow	Operator monitors motor amps and vibration.			
5.2.11	WHEN suppression chamber level returns to the desired band, <b>RESTORE</b> the RHR and Service Water systems to normal using Attachment 2	Operator determines that suppression chamber level is in the normal band.	* #		
<b>CUE</b>	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state " <b>This JPM is complete</b> ".  <b>STOP TIME:</b>	N/A			

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Primary Containment**TASK: **Suppression Chamber Makeup From Service Water Loop B**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
N/A	TASK STANDARD:	Operator Restores Suppression Chamber Level By Using Suppression Chamber Makeup From Service Water Loop B			

**OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION**

**NAME:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**JPM Number: 2013 NRC S-5**

**TASK: Suppression Chamber Makeup From Service Water Loop B**

**QUESTION:** \_\_\_\_\_

---

---

---

---

---

**RESPONSE:** \_\_\_\_\_

---

---

---

---

---

**RESULT:**

**SAT**

☐

**UNSAT**

☐

**QUESTION:** \_\_\_\_\_

---

---

---

---

---

**RESPONSE:** \_\_\_\_\_

---

---

---

---

---

**RESULT:**

**SAT**

☐

**UNSAT**

☐

JPM NUMBER: 2013 NRC S-5

REV#: 01

**I. INITIAL CONDITIONS:**

I.C.

<i>Initial</i>	
	<b>INITIALIZE</b> the simulator to IC (Shutdown)
	<b>ESTABLISH</b> Suppression chamber level at 70".
	<b>ENSURE</b> associated Schedule file open and running.
	<b>ENSURE</b> associated Events file open.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	<b>TOGGLE</b> Control Room Horns to <b>OFF</b> .
	<b>ENSURE</b> the simulator is reset <u>AND</u> in <b>FREEZE</b> .
	<b>COMPLETE</b> "Simulator Ready-for-Training/Examination Checklist".

**EVENT FILE:**

<i>Initial</i>	ET #	
		Event code: Description:
		Event code: Description:
		Event code: Description:

**MALFUNCTION SCHEDULE:**

<i>Initial</i>	@Time	Event	Action	Description

## REMOTE SCHEDULE:

<i>Initial</i>	@Time	Event	Action	Description

## OVERRIDE SCHEDULE:

<i>Initial</i>	@Time	Event	Action	Description

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC S-5

Rev #	Date	Description	Validation Required?
01	12/11/12	New JPM for NRC exam.	Y

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC S-5**REV#:** 01**TASK:** Suppression Chamber Makeup From Service Water Loop B

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - \_\_\_\_\_ a. verify cues both verbal and visual are free of conflict
  - \_\_\_\_\_ b. ensure performance time is accurate

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

**JOB PERFORMANCE MEASURE**

**INITIAL CONDITIONS:**

1. Suppression Chamber level is 70 inches and normal means of make-up are unavailable.
2. RHR Pump BP202 is shutdown and is not required to assure adequate core cooling.

**INITIATING CUE:**

Restore suppression chamber level using Suppression Chamber Make-up from Service Water Loop B.

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Electrical

**TASK:** Synchronize and Load Main Generator to the Grid

**TASK NUMBER:**

**JPM NUMBER:** 2013 NRC S-6

**REV #:** 1

**SAP BET:**

**ALTERNATE PATH:** ☒

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

STATION: Hope Creek

JPM NUMBER: 2013 NRC S-6

REV: 01

SYSTEM: Electrical

TASK NUMBER:

TASK: Synchronize and Load Main Generator to the Grid

ALTERNATE PATH: ☒

K/A NUMBER: 262001 A4.04

IMPORTANCE FACTOR: 3.6 3.7

APPLICABILITY:

RO

SRO

EO ☐RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.MA-0001, Rev 56, HC.OP-AB.BOP-0002, Rev 13

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: \_\_\_\_\_ Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: \_\_\_\_\_

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: \_\_\_\_\_ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Electrical**TASK:** Synchronize and Load Main Generator to the Grid**TASK NUMBER:****INITIAL CONDITIONS:**

1. A normal plant startup is in progress
3. All steps of HC.OP-SO.MA.0001 up to 5.16 have been completed, including prerequisites, precautions and limitations.

**INITIATING CUE:**

1. Continue with the performance of HC.OP-SO.MA-0001, MAIN TURBINE, and synchronize and load the Main Generator to the grid starting with step 5.16.

JPM: 2013 NRC S-6

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Electrical

TASK: Synchronize and Load Main Generator to the Grid

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue:  START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-SO.MA-0001, Rev 56			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	IF excessive time is taken reviewing precautions and limitations, THEN INFORM operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.16.			

JPM: 2013 NRC S-6

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Electrical

TASK: Synchronize and Load Main Generator to the Grid

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.0	<b>ENSURE</b> that all prerequisites have been satisfied IAW Section 2.0 of this procedure.	Operator Verifies Prerequisites.			
5.2.16	<b>PERFORM</b> the following to synchronize the Main Generator using Manual Load Control:		#		
5.2.16. A	<b>SELECT</b> Control, Speed-Load	The operator selects Control, Speed-Load.  Note: Ramp Rate will indicate 20%/min until breaker is closed, upon breaker closure, Ramp Rate will be 60%/min for 2 seconds (2% load), Ramp Rate will then go to setpoint entered	#		
5.2.16. B	<b>SELECT</b> Load Set, Ramp Rate <u>AND</u> <b>ENTER</b> 10%/min	Operator selects Load Set, Ramp Rate and enters 10%/min.	* #		

JPM: 2013 NRC S-6

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Electrical

TASK: Synchronize and Load Main Generator to the Grid

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.16. C	<b>SELECT</b> Load Set, Manual Adj.: Raise <u>OR</u> Lower until pointer on the SYNCHROSCOPE is moving slowly in the FAST direction.	The operator selects Load set, Manual Adj. and RAISES or LOWERS until the pointer on the synchroscope is moving slowly in the fast direction.	#		
5.2.16. D	IF the SYNCH WINDOW <u>green</u> light does <u>NOT</u> turn on, <u>THEN REQUEST</u> permission from SM/CRS to bypass the synch check relay <u>AND GO TO</u> Step 5.2.17.	The operator notes that the green light turns on.	#		
5.2.16. E	<b>PERFORM</b> the following (with Steps 5.16.E.1 thru 5.2.16.E.3 being performed in rapid succession):		#		
5.2.16. E.1	<u>WHEN</u> the SYNCHROSCOPE Pointer is at 2 minutes before 12 o'clock position, <u>AND</u> the SYNCH WINDOW <u>green</u> light is illuminated, <u>THEN</u> <b>CLOSE</b> BS 6-5 (BS 2-6) Breaker.	The operator closes the breaker when the synchroscope pointer is at ~ 2 minutes before 12 o'clock position and the synch window green light is illuminated.  Note: Ramp Rate will indicate 20%/min until breaker is closed, upon breaker closure, Ramp Rate will be 60%/min for 2 seconds (2% load), Ramp Rate will then go to setpoint entered	* #		
5.2.16. E.2	<b>IMMEDIATELY SELECT</b> Load Set: Setpoint <u>AND ENTER</u> 30%.	The operator immediately selects Load Set: Setpoint and enters 30%.	* #		

JPM: 2013 NRC S-6

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Electrical

TASK: Synchronize and Load Main Generator to the Grid

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.16. E.3	<b>IMMEDIATELY OBSERVE</b> the following: <ul style="list-style-type: none"> <li>• Bypass Valves close as generator loads to 30% Load Set</li> <li>• Generator phase current increases</li> <li>• MW load and MVAR increases</li> <li>• Synchroscope pointer steady at 12 o'clock position</li> </ul>	Operator observes listed parameters.	#		
5.2.16. E.4	<b>ADJUST</b> Generator MVARs to within the limits of Excitation Limit Curve of Attachment 1.	Operator adjusts generator MVARs to within the limits of Excitation Limit Curve of Attachment 1.	#		

JPM: 2013 NRC S-6

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Electrical

TASK: Synchronize and Load Main Generator to the Grid

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<b><u>Alternate Path:</u></b> After operator selects load set setpoint to 30%, the booth will insert Bearing 1-10 Vibration > 11 mils (@ 1800rpm) initiating alarm D3 C5 TURBINE GENERATOR VIB HI	Operator responds to MAIN TURBINE GENERATOR VIB HI alarm IAW HC.OP-AR.ZZ-0014, Rev 34, Attachment C5 <u>AND</u> HC.OP-AB.BOP-0002, Rev. 13  Operator trips the Main Turbine when Journal bearing 1-10 vibration is determined to be >11 mils (as read on CRIDS points A2519-A2530) IAW Alarm Response Procedure and Retainment Override	*		
<b>CUE</b>	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state " <b>This JPM is complete</b> ".  <b>STOP TIME:</b>	N/A			

JPM: 2013 NRC S-6

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Electrical

TASK: Synchronize and Load Main Generator to the Grid

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
N/A	TASK STANDARD:	Operator synchs and loads the Main generator to the grid and trips the main turbine when high vibrations > retainment override limit condition is indicated.			

**OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION**

**NAME:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**JPM Number: 2013 NRC S-6**

**TASK: Synchronize and Load Main Turbine to the Grid**

**QUESTION:** \_\_\_\_\_

---

---

---

---

**RESPONSE:** \_\_\_\_\_

---

---

---

---

**RESULT:**

**SAT**

☐

**UNSAT**

☐

**QUESTION:** \_\_\_\_\_

---

---

---

---

**RESPONSE:** \_\_\_\_\_

---

---

---

---

**RESULT:**

**SAT**

☐

**UNSAT**

☐

**I. INITIAL CONDITIONS:**

I.C.

<i>Initial</i>	
	<b>INITIALIZE</b> the simulator to IC (Operating)
	<b>ESTABLISH</b> Main Turbine running unloaded
	<b>ENSURE</b> associated Schedule file open and running.
	<b>ENSURE</b> associated Events file open.
	Ensure trigger to bearing 1-10 vibration > 11 mils

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description
	<b>TOGGLE</b> Control Room Horns to <b>OFF</b> .
	<b>ENSURE</b> the simulator is reset <u>AND</u> in <b>FREEZE</b> .
	<b>COMPLETE</b> "Simulator Ready-for-Training/Examination Checklist".

**EVENT FILE:**

<i>Initial</i>	ET #	
		Event code: Description:
		Event code: Description:
		Event code: Description:

**MALFUNCTION SCHEDULE:**

<i>Initial</i>	@Time	Event	Action	Description

REMOTE SCHEDULE:

<i>Initial</i>	@Time	Event	Action	Description

OVERRIDE SCHEDULE:

<i>Initial</i>	@Time	Event	Action	Description

JOB PERFORMANCE MEASURE

**REVISION HISTORY**

**JPM NUMBER:** 2013 NRC S-6

<b>Rev #</b>	<b>Date</b>	<b>Description</b>	<b>Validation Required?</b>
01	4/2/13	New JPM for NRC exam.	Y

JOB PERFORMANCE MEASURE  
**VALIDATION CHECKLIST**

**JPM NUMBER:** 2013 NRC S-6

**REV#:** 01

**TASK:** Synchronize and Load Main Turbine to the Grid

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - \_\_\_\_\_ a. verify cues both verbal and visual are free of conflict
  - \_\_\_\_\_ b. ensure performance time is accurate

**VALIDATED BY:**

Qualification Level Required: RO

_____ Name	_____ Qual	_____ Signature	_____ Date
_____ Name	_____ Qual	_____ Signature	_____ Date

## **JOB PERFORMANCE MEASURE**

### **INITIAL CONDITIONS:**

1. A normal plant startup is in progress
3. All steps of HC.OP-SO.MA.0001 up to 5.16 have been completed, including prerequisites, precautions and limitations.

### **INITIATING CUE:**

1. Continue with the performance of HC.OP-SO.MA-0001, MAIN TURBINE, and synchronize and load the Main Generator to the grid starting with step 5.16.

OPERATOR TRAINING PROGRAM  
JOB PERFORMANCE MEASURE:

STATION: Hope Creek  
SYSTEM: Reactor Protection System  
TASK: Defeat RPS Interlocks  
TASK NUMBER: 2001040501  
JPM NUMBER: 305H-JPM. SB-012-04

ALTERNATE PATH: ☐

K/A NUMBER: 295037 EA1.01

IMPORTANCE FACTOR: 4.6 4.6

RO SRO

APPLICABILITY:

EO ☒RO ☒STA ☐SRO ☒EVALUATION SETTING/METHOD: Simulator/Perform OR Control Room Simulate

REFERENCES: HC.OP-EO.ZZ-0320, Rev. 2



## TOOLS, EQUIPMENT AND PROCEDURES:

EOP-320 Implementation Kit

VALIDATED JPM COMPLETION TIME: 5 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

## APPROVAL:

  
BARGAINING UNIT  
REPRESENTATIVE  
TRAINING SUPERVISOR  
OR DESIGNEE  
OPERATIONS MANAGER  
OR DESIGNEE

**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: \_\_\_\_\_

OPERATOR TRAINING PROGRAM  
JOB PERFORMANCE MEASURE:

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Reactor Protection System**TASK:** Defeat RPS Interlocks**TASK NUMBER:** 2001040501**INITIAL CONDITIONS:**

1. The plant has experienced a failure to scram.
2. All scram valves have opened but the Scram Discharge Volume is full.
3. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being executed.
4. Draining the SDV and attempting a manual scram is required.
5. HC.OP-EO.ZZ-0302 has NOT been implemented.
6. ARI interlocks have been defeated in accordance with Section 5.1 of HC.OP-EO.ZZ-0320.

**INITIATING CUE:**

Defeat RPS interlocks IAW HC.OP-EO.ZZ-0320.

**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.

JPM: 2013 NRC S-7

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Protection System

TASK: Defeat RPS Interlocks

# *	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-0320.	Operator obtains the correct procedure.		
		Operator reviews precautions and limitations.	Operator reviews precautions and limitations.  <b>Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.</b>		
	4.0 4.1  4.2	<b><u>EQUIPMENT REQUIRED</u></b> EOP-320 Implementation Kit (NSS office EOP Drawer) contents: 1 set of fuse pullers 1 flashlight 1 plastic bag for ARI fuses 4 banana plug jumpers  <u>OR</u> Key #9 for EOP Locker in OSC (obtain from SNSS office or break red key holder glass in OSC)  <u>AND</u> EOP-320 Implementation kit (EOP Locker in OSC) contents: 1 set of fuse pullers 1 flashlight 1 plastic bag for ARI fuses 4 banana plug jumpers	Operator obtains the following required equipment: EOP-320 Implementation kit from SM Office Clerk Area EOP drawer.  <u>OR</u>  Key #9 from OSC office or key from break glass key holder in OSC for OSC EOP locker.  <u>AND</u> EOP-320 Implementation kit from EOP locker in OSC.  <b>Examiner Cue: Supply operator with EOP-320 implementation kit.</b>		

JPM: 2013 NRC S-7

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Reactor Protection System**TASK: **Defeat RPS Interlocks**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.2.1.		
	5.2.1	<b>ENSURE</b> that Prerequisites have been satisfied IAW Section 2.2.	Operator ensures Prerequisites are satisfied.  <b>Examiner Cue: If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.</b>		
*	5.2.2	START TIME: _____ On H11-P609, front, Division 1, left test box, <b>INSERT</b> a jumper between test point C71A-K10A-2A (first column-first row, red jack) and test point C71A-K12E-2B (fourth column-second row, black jack).	Operator installs jumper at H11-P609 between test points C71A-K10A-2A and C71A-K12E-2B.  <b>Examiner Cue: IF the JPM is being simulated in the Control Room, THEN inform the Operator that a jumper has been placed between the test jacks you indicated.</b>		
*	5.2.3	On H11-P609, front, Division 3, left test box, <b>INSERT</b> a jumper between test point C71A-K10C-2A (third column-fourth row, red jack) and test point C71A-K12G-2B (fourth column-third row, black jack)..	Operator installs jumper at H11-P609 between test points C71A-K10C-2A and C71A-K12G-2B.  <b>Examiner Cue: IF the JPM is being simulated in the Control Room, THEN inform the Operator that a jumper has been placed between the test jacks you indicated.</b>		

JPM: 2013 NRC S-7

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Reactor Protection System**TASK: **Defeat RPS Interlocks**

# *	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	5.2.4	On H11-P611, front, Division 2, left test box, <b>INSERT</b> a jumper between test point C71A-K10B-2A (fourth column-fourth row, red jack) and test point C71A-K12F-2B (first column-second row, black jack)..	Operator installs jumper at H11-P611 between test points C71A-K10B-2A and C71A-K12F-2B.  <b>Examiner Cue: IF the JPM is being simulated in the Control Room, THEN inform the Operator that a jumper has been placed between the test jacks you indicated.</b>		
*	5.2.5	On H11-P611, front, Division 4, left test box, <b>INSERT</b> a jumper between test point C71A-K10D-2A (third column-third row, red jack) and test point C71A-K12H-2B (fourth column-second row, black jack).  STOP _____ TIME:	Operator installs jumper at H11-P611 between test points C71A-K10D-2A and C71A-K12H-2B.  <b>Examiner Cue: IF the JPM is being simulated in the Control Room, THEN inform the Operator that a jumper has been placed between the test jacks you indicated.</b>		

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

DATE: \_\_\_\_\_

**TASK NUMBER: 2001040501**

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

**RESULT:** ☐ - SAT ☐ - UNSAT

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. The plant has experienced a failure to scram.
2. All scram valves have opened but the Scram Discharge Volume is full.
3. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being executed.
4. Draining the SDV and attempting a manual scram is required.
5. HC.OP-EO.ZZ-0302 has NOT been implemented.
6. ARI interlocks have been defeated in accordance with Section 5.1 of HC.OP-EO.ZZ-0320.

**INITIATING CUE:**

Defeat RPS interlocks IAW HC.OP-EO.ZZ-0320.

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Containment Atmosphere Control

**TASK:** Vent to Control Containment Pressure With Suppression  
Pool Level Less Than 180 inches

**TASK NUMBER:** 2000950501

**JPM NUMBER:** 2013 NRC S-8

**REV #:** 1

**SAP BET:** NOH05JPGS05E

**ALTERNATE PATH:** ☒

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC S-8**REV:** 1**SYSTEM:** Containment Atmosphere Control**TASK NUMBER:** 2000950501**TASK:** Vent to Control Containment Pressure With Suppression Pool Level  
Less Than 180 inches**ALTERNATE PATH:** ☒**K/A NUMBER:** 295024 EA1.19**IMPORTANCE FACTOR:** 3.3 3.4**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-EO.ZZ-0318(Q) Rev. 7**TOOLS, EQUIPMENT AND PROCEDURES:** None**ESTIMATED COMPLETION TIME:** 23 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Containment Atmosphere Control**TASK:** Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches**TASK NUMBER:** 2000950501**INITIAL CONDITIONS:**

1. The 'B' RHR pump suction was isolated due to a leak.
2. The Plant experienced a large break LOCA.
3. HC.OP-EO.ZZ-0102, Primary Containment Control has been implemented.
4. Drywell pressure is approximately 60 psig and rising AND Suppression Chamber pressure is approximately 59 psig and rising.
5. Suppression Pool Level indicates approximately 83 inches.
6. The Emergency Instrument Air Compressor has been restored IAW HC.OP-EO.ZZ-0319.
7. The Control Room Emergency Filtration System is operating in the Isolate/Recirculation Mode in accordance with HC.OP-SO.GK-0001(Q).
8. FRVS is in operation in accordance with HC.OP-SO.GU-0001(Q).
9. The Emergency Duty Officer/Emergency Response Manager has been informed that containment venting will be performed.
10. Salem Operations has been notified that containment venting will be performed.
11. The Aux. Bldg. EO is standing by at panel 1Y-F404.
12. The Reactor Building is inaccessible and has been evacuated.

**INITIATING CUE:**

Vent the Containment via the Hard Torus Vent IAW HC.OP-EO.ZZ-0318. Notify the CRS when venting has commenced.

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE:  START TIME:</b>				
	Operator obtains/locates procedure HC.OP-EO.ZZ-0318.	Operator obtains the correct procedure.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<b>If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.</b>				
	Operator determines beginning step of the procedure	Operator determines correct beginning step to be 5.1.1.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.1	<b>VENT</b> the containment via the Hard Torus Vent as follows: A. <b>ENSURE</b> that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure.	Operator reviews Prerequisites and ensures Prerequisites complete.			
<b>CUE</b>	<b>If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.</b>				
5.1.1	B. <b>NOTIFY</b> the Emergency Duty Officer that containment venting via the Hard Torus Vent will be performed.	Operator notifies the CRS to notify the EDO that containment venting via the Hard Torus Vent will be performed.			
<b>CUE</b>	<b>Acknowledge the communication to the EDO.</b>				
5.1.1	C. In the Lower Relay Room, Elev 102' at panel 1YF404 (see Attachment 2), <b>INSTALL</b> F22 (6 amp fuse).	Operator directs the field operator to install fuse F22 at panel 1YF404.	* #		

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>WHEN</b> directed to install 1YF404 fuse F22, <b>THEN TRIGGER ET-3</b> <b>AND REPORT</b> the fuse is installed.				
5.1.1	D. <b>DEPRESS</b> ISLN OVRD and <b>OPEN</b> GS-HV-4964 SUPP CHMBR TO CPCS DMP.	Operator depresses the ISLN OVRD pushbutton for the HV-4964.	* #		
		Operator observes the amber OVER-RIDDEN indicator illuminates.			
		Operator depresses the HV4964 OPEN PB.	* #		
		Operator observes the red OPEN indicator illuminates and the green CLSD indicator extinguishes.			
5.1.1	E. <b>ANNOUNCE</b> that containment venting will commence at the South end of the Reactor Building via the Hard Torus Vent.	Operator announces containment venting will commence at the South end of the Reactor Building via the Hard Torus Vent over the plant paging system.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.1	F. When HV-4964 SUPP CHMBR TO CPCS DMP is full open, then <b>OPEN</b> GS-HV-11541 TORUS VENT ISOLATION VALVE.	Operator observes that the HV4964 OPEN indicator is illuminated.  Operator observes that the HV4964 CLSD indicator is extinguished.			
		Operator rotates HV11541 keylock switch to the OPEN position.	*		
		Operator observes the red HV11541 OPEN indicator REMAINS EXTINGUISHED and the green CLOSED indicator REMAINS ILLUMINATED.			
		Operator informs CRS.			
CUE	Repeat back report from Operator and direct Operator to continue to implement the procedure until a vent path is established.	<b>Examiner Note:</b> Based on the Initial Conditions, the Reactor Building is NOT accessible. Manually opening the HV-11541 is not an option.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.1	G. When drywell pressure can be maintained below 60 psig, then <b>CLOSE</b> GS-HV-11541 TORUS VENT ISOLATION VALVE.	Operator determines drywell pressure is not being maintained below 60 psig, continues on in the procedure.			
5.1.1	H. <b>REPEAT</b> steps 5.1.1.E thru 5.1.1.G as necessary to reduce and maintain drywell pressure below 65 psig.	Operator determines repeating these steps will not establish a vent path.			
5.1.1	I. If actions taken to reduce containment pressure have been unsuccessful, then continue in this procedure.	Operator determined actions taken thus far have not been successful, continues in the procedure.			
5.1.2	<b>VENT</b> the containment via the Suppression Chamber supply and ILRT piping as follows:	Operator determines this path is not available since it requires access to the Reactor Building and the reactor Building is not accessible.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>IF</b> the Operator requests the status of the "angled piping downstream of 1-GS-V058", <b>THEN INFORM</b> the Operator the piping has NOT been rotated to align the vent path and the Reactor Building is NOT accessible.				
5.1.3	<b>VENT</b> the containment via the Drywell supply and ILRT piping as follows:	Operator determines this path is not available since it requires access to the Reactor Building and the reactor Building is not accessible.			
5.1.4	<b>VENT</b> the containment via the Suppression Chamber 2" exhaust as follows:	Operator determines the Suppression Chamber 2" exhaust is the next most preferable path.  <b>Examiner Note:</b> 3.1.4 states: The selection of vent paths has been presented in priority order. However, if it can be determined that a particular path is unavailable or undesirable, the section addressing that vent path may be omitted (see Attachment 4).			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.4	A. <b>ENSURE</b> that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure.	Operator reviews Prerequisites and ensures Prerequisites complete.			
<b>CUE</b>	<b>If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.</b>				
5.1.4	B. <b>NOTIFY</b> the Emergency Duty Officer that containment venting of the Suppression Chamber to the Reactor Building will be performed.	Operator notifies the CRS to notify the EDO that containment venting of the Suppression Chamber to the Reactor Building will be performed.			
<b>CUE</b>	<b>Acknowledge the communication to the EDO.</b>				
5.1.4	C. <b>DEPRESS</b> ISLN OVRD and <b>OPEN</b> GT-HD-9372A Drwl Purge Vent Exh Dmpr.	Operator presses the DRYWELL PURGE SHUT OFF DMPRS ISLN OVRD pushbutton.	* #		
		Operator observes the pushbutton backlights.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator presses the DRYWELL PURGE SHUT OFF DMPRS HD9372A OPEN pushbutton.	* #		
		Operator observes the red HD9372A OPEN light illuminates and green CLOSED light extinguishes.			
5.1.4	D. <b>DEPRESS</b> ISLN OVRD and <b>OPEN</b> GS-HV-4964 SUPP CHMBR TO CPCS DMP.	Operator observes the amber OVER-RIDDEN light for the HV-4964 ISLN OVRD is already illuminated.			
		Operator observes red HV4964 OPEN light is already illuminated and green CLSD light is already extinguished.  <b>Examiner Note:</b> It is only critical the HV-4964 is open. It is not critical whether it was left open from step 5.1.1.C, or closed and then re-opened at this step.			
5.1.4	E. <b>ANNOUNCE</b> containment venting of the Suppression Chamber to the Reactor Building.	Operator announces containment venting of the Suppression Chamber to the Reactor Building over the plant page.	* #		

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.4	F. When GS-HV-4964 SUPP CHMBR TO CPCS DMP is full open, then <b>DEPRESS</b> ISLN OVRD and <b>OPEN</b> GS-HV-4963 SUPP CHMBR N <sub>2</sub> M/U EXH.	Operator observes red HV4964 OPEN light is illuminated and green CLSD light is extinguished.			
		Operator presses ISLN OVRD for the HV4963.	* #		
		Operator observes the amber OVER-RIDDEN light illuminates.			
		Operator presses the HV4963 OPEN pushbutton.	* #		
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			
5.1.4	G. When drywell pressure can be maintained below 60 psig, then <b>CLOSE</b> GS-HV-4963 SUPP CHMBR N <sub>2</sub> M/U EXH and GS-HV-4964 SUPP CHMBR TO CPCS DMP.	Operator informs CRS that drywell venting has commenced and monitors drywell pressure.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Containment Atmosphere Control

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>IF</b> the operator cannot see the pressure reduction on the 10C650E indicators,  <b>THEN</b> inform the operator Drywell pressure reduction is observable on SPDS.	<b>Examiner Note:</b> The rate of drywell pressure reduction through this path alone is slow and will not be readily visible on the 10C650E indicators due to the absence of a tenth digit. The response IS readily observable on SPDS. The operator may not be satisfied with the initial response and may elect to open an additional vent path.			
CUE	<b>WHEN</b> operator informs you the task is complete, <b>OR</b> the JPM has been terminated for other reasons, <b>THEN RECORD</b> the STOP time.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state "This JPM is complete".  <b>STOP TIME:</b>				
N/A	<b>TASK STANDARD:</b>	Operator vents primary containment through alternate vent path.			

JOB PERFORMANCE MEASURE  
OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC S-8

TASK: Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches

TASK NUMBER: 2000950501

QUESTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

## JOB PERFORMANCE MEASURE

## INITIAL CONDITIONS:

1. The 'B' RHR pump suction was isolated due to a leak.
2. The Plant experienced a large break LOCA.
3. HC.OP-EO.ZZ-0102, Primary Containment Control has been implemented.
4. Drywell pressure is approximately 60 psig and rising AND Suppression Chamber pressure is approximately 59 psig and rising.
5. Suppression Pool Level indicates approximately 83 inches.
6. The Emergency Instrument Air Compressor has been restored IAW HC.OP-EO.ZZ-0319.
7. The Control Room Emergency Filtration System is operating in the Isolate/Recirculation Mode in accordance with HC.OP-SO.GK-0001(Q).
8. FRVS is in operation in accordance with HC.OP-SO.GU-0001(Q).
9. The Emergency Duty Officer/Emergency Response Manager has been informed that containment venting will be performed.
10. Salem Operations has been notified that containment venting will be performed.
11. The Aux. Bldg. EO is standing by at panel 1Y-F404.
12. The Reactor Building is inaccessible and has been evacuated.

## INITIATING CUE:

Vent the Containment via the Hard Torus Vent IAW HC.OP-EO.ZZ-0318. Notify the CRS when venting has commenced.

## JOB PERFORMANCE MEASURE

**I. INITIAL CONDITIONS:****I.C.**

<i>Initial</i>	
	INITIALIZE the simulator to 100% power, MOL, EPU.
	CLOSE the BC-HV-F004B RHR pump suction valve.
	ISOLATE drywell cooling by closing the inboard and outboard drywell chilled water isolation valves.
	TRIGGER ET-1 and ESTABLISH post large break LOCA conditions with a downcomer break and drywell pressure approximately 60 psig. Malfunctions may be modified as necessary.
	CLOSE the MSIVs and drains.
	IMPLEMENT EOP-101 AND EOP-102 <u>AFTER</u> drywell pressure is raised to approximately 60 psig.
	RESTORE Instrument Air IAW EOP-319.
	PLACE Temporary Air Compressor in service.
	PLACE 'A' RHR pump in drywell spray with the exception of opening the HV-F021A.
	FAIL OPEN an ADS SRV.
	USE Insight Item rhv021(1) (set to ~0.00 to 0.04) to crack open the F021A as necessary to establish drywell pressure at 60 psig and rising slowly.
	ENSURE CREF is in service in the ISOLATE/RECIRC Mode IAW SO.GK-0001.
	ENSURE FRVS is in Service IAW SO.GU-0001.

**PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)**

<i>Initial</i>	Description
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

**EVENT FILE:**

<i>Initial</i>	ET #	
	2	Event code: pcpdw >= 16.2 // Drywell Pressure in psia Description: Inserts Feedwater line break and LOCA after drywell preheated
		Event code: Description:
		Event code: Description:

## JOB PERFORMANCE MEASURE

**TQ-AA-106-0303**

## JOB PERFORMANCE MEASURE

## MALFUNCTION SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert malfunction FW32 to 100.00000 on event 2	Feedwater line break inside containment
	None	None	Insert malfunction FW04A after 60 on event 2	Secondary condensate pump AP137 trip
	None	None	Insert malfunction FW04B after 60 on event 2	Secondary condensate pump BP137 trip
	None	None	Insert malfunction FW04C after 60 on event 2	Secondary condensate pump CP137 trip
	None	None	Insert malfunction MS01 after 90 to 4.00000 on event 2	Steam line break in drywell
	None	None	Insert malfunction PC04 on event 4	Downcomer break

## REMOTE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert remote RH23B to TAGGED	RH23 RHR Pump B
	None	None	Insert remote RH20A to RACK_OUT	RH20 HV-F021A RHR CTMT SPRAY
	None	None	Insert remote ET067 to INSTALLED on event 3	ET067 HV-11541 Torus vent
	None	None	Insert remote IA10 to RUN	IA10 Temporary station air compressor
	None	None	Insert remote EP38 to Emergency	EP38 EOP-319, Restoring Instrument Air in an Emergency

## OVERRIDE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert override 6S151_A_DI to Off	HV-11541 OPEN KEY SW (DI)

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC S-8

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC S-8**REV#:** 01**TASK:** Vent to Control Containment Pressure With Suppression Pool Level  
Less Than 180 inches

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.  
Knowledge and Abilities (K/A) is identified, and is  $\geq 3.0$  (LOR) or  $\geq 2.5$  (ILT) or justification is
- \_\_\_\_\_ 2. provided.
- \_\_\_\_\_ 3. License level identified. (SRO,RO,STA,NLO)
- \_\_\_\_\_ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- \_\_\_\_\_ 5. Initial setup conditions are identified.
- \_\_\_\_\_ 6. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 7. Task standards for successful completion are identified.  
Critical steps meet the criteria for critical steps and are identified with an asterisk (\*). Sequence
- \_\_\_\_\_ 8. Critical Steps are identified with a pound sign (#).
- \_\_\_\_\_ 9. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.
- \_\_\_\_\_ 10. Procedure(s) referenced by this JPM match the most current revision of that procedure.
- \_\_\_\_\_ 11. Cues both verbal and visual are complete and correct.  
Performance standards are specific in exact control and indication nomenclature (switch
- \_\_\_\_\_ 12. position, meter reading) even if these criteria are not specified in the procedural step.  
Statements describing important actions or observations that should be made by the operator
- \_\_\_\_\_ 13. are included (if required.)
- \_\_\_\_\_ 14. Validation time is included.
- \_\_\_\_\_ 15. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Residual Heat Removal

**TASK:** Align Fire Water System For Alternate RPV Injection

**TASK NUMBER:** 2000490504

**JPM NUMBER:** 2013 NRC P-1

**REV #:** 01

**SAP BET:** NOH05JPBC07E

**ALTERNATE PATH:** ☐

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

STATION: Hope Creek

JPM NUMBER: 2013 NRC P-1

REV: 01

SYSTEM: Residual Heat Removal

TASK NUMBER: 2000490504

TASK: Align Fire Water System For Alternate RPV Injection

ALTERNATE PATH: ☐

K/A NUMBER: 295031 A1.08

IMPORTANCE FACTOR: 

3.8	3.9
RO	SRO

APPLICABILITY:

EO ☐RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Plant/Simulate

REFERENCES: HC.OP-EO.ZZ-0310 Rev. 7

TOOLS, EQUIPMENT AND PROCEDURES: HC.OP-EO.ZZ-0310

EOP-310 equipment located in EOP locker on E1.102' Diesel Bldg. Key(s) specified in section 4.0 of HC.OP-EO.ZZ-0310.

ESTIMATED COMPLETION TIME: 20 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: \_\_\_\_\_

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: \_\_\_\_\_ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Residual Heat Removal**TASK:** Align Fire Water System For Alternate RPV Injection**TASK NUMBER:** 2000490504**INITIAL CONDITIONS:**

1. A Station Blackout has occurred due to severe weather conditions.
2. The reactor is shutdown; all control rods are in.
3. A, C, and D Emergency Diesel Generators have failed to start.
4. B Emergency Diesel Generator has started and loaded onto its respective bus.
5. B RHR pump has tripped on overcurrent and cannot be started.
6. The Diesel Driven Fire pump has started and is operating properly.
7. Due to severe weather conditions, the DG building watertight doors are not accessible.

**INITIATING CUE:**

Lineup for alternate injection using Fire Water IAW HC.OP-EO.ZZ-0310.  
Use the local fire hose station isolation valve as the supply of Fire Water.  
The Reactor Building EO is standing by to assist as necessary.

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER</b> Operator repeats back the Initiating Cue: <b>START TIME:</b>	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-EO.ZZ-0310			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<b>IF excessive time is taken reviewing precautions and limitations, THEN INFORM</b> operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1.1.			

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Residual Heat Removal**TASK: **Align Fire Water System For Alternate RPV Injection**

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<u>EQUIPMENT REQUIRED</u>  Key # (G1) for EOP Locker on El. 102' diesel bldg. From either: ○ SM office <u>or</u> ○ From EOP Locker in OSC (Use Key #9 obtained from SM office or by breaking red key holder glass in OSC).  <u>AND</u>  Equipment located in EOP locker on El. 102' diesel bldg.  Contents:  1- 2.5" hose to flange adapter 1- 1.5" hose to flange adapter 150' of 2.5" Fire Hose 50' of 1.5" Fire Hose (for Fire Hose Station) 2- 1-1/16" Box Wrenches 2- Fire Hose Wrenches 1- Hydrant Wrench	Operator obtains the following required equipment:  Key # (G1) for EOP Locker on El. 102' diesel bldg. From either: ○ SM office <u>or</u> ○ From EOP Locker in OSC (use key #9 obtained from SM office or by breaking red key holder glass in OSC)  Equipment located in EOP locker on El 102' diesel bldg.  <b>Examiner Note: After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location.</b>			
5.1.1	<b>ENSURE</b> all prerequisites of Section 2.1 are satisfied.	Operator ensures that all prerequisites have been satisfied.			

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	IF excessive time is taken reviewing prerequisites, THEN <b>INFORM</b> operator that all are satisfied.	N/A			
5.1.2	<b>CONNECT</b> hose to the appropriate flange adaptor <b>AND TIGHTEN</b> . <ul style="list-style-type: none"> <li>1.5" hose and adapter for fire hose station</li> <li>2.5" hose and adapter for yard fire hydrant or fire truck</li> </ul>	Operator accesses the EOP locker and identifies the 1.5" fire hose and correct adapter.  <b>Examiner Note:</b> Based on the Initiating Cue, Operator determines the 1.5" hose and adapter is the correct equipment. From this point on, actions will be simulated. <i>The installed white hose on the Fire Hose Station is <b>NOT</b> the correct hose for this task.</i>			
CUE	Once the operator identifies the correct equipment, <b>INFORM</b> the Operator the remainder of the JPM will be simulated.	N/A			
		Operator connects the correct hose to the correct adapter.	*		

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.3	<b>REMOVE</b> fire hose fill connection blank flange on 1-BC-V426 (local, Diesel Building, Elev. 102', see Attachment 2) <b>AND INSTALL</b> hose to flange adapter.	Operator removes the four bolts on the 1-BC-V426 blank flange. (Bolts removed and re-installed using the 1- 1/16" Box wrenches).	*		Y N STAR
		Operator removes the blank flange.	*		
CUE	The flange you indicated is removed.				
		Operator installs the 1.5" hose to flange adapter using the same four bolts. (Bolts removed and re-installed using the 1- 1/16" Box wrenches).	*		
CUE	The hose to flange adapter has been installed in the place you indicated.				

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.4	<b>CONNECT</b> fire hose to one of the following sources of Fire Water: <ul style="list-style-type: none"> <li>○ Fire Hose Station</li> <li>○ Yard Fire Hydrant</li> <li>○ Fire Truck</li> </ul>	Operator removes installed Fire Station hose from standpipe.			
		Operator installs free end of 1.5" fire hose to the Fire Hose Station standpipe.	*		
CUE	The fire hose has been connected to the fire water source stated.				

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.5	<b>OPEN</b> one of the following as applicable: <ul style="list-style-type: none"> <li>○ Fire Hose Station Isolation Valve</li> <li>○ Fire Hydrant Line Valve (side) and Plug Valve (top)</li> <li>○ Fire Truck Valves</li> </ul>	Operator opens the Fire Hose Station Isolation Valve.	*		
CUE	The valve you have indicated is open, flow noise can be heard past the valve and the fire hose is swelling.				
5.1.6	In the South-east corner of the Rx Bldg, Elev. 102', <b>OPEN</b> breaker 52-222082.	Operator contacts RB Equipment Operator and directs the opening at breaker 52-222082.	*		Y N 3-Way Communications
CUE	As the RB Equipment Operator, report that breaker 52-222082 has been opened.				

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.7	<b>OPEN</b> 1-BC-V426, SSWS Sup to RHR Fire Hose Fill Conn Sup Vlv (local, diesel truck bay, elevation 102 inside stairway door - see Attachment 2).	Operator opens 1-BC-V426.	*		Y N STAR
	<b>Examiner Cue:</b> The valve you indicated is open; flow noise can be heard past the valve.				
5.1.8	<b>OPEN</b> BC-HV-F075, SSWS TO RHR LOOP B SUP MOV (panel 10C650).	Operator requests that the Control Room operator open BC-HV-F075.	*		Y N 3-Way Communications
<b>CUE</b>	<b>Acknowledge messages from the operator and report that BC-HV-F075 has been opened.</b>				

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete,  <u>OR</u> the JPM has been terminated for other reasons,  <u>THEN RECORD</u> the STOP TIME.</p> <p><b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state "<b>This JPM is complete</b>".</p> <p><b>STOP TIME:</b></p>	N/A			
N/A	TASK STANDARD:	Operator lines up for alternate injection using Fire Water IAW HC.OP-EO.ZZ-0310 using the local fire hose station isolation valve as the supply of Fire Water.			

**OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION**

**NAME:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**JPM Number: 2013 NRC P-1**

**TASK: Align Fire Water System For Alternate RPV Injection**

**TASK NUMBER: 2000490504**

**QUESTION:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESPONSE:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESULT:**

**SAT**

☐

**UNSAT**

☐

**QUESTION:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESPONSE:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESULT:**

**SAT**

☐

**UNSAT**

☐

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

JPM NUMBER: 2013 NRC P-1

REV#: 1

**I. INITIAL CONDITIONS:**

I.C.

<i>Initial</i>	

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

<i>Initial</i>	Description

**EVENT TRIGGERS:**

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: COMMAND: PURPOSE:

**JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)**

## JOB PERFORMANCE MEASURE

**REVISION HISTORY****JPM NUMBER:** 2013 NRC P-1

<b>Rev #</b>	<b>Date</b>	<b>Description</b>	<b>Validation Required?</b>

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC P-1**REV#:** 1**TASK:** Align Fire Water System For Alternate RPV Injection

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.  
Knowledge and Abilities (K/A) is identified, and is  $\geq 3.0$  (LOR) or  $\geq 2.5$  (ILT) or justification is
- \_\_\_\_\_ 2. provided.
- \_\_\_\_\_ 3. License level identified. (SRO,RO,STA,NLO)
- \_\_\_\_\_ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- \_\_\_\_\_ 5. Initial setup conditions are identified.
- \_\_\_\_\_ 6. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 7. Task standards for successful completion are identified.  
Critical steps meet the criteria for critical steps and are identified with an asterisk (\*). Sequence
- \_\_\_\_\_ 8. Critical Steps are identified with a pound sign (#).
- \_\_\_\_\_ 9. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.  
Procedure(s) referenced by this JPM match the most current revision of that
- \_\_\_\_\_ 10. procedure.
- \_\_\_\_\_ 11. Cues both verbal and visual are complete and correct.  
Performance standards are specific in exact control and indication nomenclature  
(switch position, meter reading) even if these criteria are not specified in the
- \_\_\_\_\_ 12. procedural step.  
Statements describing important actions or observations that should be made by the
- \_\_\_\_\_ 13. operator are included (if required.)
- \_\_\_\_\_ 14. Validation time is included.
- \_\_\_\_\_ 15. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. A Station Blackout has occurred due to severe weather conditions.
2. The reactor is shutdown; all control rods are in.
3. A, C, and D Emergency Diesel Generators have failed to start.
4. B Emergency Diesel Generator has started and loaded onto its respective bus.
5. B RHR pump has tripped on overcurrent and cannot be started.
6. The Diesel Driven Fire pump has started and is operating properly.
7. Due to severe weather conditions, the DG building watertight doors are not accessible.

**INITIATING CUE:**

Lineup for alternate injection using Fire Water IAW HC.OP-EO.ZZ-0310.  
Use the local fire hose station isolation valve as the supply of Fire Water.  
The Reactor Building EO is standing by to assist as necessary.

OPERATOR TRAINING PROGRAM  
JOB PERFORMANCE MEASURE

**STATION:** Hope Creek  
**SYSTEM:** Emergency Diesel Generator  
**TASK:** Manually Emergency Start A Diesel Generator From The Remote Panel  
**TASK NUMBER:** 2640170404  
**JPM NUMBER:** 2013 NRC P-2

**ALTERNATE PATH:** ☐

**K/A NUMBER:** 264000 A2.09

<b>IMPORTANCE FACTOR:</b>	<u>3.7</u>	<u>4.1</u>
	<b>RO</b>	<b>SRO</b>

**APPLICABILITY:**

EO ☒

RO ☒

STA ☐

SRO ☒

**EVALUATION SETTING/METHOD:** Aux Bldg/Simulate

**REFERENCES:** HC.OP-SO.KJ-0001 Rev 43

**TOOLS, EQUIPMENT AND PROCEDURES:**

Key #51 – KIRK – Diesel Eng Takeover/Local Cont. (Work Control)

**VALIDATED JPM COMPLETION TIME:** 6 Minutes

**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A

**APPROVAL:**

\_\_\_\_\_  
BARGAINING UNIT  
REPRESENTATIVE

\_\_\_\_\_  
OPS TRAINING MANAGER  
OR DESIGNEE

\_\_\_\_\_  
OPERATIONS DIRECTOR  
OR DESIGNEE

**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:** \_\_\_\_\_

OPERATOR TRAINING PROGRAM  
JOB PERFORMANCE MEASURE:

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Emergency Diesel Generator**TASK:** Manually Emergency Start A Diesel Generator From The Remote Panel**TASK NUMBER:** 2640170404**INITIAL CONDITIONS:**

1. An earthquake and Loss of Coolant Accident have occurred.
2. The Aux Bldg Operator has been called to the Control Room to perform Communicator duties.
3. The Reactor is shutdown. All rods are full in.
4. Emergency Diesel Generator AG400 has failed to automatically start and will not start from the Control Room.
5. HC.OP-AB.ZZ-0135 is being implemented.
6. Loss Prevention has been notified that a Diesel Generator will be placed in service and implementation of the Safety Department sampling plan may be required.

**INITIATING CUE:**

You are an extra Operator.

Start the 'A' Emergency Diesel Generator AG400 from the Remote Panel 1A-C423 (EI. 130').  
Loading the EDG is not required 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.

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Emergency Diesel Generator**TASK: **Manually Emergency Start A Diesel Generator From The Remote Panel**

* #	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.KJ-0001.	Operator obtains the correct procedure.		
		Operator reviews precautions and limitations.	Operator reviews precautions and limitations.  <b>Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.</b>  <b>Examiner Note:</b> It is not critical to initial the procedure step, nor complete Attachment 1 in this and subsequent steps.		
	4.0	<b><u>EQUIPMENT REQUIRED</u></b> Key #51 – KIRK – Diesel Eng Takeover/Local Cont. (Work Control)	Operator obtains Key #51 – KIRK – Diesel Eng Takeover/Local Cont. (Work Control)  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 5.4.1.		
	5.4.1	<b>ENSURE</b> that all prerequisites have been satisfied IAW Section 2.4 of this procedure.	Operator ensures that all prerequisites have been satisfied.  <b>Examiner Cue: If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.</b>		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Emergency Diesel Generator**TASK: **Manually Emergency Start A Diesel Generator From The Remote Panel**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.4.2	START TIME: _____ <b>OBSERVE</b> that READY FOR AUTO START is ON (Panel 1A(B,C,D)-C423 EI. 130').	Operator observes the READY FOR AUTO START is on. <b>Examiner Cue: The light identified is illuminated.</b>  The operator then initials the appropriate procedure step.		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Emergency Diesel Generator

TASK: Manually Emergency Start A Diesel Generator From The Remote Panel

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.4.3	<p><b>OBSERVE</b> that Control is transferred to Remote Panels through one of the following:</p> <ul style="list-style-type: none"> <li><b>PRESS</b> REMOTE PB <b>AND ENSURE</b> (10C651E). REMOTE light is ON.</li> </ul> <p style="text-align: center;"><u>OR</u></p>	<p>Operator requests that the Control Room press the REMOTE push button for AG400.</p> <p><b>Examiner Cues:</b> <b>IF</b> the operator requests the Control Room to press REMOTE, <b>THEN</b> respond as the Control Room you are <b>NOT</b> able to transfer the AG400 to Remote control. REMOTE push button for AG400 has been depressed and the REMOTE light is <b>NOT</b> on.</p> <p><b>IF</b> the operator requests the status of the local indications <b>THEN</b> inform them:</p> <ul style="list-style-type: none"> <li>On the 423 panel the Main Control Room has Control light is illuminated and the Remote Engine Panel has Control light is extinguished.</li> <li>On the 422 panel, the Main Control Room has Control lights are illuminated and the Remote Generator Panel has Control lights are extinguished.</li> </ul> <p style="text-align: center;"><u>OR</u></p>		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Emergency Diesel Generator

TASK: Manually Emergency Start A Diesel Generator From The Remote Panel

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
* #		<ul style="list-style-type: none"> <li><b>OBTAIN</b> key #51 – KIRK – Diesel Emg <b>Takeover</b>/Local Cont., from Work Control Center <b>AND PLACE</b> EMERGENCY TAKE-OVER Switch in EMERG position.</li> </ul>	<p>Operator obtains key #51 from WCC, unlocks the AG400 EMERGENCY TAKE-OVER Switch, and places the AG400 EMERGENCY TAKE-OVER Switch in EMERG position</p> <p>The operator then initials the appropriate procedure step.</p> <p><b>Examiner Cues:</b></p> <p><b>The switch identified is in the stated position.</b></p> <p><b>IF the operator requests the status of the local indications <u>THEN</u> tell them:</b></p> <ul style="list-style-type: none"> <li>On the 423 panel the Main Control Room has Control light is extinguished and the Remote Emergency Takeover light is illuminated.</li> <li>On the 422 panel, the Main Control Room has Control AND Emergency Takeover in Normal lights are extinguished. The Remote Emergency Takeover light is illuminated.</li> </ul>		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Emergency Diesel Generator**TASK: **Manually Emergency Start A Diesel Generator From The Remote Panel**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
* #	5.4.4	<b>PLACE</b> REMOTE ENGINE CONTROL in START (Panel 1A(B,C,D)-C423 El. 130').	Operator places the AG400 REMOTE ENGINE CONTROL in START.  <b>EXAMINER NOTE:</b> The following cues are dependent upon correct step performance. Cue appropriately.  <b>EXAMINER CUE: On panel 1AC423:</b>  <b>1. The Diesel Engine can be heard starting.</b>  <b>2. Engine Stopped indicator is extinguished</b>  The operator then initials the appropriate procedure step.		
	5.4.5	<b>OBSERVE</b> the following: <ul style="list-style-type: none"><li>GENERATOR FREQUENCY indicates about 60 Hz.</li></ul>	Operator observes: GENERATOR FREQUENCY indicates about 60 Hz.  <b>Examiner Cue: The indicator identified indicates 60 Hz.</b>  The operator then initials the appropriate procedure step.		
		<ul style="list-style-type: none"><li>GENERATOR VOLTS indicates about 4160 Volts.</li></ul>	GENERATOR VOLTS indicates about 4160 Volts.  <b>Examiner Cue: The indicator identified indicates 4160 volts.</b>  The operator then initials the appropriate procedure step.		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Emergency Diesel Generator

TASK: Manually Emergency Start A Diesel Generator From The Remote Panel

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.4.6	<b>OBSERVE</b> the status of the following indicating lights (Panel 1A(B,C,D)-C423 El. 130'). <ul style="list-style-type: none"> <li>JACKET WATER HEATER is OFF.</li> </ul>	Operator observes: JACKET WATER HEATER OFF light is illuminated and JACKET WATER HEATER ON light is extinguished. <b>Examiner Cue: The JACKET WATER HEATER OFF light is illuminated and JACKET WATER HEATER ON light is extinguished.</b> The operator then initials the appropriate procedure step.		
		<ul style="list-style-type: none"> <li>LUBE OIL KEEPWARM HEATER is OFF.</li> </ul>	Operator observes: LUBE OIL KEEPWARM SYSTEM HEATER OFF light is illuminated and LUBE OIL KEEPWARM SYSTEM HEATER ON light is extinguished. <b>Examiner Cue: The LUBE OIL KEEPWARM SYSTEM HEATER OFF light is illuminated and LUBE OIL KEEPWARM SYSTEM HEATER ON light is extinguished.</b> The operator then initials the appropriate procedure step.		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Emergency Diesel Generator

TASK: Manually Emergency Start A Diesel Generator From The Remote Panel

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		<ul style="list-style-type: none"> <li>JACKET WATER KEEPWARM PUMP is OFF.</li> </ul>	<p>Operator observes: JACKET WATER KEEPWARM PUMP OFF light is illuminated and JACKET WATER KEEPWARM PUMP ON light is extinguished.</p> <p><b>Examiner Cue: JACKET WATER KEEPWARM PUMP OFF light is illuminated and JACKET WATER KEEPWARM PUMP ON light is extinguished.</b></p> <p>The operator then initials the appropriate procedure step.</p>		
		<ul style="list-style-type: none"> <li>GENERATOR SPACE HEATER is OFF.</li> </ul>	<p>Operator observes: GENERATOR SPACE HEATER OFF light is illuminated and GENERATOR SPACE HEATER ON light is extinguished.</p> <p><b>Examiner Cue: GENERATOR SPACE HEATER OFF light is illuminated and GENERATOR SPACE HEATER ON light is extinguished.</b></p> <p>The operator then initials the appropriate procedure step.</p>		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Emergency Diesel Generator**TASK: **Manually Emergency Start A Diesel Generator From The Remote Panel**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		<ul style="list-style-type: none"> <li>DIESEL RUNNING – NOT LOADED is ON.</li> </ul>	DIESEL RUNNING - NOT LOADED is on.  <b>Examiner Cue: The light identified is illuminated.</b>  The operator then annotates the appropriate procedure step.		
	5.4.7	IF DIESEL RUNNING – LOADED is ON (Panel 1A(B,C,D)-C423 El. 130'), <b>OBSERVE</b> that EDG BREAKER CLOSED is ON.	<b>Examiner Cue: The light identified is extinguished.</b>  Operator determines the step does NOT apply.  The operator then initials the appropriate procedure step.		
	5.4.8	<b>REFER</b> to Attachment 5, Start/Failure Criteria for determining the validity of the start or failure to start, <b>THEN LOG</b> results in Control Room log(s).	Operator refers to Attachment 5.		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Emergency Diesel Generator**TASK: **Manually Emergency Start A Diesel Generator From The Remote Panel**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	Att. 5	The Shift Manager (SM) shall determine the validity of the start or failure to start utilizing the following criteria:	Operator requests the SM to determine the Start/Failure Criteria per Attachment 5.  <b>Examiner Cue: Repeat back request from Operator. Inform Operator the Start Attempt was a Failure and has been logged in the Control Room log.</b>  The operator then initials the appropriate procedure step.		
	5.4.9	<u>IF</u> loading of the EDG is required locally, <b>PROCEED</b> to Step 5.6.13. STOP TIME: _____	Operator determines local loading of the EDG is <u>NOT</u> required.  The operator then initials the appropriate procedure step.		

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

DATE: \_\_\_\_\_

**TASK NUMBER: 2640170404**

**QUESTION:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**UNSAT**

QUESTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**RESPONSE:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**UNSAT**

**INITIAL CONDITIONS:**

1. An earthquake and Loss of Coolant Accident have occurred.
2. The Aux Bldg Operator has been called to the Control Room to perform Communicator duties.
3. The Reactor is shutdown. All rods are full in.
4. Emergency Diesel Generator AG400 has failed to automatically start and will not start from the Control Room.
5. HC.OP-AB.ZZ-0135 is being implemented.
6. Loss Prevention has been notified that a Diesel Generator will be placed in service and implementation of the Safety Department sampling plan may be required.

**INITIATING CUE:**

You are an extra Operator.

Start the 'A' Emergency Diesel Generator AG400 from the Remote Panel 1A-C423 (El. 130').  
Loading the EDG is not required at this time.

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Control Rod Drive Hydraulics

**TASK:** Manually Vent SCRAM Air Header

**TASK NUMBER:** 2000430504

**JPM NUMBER:** 2013 NRC P-3

**REV #:** 1

**SAP BET:** NOH05JPBF04E

**ALTERNATE PATH:**

☐

**APPLICABILITY:**

EO

☒

RO

☒

STA

☐

SRO

☒

**DEVELOPED BY:** \_\_\_\_\_

Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_

Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_

Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek  
**JPM NUMBER:** 2013 NRC P-3  
**SYSTEM:** Control Rod Drive Hydraulics  
**TASK NUMBER:** 2000430504  
**TASK:** Manually Vent SCRAM Air Header

**REV:** 1**ALTERNATE PATH:** ☐**K/A NUMBER:** 295037 A1.05**IMPORTANCE FACTOR:** 3.9 4.0**APPLICABILITY:**EO ☒RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Plant/Simulate**REFERENCES:** HC.OP-EO.ZZ-0306 Rev. 5**TOOLS, EQUIPMENT AND PROCEDURES:** HC.OP-EO.ZZ-0306, Pipe wrench**ESTIMATED COMPLETION TIME:** 10 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_**DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Control Rod Drive Hydraulics

**TASK:** Manually Vent SCRAM Air Header

**TASK NUMBER:** 2000430504

**INITIAL CONDITIONS:**

1. The plant has experienced an ATWS
2. The Scram Air Header has failed to vent.
3. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being executed.
4. Manual insertion of control rods from the Control Room IAW HC.RE-AB.ZZ-0001, Transient Plant Conditions in response to an ATWS, is in progress.

**INITIATING CUE:**

Manually vent the Scram Air Header IAW HC.OP-EO.ZZ-0306.

JPM: 2013 NRC P-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER</b> Operator repeats back the Initiating Cue: <b>START TIME:</b>	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-EO.ZZ-0306.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<b>IF excessive time is taken reviewing precautions and limitations, THEN INFORM</b> operator that all are satisfied.	N/A			
CUE	<b>IF excessive time is taken reviewing prerequisites, THEN INFORM</b> operator that all are satisfied.	N/A			

JPM: 2013 NRC P-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.0 4.1	<u>EQUIPMENT REQUIRED</u> Key #9 for EOP Locker in OSC (obtain from OS office or break red key holder glass in OSC) <u>AND</u> EOP-306 Implementation kit (EOP Locker in OSC) Contents: 1 14" Pipe Wrench 1 Wire Cutter 1 Flashlight	Operator obtains the following required equipment: Key #9 from SM office or key from break glass key holder in OSC for OSC EOP locker <u>AND</u> EOP-306 Implementation Kit from EOP Locker in OSC. <b>Examiner Note: Obtaining a pipe wrench from an alternate location is considered satisfactory completion of this step. After operator has demonstrated ability to obtain the required equipment, ensure that the equipment is returned to its appropriate storage location.</b>			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1			
CUE	If at any time the operator requests permission to use section 5.2, <u>DENY</u> permission due to ongoing Control Room actions to manually insert control rods with RMCS.	N/A			

JPM: 2013 NRC P-3

Rev: 1

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	All operations are performed locally at the CRD Flow Control Area, Rx Bldg Elev. 102'.	Operator reads NOTE.			
5.1.1	<b>UNLOCK AND CLOSE</b> 1BFV-073 //B/U SCRAM PILOT VLVS AIR SUP VLV//.	Operator simulates removing the lock from 1BFV-073.	* #		Y N STAR
<b>CUE</b>	<b>The locking device has been removed.</b>	N/A			
		Operator simulates closing 1BFV-073 by turning valve handwheel clockwise until coming to a hard stop.	*		Y N STAR
<b>CUE</b>	<b>The valve you indicated is in the position stated.</b>	N/A			
5.1.2	<b>UNCAP AND OPEN</b> 1BFV-802 //ARI VLVS AIR SUP HDR DRN VLV// between the scram air header ARI valves.	Operator simulates removing the cap from 1BFV-802 by using the pipe wrench and rotating the cap in the counter-clockwise direction until the cap comes off.	* #		Y N STAR
<b>CUE</b>	<b>The cap device has been removed.</b>	N/A			
		Operator opens 1BFV-802 by turning valve handwheel counter-clockwise until coming to a hard stop.	*		Y N STAR

JPM: 2013 NRC P-3

Rev: 1

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	The valve you indicated is in the position stated. Air can be heard flowing from the drain opening.	N/A			
5.1.3	<b>OBSERVE</b> PI-R013 SCRAM AIR HEADER PRESSURE (10-C-264 panel at the CRD flow control panel) to verify the air header fully depressurizes.	Operator observes pressure reading on PI-R013 on panel 10C264.			
CUE	The gauge you have indicated is reading zero.				
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state " <b>This JPM is complete</b> ".  <b>STOP TIME:</b>	N/A			

**OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION**

**NAME:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**JPM Number:** 2013 NRC P-3

**TASK:** Manually Vent SCRAM Air Header

**TASK NUMBER:** 2000430504

**QUESTION:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESPONSE:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESULT:**

**SAT**

☐

**UNSAT**

☐

**QUESTION:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESPONSE:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESULT:**

**SAT**

☐

**UNSAT**

☐

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

JPM NUMBER: 2013 NRC P-3

REV#: 1

**I. INITIAL CONDITIONS:**

I.C.

Initial	

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description

**EVENT TRIGGERS:**

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

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

JPM NUMBER: 2013 NRC P-3

REV#: 1

## MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	NONE	---	---
		---	---	NONE	---	---
		---	---	NONE	---	---
		---	---	NONE	---	---
		---	---	NONE	---	---
		---	---	NONE	---	---

## REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	NONE	---	---

## I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
		---	---	NONE	---	---
		---	---	NONE	---	---
		---	---	NONE	---	---
		---	---	NONE	---	---

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC P-3

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC P-3**REV#:** 1**TASK:** Manually Vent SCRAM Air Header

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - \_\_\_\_\_ a. verify cues both verbal and visual are free of conflict
  - \_\_\_\_\_ b. ensure performance time is accurate

**VALIDATED BY:**

Qualification Level Required: \_\_\_\_\_

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. The plant has experienced an ATWS
2. The Scram Air Header has failed to vent.
3. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being executed.
4. Manual insertion of control rods from the Control Room IAW HC.RE-AB.ZZ-0001, Transient Plant Conditions in response to an ATWS, is in progress.

**INITIATING CUE:**

Manually vent the Scram Air Header IAW HC.OP-EO.ZZ-0306.

## JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Radiation Control

TASK: Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves

TASK NUMBER: 2991660301

JPM NUMBER: 305H-JPM.ZZ001

REV #: 01

SAP BET: NOH05JPZZ01E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: J. Berglund

Instructor

DATE: 11/16/08

REVIEWED BY:

Operations Representative

DATE: 12/12/08

APPROVED BY:

Training Department

DATE: 12/12/08

**STATION:** Hope Creek**JPM NUMBER:** RO A-1**REV:** 01**SYSTEM:** Radiation Control**TASK NUMBER:** 2991660301**TASK:** Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves**ALTERNATE PATH:** ☐**K/A NUMBER:** 2.3.11**IMPORTANCE FACTOR:**

3.8	4.3
RO	SRO

**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**EVALUATION SETTING/METHOD:** Classroom/Perform**REFERENCES:** OP-HC-103-105 Rev 0**TOOLS, EQUIPMENT AND PROCEDURES:****ESTIMATED COMPLETION TIME:** 20 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_**DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Radiation Control

**TASK:** Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves

**TASK NUMBER:** 2991660301

**INITIAL CONDITIONS:**

1. A plant shutdown is in progress for a Refueling outage.
2. The Reactor is shutdown.
3. At 0200 today Purging of the Primary Containment commenced.
4. At 0836 today Operational Condition 4 was entered.
5. At 1142 today the purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation.

**INITIATING CUE:**

**COMPLETE** today's Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit and Log in accordance with OP-HC-103-105.

JPM: 2013 NRC RO A-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Radiation Control

TASK: Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue <u>AND</u> a copy of OP-HC-103-105 <u>WITH</u> the attached paperwork.	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER</b> Operator repeats back the Initiating Cue:  <b>START TIME:</b>	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 4.4.2.			
4.4	<b><u>Calculating Valve Open Time</u></b>	N/A			
4.4.1	In Section C of Form 2, <b>ENTER</b> the time the valve(s) listed in Section 2.2 or the line(s) listed in Section 2.4 <b>or</b> 2.5 are opened in Condition 1, 2, or 3 <b>or</b> when Condition 2 <u>OR</u> 3 is entered from Condition 4 with the valve(s)/line(s) open.	N/A (Filled in by previous Operator)			
4.4.2	In Section C of Form 2, <b>ENTER</b> the time the valve(s) listed in Section 2.2 or the line(s) listed in Section 2.4 <b>or</b> 2.5 are closed in Condition 1, 2, or 3 <b>or</b> when Condition 4 is entered from Condition 2 <b>or</b> 3 with the valve(s)/line(s) open. <b>[T/S 1.34]</b>	Operator enters 0836 in section C of Form 2 in the "Time at which valve/line was closed or Condition 4 or 5 was entered with valve/line opened" space.	*		

JPM: 2013 NRC RO A-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Radiation Control

TASK: Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.4.3	<b>COMPUTE</b> the total hours (round up to the nearest 0.5 hour or to the nearest 1.0 hour) for each open cycle.	Operator calculates the open cycle as 7.0 hours (6.6 rounded up to 7.0) and enters in Section C "Total number of hours valve/line opened this cycle" space.	*		
4.4.4	When the valve permit is no longer valid due to either the evolution is complete, <b>or</b> mode change to Condition 4 has occurred, <b>or</b> the day has ended <b>TOTAL</b> the hours that the valve(s)/line(s) were open (should be less than the time authorized in Section B of Form 2). [T/S 1.52]	Operator totals the hours that the valve(s)/line(s) were open. (7.0 hours) and enters in Section C "Total number of hours valves/line open this permit" space.	*		
4.4.5	The NCO performing the section C calculations should sign in the appropriate space and enter the time and date.	Operator signs the "NCO performing calculations" space and enters Date/Time in Section C.			
4.4.6	The SM/CRS should verify the calculations, sign in the appropriate space for verification and close out and enter the time and date.	Operator hands the paperwork to the CRS.			
<b>CUE</b>	<b>SIGN</b> and <b>DATE</b> the appropriate spaces and <b>RETURN</b> to the operator.	N/A			

JPM: 2013 NRC RO A-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Radiation Control

TASK: Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.4.7	On Form 1, <b>ENTER</b> the name of the SM/CRS closing out the valve permit and the number of hours the valves were open on this permit. The NCO entering this information should initial in the appropriate space.	On Form 1, the operator enters the name of the SM/CRS closing out the valve permit.			
		On Form 1, the operator enters the number of hours the valves were open. (7.0 hrs THIS PERMIT/ 55.5 TOTAL)	*		
		On Form 1, the operator initials entry.			
<b>CUE</b>	<p><u>WHEN</u> operator informs you the task is complete,  <u>OR</u> the JPM has been terminated for other reasons,  <u>THEN RECORD</u> the STOP TIME.</p> <p><b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state <b>"This JPM is complete"</b>.</p> <p><b>STOP TIME:</b></p>	N/A			

JOB PERFORMANCE MEASURE  
OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC RO A-1

TASK: Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves

TASK NUMBER: 2991660301

QUESTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESPONSE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

**TRAINING ONLY**  
**Examiner's Copy**  
**FORM 1**

**OP-HC-103-105**  
Revision 0  
Page 7 of 8

Page \_\_\_\_ of \_\_\_\_

**CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT LOG**

DATE	HOURS PREV. YEAR (Note 1)	HOURS AUTH. THIS PERMIT	NAME OF SM/CRS AUTHORIZING THIS PERMIT	NCO INITIAL	HOURS USED THIS PERMIT	TOTAL HOURS PREVIOUS YEAR (Note 1)	NAME OF SM/CRS CLOSING THIS PERMIT	NCO INITIAL
11/15/07	12.0	24	P. Oliver	<i>PO</i>	13.0	25.0	O. North	<i>ON</i>
3/3/08	22.5	24	H. Davidson	<i>SD</i>	5.5	28.0	A. West	<i>SD</i>
6/25/08	18.5	24	G. Washington	<i>TRW</i>	3.5	22.0	G. Clooney	<i>TRW</i>
8/30/08	22.0	24	O.W. Holmes	<i>R</i>	24.00	46.0	V. Price	<i>R</i>
8/31/08	46.0	24	B. Lee	<i>E</i>	2.5	48.5	V. Bono	<i>E</i>
Today	35.5	24	A. Jones	<i>JS</i>	7.0	42.5	<b>SM/CRS Name</b>	<i>INIT</i>

Note 1: The previous year includes the period from 2400 on today's date back to 0001 on the same date one year earlier.



## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. A plant shutdown is in progress for a Refueling outage.
2. The Reactor is shutdown.
3. At 0200 today Purging of the Primary Containment commenced.
4. At 0836 today Operational Condition 4 was entered.
5. At 1142 today the purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation.

**INITIATING CUE:**

**COMPLETE** today's Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit and Log in accordance with OP-HC-103-105.

**TRAINING ONLY**  
**Operator's Copy**  
**FORM 1**

**OP-HC-103-105**  
Revision 0  
Page 7 of 8

Page \_\_\_\_ of \_\_\_\_

**CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT LOG**

DATE	HOURS PREV. YEAR (Note 1)	HOURS AUTH. THIS PERMIT	NAME OF SM/CRS AUTHORIZING THIS PERMIT	NCO INITIAL	HOURS USED THIS PERMIT	TOTAL HOURS PREVIOUS YEAR (Note 1)	NAME OF SM/CRS CLOSING THIS PERMIT	NCO INITIAL
11/15/07	12.0	24	P. Oliver	<i>PO</i>	13.0	25.0	O. North	<i>ON</i>
3/3/08	22.5	24	H. Davidson	<i>SD</i>	5.5	28.0	A. West	<i>SD</i>
6/25/08	18.5	24	G. Washington	<i>TRW</i>	3.5	22.0	G. Clooney	<i>TRW</i>
8/30/08	22.0	24	O.W. Holmes	<i>R</i>	24.00	46.0	V. Price	<i>R</i>
8/31/08	46.0	24	B. Lee	<i>E</i>	2.5	48.5	V. Bono	<i>E</i>
Today	35.5	24	A. Jones	<i>JS</i>				

Note 1: The previous year includes the period from 2400 on today's date back to 0001 on the same date one year earlier.

**FORM 2**

## SECTION A

Gaseous Effluent Permit #: 020020001

**HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)**

Andrew Jones Today/0130

**VALVE/LINE OPEN TIME (Note 2)**

SM/CRS Closing permit	Date/Time
-----------------------	-----------

Note 3: When computing the total hours (round up to the nearest 0.5 or to the nearest 1.0 hr.)

## JOB PERFORMANCE MEASURE

**REVISION HISTORY****JPM NUMBER:** 2013 NRC RO A-1

<b>Rev #</b>	<b>Date</b>	<b>Description</b>	<b>Validation Required?</b>

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC RO A-1**REV#:** 01**TASK:** Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - a. verify cues both verbal and visual are free of conflict
  - b. ensure performance time is accurate

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Reactor Recirculation

**TASK:** Perform a Reactor Recirculation Pump Quick Restart

**TASK NUMBER:** 2020160101

**JPM NUMBER:** 2013 NRC RO A-2

**REV #:** 01

**SAP BET:** NOH05JPZZ11E

**ALTERNATE PATH:** ☐

**APPLICABILITY:**

EO

☐

RO

☒

STA

☐

SRO

☐

**DEVELOPED BY:** \_\_\_\_\_

Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_

Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_

Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC RO A-2**REV:** 01**SYSTEM:** Reactor Recirculation**TASK NUMBER:** 2020160101**TASK:** Perform a Reactor Recirculation Pump Quick Restart**ALTERNATE PATH:** ☐**K/A NUMBER:** 2.2.40**IMPORTANCE FACTOR:**

3.4	4.7
RO	SRO

**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☐**EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.RPV-0003 Rev 23**TOOLS, EQUIPMENT AND PROCEDURES:**

Steam Tables/Calculator

**ESTIMATED COMPLETION TIME:** 8 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Reactor Recirculation

**TASK:** Perform a Reactor Recirculation Pump Quick Restart

**TASK NUMBER:** 2020160101

**INITIAL CONDITIONS:**

1. The Reactor was scrammed when both Reactor Recirculation Pumps tripped.
2. Evidence of thermal stratification is present.
3. Actions have been taken in accordance with HC.OP-AB.RPV-0003 through step G.11.

**INITIATING CUE:**

Complete HC.OP-AB.RPV-0003 step G.12 as necessary for restart of A Reactor Recirc Pump.

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue:  START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-AB.RPV-0003.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be G.12.			
G.12	ENSURE Differential Temperature requirements are met by completing Attachment 2. [T/S 4.4.1.4]	Operator obtains HC.OP-AB.RPV-0003 Attachment 2.			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Reactor Recirculation**TASK: **Perform a Reactor Recirculation Pump Quick Restart**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
HC.OP-AB-RPV-0003 Attachment 2					
1.0	REACTOR VESSEL TO BOTTOM HEAD DRAIN LINE DIFFERENTIAL TEMPERATURE CRITERIA	NA			
1.1	Rx Pressure Vessel Steam Space Coolant Saturation Temperature. (Rx Pressure and Steam Tables) (Note 1)	Operator reads Note 1.			
		Operator determines RPV pressure 885 psig. (900 psia)			
		Operator determines Steam space Coolant Saturation Temperature to be 900 psia = <b>532 degF</b> (Steam Tables)	*		
		Operator records value in space provided on Attachment 1.			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Reactor Recirculation**TASK: **Perform a Reactor Recirculation Pump Quick Restart**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
Note 1	Steam Table as part of this attachment may be utilized to determine temperature rounding the numbers in a conservative fashion. For a more accurate conversion from pressure to temperature a more detailed set of steam tables should be utilized.	NA			
1.2	Bottom Head Drain Coolant Temperature. (Note 2) (Computer Point A2942)	Operator accesses CRIDS terminal.			
Note 2	RWCU Flow required for accurate Bottom Head Drain Coolant Temperature indication.	Operator reads Note 2.			
		Operator determines RWCU is in service and the Bottom Head Drain Coolant Temperature is valid.			
		Operator obtains value of <b>467 degF</b> from CRIDS point A2942.	*		

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Reactor Recirculation**TASK: **Perform a Reactor Recirculation Pump Quick Restart**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.3	< 145°F between Rx Pressure Vessel Steam Space Coolant AND Bottom Head Drain Line Coolant (A – B). [T/S 4.4.1.4]	Operator subtracts value of step 1.2 from value of step 1.1. and determines value of <b>65 degF</b> $\pm$ 1F.	*		
		Operator records value in space provided.			
1.4	Time Readings taken: _____	Operator records current time in space provided.	*		
2.0	REACTOR VESSEL TO RECIRCULATION LOOP DIFFERENTIAL TEMPERATURE CRITERIA.	NA			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.1	Temperature of the Rx Coolant within the idle loop to be started up. (Note 3)	Operator reads Note 3.			
Note 3	Use TR-650-B31 Recirc Pump Suction Loop A(B) (if available) OR if above 400° F - CRIDS points A221 and A222 for A loop (A223 and A224 for B loop). IF below 400°F AND TR-650-B31 not available, THEN have I&C obtain temperatures using RTD ohm values (reference RTD ohm values to calibration data in TDR using HC.OP-GP.ZZ-0008(Q))	NA			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator determines Idle Recirc Loop Temp for A Loop is above 400 F.			
		Operator obtains value of <b>510 degF</b> from CRIDS point A221 or A222.			
2.2	Temperature of coolant in the Rx Pressure Vessel. (RX Pressure and Steam Tables) (Note 1)	Operator reads Note 1.			
		Operator determines RPV pressure is 885 psig. (900 psia)	*		
		Operator determines Steam space Coolant Saturation Temperature to be: 900 psia = 532 degF (Steam Tables)			
		Operator records value in space provided on Attachment 1.			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.3	< 50°F between the Rx Coolant within the loop not in operation AND the Coolant in the Rx Pressure Vessel (A-B). [T/S 4.4.1.4]	Operator determines differential temp is < 50 F. <b>Examiner Note:</b> Actual value is <b>22 degF ± 1F</b> .	*		
2.4	Time Readings taken: _____	Operator records current time in space provided.	*		
HC.OP-AB-RPV-0003					
G.12	ENSURE Differential Temperature requirements are met by completing Attachment 2. [T/S 4.4.1.4]	Operator initials step G.12.	*		
<b>CUE</b>	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state " <b>This JPM is complete</b> ".  <b>STOP TIME:</b>	N/A			

JOB PERFORMANCE MEASURE  
OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC RO A-2

TASK: Perform a Reactor Recirculation Pump Quick Restart

TASK NUMBER: 2020160101

QUESTION: \_\_\_\_\_

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

**JOB PERFORMANCE MEASURE**

**INITIAL CONDITIONS:**

1. The Reactor was scrammed when both Reactor Recirculation Pumps tripped.
2. Evidence of thermal stratification is present.
3. Actions have been taken in accordance with HC.OP-AB.RPV-0003 through step G.11.

**INITIATING CUE:**

Complete HC.OP-AB.RPV-0003 step G.12 as necessary for restart of A Reactor Recirc Pump.

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## **I. INITIAL CONDITIONS:**

### **I.C.**

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	Trip both Reactor Recirc Pump Drive Motor Breakers.
	Take appropriate Scram actions IAW HC.OP-AB.ZZ-0001.
	IMPLEMENT EOP-101 to stabilize plant at 885 psig RPV pressure on DEHC.
	IMPLEMENT HC.OP-AB.RPV-0003 up to and including step G.11.
	Acknowledge alarms.
	Put Simulator in FREEZE.

### **PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)**

Initial	Description
	<b>MARKUP</b> a copy of HC.OP-AB.RPV-0003 up to and including step G.11.
	<b>ENSURE</b> Mode Switch key is removed.
	<b>COMPLETE</b> "Simulator Ready-for-Training/Examination Checklist".

### **EVENT FILE:**

Initial	ET #	
		Event code: Description:
		Event code: Description:
		Event code: Description:

JOB PERFORMANCE MEASURE  
SIMULATOR SETUP INSTRUCTIONS  
(OPTIONAL)

## MALFUNCTION SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>

## REMOTE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>

## OVERRIDE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>

## JOB PERFORMANCE MEASURE

**REVISION HISTORY****JPM NUMBER:** 2013 NRC RO A-2

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC RO A-2**REV#:** 1**TASK:** Perform a Reactor Recirculation Pump Quick Restart

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - \_\_\_\_\_ a. verify cues both verbal and visual are free of conflict
  - \_\_\_\_\_ b. ensure performance time is accurate

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

**STATION:** Hope Creek  
**SYSTEM:** Equipment Control  
**TASK:** Identify Core Spray Leak Isolations and Vent & Drain Paths

**TASK NUMBER:**

**JPM NUMBER:** 2013 NRC RO A-3

**ALTERNATE PATH:** ☐

**K/A NUMBER:** 2.2.41

IMPORTANCE FACTOR:	
3.5	3.9
RO	SRO

**APPLICABILITY:**

EO ☐ RO ☒ STA ☐ SRO ☐

**EVALUATION SETTING/METHOD:** Classroom/Perform

**REFERENCES:** M-52-1 Sh. 1 Core Spray P&ID

**TOOLS, EQUIPMENT AND PROCEDURES:**

M-52-1 Sh. 1 Core Spray P& ID

Electrical Core Spray P&ID for F001A AND CSS 'A' Pump Motor

**VALIDATED JPM COMPLETION TIME:** 20 Minutes

**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A

**APPROVAL:**

\_\_\_\_\_  
BARGAINING UNIT  
REPRESENTATIVE

\_\_\_\_\_  
TRAINING SUPERVISOR  
OR DESIGNEE

\_\_\_\_\_  
OPERATIONS MANAGER  
OR DESIGNEE

**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:** \_\_\_\_\_

OPERATOR TRAINING PROGRAM  
JOB PERFORMANCE MEASURE:

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: Equipment Control

TASK: Identify Core Spray Leak Isolations and Vent &amp; Drain Paths

## TASK NUMBER:

## INITIAL CONDITIONS:

- 100% Power
- Core Spray is in its normal standby lineup
- ‘B’ RHR Pump is C/T for routine maintenance
- A pencil size leak has been reported by the Reactor Building Operator to the Shift manager on the Core Spray suction piping between the CSS Pump Suppression Pool Suction Valve (HV-F001A) and the AP206 Core Spray pump suction inlet.

## INITIATING CUE:

The shift manager directs you to:

- Identify mechanical AND electrical components to isolate, vent, and drain the pump using controlled station mechanical drawings.

## 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.

JPM: 2013 NRC RO A-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Equipment Control

TASK: Identify Core Spray Leak Isolations and Vent &amp; Drain Paths

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains M-52-1 Sh. 1 Core Spray P&ID and Electrical Core Spray P&ID for F001A AND CSS 'A' Pump Motor	Operator obtains the correct drawings		
		START TIME: _____			
*		1. Applicant reviews P&IDs and identifies mechanical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump.	Applicant identifies the following mechanical isolation valves: <ul style="list-style-type: none"> <li>• HV-F001A SHUT</li> <li>• V-009 SHUT</li> <li>• V-027 SHUT</li> <li>• V-037 OPEN (check valve bypass)</li> <li>• V-045 SHUT</li> <li>• V-049 SHUT</li> <li>• V-107 SHUT</li> <li>• PSV F-032A GAGGED OPEN</li> <li>• V-9974 SHUT</li> <li>• V-9975 SHUT</li> <li>• V-9996 SHUT</li> <li>• V-9997 SHUT</li> <li>• V-9998 SHUT</li> <li>• V-9999 SHUT</li> </ul>		

JPM: 2013 NRC RO A-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Equipment Control**TASK: **Identify Core Spray Leak Isolations and Vent & Drain Paths**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		2. Applicant reviews P&IDs and identifies electrical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump.	Applicant identifies the following electrical components required for isolation: <ul style="list-style-type: none"> <li>• MCC 10B212, breaker 012 (HV-F001A)</li> <li>• 10A401, breaker 05 ('A' CSS Pump Motor)</li> </ul>		
*		3. Applicant reviews P&ID and identifies mechanical components required to VENT the isolated section of the Core Spray train. (Valves OPEN)	Applicant identifies the following mechanical VENT valves in the OPEN position: <ul style="list-style-type: none"> <li>• V-041 OPEN</li> </ul>		
*		4. Applicant reviews P&ID and identifies mechanical components required to DRAIN the isolated section of the Core Spray train. (Valves OPEN)	Applicant identifies the following mechanical DRAIN valves in the OPEN position: <ul style="list-style-type: none"> <li>• V-108</li> </ul>		
		5. STOP TIME: _____			

**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:** Equipment Control

**TASK:** Identify Core Spray Leak Isolations and Vent & Drain Paths

**TASK NUMBER:**

**QUESTION:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESPONSE:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESULT:**

☐

- SAT

☐

- UNSAT

**QUESTION:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESPONSE:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RESULT:**

☐

- SAT

☐

- UNSAT

**INITIAL CONDITIONS:**

- 100% Power
- Core Spray is in its normal standby lineup
- ‘B’ RHR Pump is C/T for routine maintenance
- A pencil size leak has been reported by the Reactor Building Operator to the Shift manager on the Core Spray suction piping between the CSS Pump Suppression Pool Suction Valve (HV-F001A) and the AP206 Core Spray pump suction inlet.

**INITIATING CUE:**

The shift manager directs you to:

- Identify mechanical AND electrical components to isolate, vent, and drain the pump using controlled station mechanical drawings.

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Administrative

**TASK:** Respond To An Abnormal Release Of Gaseous  
Radioactivity - Calculate Noble Gas Release Release  
Rates

**TASK NUMBER:** 4000270401

**JPM NUMBER:** 2013 NRC RO A-4

**REV #:** 01

**SAP BET:** NOH05JPZZ19E

**ALTERNATE PATH:** ☐

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☐

**DEVELOPED BY:** \_\_\_\_\_

Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_

Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_

Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC RO A-4**REV:** 01**SYSTEM:** Administrative**TASK NUMBER:** 4000270401**TASK:** Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates**ALTERNATE PATH:** ☐**K/A NUMBER:** 295938 EA1.01**IMPORTANCE FACTOR:** 3.9 4.2**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☐**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.CONT-0004 Rev. 5

HC.OP-DL.ZZ-0026 Rev. 128

**TOOLS, EQUIPMENT AND PROCEDURES:** Calculator**ESTIMATED COMPLETION TIME:** 10 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_**DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Administrative**TASK:** Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates**TASK NUMBER:** 4000270401**INITIAL CONDITIONS:**

1. North Plant Vent (NPV) Stack radiation monitoring activity was rising on RM-11 point 9RX590.
2. SPDS is unavailable.
3. Abnormal HC.OP-AB.CONT-0004 is being executed to determine and stop the release of activity.
4. NPV Exh Flow instrumentation channel 9AX300 is inoperable. Flow is being estimated in accordance with HC.OP-DL.ZZ-0026(Q), Attachment 3u (Provided).

**INITIATING CUE:**

Determine the Release Rate of **NOBLE GAS** from the **NPV** in accordance with HC.OP-AB.CONT-0004, Action A.4.

JPM: 2013 NRC RO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Administrative

TASK: Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue:  START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-AB.CONT-0004.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be A.4			
A.4	DETERMINE the Total Release Rates of Noble Gas and Iodine as follows: USE the SPDS Noble Gas Total.  <u>OR</u> USE one of the Formulas in Table "A".	Operator determines that to calculate the Noble Gas release from the NPV the formulas in Table "A" must be used.			

JPM: 2013 NRC RO A-4

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: Administrative

TASK: Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	IF the effluent (µCi/sec) channel on the RM-11 is NOT operating for a specific plant vent, <u>THEN</u> <b>CALCULATE</b> the Noble Gas release rate for that vent using the following:				
	$\frac{\mu\text{Ci/cc (n.g.)}}{\text{Plant Vent Exh Flow in cfm}} \times 472 = \mu\text{Ci/sec (n.g.)}$ <p>Where:</p> <p>µCi/sec (n.g.) - the calculated release rate from the specified plant vent (Noble Gas)</p> <p>µCi/cc (n.g.) - The concentration of Noble Gas obtained from the RM-11 (the operable channel will be highlighted in GREEN) <u>OR</u> from an actual sample of the plant vent</p> <p>472 - The conversion factor in units of cc/sec/cfm</p>				
		Operator manipulates the RM-11 terminal to obtain the value of NPV Noble Gas release from the 9RX602 Low Range detector and enters the value into the formula. <b>3.65E-7 uCi/cc.</b>	*		
		Operator transfers the Plant Vent Exh Flow value from Attachment 3u of HC.OP-DL.ZZ-0026 (provided). <b>49613.9 CFM</b>	*		

JPM: 2013 NRC RO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Administrative

TASK: Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator calculates the NPV Noble Gas release rate. Calculated Value =  $3.65\text{E-}7 \mu\text{Ci/cc} * 49613.9 \text{ CFM} * 472$ $= \underline{8.547 \mu\text{Ci/sec}} (\pm 0.5)$	*		
<b>CUE</b>	<p><u>WHEN</u> operator informs you the task is complete,  <u>OR</u> the JPM has been terminated for other reasons,  <u>THEN RECORD</u> the STOP TIME.</p> <p><b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state "<b>This JPM is complete</b>".</p> <p><b>STOP TIME:</b></p>	N/A			

JOB PERFORMANCE MEASURE  
OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC RO A-4

TASK: Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates

TASK NUMBER: 4000270401

QUESTION: \_\_\_\_\_

---

---

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

---

---

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. North Plant Vent (NPV) Stack radiation monitoring activity was rising on RM-11 point 9RX590.
2. SPDS is unavailable.
3. Abnormal HC.OP-AB.CONT-0004 is being executed to determine and stop the release of activity.
4. NPV Exh Flow instrumentation channel 9AX300 is inoperable. Flow is being estimated in accordance with HC.OP-DL.ZZ-0026(Q), Attachment 3u (Provided).

**INITIATING CUE:**

Determine the Release Rate of **NOBLE GAS** from the **NPV** in accordance with HC.OP-AB.CONT-0004, Action A.4.

## JOB PERFORMANCE MEASURE

## ATTACHMENT 3u

Page 1 of 1

**Radioactive Gaseous Effluent Monitoring (North Plant Vent)**  
**T/S 6.8.4.g ODCM TABLE 3.3.7.11-1 ACTION 122**

If the North Plant Vent Flow Rate Monitor is Inoperable,  
then Effluent Releases via this pathway may continue for up to 30 days provided flow rate is estimated at least once per 4 hours.

Readings are taken every 3 hours to ensure that the 4 hour Tech Spec Action limit is not exceeded per administrative requirements and after a change in the ventilation line-up.

If flow indication(s) become unavailable, then the "NORM" flow value may be logged for the specific fan alignment.

**HCGS**

**DATE:** \_\_\_\_\_ **Today's Date**

**Location Aux/Turb/Radwaste**

PARAMETER		NORM	ENTER TIME OF EACH READING BELOW							COMMENTS
			NOW							
SOLID RADWASTE EXH FAN	A318	17,000	17358							
SOLID RADWASTE EXH FAN	B318	17,000	17163							
CHEM LAB EXH	A307	7,500	7528							
CHEM LAB EXH	B307	7,500	7519							
OFFGAS DISCHARGE	HA-XR-10022 OR HA-FI5665	---	45.9							
TOTAL FLOW			49613.9							
ESTIMATED TOTAL FLOW REPORTED TO RAD PRO - (YES)			Yes							

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	INSERT Malfunctions:
	<ul style="list-style-type: none"> <li>• RM9590 @ 0.0E+00</li> <li>• RM9591 @ 0.0E+00</li> <li>• RM9602 @ 3.65E-7</li> <li>• RM9603 @ 0.0E+00</li> <li>• CC03 SPDS CRT Failure</li> </ul>
	Acknowledge alarms.
	Put Simulator in FREEZE.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
	ENSURE SPDS and CRIDS Displays are off.
	ENSURE MARKUP copy of HC.OP-DL.ZZ-0026 Attachment 3u available.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

## EVENT FILE:

Initial	ET #	
		Event code: Description:
		Event code: Description:
		Event code: Description:

# JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

## MALFUNCTION SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert malfunction RM9590 to 0.00000	9RX590, NPV EFF - North Plant Vent Noble Gas Effluent
	None	None	Insert malfunction RM9591 to 0.00000	9RX591, NPV HIGH - North Plant Vent High Range Noble Gas
	None	None	Insert malfunction RM9602 to 3.65E-7	9RX602, NPV LOW - North Plant Vent Range Noble Gas
	None	None	Insert malfunction RM9603 to 0.00000	9RX603, NPV MID - North Plant Vent Mid Range Noble Gas
	None	None	Insert malfunction CC03	SPDS CRT failure

## REMOTE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>

## OVERRIDE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC RO A-4

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC RO A-4**REV#:** 1**TASK:** Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - \_\_\_\_\_ a. verify cues both verbal and visual are free of conflict
  - \_\_\_\_\_ b. ensure performance time is accurate

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Radiation Control

**TASK:** Verify Compliance with Gaseous Release Permit

**TASK NUMBER:** 2990420302

**JPM NUMBER:** 2013 NRC SRO A-1

**REV #:** 01

**SAP BET:** NOH05JPZZ03E

**ALTERNATE PATH:**

☐

**APPLICABILITY:**

EO

☐

RO

☐

STA

☐

SRO

X

**DEVELOPED BY:**

\_\_\_\_\_

Instructor

**DATE:**

\_\_\_\_\_

**REVIEWED BY:**

\_\_\_\_\_

Operations Representative

**DATE:**

\_\_\_\_\_

**APPROVED BY:**

\_\_\_\_\_

Training Department

**DATE:**

\_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC SRO A-1**REV:** 01**SYSTEM:** Radiation Control**TASK NUMBER:** 2990420302**TASK:** Verify Compliance with Gaseous Release Permit**ALTERNATE PATH:** ☐**K/A NUMBER:** 2.3.6**IMPORTANCE FACTOR:** 2.0 3.8**APPLICABILITY:**EO ☐RO ☐STA ☐SRO ☒

RO

SRO

**EVALUATION SETTING/METHOD:** Classroom/Perform**REFERENCES:** OP-HC-103-105 Rev 1**TOOLS, EQUIPMENT AND PROCEDURES:**

Prepared OP-HC-103-105 Form 2, Calculator

**ESTIMATED COMPLETION TIME:** 9 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_**DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Radiation Control**TASK:** Verify Compliance with Gaseous Release Permit**TASK NUMBER:** 2990420302**INITIAL CONDITIONS:**

1. A plant shutdown is in progress for a Refueling outage.
2. The Reactor is shutdown.
3. At 0200 today Purging of the Primary Containment commenced.
4. At 0436, the Purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation, due to a damper problem.
5. At 0800, Purging of Primary Containment re-commenced.
6. At 1252 today Operational Condition 4 was entered.
7. At 1548 today the purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation.

**INITIATING CUE:**

Review AND Close Out today's Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit in accordance with OP-HC-103-105.

JPM: 2013 NRC SRO A-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Radiation Control

TASK: Verify Compliance with Gaseous Release Permit

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue <u>AND</u> : <input type="checkbox"/> Prepared OP-HC-103-105 log Forms 1 & 2 (Attached) <input type="checkbox"/> Copy of OP-HC-103-105	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER</b> Operator repeats back the Initiating Cue: <b>START TIME:</b>	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 4.4.6.			

JPM: 2013 NRC SRO A-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Radiation Control

TASK: Verify Compliance with Gaseous Release Permit

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.4.6	The SM/CRS should verify the calculations, sign in the appropriate space for verification and close out and enter the time and date.	Operator reviews Form 2.			
		Operator recognizes NCO incorrectly rounded down from 2.6 to 2.5 instead of rounding up to 3.0 IAW 4.4.3 during calculation of first purge period.	*		
		Operator recognizes NCO incorrectly used securing of purge lineup for end time of second purge period instead of using entry into OPCI 4 time IAW step 4.4.2.	*		
CUE	IF the operator requests the NCO to make changes, <u>THEN DIRECT</u> the operator to make any required changes.	N/A			

JPM: 2013 NRC SRO A-1

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Radiation Control

TASK: Verify Compliance with Gaseous Release Permit

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.4.6	The SM/CRS should verify the calculations, sign in the appropriate space for verification and close out and enter the time and date.	Operator makes corrections to Form 2 Stop times and Total Hours.  <b>Examiner Note:</b> Refer to Examiners Copy for appropriate corrections.	*		
<b>CUE</b>	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state " <b>This JPM is complete</b> ".  <b>STOP TIME:</b>	N/A			

## JOB PERFORMANCE MEASURE

OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC SRO A-1

TASK: Verify Compliance with Gaseous Release Permit

TASK NUMBER: 2990420302

QUESTION: \_\_\_\_\_

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

## JOB PERFORMANCE MEASURE

**FORM 2****CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT****SECTION A**Date: Today**NOTE:** This permit is valid only until 2400 of this date

Gaseous Effluent Permit #:

020020001**SECTION B****HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)**Calculate Total Hours Open  
During Previous Year (**Note 1**)NUMBER OF HOURSDATE4/3/115.56/25/113.58/30/1124.08/31/112.5

(1) Max. allowed for 365 days (Admin Limit)

**452 hrs**(2) Total previous year (**NOTE 1**)(-) 35.5Hours available this date (line 1 minus line 2  
OR 24, whichever is less)(=) 24

Hours authorized this date (max 24 hours)

24

NCO performing calculation

Date/Time

John SmithToday/0100

SM/CRS verification and authorization

Date/Time

Andrew JonesToday/0130**SECTION C****VALVE/LINE OPEN TIME (Note 2)****START TIME**Time at which valve/line was open or  
Condition 1, 2, or 3 was entered with valve/line  
open02000800**STOP TIME**Time at which valve/line was closed or  
Condition 4 or 5 was entered with valve/line  
opened04361548 1252**TOTAL HOURS**Total number of hours valve/line  
opened this cycle

(NOTE 3)

2.5 3.08.0 5.0

Total number of hours valves/line open this permit:

10.5 8.0

NCO performing calculations

Andy Granatelli

Date/Time

Today/Now

SM/CRS Closing permit

Operator Signature

Date/Time

Date/Time

Note 1: The previous year includes the period from 2400 on today's date back to 0001 on the same date one year earlier.

Note 2: Completed Form 2 should be filed in the AP-104 binder in the control room.

Note 3: When computing the total hours (round up to the nearest 0.5 or to the nearest 1.0 hr.)

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. A plant shutdown is in progress for a Refueling outage.
2. The Reactor is shutdown.
3. At 0200 today Purging of the Primary Containment commenced.
4. At 0436, the Purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation, due to a damper problem.
5. At 0800, Purging of Primary Containment re-commenced.
6. At 1252 today Operational Condition 4 was entered.
7. At 1548 today the purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation.

**INITIATING CUE:**

Review AND Close Out today's Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit in accordance with OP-HC-103-105.

**TRAINING ONLY**  
**OPERATOR COPY**  
**FORM 1**

**OP-HC-103-105**  
Revision 0  
Page 7 of 8

Page \_\_\_\_ of \_\_\_\_

**CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT LOG**

DATE	HOURS PREV. YEAR (Note 1)	HOURS AUTH. THIS PERMIT	NAME OF SM/CRS AUTHORIZING THIS PERMIT	NCO INITIAL	HOURS USED THIS PERMIT	TOTAL HOURS PREVIOUS YEAR (Note 1)	NAME OF SM/CRS CLOSING THIS PERMIT	NCO INITIAL
4/3/11	22.5	24	H. David	<i>SD</i>	5.5	28.0	S. West	<i>SD</i>
6/25/11	18.5	24	G. Williams	<i>TRW</i>	3.5	22.0	G. Cloon	<i>TRW</i>
8/30/11	22.0	24	W. Holmes	<i>R</i>	24.00	46.0	P. Price	<i>R</i>
8/31/11	46.0	24	B. Lee	<i>E</i>	2.5	48.5	V. Bonovan	<i>E</i>
Today	35.5	24	A. Jones	<i>JS</i>				

Note 1: The previous year includes the period from 2400 on today's date back to 0001 on the same date one year earlier.

# TRAINING ONLY OPERATOR COPY

OP-HC-103-105

Revision 0

Page 8 of 8

## FORM 2

### CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT

#### SECTION A

Date: Today

**NOTE:** This permit is valid only until 2400 of this date

Gaseous Effluent Permit #: 020020001

#### SECTION B

##### HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)

Calculate Total Hours Open  
During Previous Year (Note 1)

DATE      NUMBER OF HOURS

4/3/11      5.5

6/25/11      3.5

8/30/11      24.0

8/31/11      2.5

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(1) Max. allowed for 365 days (Admin Limit)      **452 hrs**

(2) Total previous year (NOTE 1)      (-) 35.5

Hours available this date (line 1 minus line 2  
OR 24, whichever is less)      (=) 24

Hours authorized this date (max 24 hours)      24

NCO performing calculation      Date/Time

John Smith      Today/0100

SM/CRS verification and authorization      Date/Time

Andrew Jones      Today/0130

#### SECTION C

##### VALVE/LINE OPEN TIME (Note 2)

##### START TIME

Time at which valve/line was open or  
Condition 1, 2, or 3 was entered with valve/line  
open

0200

0800

##### STOP TIME

Time at which valve/line was closed or  
Condition 4 or 5 was entered with valve/line  
opened

0436

1548

##### TOTAL HOURS

Total number of hours valve/line  
opened this cycle

2.5

8.0

(NOTE 3)

Total number of hours valves/line open this permit: 10.5

NCO performing calculations Andy Granatelli      Date/Time Today/Now

SM/CRS Closing permit \_\_\_\_\_      Date/Time \_\_\_\_\_

Note 1: The previous year includes the period from 2400 on today's date back to 0001 on the same date one year earlier.

Note 2: Completed Form 2 should be filed in the AP-104 binder in the control room.

Note 3: When computing the total hours (round up to the nearest 0.5 or to the nearest 1.0 hr.)

**REVISION HISTORY****JPM NUMBER:** 2013 NRC SRO A-1

Rev #	Date	Description	Validation Required?

## VALIDATION CHECKLIST

**JPM NUMBER:** 2013 NRC SRO A-1**REV#:** 01**TASK:** Verify Compliance with Gaseous Release Permit

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - \_\_\_\_\_ a. verify cues both verbal and visual are free of conflict
  - \_\_\_\_\_ b. ensure performance time is accurate

**VALIDATED BY:**Qualification Level Required: SRO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

**STATION:** Hope Creek  
**SYSTEM:** Conduct of Operations  
**TASK:** Initiate and Review System Lineup Sheets  
**TASK NUMBER:** 2991110302  
**JPM NUMBER:** 2013 NRC SRO A-2

**ALTERNATE PATH:** ☐

**K/A NUMBER:** 2.1.29

IMPORTANCE FACTOR:	
3.4	3.3
RO	SRO

**APPLICABILITY:**

EO ☐ RO ☐ STA ☐ SRO ☒

**EVALUATION SETTING/METHOD:** Classroom/Perform

**REFERENCES:** HC.OP-IO.ZZ-0003 Rev 71

**TOOLS, EQUIPMENT AND PROCEDURES:**

NSSSS Elementary Print B21-1090-0062, P&ID M-041, Computer with access to SAP

**VALIDATED JPM COMPLETION TIME:** \_\_\_\_\_ Minutes

**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** \_\_\_\_\_ N/A

**APPROVAL:**

\_\_\_\_\_  
N/A  
BARGAINING UNIT  
REPRESENTATIVE

\_\_\_\_\_  
TRAINING SUPERVISOR  
OR DESIGNEE

\_\_\_\_\_  
OPERATIONS MANAGER  
OR DESIGNEE

**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:** \_\_\_\_\_

OPERATOR TRAINING PROGRAM  
JOB PERFORMANCE MEASURE:

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Conduct of Operations**TASK:** Initiate and Review System Lineup Sheets**TASK NUMBER:** 2991110302**INITIAL CONDITIONS:**

1. A start-up is in progress IAW HC.OP-IO.ZZ-0003.
2. Preparations are being made to enter Operational Condition 1 IAW Attachment 4 of the IOP.
3. The Current Mode has been changed to Mode 1 IAW step IV.1.2.1 of Attachment 4.
4. A Components in OFF-Normal Position Report has been generated IAW step IV.1.2.3 of HC.OP-IO.ZZ-0003 Attachment IV.

**INITIATING CUE:**

Review the Components in OFF-Normal Position Report and determine if any components require re-positioning IAW step IV.2.4 of HC.OP-IO.ZZ-0003 Attachment 4.

You will be allowed access to SAP and DCRMS to research component data.

The provided Off Normal Report does NOT reflect the current status of the actual plant.

Do NOT perform ANY changes to actual plant data.

**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.

JPM: 2013 NRC SRO A-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Conduct of Operations

TASK: Initiate and Review System Lineup Sheets

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		HC.OP-IO.ZZ-0003 Attachment 4			
	IV.1.2.3	<b>GENERATE</b> a Components In Off-Normal Position Report <b>USING</b> WCM Reports/Off Normal Report function.	<b>Examiner Cue: PROVIDE the Operator the attached Components In Off-Normal Position Report for review.</b>	N/A	N/A
*	IV.1.2.4	START TIME: _____ <b>POSITION</b> all components as required.  STOP TIME: _____	Operator reviews Components In Off-Normal Position Report.  Operator recognizes that handswitches for E-521 Separator Heater (HS-8722A & HS-8722B) are in AU.  Operator recognizes handswitches for E-521 Separator Heater (HS-8722A & HS-8722B) should be in SO in OPCON 1.  <b>Examiner Note:</b> AU=Automatic SO=Stop/Off		

**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: Conduct of Operations**

**TASK: Initiate and Review System Lineup Sheets**

**TASK NUMBER: 2013 NRC SRO A-3**

QUESTION: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT: ☐ - SAT ☐ - UNSAT

## JOB PERFORMANCE MEASURE

**INITIAL CONDITIONS:**

1. A start-up is in progress IAW HC.OP-IO.ZZ-0003.
2. Preparations are being made to enter Operational Condition 1 IAW Attachment 4 of the IOP.
3. The Current Mode has been changed to Mode 1 IAW step IV.1.2.1 of Attachment 4.
4. A Components in OFF-Normal Position Report has been generated IAW step IV.1.2.3 of HC.OP-IO.ZZ-0003 Attachment IV.

**INITIATING CUE:**

Review the Components in OFF-Normal Position Report and determine if any components require re-positioning IAW step IV.2.4 of HC.OP-IO.ZZ-0003 Attachment 4.  
You will be allowed access to SAP and DCRMS to research component data.  
The provided Off Normal Report does NOT reflect the current status of the actual plant.  
Do NOT perform ANY changes to actual plant data.

## JOB PERFORMANCE MEASURE

User: NUJ8B  
Plant: NNUCOff Normal Report  
Mode 01Date: 10/26/2005  
Time: 09:10:58

Technical Object	Description	Current	Normal	Location	Loc. Description	Status	Change Date	Remark
H0KD -0-KD-V455	AUX BLDG TRUCK WASH DRAIN	O	X	001020AP	HC YARD-EAST OF POWER BLOCK	OffNormal	08/14/2005	REF NOTIF# 20248261
H0KD -0-KD-V456	AUX BLD TRK W/DWN EXTER HYDRT	X	O	001020AO	HC YARD-HHB/AUX STM TRENCH AREA	OffNormal	08/14/2005	REF NOTIF# 20248261
H0KD -0-KD-V458	TB S TRK W/DN EXTR HYDRT ISO V	X	O	001020AQ	HC YARD-SOUTH OF POWER BLOCK	OffNormal	08/14/2005	REF NOTIF# 20248261
H0LE -HS-8722A	HNDSWCH,0A-E-521 SEPARATOR HTR	AU	AU	001020AZ	HC YARD-OIL & WASTEWTR TRT AREA	OffNormal	09/08/2005	AS PER CHEMISTRY
H0LE -HS-8722B	HNDSWCH,0B-E-521 SEPARATOR HTR	AU	AU	001020AZ	HC YARD-OIL & WASTEWTR TRT AREA	OffNormal	09/08/2005	AS PER CHEMISTRY
H0LE -HS-8776	HS,00P589 OIL RECYCLE PMP SW 00C574 PN	SO	OF	001020AZ	HC YARD-OIL & WASTEWTR TRT AREA	OffNormal	09/08/2005	AS PER CHEMISTRY
H0LE -HS-8777	H/S,00E523 SLUDGE TK HTR 00C574 PNL	SO	AU	001020AZ	HC YARD-OIL & WASTEWTR TRT AREA	OffNormal	09/08/2005	AS PER CHEMISTRY
H0ZZ -00B508-01	SPARE	X	O	28102DWPHS	HC DEEPWELL PUMPHOUSE	OffNormal	10/01/2003	CLOSED TO SUPPORT TEMPORARY LIGHTING
H0ZZ -00B508-03	SPARE	X	O	28102DWPHS	HC DEEPWELL PUMPHOUSE	OffNormal	01/04/2004	GANGED TO BKRS 1 & 5
H0ZZ -00B508-05	SPARE	X	O	28102DWPHS	HC DEEPWELL PUMPHOUSE	OffNormal	01/04/2004	GANGED TO BREAKERS 1 & 3
H0ZZ -00L327-08	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-09	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -00L327-10	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-12	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/22/2005	PER ORDER # 60055303
H0ZZ -00L327-23	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -0BJ595-22	SPARE	X	O	071047000B	HC HC/SALEM COMMON GDHSE EL.104'	OffNormal	07/29/2005	SUPPLYING UNKNOWN LOAD NOT# 20247903
H0ZZ -0BJ595-23	SPARE	X	O	071047000B	HC HC/SALEM COMMON GDHSE EL.104'	OffNormal	07/29/2005	SUPPLYING UNKNOWN LOAD NOT# 20247903
H0ZZ -52-595071	SPARE	X	O	13102102B	HC AUX BLR SUBSTA ROOM-S.E. QUAD	OffNormal	06/09/2005	BKR DCP'D-PWR SUPPLY TO BRE
H1KC -1-KC-V282	STRAINER B/D VLV	X	XC	050545106D	HC FUTURE CONTROLLED STOR AREA D	OffNormal	05/25/2005	20240203 NO THREADS TO PUT CAP ON
H1QA -10L221-08	LTG,TORUS PLATF EL 77	O	X	041024303C	HC MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1QA -10L221-09	RECEPT,TORUS PLATF EL 77	O	X	041024303C	HC MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1QA -10L221-10	LTG,TORUS PLATF EL 77	O	X	041024303C	HC MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1AB -1ABV501	INST PDT-N086C&DISO VLV PEN J25	O	O	040774227A	HC TORUS AREA A, AZIMUTH 0-45	OffNormal	10/20/2005	CLOSED FOR I&C
H1AB -1ABV504	INST PDT-N086C&DISO VLV PEN J25	O	O	040774227A	HC TORUS AREA A, AZIMUTH 0-45	OffNormal	10/20/2005	CLOSED FOR I&C
H1ZZ -10L221-11	RECEPT,TORUS PLATF EL 77	O	X	041024303C	HC MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1ZZ -1CD318-08	SPARE	X	O	031243432	HC AUXILIARY PANEL ROOM	OffNormal	02/09/2005	SEE NOTIFICATION 20223509
H1ZZ -1CD318-23	SPARE	X	O	031243432	HC AUXILIARY PANEL ROOM	OffNormal	02/09/2005	SEE NOTIFICATION 20223509
H1ZZ -52-272024	SPARE	RE	O	040774218B	HC MCC AREA B	OffNormal	11/20/2004	Breaker removed
H1ZZ -52-313035	SPARE	O	X	031553602B	HC H&V EQUIPMENT AREA B	OffNormal	11/19/2004	SPARE
H1ZZ -52-313053	SPARE	O	X	031553602B	HC H&V EQUIPMENT AREA B	OffNormal	11/19/2004	SPARE
H1ZZ -52-313054	SPARE	O	X	031553602B	HC H&V EQUIPMENT AREA B	OffNormal	11/19/2004	SPARE

**EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

OPERATOR TRAINING PROGRAM  
JOB PERFORMANCE MEASURE:

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Equipment Control**TASK:** Identify Core Spray Leak Isolations and Vent & Drain Paths**TASK NUMBER:****INITIAL CONDITIONS:**

-100% Power

-Core Spray is in its normal standby lineup

-'B' RHR Pump is C/T for routine maintenance

- A pencil size leak has been reported by the Reactor Building Operator to the Shift manager on the Core Spray suction piping between the CSS Pump Suppression Pool Suction Valve (HV-F001A) and the AP206 Core Spray pump suction inlet.

**INITIATING CUE:**

The shift manager directs you to:

- Identify mechanical AND electrical components to isolate, vent, and drain the pump using controlled station mechanical drawings.
- Identify the most limiting Tech Spec condition (if any) AFTER the leak has been isolated.

**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.

JPM: 2013 NRC SRO A-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Equipment Control

TASK: Identify Core Spray Leak Isolations and Vent &amp; Drain Paths

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains M-52-1 Sh. 1 Core Spray P&ID and Electrical Core Spray P&ID for F001A AND CSS 'A' Pump Motor	Operator obtains the correct drawings		
		START TIME: _____			
*		1. Applicant reviews P&IDs and identifies mechanical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump.	Applicant identifies the following mechanical isolation valves: <ul style="list-style-type: none"> <li>• HV-F001A SHUT</li> <li>• V-009 SHUT</li> <li>• V-027 SHUT</li> <li>• V-037 OPEN (check valve bypass)</li> <li>• V-045 SHUT</li> <li>• V-049 SHUT</li> <li>• V-107 SHUT ??</li> <li>• PSV F-032A SHUT ??</li> <li>• V-9974 SHUT</li> <li>• V-9975 SHUT</li> <li>• V-9996 SHUT</li> <li>• V-9997 SHUT</li> <li>• V-9998 SHUT</li> <li>• V-9999 SHUT</li> </ul>		

JPM: 2013 NRC SRO A-3

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 1

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Equipment Control**TASK: **Identify Core Spray Leak Isolations and Vent & Drain Paths**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		2. Applicant reviews P&IDs and identifies electrical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump.	Applicant identifies the following electrical components required for isolation: <ul style="list-style-type: none"> <li>MCC 10B212, breaker 012 (HV-F001A)</li> <li>10A401, breaker 05 ('A' CSS Pump Motor)</li> </ul>		
*		3. Applicant reviews P&IDs and identifies mechanical components required to VENT the isolated section of the Core Spray train. (Valves OPEN)	Applicant identifies the following mechanical VENT valves in the OPEN position: <ul style="list-style-type: none"> <li>V-041 OPEN</li> </ul>		
*		4. Applicant reviews P&IDs and identifies mechanical components required to DRAIN the isolated section of the Core Spray train. (Valves OPEN)	Applicant identifies the following mechanical DRAIN valves in the OPEN position: <ul style="list-style-type: none"> <li>V-108</li> </ul>		
		5. Applicant reviews Tech Specs and identifies the most limiting Tech Spec action statement AFTER leak isolation.	Applicant identified the following as the most limiting Tech Spec Action Statement: <ul style="list-style-type: none"> <li>3.5.1.a.1 Restore within 7 days of be in Hot S/D within 12hrs and Cold S/D within 24hrs</li> </ul>		
		6. STOP TIME: _____			

**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: Equipment Control

TASK: Identify Core Spray Leak Isolations and Vent & Drain Paths

TASK NUMBER:

QUESTION: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESPONSE: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESPONSE: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESULT: ☐ - SAT ☐ - UNSAT

**INITIAL CONDITIONS:**

- 100% Power
- Core Spray is in its normal standby lineup
- 'B' RHR Pump is C/T for routine maintenance
- A pencil size leak has been reported by the Reactor Building Operator to the Shift manager on the Core Spray suction piping between the CSS Pump Suppression Pool Suction Valve (HV-F001A) and the AP206 Core Spray pump suction inlet.

**INITIATING CUE:**

The shift manager directs you to:

- Identify mechanical AND electrical components to isolate, vent, and drain the pump using controlled station mechanical drawings.
- Identify the most limiting Tech Spec condition (if any) AFTER the leak has been isolated.

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Equipment Control

**TASK:** Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)

**TASK NUMBER:** 2990010101

**JPM NUMBER:** 2013 NRC SRO A-4

**REV #:** 01

**SAP BET:** NOH05JPZZ36E

**ALTERNATE PATH:** ☐

**APPLICABILITY:**

EO ☐

RO ☒

STA ☐

SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC SRO A-4**REV:** 01**SYSTEM:** Equipment Control**TASK NUMBER:** 2990010101**TASK:** Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)**ALTERNATE PATH:** ☐**K/A NUMBER:** 2.2.23**IMPORTANCE FACTOR:**

3.1	4.6
RO	SRO

**APPLICABILITY:**EO ☐ RO ☒ STA ☐ SRO ☒**EVALUATION SETTING/METHOD:** Classroom/Perform**REFERENCES:** HC.OP-DL.ZZ-0026 Rev 128**TOOLS, EQUIPMENT AND PROCEDURES:**

Blank HC.OP-DL.ZZ-0026

**ESTIMATED COMPLETION TIME:** 10 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** \_\_\_\_\_**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Equipment Control**TASK:** Perform the Watchstanding Duties of the Nuclear Control Room Operator  
(Determine Liquid Radwaste Radiation Monitoring System Cooling Tower  
Blowdown Weir Flow)**TASK NUMBER:** 2990010101**INITIAL CONDITIONS:**

1. The plant is at 100% power.
2. B Circ Water Pump is tagged for motor replacement.
3. A, C, and D Circ Water Pumps are in service.
4. Cooling Tower Blowdown Weir Flow Rate Monitor 0SP-RI4861 is reading blank and is INOPERABLE. TSAS # 2012-001 entered.
5. RM-11 point 9AX327 historical data is NOT available.
6. SSW Loop Flow CRIDS Point values as follows:
  - A2440 SERVICE WATER FLOW RATE DIV A = 13,560 gpm
  - A2441 SERVICE WATER FLOW RATE DIV B = 21,345 gpm

**INITIATING CUE:**

You are the Reactor Operator.

The CRS has directed you to complete HC.OP-DL.ZZ-0026 Attachment 1a ITEM 47 Day Shift reading for the inoperable RMS Cooling Tower Blowdown Weir Flow Rate Monitor.

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Equipment Control**

**Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)**

TASK:

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>PROVIDE</b> the operator the initiating cue <u>AND</u> : <ul style="list-style-type: none"> <li>A blank copy of HC.OP-DL.ZZ-0026.</li> </ul>	Operator repeats back initiating cue.			
CUE	<b>ENTER START TIME AFTER</b> Operator repeats back the Initiating Cue:  <b>START TIME:</b>	N/A			
	<b>HC.OP-DL.ZZ-0026 Attachment 1a</b>	N/A			
ITEM 47	CHANNEL CHECK: COOLING TOWER BLOWDOWN WEIR FLOW RATE MONITOR	Operator reads ITEM 47.			
	OPER COND AT ALL TIMES	Operator determines the ITEM is applicable is the current Op Condition			
	ACCEPTABLE LIMITS MIN      NORM      MAX ITEM 002 < 40K      70K	Operator reads the limits.			
	INSTRUMENT (PANEL) 0SP-RI4861 (10C604) ITEM 029 RM-11 (9AX327) (NOTE 45)	Operator reads NOTE 45 and determines that data is not available from the Initial Conditions.			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Equipment Control

Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring

TASK: System Cooling Tower Blowdown Weir Flow)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE 33		Operator reads NOTE 33 and determines that data is not available from the Initial Conditions.			
NOTE 35		Operator reads NOTE 35 and determines that data is not available from the Initial Conditions.			
NOTE 46	IF INSTRUMENT IS INOP, USE ATTACHMENT 3Y TO ESTIMATE WEIR FLOW. THIS IS REQUIRED REGARDLESS OF WHETHER A RADIOACTIVE LIQUID RELEASE IS IN PROGRESS.	Operator reads NOTE 46 and determines that Attachment 3Y is applicable.	*		
		Operator locates Attachment 3Y.			
	<b>Examiner Note:</b> Refer to steps below and Examiner Copy of Attachment 3Y for Standards associated with this step.				

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Equipment Control

Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring

TASK: System Cooling Tower Blowdown Weir Flow)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	HC.OP-DL.ZZ-0026 Attachment 3Y				
	DATE	Operator enters current date on Attachment 3Y.			
	METHOD 1	Operator determines data for Method 1 completion is not available and continues to METHOD 2.			
	TIME	Operator enters current time on Attachment 3Y under Method 2	*		
	SSW LOOP A FLOW #	Operator reads # Footnote			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring****TASK: System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	# READ FROM FIT-2218A/B OR FR-2218-1/2 OR <b>CRIDS A2440/A2441</b> . (B SSW LOOP FLOW (FIT-2218B) IS OBTAINED LOCALLY AT PANAMETRICS MONITOR. FLOW VALUE IS THE AVERAGE VOLUMETRIC FLOW RATE WHICH IS DISPLAYED AS "AVG VOLUMETRIC GAL/MIN" ON THE MONITOR DISPLAY.	Operator determines A SSW Loop Flow is 13,560 gpm from CRIDS point A2440 in the Initial Conditions.			
		Operator enters the value 13,560 under SSW LOOP A FLOW # on ATT 3Y.	*		
	SSW LOOP B FLOW #	Operator reads # Footnote			
	# READ FROM FIT-2218A/B OR FR-2218-1/2 OR <b>CRIDS A2440/A2441</b> . (B SSW LOOP FLOW (FIT-2218B) IS OBTAINED LOCALLY AT PANAMETRICS MONITOR. FLOW VALUE IS THE AVERAGE VOLUMETRIC FLOW RATE WHICH IS DISPLAYED AS "AVG VOLUMETRIC GAL/MIN" ON THE MONITOR DISPLAY.	Operator determines B SSW Loop Flow is 21,345 gpm from CRIDS point A2441 in the Initial Conditions.			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Equipment Control

Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring

TASK: System Cooling Tower Blowdown Weir Flow)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator enters the value 21,345 under SSW LOOP B FLOW # on ATT 3Y.	*		
	TOTAL SSW FLOW	Operator calculates Total SSW Flow at 34,905 gpm by summing Loop A and Loop B flows.			
		Operator enters the value 34,905 under TOTAL SSW LOOP FLOW on ATT 3Y.	*		
	EVAPORATIVE LOSSES*.	Operator reads * Footnote			
	* REFERENCE PRINT 10855-M15-181-1 FOR EVAPORATIVE LOSS ESTIMATES. USE 16,700 GPM FOR DEFAULT VALUE(MIN. DILUTION FLOW), FOR EVAPORATIVE LOSS ESTIMATES IF 4 CIRCULATING WATER PUMPS ARE IN SERVICE, OR <b>12,500 GPM IF ONLY 3 CIRCULATING WATER PUMPS ARE IN SERVICE.</b> THIS BLOCK IS N/A IF THE COOLING TOWER IS OUT OF SERVICE.	Operator determines Evaporative Losses from * Footnote at bottom of page for 3 Circ Water Pump operation as 12,500 gpm.			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Equipment Control

Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring

TASK: System Cooling Tower Blowdown Weir Flow)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator enters the value 12,500 under EVAPORATIVE LOSSES* on ATT 3Y.	*		
	TOTAL WEIR FLOW	Operator determines TOTAL WEIR FLOW is 22,405 gpm by subtracting Evaporative Losses from Total SSW Loop Flow.			
		Operator enters the value 22,405 under TOTAL WEIR FLOW on ATT 3Y.	*		
	HC.OP-DL.ZZ-0026 Attachment 1a	N/A			
	<b>Examiner Note:</b> Refer to steps below and Examiner Copy of Attachment 1a for Standards associated with this step.				
ITEM 47	CHANNEL CHECK: COOLING TOWER BLOWDOWN WEIR FLOW RATE MONITOR	Operator reads ITEM 47.			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Equipment Control**

**Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)**

TASK:

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	DAY	Operator logs DAY reading of F/I or INOP on ATTACHMENT 1a for ITEM 47.			
	<b>Examiner Note:</b> Operator will annotate with F/I (Failed instrument), INOP, or other similar description. The entry should be circled. The TS Action Statement # and that Attachment 3Y should be entered in the comments area of attachment 1a line item 47.				
	INST TRIPPED	Operator logs F/I or INOP on ATTACHMENT 1a for ITEM 47 INST TRIPPED.			

<b>CUE</b>	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p><b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state "<b>This JPM is complete</b>".</p> <p><b>STOP TIME:</b></p>	N/A		
------------	---	-----	--	--

JOB PERFORMANCE MEASURE  
OPERATOR TRAINING PROGRAM  
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

JPM Number: 2013 NRC SRO A-4

**TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid  
Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)**

TASK NUMBER: 2990010101

QUESTION: \_\_\_\_\_

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_

---

---

---

---

RESPONSE: \_\_\_\_\_

---

---

---

---

RESULT:

SAT

☐

UNSAT

☐

## JOB PERFORMANCE MEASURE

HC.OP-DL.ZZ-0026(Q)

ATTACHMENT 1a  
Surveillance Log - Control Room

Page 10 of 17

Operational Condition

Date

ITEM	SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS MIN NORM MAX			INSTRUMENT (PANEL)	DAY	EVE	MID	COMMENTS
47	CHANNEL CHECK: COOLING TOWER BLOWDOWN WEIR FLOW RATE MONITOR	AT ALL TIMES	ITEM 002	< 40K	70K	OSP-R14561 (10C604) ITEM 029 RM-11 (9AX327) (NOTE 45)	F/I			<b>TSAS 2012-001 See Attachment 3Y</b>  (NOTE 33., 35., 46., 47.)
			—	NO	—	INST TRIPPED	F/I			
48	CHANNEL CHECK: COOLING TOWER BLOWDOWN RADIATION MONITOR	AT ALL TIMES	—	—	ITEM 009	SP-R18517 (10C604)	N/A	N/A		(NOTE 30., 41.)
	SAMPLE FLOW		1.0	—	14.0	SP-R18517 (10C604) ITEM 029	N/A	N/A		(NOTE 35.)
	SAMPLE LOW FLOW ALARM		1.0	—	1.0	SP-R18517 (10C604) ITEM 002	N/A			(NOTE 33.)
			—	0000	—	SP-R18517 (10C604) ITEM 044	N/A			(NOTE 40.)
	ANY OF ITEM 48		—	NO	—		N/A			
49	CHANNEL CHECK: TBCW RADIATION MONITOR	AT ALL TIMES	—	—	—	CRIDS (R9501) / RM-11 (9RX500)		N/A	N/A	(NOTE 30.)
50	CHANNEL CHECK: RACS RADIATION MONITOR	AT ALL TIMES	—	—	—	SP-R14550A1 OR CRIDS (R9501) / RM-11 (9RX501)				(NOTE 30.)
51	CHANNEL CHECK: SACS LOOP A RADIATION MONITOR	AT ALL TIMES	—	—	—	SP-R14550A1 OR CRIDS (R9501) / RM-11 (9RX501)				(NOTE 30.)
52	CHANNEL CHECK: SACS LOOP B RADIATION MONITOR	AT ALL TIMES	—	—	—	SP-R14550B1 OR CRIDS (R9503) / RM-11 (9RX503)				(NOTE 30.)

NOTES: 30. IF NORMAL INSTRUMENT IS INOP AND CRIDS IS USED (FOLLOWING EQUIVALENCY REVIEW), THEN ONLY OBTAIN CRIDS VALUE FROM PAGE DISPLAY. CRIDS POINT SUMMARY DOES NOT PROVIDE AN ADEQUATE VALUE. [70037325]

33. TO OBTAIN VALUES 006 OR 002, PRESS MON PB, KEY IN 006 OR 002, THEN ITEM PB.

35. TO OBTAIN VALUES 028, 029, OR 073, PRESS MON PB, KEY IN 028, 029, OR 073, THEN ITEM PB.

40. TO OBTAIN VALUE 044, PRESS MON PB, KEY IN 044, THEN ITEM PB. IF VALUE IS NOT AT 0000 HAVE I&O/RAD PRO INVESTIGATE OPERABILITY.

41. TO OBTAIN VALUE 009, PRESS LIC PB, KEY IN 009, THEN ITEM PB.

45. CHANNEL CHECK SHALL CONSIST OF VERIFYING INDICATION OF FLOW DURING PERIODS OF RELEASE. CHANNEL CHECK SHALL BE MADE AT LEAST ONCE PER 24 HOURS ON DAYS ON WHICH CONTINUOUS, PERIODIC, OR BATCH RELEASES ARE MADE. WHEN THREE GSWP PUMPS ARE IN-SERVICE, AND, THE RM-11 IS AVAILABLE, RECORD THE LOWEST OF THE LAST 12 (HOURLY) AVERAGES FOR 9AX327 (OTB FLOW) AS FOLLOWS: FROM THE TOP LEVEL MENU THAT CAN BE ARRIVED AT BY DEPRESSING THE 'ESC' KEY, CLICK THE 'LOGS/REPORTS' BUTTON, THEN THE 'DAILY LOG SETUP' BUTTON, (F2) OR TYPE 'ARCHIVE' IN THE YELLOW FUNCTION FIELD; CHANGE DATE AND TIME UNDER 'ENTER START TIME' TO AT LEAST 12 HOURS AGO (ONLY THE BACKSPACE KEY FUNCTIONS TO ERASE EXISTING TEXT); IN THE FIELD UNDER 'OR ENTER PIDS (COMMA DELIMITED);' ENTER 'TR604801-4'. THIS IS THE 60 MINUTE AVERAGE TREND FOR THE DESIRED POINT; SELECT F3 OR CLICK THE 'F3=VIEW PID' BUTTON AT THE SCREEN BOTTOM TO DISPLAY THE DATA. [70026506]

46. IF INSTRUMENT IS INOP, USE ATTACHMENT 3Y TO ESTIMATE WEIR FLOW. THIS IS REQUIRED REGARDLESS OF WHETHER A RADIOACTIVE LIQUID RELEASE IS IN PROGRESS.

47. REFER TO HC.OP-SO.SP-0001(Q), RADIATION MONITORING SYSTEM OPERATION, FOR NOTES ON OPERABILITY.

Page 1 of 1

Radioactive Liquid Effluent Monitoring Instrumentation  
T/S 6.8.4.g ODCM Table 3.3.7.10-1 Item 3b, ACTION 112

Readings are taken regardless of whether a Liquid Release is in progress.

Readings are taken every 3 hours to ensure that the 4 hour Tech Spec Action limit is NOT exceeded per administrative requirements.

DATE **TODAY**

Any one of the following Methods may be used to satisfy the requirements of Action 112.

[illegible][illegible]

REFERENCE PRINT 10855-M15-151-1 FOR EVAPORATIVE LOSS ESTIMATES. USE 16,700 GPM FOR DEFAULT VALUE (MIN. DILUT. ON FLOW) FOR EVAPORATIVE LOSS ESTIMATES IF 4 CIRCULATING WATER PUMPS ARE IN SERVICE, OR 12,500 GPM IF ONLY 3 CIRCULATING WATER PUMPS ARE IN SERVICE. THIS BLOCK IS N/A IF THE COOLING TOWER IS OUT OF SERVICE.

# READ FROM FIT-2218A/B OR FR-2215-1/2 OR CRDS A2440/A2441. IE SSW LOOP FLOW (FIT-2215B) IS OBTAINED LOCALLY AT PANAMETRICS MONITOR. FLOW VALUE IS THE AVERAGE VOLUMETRIC FLOW RATE WHICH IS DISPLAYED AS "AVG VOLUMETRIC GALL/MIN" ON THE MONITOR DISPLAY.

## JOB PERFORMANCE MEASURE

## INITIAL CONDITIONS:

1. The plant is at 100% power.
2. B Circ Water Pump is tagged for motor replacement.
3. A, C, and D Circ Water Pumps are in service.
4. Cooling Tower Blowdown Weir Flow Rate Monitor 0SP-RI4861 is reading blank and is INOPERABLE. TSAS # 2012-001 entered.
5. RM-11 point 9AX327 historical data is NOT available.
6. SSW Loop Flow CRIDS Point values as follows:
  - A2440 SERVICE WATER FLOW RATE DIV A = 13,560 gpm
  - A2441 SERVICE WATER FLOW RATE DIV B = 21,345 gpm

## INITIATING CUE:

You are the Reactor Operator.

The CRS has directed you to complete HC.OP-DL.ZZ-0026 Attachment 1a ITEM 47 Day Shift reading for the inoperable RMS Cooling Tower Blowdown Weir Flow Rate Monitor.

## JOB PERFORMANCE MEASURE

## REVISION HISTORY

JPM NUMBER: 2013 NRC SRO A-4

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC SRO A-4**REV#:** 01

**TASK:** Perform the Watchstanding Duties of the Nuclear Control Room  
Operator (Determine Liquid Radwaste Radiation Monitoring System  
Cooling Tower Blowdown Weir Flow)

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.
- \_\_\_\_\_ 2. Knowledge and Abilities (K/A) references are included.
- \_\_\_\_\_ 3. Performance location specified (in-plant, control room, or simulator).
- \_\_\_\_\_ 4. Initial setup conditions are identified.
- \_\_\_\_\_ 5. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 6. Task standards identified and verified by SME review.
- \_\_\_\_\_ 7. Critical steps meet the specified criteria and are identified with an asterisk (\*).
- \_\_\_\_\_ 8. Verify the JPM steps match the most current revision of the procedure.
- \_\_\_\_\_ 9. Pilot test the JPM:
  - a. verify cues both verbal and visual are free of conflict
  - b. ensure performance time is accurate

**VALIDATED BY:**Qualification Level Required: RO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

## JOB PERFORMANCE MEASURE

**STATION:** Hope Creek

**SYSTEM:** Administrative Duties/Reporting Requirements

**TASK:** Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

**TASK NUMBER:** 2000500302/2000020505

**JPM NUMBER:** 2013 NRC SRO A-5

**REV #:** 01

**SAP BET:** NOH05JPCL05E

**ALTERNATE PATH:** ☐

**APPLICABILITY:**

EO ☐ RO ☐ STA ☒ SRO ☒

**DEVELOPED BY:** \_\_\_\_\_  
Instructor

**DATE:** \_\_\_\_\_

**REVIEWED BY:** \_\_\_\_\_  
Operations Representative

**DATE:** \_\_\_\_\_

**APPROVED BY:** \_\_\_\_\_  
Training Department

**DATE:** \_\_\_\_\_

**STATION:** Hope Creek

**JPM NUMBER:** 2013 NRC SRP A-5

**SYSTEM:** Administrative Duties/Reporting Requirements

**TASK NUMBER:** 2000500302/2000020505

**TASK:** Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

**ALTERNATE PATH:** ☐ **K/A NUMBER:** 2.4.38

**IMPORTANCE FACTOR:**

2.2	4.0
RO	SRO

**APPLICABILITY:**

EO ☐ RO ☐ STA ☒ SRO ☒

**EVALUATION SETTING/METHOD:** Simulator/Perform or In Plant/Simulate

**REFERENCES:** Hope Creek Event Classification Guide, TOC Rev 0

**TOOLS, EQUIPMENT AND PROCEDURES:**

**ESTIMATED COMPLETION TIME:** 13 Minutes

**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** 15/13 Minutes

**JPM PERFORMED BY:** \_\_\_\_\_ **GRADE:** ☐ SAT ☐ UNSAT

**ACTUAL COMPLETION TIME:** \_\_\_\_\_ Minutes

**ACTUAL TIME CRITICAL COMPLETION TIME:** \_\_\_\_ / \_\_\_\_ Minutes

**REASON, IF UNSATISFACTORY:**

**EVALUATOR'S SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**SYSTEM:** Administrative Duties/Reporting Requirements**TASK:** Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**TASK NUMBER:** 2000500302/2000020505**INITIAL CONDITIONS:**

1. The plant was at 100% power with the AD483 inverter isolated to it's backup AC supply.
2. Then, a Loss of Offsite Power occurred.
3. All Emergency Diesel Generators have failed to start and all vital buses are de-energized.
4. Due to a loss of rod position indication, the Control Room was unable to verify the reactor shutdown, and EOP-101A is being implemented.
5. The following conditions exist:
  - A, C, and E APRMs are de-energized
  - B, D, and F APRMS are reading 0% power.
  - RCIC is injecting.
  - RPV Level is -80", rising after reaching a minimum value of -90".
  - RPV pressure is 900# being controlled with SRVs.
6. Efforts to energize the Vital buses have been unsuccessful; maintenance has reported that they should be able to restore the 'B' EDG to service in one hour.
7. The current 33 ft. elevation wind direction is from 332° at 21 mph.

**INITIATING CUE:**

Based on this information, classify this event and make the initial notifications.

This is a Time Critical Task, and has two Time Critical elements.  
Time zero for this event is now.

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE:  START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains Hope Creek Event Classification Guide.			
ECG Section 8.4	The primary tools for determining the emergency classification level are the EAL flowcharts or EAL wallcharts. The user of the EAL flowcharts or wallcharts may (but is not required to) consult the EAL Technical Basis in order to obtain additional information concerning the EALs under classification consideration. To use the EAL flowcharts or wallcharts, follow this sequence:				
ECG Section 8.4.1	ASSESS the event and/or plant conditions and DETERMINE which ECG-EAL Group/Section is most appropriate.	Operator assesses the initial conditions, and determines that S1, Loss Of AC Power, and S3, ATWS/Criticality are appropriate ECG sections.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.2	REVIEW EAL categories and subcategories on the appropriate flowcharts/wallcharts.	Operator refers to Flowchart Diagrams and/or Wallcharts and identifies that the Initial Conditions for EALs SS1.1, SG1.1, and SA3.1 are related to the event that has occurred.			
ECG Section 8.4.3	If using the ECG – EAL flowcharts, for each applicable subcategory, REVIEW EALs in the subcategory beginning with the lowest emergency classification level to the highest classification level (left to right). ENSURE all pages of a particular subcategory being considered are reviewed.				
ECG Section 8.4.4	If using the ECG – EAL Wallcharts, for each applicable subcategory, REVIEW EALs in the subcategory beginning with the highest emergency classification level to the lowest classification level (left to right).				

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.5	If in OPCON 1, 2 or 3, also REVIEW the Fission Product Barrier (FPB) Table:	N/A			
ECG Section 8.4.5.a	EXAMINE the FPB categories in the left column of the table.	Operator refers to FPB Table and identifies that the Initial Conditions do not meet any FPB Table thresholds.			
ECG Section 8.4.5.b	SELECT the category that most likely coincides with event conditions.	N/A			
ECG Section 8.4.5.c	REVIEW all thresholds in this category for each fission product barrier.	N/A			

JPM: 2013 NRC SRO A-5

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**

TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)																			
ECG Section 8.4.5.d	<p>For each threshold that is exceeded, IDENTIFY its point value and DETERMINE the classification level in accordance with the instructions on the Fission Product Barrier Table (or in EAL Technical Bases, Attachment 1).</p> <table><tr><th>If sum is:</th><th>Classify as:</th><th>Emergency Action Levels (EALs)</th><th>Refer to ECG ATT#</th></tr><tr><td>2,3</td><td>UNUSUAL EVENT (NOTE 1)</td><td>ANY loss or ANY potential loss of Containment</td><td>1</td></tr><tr><td>4,5</td><td>ALERT</td><td>ANY loss or ANY potential loss of either Fuel Clad or RCS</td><td>2</td></tr><tr><td>6-11</td><td>SEVERE EMERGENCY</td><td>Loss or potential loss of ANY two barriers</td><td>3</td></tr><tr><td>12,13</td><td>GENERAL EMERGENCY</td><td>Loss of ANY two barriers AND Loss or potential loss of the third barrier</td><td>4</td></tr></table>	If sum is:	Classify as:	Emergency Action Levels (EALs)	Refer to ECG ATT#	2,3	UNUSUAL EVENT (NOTE 1)	ANY loss or ANY potential loss of Containment	1	4,5	ALERT	ANY loss or ANY potential loss of either Fuel Clad or RCS	2	6-11	SEVERE EMERGENCY	Loss or potential loss of ANY two barriers	3	12,13	GENERAL EMERGENCY	Loss of ANY two barriers AND Loss or potential loss of the third barrier	4	N/A		
If sum is:	Classify as:	Emergency Action Levels (EALs)	Refer to ECG ATT#																					
2,3	UNUSUAL EVENT (NOTE 1)	ANY loss or ANY potential loss of Containment	1																					
4,5	ALERT	ANY loss or ANY potential loss of either Fuel Clad or RCS	2																					
6-11	SEVERE EMERGENCY	Loss or potential loss of ANY two barriers	3																					
12,13	GENERAL EMERGENCY	Loss of ANY two barriers AND Loss or potential loss of the third barrier	4																					

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
FPB Table NOTE 1	The Primary Containment Barrier should not be declared lost or potentially lost based on exceeding Technical Specification action statement criteria, unless there is an event in progress requiring mitigation by the Primary Containment barrier. When no event is in progress (Loss or Potential Loss of either Fuel Clad and/or RCS barrier) the Primary Containment Barrier status is addressed by Technical Specifications.	Operator reads NOTE.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.6	<p>REVIEW the associated EALs as compared to the event and SELECT the <u>highest</u> appropriate emergency. If identification of an EAL is questionable refer to paragraph 8.1 above.</p> <p>If there is any doubt with regard to assessment of a particular EAL, the <u>ECG EAL Technical Bases Document</u> should be reviewed. Words contained in an EAL that appear in uppercase and bold print (e.g., VALID) are defined at the end of the bases for the particular EAL or in ECG – EAL Technical Basis Document, Attachment 3, EP-HC-111-232, EAL Definitions. Words or numbers contained in an EAL that are in bold print but not uppercase are EAL threshold values (e.g., <math>\geq 15</math> minutes).</p>	Operator reviews the EALs in section S, and determines that EAL # <b>SS1.1</b> is the highest emergency action level met or exceeded ( <b>SITE AREA EMERGENCY</b> ).			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.7	If an EAL has been exceeded, equal level EALs or lower level EALs are not required to be separately reported as long as the applicable information is communicated to the NRC using ECG Attachment 5, EP-HC-111-F5, NRC Data Sheet & Completion Reference.	<b>Examiner Note:</b> Filling out the NRC Data Sheet is beyond the scope of this JPM.			
ECG Section 8.4.8	When the Shift Manager (SM) is the Emergency Coordinator, the Shift Technical Advisor (STA) is responsible to perform an independent verification of the EAL classification. The STA verification does not alleviate the requirement of the SM to make a timely classification. Should the SM fill the STA role, independent verification of the EAL classification will be delegated to another on-shift SRO, the Independent Assessor.	<u>IF</u> time permits, <u>THEN</u> Operator requests STA/IA verification of classification.  <b>Examiner Note:</b> Due to time spent assessing and/or nature of JPM administration, Operator may not request a verification.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b><u>IF</u> the Operator requests the STA/IA to independently verify the EAL Classification, <u>THEN</u> INFORM the Operator the STA/IA is not available.</b>	N/A			
ECG Section 8.4.9	IDENTIFY and IMPLEMENT the referenced ECG form based on the Emergency Classification Level.  <ul style="list-style-type: none"> <li>Unusual Event Implement EP-HC-111-F1</li> <li>Alert Implement EP-HC-111-F2</li> <li>Site Area Emergency Implement EP-HC-111-F3</li> <li>General Emergency Implement EP-HC-111-F4</li> <li>Unusual Event (Common Site) Implement EP-HC-111-F24</li> </ul>	Operator identifies and implements EP-HC-111-F3 Attachment 3 Site Area Emergency.			
ECG Att. 3	<b><u>I. EMERGENCY COORDINATOR (EC) LOG SHEET</u></b>				
ECG Att. 3. A	<b>CLASSIFICATION</b>				
ECG Att. 3 1.	CALL communicators to the Control Room.	Operator calls communicators to the Control Room.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	After 2 minutes, report as the communicators and give your name as CM1 and CM2.	N/A			
ECG Att. 3 2.	If a security event is in progress, THEN, IMPLEMENT the prompt actions of NC.EP-EP.ZZ-0102, EC Response, Attachment 10, prior to classification.	Operator determines this step is not applicable.			
ECG Att. 3 3.	As time allows, OBTAIN Classification Independent Verification (ensure verifier understands the EAL assessment clock is running); <ul style="list-style-type: none"> <li>• STA or designee performs Independent Verification for SM</li> <li>• SM or designee performs Independent Verification for EDO</li> <li>• EDO or designee performs Independent Verification for ERM</li> </ul>	<p><u>IF</u> time permits, <u>THEN</u> Operator requests STA/IA verification of classification.</p> <p><b>Examiner Note:</b> Due to time spent assessing and/or nature of JPM administration, Operator may not request a verification.</p>			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: Administrative Duties/Reporting Requirements

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<b>IF</b> the Operator requests the STA/IA to independently verify the EAL Classification, <b>THEN INFORM</b> the Operator the STA/IA is not available.	N/A			
ECG Att. 3 4.	While classification verification is in progress and if time allows, <b>COMMENCE</b> filling out the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment).	Operator commences filling out ICMF.			
ECG Att. 3 5.	<b>After classification verification and before 15 minute EAL assessment clock expires, DECLARE a SITE AREA EMERGENCY at Hope Creek.</b> EAL #(s) _____, _____, _____ DECLARED AT _____ hrs on _____ time                      date	Operator declares a Site Area Emergency, places the EAL # SS1.1, time and date in the appropriate spots in Attachment 3, and initials the step as the EC.  <b>Examiners Note: ENTER</b> the declaration time that the operator entered on Att. 3. The difference between the START TIME and the "DECLARED AT" TIME is the first critical time_(15 min.) Initialing the step is not critical.	*		

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 3 B.	<b>NOTIFICATIONS</b>				
ECG Att. 3 B.1.	ACTIVATE "ERO Emergency Callout" per posted instructions titled: "Emergency Callout Activation" (EP96-003)	Operator activates the ERO per posted instructions titled Training Use Emergency Callout Activation.  <b>Examiner Note:</b> <u>ENSURE</u> the operator is using the <u>Simulator Training</u> Activation instructions.			
ECG Att. 3 B.2.	COMPLETE the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment).	Operator Completes the ICMF.  <b>Examiners Note:</b> See the attached ICMF for an example of what the form should look like when filled out properly. Note that the exact words do not have to be in the "DESCRIPTION OF EVENT", but the description must convey the sense of the Initiating Condition for EAL SS1.1. The operator may place the Examiner's name as the Communicator or tell the Examiner to place his/her name as the Communicator.	*		

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 3 B.3.	IF time allows, OBTAIN an accuracy peer check of the completed ICMF.	Operator requests a Peer Check of the completed ICMF.			
<b>CUE</b>	<u>IF</u> the Operator requests a Peer Check, <u>THEN INFORM</u> the Operator a Peer Check has been performed as requested.	N/A			
ECG Att. 3 B.4.	PROVIDE the ICMF to the Primary Communicator (CM1) and DIRECT the Communicator to implement <b>ECG Attachment 6</b> .	Operator provides the ICMF to CM1 and directs implementation of Att.6.	*		
<b>CUE</b>	<b>LOG</b> the time the ICMF is provided to CM1. <b>LOG TIME:</b> _____ <b>Role-play as CM1 and repeat back the direction as given.</b>	<b>Examiners Note:</b> The difference between the "DECLARED AT" TIME and this LOG TIME is the <b>second</b> critical time (13 min.)			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: \_\_\_\_\_

Rev: 01

JOB PERFORMANCE MEASURE

DATE: \_\_\_\_\_

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 3 B.6.	DIRECT the Secondary Communicator (CM2) to implement <b>ECG Attachment 8</b> for a SITE AREA EMERGENCY.	Operator directs CM2 to implement Att. 8 for a SITE AREA EMERGENCY.	*		
CUE	<b>ROLE-PLAY</b> as CM2 and <b>REPEAT BACK</b> the direction as given.	N/A			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> <b>RECORD</b> the STOP time.  <b>REPEAT BACK</b> any message from the operator on the status of the JPM, and then state " <b>This JPM is complete</b> ".  <b>STOP TIME:</b>	N/A			
N/A	<b>TASK STANDARD:</b>	Operator declares a Site Area Emergency IAW ECG <b>SS1.1</b> , and makes notifications within identified Critical Times.			

JOB PERFORMANCE MEASURE  
 OPERATOR TRAINING PROGRAM  
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: \_\_\_\_\_  
 DATE: \_\_\_\_\_

JPM Number: 2013 NRC SRO A-5

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event  
 And/Or Plant Condition

TASK NUMBER: 2000500302/2000020505

QUESTION: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

QUESTION: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESPONSE: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESULT:

SAT

☐

UNSAT

☐

ECG  
ATT 3  
Pg. 2 of 2

I. THIS IS Not Required, COMMUNICATOR IN THE ☒ CONTROL ROOM  
(NAME) ☐ TSC  
☐ EOF

AT THE **HOPE CREEK** NUCLEAR GENERATING STATION.

- II. ☒ THIS IS NOTIFICATION OF A **SITE AREA EMERGENCY** WHICH WAS  
DECLARED AT Today's Time ON Today's Date.  
(TIME - 24 HOUR CLOCK) (DATE)

EAL #(*s*) **SS1.1**

DESCRIPTION OF EVENT: **Loss of Power to All Vital Buses**

### III.

**NOTE:**

Radiological Release is defined as: Plant Effluent > Tech Spec Limit of 1.20E+04  $\mu\text{Ci/sec}$  Noble Gas or 1.70E+01  $\mu\text{Ci/sec}$  I-131.

- |                                     |  |   |
|-------------------------------------|--|---|
| <input checked="" type="checkbox"/> | <u>NO</u> RADIOLOGICAL RELEASE IS IN PROGRESS. | } see NOTE<br>for release<br>definition |
| <input type="checkbox"/>            | THERE IS A RADIOLOGICAL RELEASE IN PROGRESS.   |   |

- IV. ☒ 33 FT. LEVEL WIND DIRECTION (From): 332 WIND SPEED: 21  
(From MET Computer /SPDS) (DEGREES) (MPH)

- V. ☒ NO PROTECTIVE ACTIONS ARE RECOMMENDED AT THIS TIME

**Initials**  


---

**EC Initials**  
**(Approval to Transmit ICMF)**

## JOB PERFORMANCE MEASURE

## INITIAL CONDITIONS:

1. The plant was at 100% power with the AD483 inverter isolated to it's backup AC supply.
2. Then, a Loss of Offsite Power occurred.
3. All Emergency Diesel Generators have failed to start and all vital buses are de-energized.
4. Due to a loss of rod position indication, the Control Room was unable to verify the reactor shutdown, and EOP-101A is being implemented.
5. The following conditions exist:
  - A, C, and E APRMs are de-energized
  - B, D, and F APRMS are reading 0% power.
  - RCIC is injecting.
  - RPV Level is -80", rising after reaching a minimum value of -90"
  - RPV pressure is 900# being controlled with SRVs.
6. Efforts to energize the Vital buses have been unsuccessful; maintenance has reported that they should be able to restore the 'B' EDG to service in one hour.
7. The current 33 ft. elevation wind direction is from 332° at 21 mph.

## INITIATING CUE:

Based on this information, classify this event and make the initial notifications.

This is a Time Critical Task, and has two Time Critical elements.

Time zero for this event is now.

## JOB PERFORMANCE MEASURE

**REVISION HISTORY****JPM NUMBER:** 2013 NRC SRO A-5

Rev #	Date	Description	Validation Required?

## JOB PERFORMANCE MEASURE

**VALIDATION CHECKLIST****JPM NUMBER:** 2013 NRC SRO A-5**REV#:** 01**TASK:** Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

- \_\_\_\_\_ 1. Task description and number, JPM description and number are identified.  
Knowledge and Abilities (K/A) is identified, and is  $\geq 3.0$  (LOR) or  $\geq 2.5$  (ILT) or justification is provided.
- \_\_\_\_\_ 2. \_\_\_\_\_
- \_\_\_\_\_ 3. License level identified. (SRO,RO,STA,NLO)
- \_\_\_\_\_ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- \_\_\_\_\_ 5. Initial setup conditions are identified.
- \_\_\_\_\_ 6. Initiating and terminating cues are properly identified.
- \_\_\_\_\_ 7. Task standards for successful completion are identified.  
Critical steps meet the criteria for critical steps and are identified with an asterisk (\*). Sequence
- \_\_\_\_\_ 8. Critical Steps are identified with a pound sign (#).
- \_\_\_\_\_ 9. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.
- \_\_\_\_\_ 10. Procedure(s) referenced by this JPM match the most current revision of that procedure.
- \_\_\_\_\_ 11. Cues both verbal and visual are complete and correct.  
Performance standards are specific in exact control and indication nomenclature (switch position, meter reading) even if these criteria are not specified in the procedural step.
- \_\_\_\_\_ 12. Statements describing important actions or observations that should be made by the operator are included (if required.)
- \_\_\_\_\_ 13. \_\_\_\_\_
- \_\_\_\_\_ 14. Validation time is included.
- \_\_\_\_\_ 15. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

**VALIDATED BY:**Qualification Level Required: SRO

_____	_____	_____	_____
Name	Qual	Signature	Date
_____	_____	_____	_____
Name	Qual	Signature	Date

**SIMULATOR**  
**EXAMINATION SCENARIO GUIDE**

**SCENARIO TITLE:** Loss of RBVS, Loss of 10A120, Recirc Vibes, FW Break

**SCENARIO NUMBER:** NRC 2013 Scenario #1 (ESG 029)

**EFFECTIVE DATE:**

**EXPECTED DURATION:** 1 hour

**REVISION NUMBER:** 1

**PROGRAM:** ☐ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER \_\_\_\_\_

**REVISION SUMMARY:**

1.

**PREPARED BY:**

\_\_\_\_\_  
Senior Simulator Instructor

\_\_\_\_\_  
DATE

**APPROVED BY:**

\_\_\_\_\_  
Nuclear Operations Training Supervisor –  
Hope Creek

\_\_\_\_\_  
DATE

**APPROVED BY:**

\_\_\_\_\_  
Operations Director or Designee

\_\_\_\_\_  
DATE

## I. OBJECTIVE(S):

---

### Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CREW CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions.  
(Crew critical tasks within this examination scenario guide are identified with an “\*.”)

## II. MAJOR EVENTS:

---

- A. Alternate RACS pumps (Optional)
- B. Loss of RBVS
- C. Loss of 10A120
- D. Recirc Pump high Vibrations
- E. Feedwater Line Break Inside Containment

## III. SCENARIO SUMMARY:

---

The scenario begins with the plant at approximately 100% power with RCIC C/T for a leak on the steam line drain pot. At the Lead Examiners discretion, RACS pumps may be swapped to support an oil change on the 'B' RACS pump. RBVS Exhaust isolation damper GU-HD-9414B fails shut, causing a loss of RBVS and requiring FRVS to be placed in service. After FRVS is in service, the 10A120 bus is lost resulting in Single Loop operations in Region 1 of the Power to Flow Map. Shortly after the 10A120 bus loss, the remaining Reactor Recirc pump develops high vibrations, which require removing the pump from service. This necessitates a reactor scram (**Critical Task #1**). If the Crew does not remove the pump from service, it will develop a partial seal failure and ultimately seize. During the scram, the alpha feedwater line breaks inside containment upstream of the inboard check valve. This results in a High Drywell Pressure, a slow lowering of RPV level due to leakage past the check valve and an increase in Suppression Pool pressure. The line break also prevents stabilizing level with feedwater or HPCI. The first RHR pump placed in Suppression Chamber or Drywell Spray will trip. The remaining pump can be successfully aligned but the corresponding spray valve fails to open. Emergency Depressurization will be required due to a violation of the PSP curve due to a failure of the RHR Pump and Drywell spray valve (**Critical Task #2**). When Emergency Depressurization is initiated, one ADS SRV will not open due to faulted solenoids. An additional SRV will need to be opened by the Crew (**Critical Task #3**).

#### IV. INITIAL CONDITIONS:

I.C.

Initial	
---------	--

**INITIALIZE** the simulator to 100% power.

C/T RCIC as follows.

1. **CLOSE** the HV-4282
2. **CLOSE** the HV-F007
3. **CLOSE** the HV-F008
4. **ALLOW** RCIC supply pressure to decay to 0 psig
5. **CLOSE** the HV-F025
6. **CLOSE** the HV-F026

**ENSURE** 'B' and 'C' RACS pumps are in service.

**PREP FOR TRAINING** (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
---------	-------------

**PLACE** red bezel covers on the following RCIC controls:

- HV-F007
- HV-F008
- HV-F076
- HV-F045
- HV-F025
- HV-F026

**INITIAL** ~~IO-6 for power ascension.~~ IO-X for power reduction.

**UPDATE** LCO Status book for RCIC outage: T/S 3.7.4 14 days

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

# EVENT TRIGGERS:

Initial	ET #	Description
	7	EVENT ACTION: <b>rrvib(1) &gt;= 11</b> // 'A' Recirc Pump Radial Vibration COMMAND: PURPOSE: Triggers INBD Seal Failure when vibrations reach Alert Level
	8	EVENT ACTION: <b>rrvib(1) &gt;= 16</b> // 'A' Recirc Pump Radial Vibration COMMAND: PURPOSE: Triggers pump seizure when vibrations reach Danger Level
	9	EVENT ACTION: <b>zcrprun &lt;= 0.0</b> // Mode Switch NOT in RUN COMMAND: PURPOSE: Triggers Feedwater Line Break and LOCA on scram.
	10	EVENT ACTION: <b>ad:k40b(2) &gt;= 1.0</b> // SRV F013B 'B' Channel solenoid energized COMMAND: PURPOSE: Triggers blowing of fuses when valve opened to ED.
	11	EVENT ACTION: <b>ad:k40d(2) &gt;= 1.0</b> // SRV F013B 'D' Channel solenoid energized COMMAND: PURPOSE: Triggers blowing of fuses when valve opened to ED.
	12	EVENT ACTION: <b>rr:52(1) &lt;= 0.0 &amp;&amp; rr:52(2) &lt;= 0.0</b> // No Recirc Pumps running COMMAND: PURPOSE: Inserts Power Oscillations when both recirc pumps are tripped.
	13	EVENT ACTION: <b>rrprv &lt;= 815</b> // Reactor Pressure <800# COMMAND: PURPOSE: Fails bypass valves shut to prevent anticipating ED and depressurizing to condenser.
	14	EVENT ACTION: <b>rhf27(1) &gt;= 100 &amp; rh_bkr(2)</b> // 'A' RHR in Chamber Spray with 'B' RHR run COMMAND: Trips AP202 RHR pump when placed in Chamber Spray if BP202 is still running PURPOSE:
	15	EVENT ACTION: <b>rhf27(2) &gt;= 100 &amp; rh_bkr(1)</b> // 'B' RHR in Chamber Spray with 'A' RHR run COMMAND: Trips BP202 RHR pump when placed in Chamber Spray if AP202 is still running PURPOSE:
	16	EVENT ACTION: <b>rhf21(1) &gt;= 500 &amp; rh_bkr(2)</b> // 'A' RHR in Drywell Spray with 'B' RHR run COMMAND: Trips AP202 RHR pump when placed in Drywell Spray if BP202 is still running PURPOSE:
	17	EVENT ACTION: <b>rhf21(2) &gt;= 500 &amp; rh_bkr(1) &gt;= 1.0</b> // 'B' RHR in Drywell Spray with 'A' RHR run COMMAND: Trips BP202 RHR pump when placed in Drywell Spray if AP202 is still running PURPOSE:

## MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	<b>RC02</b> RCIC Auto Start Failure	---	---	NONE	---	---
	<b>AD01</b> ADS Failure to Auto-Initiate	---	---	NONE	---	---
	<b>ED04</b> Loss of 10A120 Bus	---	---	ET-3	---	---
	<b>RR26A2</b> 'A' Recirc Pump High Vibration	---	12:00	ET-4	3	15
	<b>RR05A</b> 'A' Recirc Pump INBD Seal Failure	---	2:00	ET-7	0%	100%
	<b>RR11A</b> 'A' Recirc Pump Trip	---	---	ET-8	---	---
	<b>CR02B</b> Power Oscillations APRMs	---	1:00	ET-12	0%	30%
	<b>FW32</b> Feedwater Line Break Inside Containment	---	---	ET-9	---	100%
	<b>RR31A2</b> 'A' Recirc Loop Large Break LOCA	---	30:00	ET-9	0%	2%
	<b>RR31B2</b> 'B' Recirc Loop Large Break LOCA	---	15:00	ET-9	0%	2%
	<b>FW26A</b> 'A' RFPT Trip	5 sec	---	ET-9	---	---
	<b>FW26B</b> 'B' RFPT Trip	5 sec	---	ET-9	---	---
	<b>FW26C</b> 'C' RFPT Trip	5 sec	---	ET-9	---	---
	<b>TC01-10</b> All Bypass Valves Failed Shut	---	---	ET-13	---	---
	<b>CD09A</b> 'A' CRD FCV Failure	90 sec	---	ET-6	---	75%
	<b>CD09B</b> 'B' CRD FCV Failure	---	---	ET-6	---	0%

## REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	<b>RC03</b> RCIC HV-F007 INBD Steam Supply	---	---	NONE	---	RACK CLOSE
	<b>RC04</b> RCIC HV-F076 Warming Line	---	---	NONE	---	RACK CLOSE
	<b>RC05</b> RCIC HV-F008 OUTBD Steam Supply	---	---	NONE	---	RACK CLOSE
	<b>HV06</b> CVH300 RBVS Fan	---	---	ET-2	---	STOP
	<b>HV05</b> BVH300 RBVS Fan	---	---	ET-2	---	STOP
	<b>HV04</b> AVH300 RBVS Fan	---	---	ET-2	---	STOP
	<b>HV03</b> CV301 RBVE Fan	---	---	ET-2	---	STOP
	<b>HV02</b> BV301 RBVE Fan	---	---	ET-2	---	STOP
	<b>HV01</b> AV301 RBVE Fan	---	---	ET-2	---	STOP
	<b>AN24</b> 10C382 Acknowledge	5 sec		ET-2	---	NORM
	<b>CD04</b> Second CRD Suction filter	---	---	ET-5	---	OPEN
	<b>CD06</b> PCV Bypass valve	---	60 sec	ET-6	0%	100%
	<b>CD10</b> 'B' FCV	120 sec	---	ET-6	---	ON
	Insert malfunction QQ20 to SHORT					
	Insert malfunction QQ20 to SHORT					
	Insert malfunction QQ21 to SHORT					

	Insert malfunction QQ21 to SHORT					
	<b>AD01B-B</b> PSV-F013B 'B' Channel Fuse	---	---	ET-10	---	REMOVE
	<b>AD01B-D</b> PSV-F013B 'D' Channel Fuse	---	---	ET-11	---	REMOVE

#### I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	<b>9S9 A LO</b> RCIC HV-F045 OVLD/PWR FAIL	---	---	NONE	---	ON
	<b>9S10 A DI</b> RCIC HV-F045 OPEN Pb	---	---	NONE	---	OFF
	<b>9S10 B LO</b> RCIC HV-F045 CLOSED light	---	---	NONE	---	OFF
	<b>9S8 A DI</b> RCIC HV-F025 OPEN Pb	---	---	NONE	---	OFF
	<b>9DS26 B LO</b> RCIC HV-F025 CLOSED light	---	---	NONE	---	OFF
	<b>9S16 A DI</b> RCIC HV-F026 OPEN Pb	---	---	NONE	---	OFF
	<b>9DS27 B LO</b> RCIC HV-F026 CLOSED light	---	---	NONE	---	OFF
	<b>9S45 A DI</b> RCIC Manual Initiation Pb	---	---	NONE	---	OFF
	<b>4A1 F DI</b> HV-F032A CLOSE Pb	---	---	NONE	---	OFF
	<b>1A175 E DI</b> HD-9414B OPEN PB	---	---	ET-1	---	OFF
	<b>1A175 F DI</b> HD-9414B CLOSE Pb	---	---	ET-1	---	ON
	Insert override 10DS40_A_LO to On					
	Insert override 10DS40_A_LO to On					
	Insert override 10DS93_A_LO to On					
	Insert override 10DS93_A_LO to On					

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><b>Swapping RACS pumps:</b> Crew places AP209 RACS pump in service and secures BP209 RACS pump after assuming the watch.</p> <p><u>IF</u> dispatched to AP209, <b>THEN REPORT</b> the AP209 RACS pump is ready for a start.</p> <p><u>AFTER</u> AP209 is in service, <b>THEN REPORT</b> AP209 is running SAT.</p> <p>Monitor Items:</p> <ul style="list-style-type: none"> <li>Normalized AP209 speed <b>cwnra209</b></li> </ul>	<ul style="list-style-type: none"> <li>CRS directs PO to place AP209 RACS pump in service and secure BP209 RACS pump.</li> <li>PO dispatches RBEO to perform pre-start checks and locally observe start of AP209 RACS pump IAW HC.OP-AP.ZZ-0109 (motherhood procedure).</li> <li>PO starts AP209 and secures BP209 IAW SO.ED-0001 Section 5.3.</li> </ul>	<p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>
<p><b>Loss of RBVS:</b> After the Crew swaps RACS pumps, <u>OR</u> at the discretion of the Lead Examiner, <b>TRIGGER ET-1</b> (RBVS Exhaust Damper HD-9414A Fails shut).</p>	<ul style="list-style-type: none"> <li>Crew recognizes Loss of RBVS by: <ul style="list-style-type: none"> <li>⇒ OHA E1-F5 "COMPUTER PT IN ALARM"</li> <li>⇒ CRIDS B7164 "REACTOR BLDG DIFF PRESS"</li> <li>⇒ OHA E6-C5 "RBVS &amp; WING AREA HVAC PNL 10C382" (delayed)</li> <li>⇒ CRIDS D3960 "RBVS EXH RMT PNL C382 TRBL"</li> <li>⇒ CRIDS D3961 "RBVS SUPPLY RMT PNL C382 TRBL"</li> <li>⇒ RB D/P indication on 10C650E</li> <li>⇒ SPDS RB PARAMETERS D/P indication.</li> </ul> </li> <li>CRS implements AB.CONT-003: <ul style="list-style-type: none"> <li>⇒ Condition A</li> </ul> </li> <li>Crew dispatches RBEO to 10C382 to investigate.</li> </ul>	
<p><u>IF</u> dispatched to 10C382, <b>THEN REPORT</b> Low Flow Trip alarms on all Reactor Bldg Supply and exhaust fans.</p>		

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to secure RBVS, <b><u>THEN TRIGGER ET-2.</u></b></p>	<ul style="list-style-type: none"> <li>RO/PO recognize HD-9414A failed shut by 10C651E indication and inform CRS.</li> <li>RO/PO place FRVS in service IAW SO.GU-0001 -or- hardcard.</li> </ul>	<p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>
<p><u>IF</u> dispatched to HD-9414B, <b><u>THEN REPORT</u></b> there is no obvious reason for the closure.</p>	<ul style="list-style-type: none"> <li>Crew dispatches NEO and Maintenance to investigate closure of HD-9414B.</li> <li>CRS recognize the following Tech Specs apply: <ul style="list-style-type: none"> <li>⇒ Secondary Containment Integrity 3.6.5.1</li> <li>⇒ Secondary Containment Automatic Isolation Dampers 3.6.5.2 action a or b or c</li> </ul> </li> </ul>	<p>GU-HD-9414B is located in Room 4624.</p>
<div style="border: 1px solid black; padding: 5px;"> <p><b><u>Loss of 10A120 Bus:</u></b> 15 minutes after the Loss of RBVS, <b><u>OR,</u></b> at the discretion of the Lead Examiner, <b><u>TRIGGER ET-3.</u></b></p> </div>	<ul style="list-style-type: none"> <li>Crew recognizes: <ul style="list-style-type: none"> <li>⇒ Reactor power lowering</li> <li>⇒ Reactor level swell</li> </ul> </li> <li>Crew monitors Reactor power, pressure, and level until plant conditions are stable.</li> <li>PO ensures feedwater restores and maintains RPV level between LVL 4 and LVL 7.</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>• Crew recognizes Loss of 'B' Reactor Recirc pump by:               <ul style="list-style-type: none"> <li>⇒ C1-D5 "REACTOR RECIRC B TROUBLE"</li> <li>⇒ CRIDS D2918 "RECIRC MG DRIVE MOTOR B BRKR"</li> <li>⇒ Flashing TRIP light for 'B' Recirc MG Drive Motor bkr</li> <li>⇒ 'B' Reactor Recirc pump flow and d/p indications on 10C651C</li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>• RO ensures at least one recirc pump still running.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Crew recognizes trip of 'B' PCP and 'B' SCP by:               <ul style="list-style-type: none"> <li>⇒ OVLD/PWR FAIL lights</li> <li>⇒ STOP lights lit</li> <li>⇒ Motor amps zero</li> </ul> </li> </ul>	<p>The trips of 'B' PCP and 'B' SCP are silent and may not be immediately recognized by the Crew.</p>
	<ul style="list-style-type: none"> <li>• Crew validates automatic actions:               <ul style="list-style-type: none"> <li>⇒ Feedwater PCP Speed Limiter on</li> <li>⇒ Recirc pump Int and Full Runbacks</li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>• Crew recognizes entry into the OPRM Enable Region by:               <ul style="list-style-type: none"> <li>⇒ C3-F1 "OPRM TRIP ENABLE"</li> </ul> </li> </ul>	<p>Rx Power ≈55% Core Flow ≈39 mlbm/hr</p>
	<ul style="list-style-type: none"> <li>• Crew recognizes loss of BK111 TB chiller by:               <ul style="list-style-type: none"> <li>⇒ OVLD/PWR FAIL light</li> <li>⇒ STOP light lit</li> <li>⇒ Motor amps zero</li> </ul> </li> </ul>	<p>The trip of BK111 is silent and may not be immediately recognized by the Crew.</p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>Crew recognizes loss of 10A120 bus from: <ul style="list-style-type: none"> <li>⇒ OHA E3-E1 7.2 KV SYS INCOMING BRKR MALF</li> <li>⇒ Solid OVLD/PWR FAIL lights on loads lost</li> <li>⇒ Flashing TRIP light for infeed bkr 52-12008</li> <li>⇒ CRIDS D3682 "SWGR BUS A120 DIFF LOCKOUT"</li> <li>⇒ CRIDS D3684 "SWGR BUS A120 UNDERVOLTAGE"</li> </ul> </li> <li>Crew announces loss of 10A120 on the plant page.</li> <li>CRS implements AB.RPV-0003: <ul style="list-style-type: none"> <li>⇒ Condition A</li> <li>⇒ Condition B</li> </ul> </li> </ul>	<p>The pace of the scenario will not allow the Crew to fully address single loop requirements.</p>
<p><u>IF</u> the Crew manually scrams, <u>THEN</u> the Feedwater Line Break and LOCA will be automatically inserted.</p>	<ul style="list-style-type: none"> <li><u>IF</u> in Region 1 of the Pwr/Flow map, <u>THEN</u> RO inserts rods IAW ESG guidance as necessary to exit Region 1.</li> <li>RO/PO close HV-F031B Recirc pump discharge valve for 5 minutes, then re-open.</li> <li>RO/PO implement DL.ZZ-0026 Att. 3v.</li> <li>CRS implements AB.RPV-0001: <ul style="list-style-type: none"> <li>⇒ Condition B</li> </ul> </li> <li>CRS implements AB.RPV-0004: <ul style="list-style-type: none"> <li>⇒ Condition D</li> <li>⇒ Condition G</li> </ul> </li> <li>PO closes HV-1680B PCP discharge valve.</li> </ul>	<p><b>HPI USED:</b>  STAR <input type="checkbox"/>  PEER CHECK <input type="checkbox"/></p> <p><b>HPI USED:</b>  STAR <input type="checkbox"/>  PEER CHECK <input type="checkbox"/>  FLAGGING <input type="checkbox"/>  OP BARRIERS <input type="checkbox"/></p> <p><b>HPI USED:</b>  STAR <input type="checkbox"/>  PEER CHECK <input type="checkbox"/>  FLAGGING <input type="checkbox"/>  OP BARRIERS <input type="checkbox"/></p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>PO closes HV-1651B SCP discharge valve.</li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/> OP BARRIERS <input type="checkbox"/>
	<ul style="list-style-type: none"> <li>PO bypasses Feedwater Runbacks.</li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
<p><u>WHEN</u> dispatched, <u>THEN REPORT</u> the 10A120 Bus Differential Overcurrent Relays are tripped. There is no visible indication of damage to the bus.</p>	<ul style="list-style-type: none"> <li>Crew dispatches TBEO and Maintenance to investigate loss of 10A120 bus.</li> </ul>	
<p>As RE, <b>REPORT</b> the Enhanced Stability guidance should be used to exit Region 1. The first three groups will also satisfy the 80% rod line sequence for single loop IAW AB.RPV-0003.</p>	<ul style="list-style-type: none"> <li>Crew contacts RE for guidance and to check thermal limits.</li> </ul>	
	<ul style="list-style-type: none"> <li>Crew references Power Maneuvering Tech Specs in AP.ZZ-108.</li> </ul>	
	<ul style="list-style-type: none"> <li>CRS recognize the following actions apply:               <ul style="list-style-type: none"> <li>⇒ Recirculation Loops 3.4.1.1 action a</li> <li>⇒ Reactor Coolant System Specific Activity T/S Table 4.4.5-1 Item 4(b)</li> <li>⇒ ODCM Table 4.11.2.1.2-1 Items (c) &amp; (f)</li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>CRS notifies Shift Rad Pro and Shift Chem Tech to take samples IAW:               <ul style="list-style-type: none"> <li>⇒ T/S Table 4.4.5-1 Item 4(b)</li> <li>⇒ ODCM Table 4.11.2.1.2-1 Items (c) &amp; (f)</li> </ul> </li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><b><u>'A' Recirc Pump High Vibration:</u></b>            15 minutes after the Loss of 10A120,  <u>OR</u>,            at the discretion of the Lead Examiner, <b>TRIGGER ET-4.</b></p>	<ul style="list-style-type: none"> <li>• CRS recognize the following Tech Specs apply:                ⇒ Recirculation Loops                    3.4.1.1 action a                    4.4.1.1.1</li> <li>• Crew contacts ESOC and Trading Floor, gives estimate of MWe output limitations and duration of limitation.</li> <li>• CRS contacts Operations Management.</li> <li>• Crew recognizes rising vibrations on 'A' Reactor Recirc pump by:                ⇒ CRIDS A2601 "RECIRC PMP A RADIAL VIB MON"                ⇒ OHA C1-F5 "COMPUTER PT IN ALARM"                ⇒ OHA C1-E4 "REACTOR RECIRC PUMP VIB HI"                ⇒ CRIDS D2920 "RECIRC PUMP MOTOR A VIBRATION"                ⇒ CRIDS D5351 "RECIRC PUMP AP201 VIBRATION"</li> <li>• CRS implements AB.RPV-0003:                ⇒ Condition F                ⇒ <u>WHEN</u> it is determined that 'A' Recirc Pump Vibration points cannot be maintained below the DANGER limits <u>THEN</u> the CRS orders manual scram to support removing 'A' Reactor Recirc pump from service.</li> <li>• RO locks the Mode Switch in SHUTDOWN and performs scram actions IAW AB.ZZ-0001 Att. 1.</li> </ul>	<p>Vibration will jump 3 mils then rise at a rate of one mil per minute. C1-E4 and C1-F5 will alarm at 11 mils.</p> <p><b>HPI USED:</b>            STAR <input type="checkbox"/>            HARD CARD <input type="checkbox"/>            PEER CHECK <input type="checkbox"/></p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<p>* <i>Crew manually scrams the Reactor within 60 seconds following the loss of both Reactor Recirc pumps.</i></p> <p>Scramming before the 'A' Reactor Recirc pump trips satisfies this Critical Task.</p>	<p><u>IF</u> the 'A' Recirc pump tripped BEFORE the Reactor was scrambled, <u>THEN RECORD</u> the time between the trip of the 'A' Recirc pump and the reactor scram.</p> <p>Time:</p>
	<ul style="list-style-type: none"> <li>Crew recognizes RPV Level Below 12.5" EOP entry condition by: <ul style="list-style-type: none"> <li>⇒ OHA C5-A4 "RPV WATER LEVEL LO"</li> <li>⇒ OHA A7-D5 "RPV LEVEL 3"</li> <li>⇒ Various water level indicators</li> </ul> </li> </ul>	
<p><b>Feedwater Line Break:</b> The feedwater line break inside containment with leakage past the check valve will be automatically inserted when the Mode Switch is taken out of RUN.</p>	<ul style="list-style-type: none"> <li>Crew recognizes High Drywell Pressure EOP entry condition: <ul style="list-style-type: none"> <li>⇒ OHA A7-D4 "DRYWELL PRESSURE HI/HI"</li> <li>⇒ OHA C5-B5 "DRYWELL PRESSURE HI"</li> <li>⇒ Various system initiations and isolations</li> </ul> </li> <li>CRS implements: <ul style="list-style-type: none"> <li>⇒ EOP-101</li> <li>⇒ EOP-102</li> </ul> </li> <li>PO attempts to maintain level as directed by CRS.</li> </ul>	<p><b>RECORD</b> Drywell Pressure reached 1.68psig for 15 min ECG Classification.</p> <p>Time:</p> <p><b>HPI USED:</b>  STAR <input type="checkbox"/>  HARD CARD <input type="checkbox"/>  PEER CHECK <input type="checkbox"/></p> <p>The feedwater line break will prevent restoring level with HPCI or feedwater.</p>
	<ul style="list-style-type: none"> <li>CRS determines an Alert Classification is required IAW ECG Section 3.2.2.b (Valid High Drywell Pressure Condition).</li> </ul>	<p><b>RECORD</b> time Alert declared.</p> <p>Time Declared:</p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to open the breaker for the HPCI HV-8278 in an attempt to fail the valve shut, <b>THEN REPORT</b> the breaker handle on the cubicle door does not appear to be engaging the breaker paddle inside the cubicle. You cannot get the cubicle door open and have called the 12 Hour Maintenance Supervisor and asked for an Electrician to help. Do <u>NOT</u> fail the valve shut.</p>	<ul style="list-style-type: none"> <li>• Crew recognizes 'A' feedwater line break by: <ul style="list-style-type: none"> <li>⇒ High Flow / Low Discharge Pressure on condensate</li> <li>⇒ High Flow / Low Discharge Pressure on HPCI</li> <li>⇒ Ability to vary HPCI flow with Setpoint</li> <li>⇒ Absence of OHA B1-E5 "HPCI PUMP DISCHARGE FLOW LO"</li> <li>⇒ Rapidly rising torus level</li> <li>⇒ Lowering hotwell level</li> <li>⇒ RPV Pressure trend not consistent with a LOCA greater than the capacity of HPCI/Condensate</li> <li>⇒ HV-F074A open and HV-F074B shut</li> </ul> </li> </ul>	
<p><u>IF</u> directed to close the F032A, <b>THEN REPORT</b> the actuator appears to be broken. The valve will not stroke from the bucket or locally with the manual handwheel.</p>	<ul style="list-style-type: none"> <li>• Crew may attempt to isolate the 'A' Feedwater line if they successfully diagnose a FW line break.</li> </ul>	<p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p> <p>The HV-F032A will not close from the Control Room.</p>
	<ul style="list-style-type: none"> <li>• Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by: <ul style="list-style-type: none"> <li>⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH"</li> <li>⇒ Flashing 95 degree status light on 10C650C</li> <li>⇒ RM11 9AX833/834 alarm</li> <li>⇒ Various Suppression Pool temperature indicators</li> </ul> </li> <li>• CRS re-enters EOP-102.</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>• IF feedwater and condensate remained aligned to feed the reactor vessel,  <u>THEN</u> Crew recognizes low main condenser hotwell levels by:               <ul style="list-style-type: none"> <li>⇒ OHA A6-F1 "CONDENSATE TRAIN A TROUBLE"</li> <li>⇒ OHA A6-F2 "CONDENSATE TRAIN B TROUBLE"</li> <li>⇒ OHA A6-F3 "CONDENSATE TRAIN C TROUBLE"</li> <li>⇒ CRIDS D2943 "CONDENSER AE108 LEVEL"</li> <li>⇒ CRIDS D2945 "CONDENSER BE108 LEVEL"</li> <li>⇒ CRIDS D2947 "CONDENSER CE108 LEVEL"</li> <li>⇒ 10C651A Hotwell Level indication</li> </ul> </li> <li>• CRS directs injection with:               <ul style="list-style-type: none"> <li>⇒ SLC</li> <li>⇒ Two CRD pumps</li> </ul>               (If RPV level continues to lower)             </li> <li>• RO/PO initiate SLC.</li> </ul>	<p><b>HPI USED:</b>            STAR <input type="checkbox"/>            PEER CHECK <input type="checkbox"/></p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to align for two CRD pump injection,  <u>THEN PERFORM</u> the following:  <b>REFER</b> to SO.BF-0001 Sect 5.4.  <b>TRIGGER ET-5</b> (Suction filter).  <b>SET</b> Remote Function for Stby CRD pump discharge valve to 0% (<b>CD01/CD02</b>).  <b>REPORT</b> Stby CRD pump ready for start.  <u>WHEN</u> Stby CRD is running,  <u>THEN RAMP</u> discharge valve to 100% open.  <u>AFTER</u> HV-F003 is open,  <u>THEN TRIGGER ET-6</u>.  <u>WHEN</u> two minutes have elapsed,  <u>THEN MODIFY</u> Malfunctions <b>CD09A/B</b> to control injection.</p>	<ul style="list-style-type: none"> <li>RO/PO align CRD for Emergency Two CRD Pump Injection IAW SO.BF-0001 Section 5.4.</li> </ul>	<p><b>HPI USED:</b>  STAR <input type="checkbox"/>  HARD CARD <input type="checkbox"/>  PEER CHECK <input type="checkbox"/></p>
<p><b><u>RHR Pump Trip &amp; HVO-16B fails to open:</u></b>  The 'A' RHR pump starts on Local Level 1 signal and immediately trips.  -AND-  HVO-16B Drywell Spray Valve fails to open</p>	<ul style="list-style-type: none"> <li>Crew recognizes 'A' RHR pump trip by: <ul style="list-style-type: none"> <li>⇒ OHA RHR LOGIC OUT OF SERVICE</li> <li>⇒ OUT OF SERVICE status light</li> <li>⇒ PUMP MOTOR OVERCURRENT status light</li> <li>⇒ Pump STOP, amp and flow indications</li> </ul> </li> </ul>	
<p><u>IF</u> dispatched to investigate the trip of the 'A' RHR pump,  <u>THEN REPORT:</u></p> <ul style="list-style-type: none"> <li>The breaker has target flags dropped on the 51A and 51B Time Overcurrent relays (401/402 bkr 06)</li> <li>The pump motor is hot to the touch and bearing oil levels are normal</li> </ul>	<ul style="list-style-type: none"> <li>Crew dispatches operator and Maintenance to the tripped RHR pump and breaker.</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>• <u>IF</u> the CRS determines 'B' RHR pump is NOT required to assure adequate core cooling by operating in LPCI mode, <u>THEN</u> CRS directs placing: 'B' RHR pump in Suppression Chamber Cooling/Spray or Drywell spray (if &gt;9.5psig in the suppression chamber).</li> <li>• RO/PO places 'B' RHR pump in Suppression Chamber Cooling/Spray or Drywell Spray IAW AB.ZZ-0001 Att. 2 or 3.</li> <li>• Crew recognizes the failure of HVO-16B to open (Drywell Spray Valve)</li> <li>• Crew recognizes containment not performing properly by: <ul style="list-style-type: none"> <li>⇒ Suppression Chamber pressure approaching Action Required area of PSP curve</li> <li>⇒ Suppression Chamber airspace temperature significantly above water temperature</li> <li>⇒ Drywell Pressure response</li> </ul> </li> </ul>	<p><i>* <u>IF</u> the Crew Sprays the Drywell, <u>WITH</u> Suppression Pool level above 124", <u>THEN</u> consider this a Critical Task Failure.</i></p> <p><b>HPI USED:</b>  STAR <input type="checkbox"/>  HARD CARD <input type="checkbox"/></p>
<p><u>IF</u> necessary, <u>THEN REDUCE</u> the ramp on malfunction <b>rr31a2</b> to raise Supp Pool pressure.</p>	<ul style="list-style-type: none"> <li>• <u>WHEN</u> the Crew determines Suppression Chamber pressure cannot be maintained below the Action Required region of the PSP curve, <u>THEN</u> the CRS implements EOP-202 to Emergency Depressurize.</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>For non-ATWS emergency depressurizations, the Control Room Supervisor should establish and maintain an RPV level band between -38" to +54" on Wide Range indication. This transient level band will prevent adverse hydraulic effects caused by high outside shroud reactor level while maintaining adequate core submergence based on Fuel Zone indication. Following the emergency depressurization, level will be restored and maintained to the preferred EOP reactor level band by using a suggested Wide Range compensated level band of +12.5" to +54" if possible using Condensate and Startup Level Control or the Control Room Supervisor can maintain an RPV level band of -38" to +54" if still batch feeding with low pressure ECCS to maintain RPV level.</p>	<ul style="list-style-type: none"> <li>Crew prevents injection from Core Spray and LPCI pumps not required for adequate core cooling.</li> <li>RO/PO open ADS valves IAW AB.ZZ-0001 Attachment 13.</li> </ul>	<p><b>HPI USED:</b>  STAR <input type="checkbox"/>  HARD CARD <input type="checkbox"/></p> <p><b>INPO Fundamentals:</b>  CONTROL <input type="checkbox"/></p>
	<p>* <b><i>Crew actuates five SRVs before Suppression Chamber pressure has been in the Action Required region of the PSP curve for over three minutes.</i></b></p> <p>NOTE:  Preventing entry into the Action Required Region of the PSP curve satisfies this critical task.</p>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>Crew recognizes failure of PSV-F013B to remain open by: <ul style="list-style-type: none"> <li>⇒ Acoustic Monitor position indication on 10C650C</li> <li>⇒ Tailpipe temperature on TR-R614</li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>RO/PO opens additional SRV IAW AB.ZZ-0001 Att. 13, informs CRS of PSV-F013B failure.</li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
	<ul style="list-style-type: none"> <li>CRS directs restoring RPV level to -38" to 54" with Low Pressure ECCS.</li> </ul>	
	<ul style="list-style-type: none"> <li>RO/PO restore RPV level as directed by CRS IAW AB.ZZ-0001: <ul style="list-style-type: none"> <li>⇒ Att. 4 for RHR</li> <li>⇒ Att. 5 for Core Spray</li> </ul> </li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/>
		IF RPV water level drops below -311", <b>THEN</b> the CRS may implement EOP-206.
	<ul style="list-style-type: none"> <li><u>WHEN</u> adequate core cooling is assured,  <b>THEN</b> CRS directs placing: <ul style="list-style-type: none"> <li>⇒ One loop of RHR in Supp Pool Cooling and Spray</li> <li>⇒ One loop of RHR in Drywell Spray (If Supp Pool Level is less than 124")</li> </ul> </li> </ul>	* <b><i>IF the Crew Sprays the Drywell, WITH Suppression Pool level above 124", THEN consider this a Critical Task Failure.</i></b>
	<ul style="list-style-type: none"> <li>RO/PO align RHR IAW AB.ZZ-0001: <ul style="list-style-type: none"> <li>⇒ Att 2 Drywell Spray</li> <li>⇒ Att 3 Supp Pool Clg</li> </ul> </li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/> OP BARRIERS <input type="checkbox"/>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
-----------------------------	---------------------------------	----------

### **Termination Requirement:**

The scenario may be terminated at the discretion of the Lead Examiner when either:

- RPV level has been restored above 129" and containment parameters are improving  
OR
- EOP-202 is being implemented and RPV pressure is being maintained 50 psig above Suppression Chamber pressure with five SRVs open.

If the scenario does not run for a full 15 minutes after -161" is reached, the SAE Classification may not be declared.

## VI. SCENARIO REFERENCES:

---

- A. NC.TQ-DG.ZZ-0002 Conduct of Simulator Training.
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. Emergency Plan (ECG)
- G. Alarm Response Procedures (Various)
- H. HU-AA-101 Performance Tools and Verification Practices
- I. SH.OP-AS.ZZ-0001 Operations Standards
- J. SH.OP-AS.ZZ-0002 Shift Technical Advisor Program
- K. HC.OP-AP.ZZ-0108 Operability Assessment and Equipment Control Program
- L. HC.OP-AP.ZZ-0109 Equipment Operational Control
- M. HC.OP-SO.AE-0001 Feedwater System Operation
- N. HC.OP-SO.BF-0001 CRD Hydraulic System Operation
- O. HC.OP-SO.ED-0001 Reactor Auxiliaries Cooling Water System Operation
- P. HC.OP-SO.GU-0001 Filtration, Recirculation, and Ventilation System Operation
- Q. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- R. HC.OP-AB.RPV-0001 Reactor Power
- S. HC.OP-AB.RPV-0003 Recirculation System / Reactor Power Oscillations
- T. HC.OP-AB.RPV-0004 Reactor Level Control
- U. HC.OP-AB.CONT-0003 Reactor Building
- V. HC.OP-AB.ZZ-000 Reactor Scram
- W. HC.OP-EO.ZZ-0101 RPV Control
- X. HC.OP-EO.ZZ-0102 Primary Containment Control
- Y. HC.OP-EO.ZZ-0202 Emergency RPV Depressurization
- Z. HC.OP-EO.ZZ-0206 RPV Flooding
- AA. NOTF 20149832 Feedwater Piping Wall Thickness

## VII. ESG CRITICAL TASK RATIONAL

### 2013 NRC Scenario #1, Rev. 01

1.

- \* ***Crew manually scrams the Reactor within 60 seconds following the loss of both Reactor Recirc pumps.***

#### **K/A 295001 Partial or Complete Loss of Forced Core Flow Circulation**

AA1 Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION:

AA1.01 Recirculation system RO 3.5 SRO 3.6

AA2 Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION:

AA2.01 Power/flow map RO 3.5 SRO 3.8

Without Recirc Drive flow through the Jet pumps, the only circulation in the Reactor core is natural circulation. When operating at power, natural circulation core flow is expected to be low enough to place us in the Scram Region of the Power to Flow Map, where the risk of power oscillations is great enough to warrant an immediate Reactor shutdown. This is procedurally driven as an Immediate Operator Action in AB.RPV-0003. It is expected that the Crew will recognize the imminent loss of the last recirc pump due to indications of pump degradation and proactively scram the reactor prior to the loss to prevent entering a potentially unstable power to flow condition. If the Crew fails to take action prior to the pump seizure, the loss will be accompanied with OHAs. In this case, 60 seconds is deemed adequate time to recognize the loss, and take the required Immediate Operator action. Scramming prior to the loss of the second reactor recirc pump, including scrams based on calculated entry into the Scram Region of the Power to Flow map, satisfies this critical task.

2.

- \* ***When the Crew determines RPV water level cannot be maintained above -185", the Crew actuates at least five SRVs to Emergency Depressurize the Reactor before RPV level reaches -200", and restores RPV level to above -185".***

#### **K/A 295031 Reactor Low Water Level**

EA1. Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL:

EA1.01 Low Pressure Coolant Injection RO: 4.4 SRO 4.4

EA1.06 Automatic depressurization system RO 4.4 SRO 4.4

EA2 Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL:

EA2.04 Adequate core cooling RO 4.6 SRO 4.8

When Reactor water level cannot be maintained above -185" with injection to the RPV, adequate core cooling cannot be assured (MSCRWL). EOPs direct action to initiate emergency depressurization when RPV water level reaches this value if there are injection sources available. To restore adequate core cooling, the Crew must Emergency Depressurize and restore level with low pressure ECCS. The lower limit of -200" provides an acceptable level of performance based upon the rate of RPV water level decrease in this scenario. The term "Crew actuates at least five SRVs" takes into account the failure of the F013B which is already inserted.

3.

- \* **WHEN Emergency Depressurization is initiated and the PSV-F013B fails to remain open, THEN before RPV pressure drops below 50 psig, the Crew places the Control Switch for an additional SRV to OPEN to achieve five open SRVs.**

**K/A 295031 Reactor Low Water Level**

EA1. Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL:

EA1.07 Safety/Relief Valves RO 3.7 SRO 3.7

The Minimum Number of SRVs required for Emergency Depressurization (MNSRED) is five. The MNSRED is utilized to assure the RPV will depressurize and remain depressurized when Emergency Depressurization is required. When the fuses for the PSV-F013B fail, the Crew needs to ensure an additional SRV control switch is in the OPEN position to achieve five SRVs for Emergency Depressurization. This is directed by both EOP-202 and AB.ZZ-0001. SRV's are designed to open with a minimum differential pressure of 50 psid between the reactor vessel and the suppression chamber. Below this d/p, they may not open. If the Crew does not attempt to open the fifth SRV before this minimum d/p is lost, they cannot validate it's operation. This would prevent them from detecting the failure and pursuing the use of the Alternate Depressurization Systems in EOP-202.

4.

- \* **IF the Crew Sprays the Drywell, WITH Suppression Pool level above 124", THEN consider this a Critical Task Failure.**

**K/A 223001 Primary Containment System and Auxiliaries**

A2 Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

A2.11 Abnormal suppression pool level RO 3.6 SRO 3.8

Suppression Pool level above 124" may result in the Torus to Drywell Vacuum breakers being submerged. If drywell sprays are initiated in this condition, the non-condensables in the Torus air space may not migrate back to the drywell, and the drywell negative pressure limit may be exceeded as a result. EOP-102 directs verifying Suppression Pool level is 124" before initiating drywell sprays.

**HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM****INITIATING EVENTS THAT LEAD TO CORE DAMAGE**

<u>Y/N</u>	<u>EVENT</u>	<u>Y/N</u>	<u>EVENT</u>
<u>      </u>	Loss Of Offsite Power/SBO	<u>      </u>	Internal Flooding
<u>  Y  </u>	LOCA		
<u>TRANSIENTS:</u>		<u>LOSS OF SUPPORT SYSTEMS:</u>	
<u>      </u>	Turbine Trip	<u>      </u>	Loss of SSW
<u>      </u>	Loss of Condenser Vacuum	<u>      </u>	Loss of SACS
<u>      </u>	Loss of Feedwater	<u>      </u>	Loss of Instrument Air
<u>      </u>	Inadvertent MSIV Closure		
<u>      </u>	Inadvertent SRV Opening		
<u>  Y  </u>	Manual Scram		

**COMPONENT/TRAIN/SYSTEM UNAVAILABILITY  
THAT INCREASES CORE DAMAGE FREQUENCY**

<u>Y/N</u>	<u>KEY EQUIPMENT</u>	<u>Y/N</u>	<u>KEY EQUIPMENT</u>
<u>      </u>	Hard Torus Vent	<u>      </u>	SLC
<u>      </u>	HPCI	<u>      </u>	CRD
<u>      </u>	1E 4.16KV Bus	<u>      </u>	1E 125VDC
<u>      </u>	SACS Hx/Pump		
<u>      </u>	EDG		<u>KEY SYSTEMS</u>
<u>      </u>	120VAC 481/482 Inverter	<u>      </u>	500KV AC Power
<u>      </u>	A/B RHR	<u>      </u>	SRVs
<u>  Y  </u>	RCIC	<u>      </u>	Condensate/Feedwater
<u>      </u>	SSW Pump	<u>      </u>	PCIG

**OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE**

<u>Y/N</u>	<u>OPERATOR ACTION</u>
<u>  Y  </u>	Aligning RHR for Suppression Pool Cooling
<u>      </u>	Emergency Venting of Primary Containment
<u>  Y  </u>	Emergency Depressurize RPV W/O High Pressure Injection
<u>      </u>	Initiating LP ECCS with No High Pressure Injection Available
<u>      </u>	Restoration of AC Power after a LOP (EDG / Offsite)
<u>      </u>	Monitoring and Control of SACS heat loads
<u>      </u>	Preventing LVL 8 trip of Feedwater during a transient
<u>      </u>	Align Core Spray Suction to CST when at NPSH limits
<u>      </u>	Cross-Tie De-Energized B/D 125VDC Battery Charger to Energized Bus
<u>      </u>	Inhibit ADS during ATWS

Complete this evaluation form for each ESG.

## **VIII. TURNOVER SHEET:**

---

Rx Power: 100%  
MWe (May vary slightly): 995  
Work Week: B  
Risk Color: Green

Activities Completed Last Shift:

Major Activities Next 12 Hours:  
Place A RACS pump I/S and Secure B RACS pump for oil change  
Power reduction to 90% for rod pattern adjustment

Protected Equipment:  
HPCI/250VDC  
'A' Channel EDG, SWGR, 1E Logic Panels,

Tagged Equipment:  
RCIC

## IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

### EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

**Note:** This form is used as guidance for an examination team to conduct a review for the proposed exam scenario(s). Attach a separate copy of this form to each scenario reviewed.

SELF-  
CHECK

ESG- Scenario #1 \_\_\_\_\_

REVIEWER: \_\_\_\_\_

- \_\_\_\_\_ 1. The scenario has clearly stated objectives in the scenario.
- \_\_\_\_\_ 2. The initial conditions are realistic, equipment and/or Instrumentation may be out of service, but it does not cue crew into expected events.
- \_\_\_\_\_ 3. Each event description consists of:
  - The point in the scenario when it is to be initiated
  - The malfunction(s) that are entered to initiate the event
  - The symptoms/cues that will be visible to the crew
  - The expected operator actions (by shift position)
  - The event termination point
- \_\_\_\_\_ 4. The use of non-mechanistic failures (e.g. pipe break) should be limited to one or a credible preceding event has occurred.
- \_\_\_\_\_ 5. The events are valid with regard to physics and thermodynamics.
- \_\_\_\_\_ 6. Sequencing/timing of events is reasonable (e.g. the crew has time to respond to the malfunctions in an appropriate time frame and implements procedures and/or corrective actions).
- \_\_\_\_\_ 7. Sequencing/timing of events is reasonable, and allows for the examination team to obtain complete evaluation results commensurate with the scenario objectives.
- \_\_\_\_\_ 8. If time compression techniques are used, scenario summary clearly so indicates.
- \_\_\_\_\_ 9. The simulator modeling is not altered.
- \_\_\_\_\_ 10. All crew competencies can be evaluated.
- \_\_\_\_\_ 11. Appropriate reference materials are available (SOERs, LERs, etc.)
- \_\_\_\_\_ 12. If the sampling plan indicates that the scenario was used for training during the requalification cycle, evaluate the need to modify or replace the scenario.
- \_\_\_\_\_ 13. Proper critical task methodology used IAW NRC procedures.

## EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)

### ESG Validation:

Rev.	Date	Comments

**Note:** The following criteria list scenario traits that are numerical in nature. A second set of numbers indicates a range to be met for a set of two scenarios. Therefore, to complete this part of the review, the set of scenarios must be available. The section below should be completed once per scenario set.

ESG: Scenario #1

ESG: \_\_\_\_\_

### SELF-CHECK

- \_\_\_\_\_ 1. Total malfunctions inserted: 4-8/10-14
- \_\_\_\_\_ 2. Malfunctions that occur after EOP entry: 1-4/3-6
- \_\_\_\_\_ 3. Abnormal Events: 1-2/2-3
- \_\_\_\_\_ 4. Major Transients: 1-2/2-3
- \_\_\_\_\_ 5. EOPs used beyond primary scram response EOP: 1-3/3-5
- \_\_\_\_\_ 6. EOP Contingency Procedures used: 0-3/1-3
- \_\_\_\_\_ 7. Approximate scenario run time: 45-60 minutes (one scenario may approach 90 minutes)
- \_\_\_\_\_ 8. EOP run time: 40-70% of scenario run time
- \_\_\_\_\_ 9. Crew Critical Tasks: 2-5/5-8
- \_\_\_\_\_ 10. Technical Specifications are exercised during the test
- \_\_\_\_\_ 11. Events used in the two scenarios are not repeated (Only Applicable for an exam set)
- \_\_\_\_\_ 12. The scenario sets for the exam week do not contain duplicate scenarios (Only Applicable for an exam set)

### Comments:

---

---

---

---

---

# SIMULATOR

## ***EXAMINATION SCENARIO GUIDE***

**SCENARIO TITLE:** Recirc Pump Seal Failure, ATWS with BPV Failure

**SCENARIO NUMBER:** NRC 2013 Exam Scenario #2

**EFFECTIVE DATE:** Effective when approved.

**EXPECTED DURATION:** 60 minutes

**REVISION NUMBER:** 01

**PROGRAM:** ☐ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER \_\_\_\_\_

**REVISION SUMMARY:**

**PREPARED BY:** \_\_\_\_\_  
Instructor

\_\_\_\_\_  
DATE

**APPROVED BY:** \_\_\_\_\_  
LORT Group Lead or Designee

\_\_\_\_\_  
DATE

**APPROVED BY:** \_\_\_\_\_  
Shift Operations Supervisor or Designee

\_\_\_\_\_  
DATE

## **I. OBJECTIVE(S):**

---

### **Enabling Objectives**

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CREW CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Crew critical tasks within this examination scenario guide are identified with an “\*.”)

## **II. MAJOR EVENTS:**

---

- A. Recirc Flow Unit Failure Downscale
- B. Loss of 1CD481 Inverter
- C. Recirc Pump High Vibrations
- C. ATWS with ARI failure, RWCU and SLC Failure
- D. EHC Pump Failure -> BPVs Fail Close
- E. RHR Pump Fails to Start

## **III. SCENARIO SUMMARY:**

---

The scenario begins with the plant at 100% power; with 'A' EHC Pump OOS. N2 makeup to the Primary Containment is required. After establishing N2 makeup, the crew will be directed to lower power to 90% using Recirc pump flow to prepare for a rod pattern adjustment. The Recirc Loop Flow Summer 'C' then fails. After restoration, the 1CD481 inverter will fail. After the inverter failure, the 'A' Recirc pump will experience a seal failure and the crew will have to reduce power and the pump will be tripped & isolated. After single loop operation is established, power oscillations will occur, necessitating a reactor SCRAM. The SCRAM will not be successful and will result in a full core ATWS with an initial power level of about 40%. ARI will fail to operate. RWCU will fail to isolate and both SLC pumps will trip when the crew manually isolates RWCU. The crew will attempt to drive individual rods manually. Additional SCRAM attempts will not be successful. Pressure will be initially controlled with the BPVs, but the BPVs will gradually fail close subsequent to the EHC pump trip, requiring the crew to establish pressure control with the SRVs. When Torus cooling is placed into service, the RHR torus cooling valve fails to open. Once torus cooling is placed in service and pressure and level are being maintained, SCRAM attempts will be successful and the scenario may be terminated.

#### IV. INITIAL CONDITIONS:

I.C.

Initial	
	<b>INITIALIZE</b> the simulator to 100% power, 3840 MWth, MOL.
	<b>REDUCE</b> reactor power to 84.5%.
	<b>REMOVE</b> the 'C' RFPT from service IAW SO.AE-0001 Section 5.11 up through the point of reducing lube oil temperature to 90 degF.
	IF N2 makeup to containment will be performed, <b>THEN REDUCE</b> drywell and suppression chamber pressure to approximately 0.30 psig.
	<b>ENSURE</b> 'D' SACS pump is in service.
	<b>ENSURE</b> 'B' CRD pump is in service.
	<b>ENSURE</b> 'B' FPCC pump is in service.
	<b>ENSURE</b> 'A' Control Room Vent Train is in service.
	<b>ENSURE BOTH</b> Steam Tunnel unit Coolers are in service.
	<b>ENSURE</b> 'A' EHC pump is in service.
	<b>ENSURE</b> associated Schedule file open and running.
	<b>ENSURE</b> associated Events file open.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
	<b>INITIAL</b> SO.AE-0001 Section 5.11 up through the point of reducing lube oil temperature to 90 degF.
	<b>PREPARE</b> an SO.AE-0001 Attachment 3 for 'C' RFPT pump casing d/t.
	<b>INITIAL</b> IO.ZZ-006 for the power reduction.
	IF performing N2 Makeup, <b>THEN INITIAL</b> SO.GS-0001 up to the and including increasing vaporizer temperature to 100 degF (Step 5.2.8 of Rev 30).
	<b>ENSURE</b> Data Collection is trending the following parameters: <ul style="list-style-type: none"><li>• W/R Reactor Water Level</li><li>• Fuel Zone Reactor Water Level</li><li>• W/R Reactor Pressure</li></ul>
	At a minimum review the Scenario Reference section and <b>CLEAN</b> the <u><b>bolded</b></u> EOPs, ABs and SOPs listed. (80091396 0270)
	<b>COMPLETE</b> the "Simulator Ready for Training/Examination" Checklist.

EVENT FILE:

Initial	ET #	
		Event code: <b>rrp_rpm(1) &lt;= 1400 // 'A' Recirc pump rpm</b> Description: <b>imf rr26a2 3 15</b> Increases malfunction vibration when Crew reduces recirc pump speed.
		Event code: <b>rhf27(1) &gt;= 100 &amp; rh_bkr(2) // 'A' RHR in Chamber Spray with 'B' RHR run</b> Description: <b>Trips AP202 RHR pump when placed in Chamber Spray if BP202 is still running</b>
		Event code: <b>rhf27(2) &gt;= 100 &amp; rh_bkr(1) // 'B' RHR in Chamber Spray with 'A' RHR run</b> Description: <b>Trips BP202 RHR pump when placed in Chamber Spray if AP202 is still running</b>
		Event code: <b>rhf21(1) &gt;= 500 &amp; rh_bkr(2) // 'A' RHR in Drywell Spray with 'B' RHR run</b> Description: <b>Trips AP202 RHR pump when placed in Drywell Spray if BP202 is still running</b>
		Event code: <b>rhf21(2) &gt;= 500 &amp; rh_bkr(1) &gt;= 1.0 // 'B' RHR in Drywell Spray with 'A' RHR run</b> Description: <b>Trips BP202 RHR pump when placed in Drywell Spray if AP202 is still running</b>

# MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description
	None		Insert malfunction ED09A1 on ET-2	Loss of 120 VAC class 1E instr bus 1CD484
	None	---	Insert malfunction RR26A2 on ET-3	A' Recirc Pump High Vibration
	None		Insert malfunction RP06	Half-core ATWS - left side
	None		Insert malfunction QQ20 to SHORT	RHR pump AP202 trip
	None		Insert malfunction QQ20 to SHORT	RHR pump AP202 trip
	None		Insert malfunction QQ21 to SHORT	RHR pump BP202 trip
	None		Insert malfunction QQ21 to SHORT	RHR pump BP202 trip

# REMOTE SCHEDULE:

Initial	@Time	Event	Action	Description
	None	None	Insert remote EP11 to INSTALLED	EP11 EOP-320 (step 5.2.2), RPS division 1 jumper
	None	None	Insert remote EP13 to INSTALLED	EP13 EOP-320 (step 5.2.3), RPS division 3 jumper
	None	None	Insert remote EP09 after 240 to REMOVED on event 7	EP09 EOP-320 (step 5.1.2), ARI valve fuses F6A/F5A
	None	None	Insert remote EP10 after 240 to REMOVED on event 7	EP10 EOP-320 (step 5.1.4), ARI valve fuses F6B/F5B
	None	None	Insert remote EP12 after 720 to INSTALLED on event 7	EP12 EOP-320 (step 5.2.4), RPS division 2 jumper
	None	None	Insert remote EP14 after 720 to INSTALLED on event 7	EP14 EOP-320 (step 5.2.5), RPS division 4 jumper

# OVERRIDE SCHEDULE:

Initial	@Time	Event	Action	Description
	None		Insert override 10DS40_A_LO to On	PUMP MOTOR OVER CURRENT-RHR A-LOOP A (LO)
	None		Insert override 10DS40_A_LO to On	PUMP MOTOR OVER CURRENT-RHR A-LOOP A (LO)
	None		Insert override 10DS93_A_LO to On	PUMP MOTOR OVER CURRENT-RHR B-LOOP B (LO)
	None		Insert override 10DS93_A_LO to On	PUMP MOTOR OVER CURRENT-RHR B-LOOP B (LO)

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><b><u>N2 M/U to the Primary Containment:</u></b></p> <p>Refer to SO.GS-0001 Section 5.2 and <b>SUPPORT</b> requests for field manipulations with appropriate reports. (The simulator does not model any of these functions. The N2 vaporizer is always lined up for make-up).</p>	<ul style="list-style-type: none"> <li>CRS directs N2 Makeup to the Primary Containment.</li> <li>PO conducts N2 makeup to the Primary Containment IAW SO.GS-0001 Section 5.2 and 5.3.</li> </ul>	
<p><b><u>Power Reduction:</u></b></p> <p>Crew places lowers power to 90% RTP using recirculation pumps.</p>	<ul style="list-style-type: none"> <li>RO reduces and maintains recirc flow to establish 90% RTP (not to exceed 1%/min).</li> </ul>	<p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p>
<p><b><u>RECIRC LOOP FLOW SUMMER 'C' FAILURE:</u></b></p> <p>At the discretion of the lead Examiner, <b>TRIGGER ET-1</b> (RECIRC LOOP FLOW SUMMER FAILURE to 0 percent).</p>	<ul style="list-style-type: none"> <li>Crew monitors Reactor power, pressure, and level and ensure plant conditions are stable. Ensures no scram setpoints have been exceeded.</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
-----------------------------	---------------------------------	----------

- Crew recognizes RPS ½ scram by:
  - ⇒ OHA C3-A3 "REACTOR SCRAM TRIP LOGIC A2"
  - ⇒ OHA C5-A1 "NEUTRON MONITORING SYSTEM"
  - ⇒ RPS Trip Logic A2 NORMAL/RESET status lights extinguished
  - ⇒ Pilot Scram Valve Solenoid LOGIC A NORMAL status lights for all four groups extinguished.
  - ⇒ CRIDS D2125 NEUTRON MON SYST SCRAM W
  - ⇒ CRIDS D2131 "REACTOR SCRAM W TRIP"
  - ⇒ CRIDS D2132 "REACTOR SCRAM Y TRIP"
- Crew recognizes 'A', 'C', and 'E' APRMs Upscale by:
  - ⇒ OHA C3-C4 "APRM SYS A UPSCALE TRIP/INOP"
  - ⇒ C3-D4 "APRM UPSCALE"
  - ⇒ APRMs A,C, and E "UPSC TR OR INOP" status lights
  - ⇒ APRM A,C, and E "UPSC ALARM" status lights
  - ⇒ CRIDS D4303 "APRM CH A UPSCALE THERMAL TRIP"
  - ⇒ CRIDS D4306 "APRM CH C UPSCALE THERMAL TRIP"

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>Crew recognizes 'C' RECIRC LOOP FLOW SUMMER FAILURE Downscale by:               <ul style="list-style-type: none"> <li>⇒ FLOW UNIT C and A "COMPAR" status lights</li> <li>⇒ APRM A, C, and E "UPSC ALARM" status lights</li> <li>⇒ CRIDS C026 "EITHER RBM CHANNEL UPSCALE"</li> <li>⇒ CRIDS C049 "RECIRC FLOW COMPR OUT LIMITS"</li> </ul> </li> <li>CRS implements AB.IC-0004:               <ul style="list-style-type: none"> <li>⇒ Condition F</li> </ul> </li> <li>CRS references AB.IC-0003:               <ul style="list-style-type: none"> <li>⇒ Condition B</li> </ul> </li> <li>RO bypasses 'C' Flow Unit.</li> <li>CRS refers to DD.ZZ-0020 for a failed PPC Sensor.</li> <li>CRS directs Reactor Engineering to evaluate the flow unit failure on the PPC.</li> <li>RO directs I&amp;C to place the MODE Switch, on the applicable flow unit, to the "UNLABELED" position between STANDBY and ZERO.</li> <li>RO verifies RPS trip clear.</li> </ul>	<p><b>HPI USED:</b>            STAR <input type="checkbox"/>            PEER CHECK <input type="checkbox"/></p>
<p>IF directed to place the Flow Unit C MODE Switch in the unlabeled position, <u>THEN</u> <b>CHANGE</b> Malfunction NM12C Final value to 100%.</p>		

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>RO resets RPS trip as follows: <ul style="list-style-type: none"> <li>⇒ TURN the affected RPS Trip Logic key to RESET, AND RETURN to the NORMAL position.</li> <li>⇒ VERIFY that RPS is reset.</li> </ul> </li> <li>CRS determine no Tech Spec actions required. Enter Tracking Action statement for: <ul style="list-style-type: none"> <li>⇒ Table 3.3.6-1 Function 6</li> </ul> </li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
<b>Loss of CD481:</b> After the Crew assumes the watch and at the discretion of the Lead Examiner, <b>TRIGGER ET-2</b> (Loss of CD481 120AC 1E Inverter).	<ul style="list-style-type: none"> <li>Crew recognizes loss of CD481 by: <ul style="list-style-type: none"> <li>⇒ OHA D3-E3 "120VAC UPS TROUBLE"</li> <li>⇒ OHA C6-A1 "RSP/RSS TAKEOVER"</li> <li>⇒ Downscale indications for 'A' Channel DC systems and CD481 on 10C650D</li> <li>⇒ 'C' Channel ECCS "TRIP UNIT OUT OF FILE OR PWR FAIL" lights</li> <li>⇒ CRIDS page 167 indications</li> </ul> </li> <li>Crew recognizes loss of Reactor Building Ventilation by: <ul style="list-style-type: none"> <li>⇒ Supply/Exhaust Dampers HD-9370A AND HD-9414A closure</li> <li>⇒ Fans trip</li> </ul> </li> <li>CRS implements AB.ZZ-0136.</li> <li>Crew verifies that 'B' Control Room vent train automatically starts.</li> <li>Crew recognizes that TACS loops failed to automatically swap</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>CRS directs manually swapping TCAS pumps IAW HC.OP-AB.22-0001, Att 10.</li> <li>Crew recognizes various other effects of CD481 loss: <ul style="list-style-type: none"> <li>⇒ AP210 SACS pump running</li> <li>⇒ 'C' Channel LOCA LVL 2 load shed breakers open on 10C650E</li> <li>⇒ PCIG valve isolations including common suction line isolation</li> <li>⇒ HPCI suction swap to torus</li> </ul> </li> </ul>	
<p><u>IF</u> dispatched to CD481 inverter ,</p> <p><b><u>THEN REPORT:</u></b></p> <ul style="list-style-type: none"> <li>The Inverter Output breaker CB10 is tripped.</li> <li>The AC Reg Output breaker CB302 is tripped</li> <li>There is an acrid odor coming from the static switch section</li> </ul>	<ul style="list-style-type: none"> <li>Crew dispatches ABEO and Maintenance to CD481 inverter.</li> </ul>	
	<ul style="list-style-type: none"> <li>CRS implements AB.COMP-002: <ul style="list-style-type: none"> <li>⇒ Condition F</li> </ul> </li> </ul>	
<p><u>IF</u> dispatched to check the A/BK202 Safety Circuit,</p> <p><b><u>THEN REPORT</u></b> status IAW the following Monitor Items:</p> <ul style="list-style-type: none"> <li>AK202 – <b>ia_6cr</b></li> <li>BK202 – <b>ia_6crb</b> <ul style="list-style-type: none"> <li>⇒ False = reset</li> <li>⇒ True = tripped</li> </ul> </li> </ul> <p><u>IF</u> directed to reset a compressor safety lockout,</p> <p><b><u>THEN TOGGLE</u></b> associated Remote Function <b>IA08/IA09</b> to <b>RESET</b>.</p>	<ul style="list-style-type: none"> <li>RO/PO align BK202 PCIG compressor to supply PCIG through the Accident suction</li> </ul>	<p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>CRS implements AB.CONT-0002: ⇒ Condition B</li> <li>CRS recognize the following Tech Spec actions apply: ⇒ Distribution - Operating 3.8.3.1 action a</li> <li>CRS contacts Operations Management.</li> </ul>	<p>Must restore CD481 within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours.</p>
<p><b><u>Recirc Pump Seal Failure:</u></b> After loss of Inverter actions are complete, <u>AND</u> at the discretion of the Lead Examiner, <b>TRIGGER ET-3</b> ('A' Recirc Pump Dual Seal Failure).</p>	<ul style="list-style-type: none"> <li>Crew recognizes second stage seal failure on 'A' Recirc pump by: ⇒ OHA C1-F5 "COMPUTER PT IN ALARM" ⇒ CRIDS D2924 "RECIRC PUMP A SEAL LKG FLOW HI" ⇒ CRIDS D2926 "RECIRC PUMP A SEAL STAGE FLOW HILO" ⇒ Lowering second stage seal pressure</li> <li>CRS implements AB.RPV-0003: ⇒ Condition D</li> </ul>	<p>First stage seal failure will occur three minutes after the second stage.</p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to report local seal pressures on 77' Rx Bldg, <b>THEN REPORT</b> readings consistent with CRIDS (Page 85), <u>OR</u> the following Monitor Items: (Monitor Items are psia)</p> <ul style="list-style-type: none"> <li>'A' Recirc Inbd (#1) Seal <b>rrpsl1(1) – 15 = psig</b></li> <li>'A' Recirc Outbd (#2) Seal <b>rrpsl2(1) – 15 = psig</b></li> </ul>	<ul style="list-style-type: none"> <li>Crew recognizes 'A' Recirc pump dual seal failure by: <ul style="list-style-type: none"> <li>⇒ OHA C1-F5 "COMPUTER PT IN ALARM" reflash</li> <li>⇒ Changing seal pressures</li> <li>⇒ Rising seal temperatures</li> <li>⇒ OHA C6-B1 "DLD SYSTEM ALARM/TRBL"</li> <li>⇒ RM11 9AX317/318/320 DLD CCM alarms</li> <li>⇒ RM11 9AX314 DLD Floor Drain Flow alarm</li> <li>⇒ Rising drywell pressure</li> </ul> </li> <li>CRS implements AB.CONT-001: <ul style="list-style-type: none"> <li>⇒ Condition A</li> </ul> </li> <li>RO/PO ensure drywell cooling is maximized.</li> </ul>	<p><b>RECORD</b> time dual recirc pump seal failure is recognized <u>OR</u> OHA C6-B1 is received (whichever is first) for ECG Classification. Time: _____</p> <p><b>HPI USED:</b> STAR <input type="checkbox"/></p>
<p>Monitor Items:</p> <ul style="list-style-type: none"> <li>HV-F023A <b>rrvf23(1)</b></li> <li>HV-F100 <b>cuvf100</b></li> <li>HV-F031A <b>rrvf31(1)</b></li> </ul>	<ul style="list-style-type: none"> <li>* <b><i>CREW trips and isolates the 'A' RR pump before DRWL pressure reaches 1.68 psig by closing the:</i></b> <b><i>HV-F023A</i></b> <b><i>HV-F100</i></b> <b><i>HV-F031A</i></b></li> <li>CRS implements AB.RPV-0006: <ul style="list-style-type: none"> <li>⇒ Condition B</li> <li>⇒ Condition C</li> </ul> </li> </ul>	<p><b>RECORD</b> drywell pressure when 'A' Reactor Recirc pump is isolated:  Drywell Pressure: _____</p>
<p><u>IF</u> the Crew scrams during the seal failure, <b>THEN</b> proceed to the ATWS. Power Oscillations <u>NOT</u> be observed.</p>	<ul style="list-style-type: none"> <li>Crew validates successful recirc isolation by: <ul style="list-style-type: none"> <li>⇒ Seal pressures and temperatures</li> <li>⇒ Trending DLD flows</li> <li>⇒ Trending drywell pressure and temperature</li> </ul> </li> </ul>	

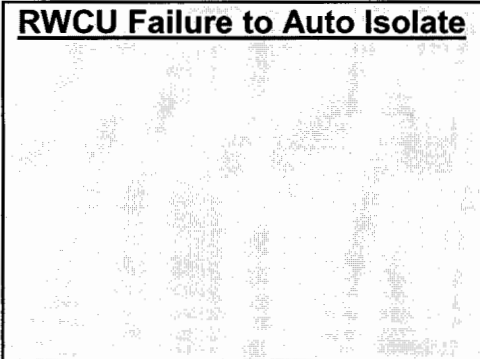
## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><b>Power Oscillations</b> At the discretion of the lead evaluator, insert Trigger <b>ET-4 Power Oscillations</b></p>	<ul style="list-style-type: none"> <li>Crew monitors plant response to the transient.</li> <li>Crew recognizes power oscillation and locks the mode switch in Shutdown IAW AB.RPV-0003 Immediate Operator Actions</li> </ul>	
<p><b>ATWS &gt;4%:</b> Full core electrical ATWS w/ failure of ARI.</p>	<ul style="list-style-type: none"> <li>Crew recognizes Scram Condition and Reactor Power Above 4% EOP entry condition: <ul style="list-style-type: none"> <li>⇒ APRM indications</li> <li>⇒ Absence of rod FULL IN lights on the Full Core Display</li> <li>⇒ Rod position indications</li> </ul> </li> </ul>	<p><b>RECORD</b> time of Mode Switch to SHUTDOWN or Turbine Trip (whichever was first) for 15 min ECG Classification. Time: _____</p>
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>Reactor Scram Reports</p> <p>Following a Reactor scram, the NCO should make an initial scram report by announcing reactor status IAW HC.OP-AB.ZZ-0001. Crew personnel should hold all other non-essential communications until after the initial scram report is complete. The Control Room Supervisor should silence alarms during the scram report and the SM/CRS is not required to make a statement directing the NCO to check the overhead alarms, since these actions are already expected immediately following the scram. During the scram report, the NCO should report reactor level and pressure and their trends to the Control Room staff IAW HC.OPAB.ZZ-0001.</p>	<ul style="list-style-type: none"> <li>RO performs scram actions IAW AB.ZZ-0001 Attachment 1.</li> </ul>	<p><b>HPI USED:</b> STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <ul style="list-style-type: none"> <li>• Prioritize the Power Leg to establish SLC injection as soon as possible.</li> <li>• Terminating and Preventing HPCI in a timely manner is critical in order to reduce reactor power by establishing and maintaining a -50" to -100" RPV level band.</li> <li>• Maximize steam loads IAW with the post scram pressure control hard card actions when reactor power exceeds bypass valve capability.</li> <li>• Although Abnormal Operating Procedure HC.OPAB. BOP-0002 guidance for tripping the turbine should still be followed, the impact of tripping the turbine on RPV pressure control should be evaluated and actions taken ahead of time to minimize the impact of the loss of the turbine (e.g., all other steam demands are maximized, turbine parameters are closely monitored to provide the longest time possible for other reactor shutdown actions to be implemented prior to tripping the turbine). If reactor power is within the capability of the turbine bypass valves, the turbine should be tripped without any additional delay.</li> <li>• After Terminating and Preventing low pressure ECCS, place RHR in suppression pool cooling in order to mitigate reaching 110 degrees F in the Torus with SRVs cycling.</li> <li>• With limited injection sources, if RPV level stabilizes below -185", the decision on whether reactor level can be restored above -185" will be based on the time required to insert sufficient negative reactivity to allow reactor level to stabilize above -185".</li> <li>• As control rods are inserted, reduce injection flow to maintain reactor level low in the assigned band to reduce reactor power.</li> </ul>	<ul style="list-style-type: none"> <li>• CRS implements EOP-101A.</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><b>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</b>            For ATWS conditions where reactor power remains &gt;4% RTP, the CRS should direct the PO to remain at feedwater to stabilize RPV level. Under these conditions, the Recirc pumps are already tripped and RWCU has already isolated and the PO should be assigned the action to initiate SLC. The RO, following completion of the post scram hard card ATWS mitigation actions (manual scram and ARI initiation), should be directed to Terminate and Prevent HPCI injection prior to implementing any other EOP-101A actions such as inhibiting ADS or inserting control rods. The basis for this direction is; 1) to facilitate PO control of RPV level; 2) mitigate the reactor power excursion due to the cold water HPCI injection inside the shroud; and 3) ensure that the main turbine remains available to facilitate RPV pressure control.</p>	<ul style="list-style-type: none"> <li>• PO stabilizes and maintains RPV level as directed by CRS.</li> <li>• CRS directs:               <ul style="list-style-type: none"> <li>⇒ Initiating SLC</li> <li>⇒ Verifying RWCU Isolates</li> </ul> </li> <li>• RO/PO initiate SLC and verify RWCU isolates.</li> </ul>	<p><b>HPI USED:</b>            STAR <input type="checkbox"/>            PEER CHECK <input type="checkbox"/></p>
<p><b>RWCU Failure to Auto Isolate</b></p> 	<ul style="list-style-type: none"> <li>• Crew recognizes failure of RWCU to isolate by:               <ul style="list-style-type: none"> <li>⇒ OHA C1-A2 "RWCU DIFF FLOW HI"</li> <li>⇒ CRIDS D5870 "RWCU DIFF FLOW CH D"</li> <li>⇒ CRIDS D5872 "RWCU DIFF FLOW CH A"</li> </ul> </li> </ul>	<p>If RWCU is isolated before differential flow setpoint is reached, isolation will not be received.</p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>InSight Items:</p> <ul style="list-style-type: none"> <li>A' Channel Isolation <b>cu_k6a09</b></li> <li>'D' Channel Isolation <b>cu_k6d11</b></li> <li>HV-F001 <b>cuvf001</b></li> <li>HV-F004 <b>cuvf004</b></li> </ul>	<ul style="list-style-type: none"> <li>RO/PO close RWCU HV-F001 and HV-F004.</li> </ul> <p>* <b><i>Crew initiates closure of RWCU HV-F001 <u>OR</u> HV-F004 before OHA C1-A2 "RWCU DIFF FLOW HI" has been in for two minutes.</i></b></p>	<p><b>HPI USED:</b> STAR <input type="checkbox"/></p> <p>Immediate Operator action IAW AB.CONT-0002.</p> <p><b>RECORD</b> time between C1-A2 and initiating closure. Time: _____ Closing the RWCU HV-F001 <u>OR</u> HV-F004 prior to receiving OHA C1-A2 satisfies this Critical Task.</p>
	<ul style="list-style-type: none"> <li>Crew isolates RWCU IAW SO.BG-0001.</li> </ul>	<p><b>HPI USED:</b> STAR <input type="checkbox"/></p>
	<ul style="list-style-type: none"> <li>CRS implements AB.CONT-002: ⇒ Condition A ⇒ Condition B</li> </ul>	<p>Condition A applies if C1-A2 is received.</p>
	<ul style="list-style-type: none"> <li>STA/IA monitors AB.CONT-0002 implementation.</li> </ul>	
	<ul style="list-style-type: none"> <li>Crew validates isolation by trending: ⇒ RWCU differential flow ⇒ Offsite release rates</li> </ul>	
	<ul style="list-style-type: none"> <li>CRS recognize primary Continuous Conductivity Monitoring is lost, contact Shift Chem Tech to ensure compliance with UFSAR section 5.2.3.2.2.2</li> </ul>	<p>References to UFSAR section 5.2.3.2.2.2 can be found in:</p> <ul style="list-style-type: none"> <li>ARP for OHA C1-F2</li> <li>SO.BG-0001</li> </ul>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>* <b><i>Crew starts AP208 SLC pump before Suppression Pool temperature reaches 110 degrees.</i></b></li> </ul>	<b>ENTER</b> Supp Pool temp when AP208 SLC pump is started: Temp: _____
<div style="border: 1px solid black; padding: 5px;"> <p><b><u>Trip of both SLC Pumps:</u></b>            ~30sec after crew manually isolates RWCU or ~2mins after ATWS if crew fails to manually isolate RWCU, and at the discretion of the Lead Examiner, <b>TRIGGER ET-5</b> (Trip of AP208 &amp; BP208 SLC Pumps).</p> </div>	<ul style="list-style-type: none"> <li>• Crew recognizes trip of AP208 &amp; BP208 SLC pumps by:               <ul style="list-style-type: none"> <li>⇒ OHA C1-B1 "SLC PUMP/VALVE O/PF"</li> <li>⇒ OHA C1-F1 "SLC/RRCS INITIATION FAILURE"</li> <li>⇒ CRIDS D3023 "SLC INJ PMP BP208 TROUBLE TRBL"</li> <li>⇒ CRIDS D3023 "SLC INJ PMP AP208 TROUBLE TRBL"</li> <li>⇒ Flashing STOP light for AP208 and BP208</li> </ul> </li> </ul>	
<p><b><u>IF</u></b> dispatched to investigate trip of AP208 &amp; BP208,  <b><u>THEN REPORT</u></b> that both motors are hot to the touch and the breakers will not reset.            (52-222101)</p>	<ul style="list-style-type: none"> <li>• Crew dispatches NEO and Maintenance to investigate trip of AP208 &amp; BP208 SLC pumps.</li> </ul>	
	<ul style="list-style-type: none"> <li>• CRS determines a SAE Classification is required IAW ECG Section <b>SS3.1</b> (An automatic scram failed to shutdown the reactor as indicated by reactor power &gt; 4% AND Manual scram actions taken at the reactor control console (mode switch, manual scram pushbuttons, manual ARI actuation) DO NOT shutdown the reactor as indicated by reactor power &gt; 4%).</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>CRS declares SAE IAW ECG Section SS3.1.</li> </ul> <p>(Note: declaration may be completed after scenario termination at lead evaluators discretion)</p> <ul style="list-style-type: none"> <li>CRS directs inhibiting ADS.</li> <li>RO/PO inhibit ADS IAW AB.ZZ-0001 Att. 13.</li> </ul>	<p><b>RECORD</b> time SAE declared.</p> <p>Time Declared: _____</p> <p><b>HPI USED:</b>  STAR <input type="checkbox"/>  HARD CARD <input type="checkbox"/></p>
	<p>* <b><i>CREW prevents an uncontrolled depressurization during ATWS conditions by preventing ADS ACTUATION.</i></b></p>	<p>This Critical Task is not applicable if RPV level never reaches -129". See justification for failure criteria.</p>

Rev: 1

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>CRS directs maintaining RPV water level between -50" and -185".</li> </ul>	Typically, the lower end of the level band is set above -129".
	<ul style="list-style-type: none"> <li>RO/PO control level as directed by CRS with:               <ul style="list-style-type: none"> <li>⇒ Feedwater IAW AB.ZZ-0001 Att. 14</li> <li>⇒ RCIC IAW AB.ZZ-0001 Att. 6</li> <li>⇒ HPCI IAW EOP-322</li> </ul> </li> </ul>	<p><b>HPI USED:</b>            STAR <input type="checkbox"/>            HARD CARD <input type="checkbox"/></p> <p>If the turbine trips before the reactor is scrammed, an RRCS feedwater runback may occur.</p>
	<p><i>* Crew lowers RPV level to -50", and ensures adequate core cooling by maintaining or restoring RPV level above -185" without Emergency Depressurizing.</i></p>	
	<ul style="list-style-type: none"> <li>CRS directs bypassing the RWM and commencing manual rod insertion.</li> </ul>	
	<ul style="list-style-type: none"> <li>RO/PO align CRD for ATWS operation IAW AB.ZZ-0001 Attachment 18.</li> </ul>	<p><b>HPI USED:</b>            STAR <input type="checkbox"/>            HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> <li>RO/PO bypass RWM and insert control rods IAW RE-AB.ZZ-0001 Attachment. 1.</li> </ul>	<p><b>HPI USED:</b>            STAR <input type="checkbox"/>            HARD CARD <input type="checkbox"/></p>
<p><b>Total Loss of EHC:</b>            ~4min after the plant is tripped, and at the discretion of the Lead Examiner, <b>TRIGGER ET-6</b> (Trip of the 'B' EHC pump).  <u>Note:</u> the BPVs will fail close ~3min after total loss of EHC.</p>	<ul style="list-style-type: none"> <li>Crew recognizes trip of the 'B' EHC pump by:               <ul style="list-style-type: none"> <li>⇒ OHA D3-F5 "TURB HYDR PUMP TROUBLE"</li> </ul> </li> </ul>	

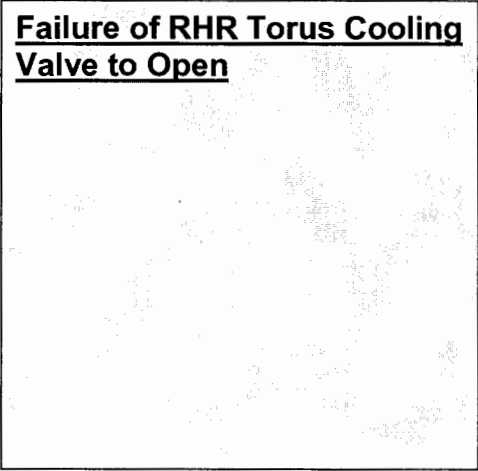
## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>Pressure Leg</p> <p>Direct initial pressure control as Stabilize pressure 800 psig to 1000 psig. The lower limit of 800 psig will not complicate RPV level maintenance and will prevent an unwanted cooldown. The upper limit of 1000 psig is a round number below 1047 psig.</p>	<ul style="list-style-type: none"> <li>• Crew recognizes turbine bypass valves failing shut by: <ul style="list-style-type: none"> <li>⇒ OHA D3-D5 "EHC UNIT PANEL 10C363"</li> <li>⇒ DEHC Bypass Valve Positioning Error alarms</li> <li>⇒ Reactor pressure rising above Pressure Setpoint</li> </ul> </li> <li>• CRS directs stabilizing pressure below 1037 psig with: <ul style="list-style-type: none"> <li>⇒ Main Steam Line Drains</li> <li>⇒ SRVs</li> <li>⇒ RFPT</li> </ul> </li> <li>• RO/PO control pressure as directed by CRS with: <ul style="list-style-type: none"> <li>⇒ Main Steam Line Drains IAW AB.ZZ-0001 Att. 15</li> <li>⇒ SRVs IAW AB.ZZ-0001 Att. 13</li> <li>⇒ RFPTs</li> </ul> </li> <li>• Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by: <ul style="list-style-type: none"> <li>⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH"</li> <li>⇒ Flashing 95 degree status light on 10C650C</li> <li>⇒ RM11 9AX833/834 alarm</li> <li>⇒ Various Suppression Pool temperature indicators</li> </ul> </li> </ul>	<p>When pressure control swaps to SRVs, maintaining RPV water level between -50" and -129" will be very challenging due to shrink and swell and changing reactor pressure with the RFPTs in MAN.</p> <p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Strategies For Successful Transient Mitigation</p> <p>Torus Temperature Leg</p> <p>Start all available Torus cooling as soon as possible to remove heat from containment.</p>	<ul style="list-style-type: none"> <li>CRS implements EOP-102.</li> <li>CRS directs placing AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray.</li> <li>RO/PO place AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray IAW AB.ZZ-0001 Att. 3.</li> </ul>	<p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p>
<p>STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION</p> <p>EOP-102 Primary Containment Control.</p> <p>Primary Containment Pressure Leg</p> <p>When controlling Primary Containment Pressure and it becomes apparent that the PSP curve is going to be exceeded and Torus level is in the normal band, the Control Room Supervisor should pick 15 psig Torus Pressure to determine if the pressure can be maintained below the PSP limit. The 15 psig limit is below the PSP limit and will allow sufficient time to evaluate further actions needed such as EOP-202 RPV blowdown. If no systems are available to restore and maintain Torus Pressure, it is expected that you would enter EOP-202 and blowdown prior to exceeding PSP.</p>	<ul style="list-style-type: none"> <li><u>WHEN</u> Suppression Chamber pressure exceeds 9.5 psig, <u>THEN</u> CRS directs initiating drywell spray.</li> <li>RO/PO place AP202 RHR pump in Drywell Spray IAW AB.ZZ-0001 Att. 2.</li> </ul>	<p><b>HPI USED:</b></p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p> <p>BP202 is not available due to 10D420 failure.</p>

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><b><u>Failure of RHR Torus Cooling Valve to Open</u></b></p> 	<ul style="list-style-type: none"> <li>• Crew recognizes failure of HV-F021A by: <ul style="list-style-type: none"> <li>⇒ OHA A6-B1 "RHR LOOP A TROUBLE"</li> <li>⇒ Flashing OVLD/PWR FAIL</li> <li>⇒ Loss of position indication</li> <li>⇒ No indication of drywell spray flow</li> <li>⇒ CRIDS D4465 "RHR CONT SPY OUTBD HV-F021A OPF"</li> </ul> </li> </ul>	
<p><u>IF</u> dispatched to investigate trip of HV-F021A breaker, <b><u>THEN REPORT</u></b> the breaker is tripped and will not reset.</p>	<ul style="list-style-type: none"> <li>• Crew dispatches NEO and Maintenance to breaker for HV-F024A (52-451062).</li> <li>• RO/PO opens HV-F021A and initiates Suppression Chamber or Drywell Spray IAW AB.ZZ-0001 Att. 2 or 3.</li> </ul>	<p><b>HPI USED:</b>  STAR <input type="checkbox"/>  HARD CARD <input type="checkbox"/></p>
<p><u>IF</u> dispatched to investigate trip of HV-F021A breaker, <b><u>THEN REPORT</u></b> the breaker is tripped and will not reset.</p>	<ul style="list-style-type: none"> <li>• Crew dispatches NEO and Maintenance to breaker for HV-F024A (52-451062).</li> <li>• <u>IF</u> Suppression Pool temperature is &gt;110 degrees, <u>AND</u> Reactor power is &gt;4%, <u>AND</u> SRVs are open or cycling, <b><u>THEN</u></b> Crew terminates and prevents injection to the RPV with the exception of SLC, CRD, and RCIC, <u>UNTIL</u> Reactor power is &lt;4%, <u>OR</u> RPV level reaches -129", <u>OR</u> SRVs remain closed.</li> </ul>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> <li>• <u>IF</u> RPV level reaches –129", <u>THEN</u> RO/PO terminate and prevents injection from Core Spray IAW AB.ZZ-0001 Attachment 16.</li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/>
<u>WHEN</u> the Crew has reset RPS, <u>THEN</u> <b>DELETE</b> Malfunction <b>RP07</b> to allow full rod insertion on the next scram.	<ul style="list-style-type: none"> <li>• <u>WHEN</u> EOP-320 Section 5.1 and 5.2 are complete, <u>THEN</u> the Crew implements EOP-320 Section 5.3 and reset RPS.</li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
At the Lead Examiners discretion, <b>MODIFY</b> InSight Item <b>IcIsdv</b> to accelerate draining of the SDV.	<ul style="list-style-type: none"> <li>• <u>WHEN</u> OHA C6-E4 clears, <u>THEN</u> the Crew initiates a manual scram IAW EOP-320 Section 5.3.</li> </ul>	<b>HPI USED:</b> STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
	<ul style="list-style-type: none"> <li>* <b><i>CREW fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320.</i></b></li> </ul>	
	<ul style="list-style-type: none"> <li>• Crew recognizes the reactor is shutdown by:               <ul style="list-style-type: none"> <li>⇒ SPDS ALL RODS IN</li> <li>⇒ RWM Confirm Shutdown</li> <li>⇒ CRIDS Rod positions</li> </ul> </li> </ul>	
<b><u>Termination Requirement:</u></b> The scenario may be terminated at the discretion of the Lead Examiner when: <ul style="list-style-type: none"> <li>• RPV Level is being maintained above –185"</li> <li><u>AND</u></li> <li>• All rods are fully inserted</li> </ul>	<ul style="list-style-type: none"> <li>• CRS exits EOP-101A, enters EOP-101.</li> </ul>	

## VI. SCENARIO REFERENCES:

---

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. **Emergency Plan (ECG)**
- G. **Alarm Response Procedures (Various)**
- H. HU-AA-101 Performance Tools and Verification Practices
- I. HU-AA-104-101 Procedure Use and Adherence
- J. HU-AA-1081 Fundamentals Toolkit
- K. HU-AA-1211 Briefing
- L. OP-AA-101-111-1003 Use of Procedures
- M. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- N. OP-AA-101-111-1004 Operations Standards
- O. OP-AA-101-112-1002 On-Line Risk Assessment
- P. OP-AA-106-101-1001 Event Response Guidelines
- Q. OP-HC-108-106-1001 Equipment Operational Control
- R. OP-AA-108-114 Post Transient Review
- S. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- T. **HC.OP-SO.AE-0001 Feedwater System Operation**
- U. **HC.OP-SO.EC-0001 Fuel Pool Cooling and Cleanup System**
- V. **HC.OP-SO.SF-0003 Rod Worth Minimizer Operation**
- W. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- X. **HC.OP-AB.CONT-0001 Drywell Pressure**
- Y. **HC.OP-AB.CONT-0001 Drywell Leakage**
- Z. **HC.OP-AB.COOL-0003 Reactor Auxiliary Cooling**
- AA. **HC.OP-EO.ZZ-0311 Bypassing Primary Containment Instrument Gas Isolation Interlocks**
- BB. **HC.OP-EO.ZZ-0319 Restoring Instrument Air in an Emergency**
- CC. **HC.OP-EO.ZZ-0320 Defeating ARI and RPS Interlocks**
- DD. **HC.OP-EO.ZZ-0322 Core Spray Injection Valve Override**
- EE. **HC.OP-EO.ZZ-0101 RPV Control**
- FF. **HC.OP-EO.ZZ-0101A ATWS-RPV Control**
- GG. **HC.OP-EO.ZZ-0102 Primary Containment Control**

## VII.ESG CRITICAL TASK RATIONAL

### 2013 NRC Scenario #2, Rev 01

1.

- \* ***CREW prevents an uncontrolled depressurization during ATWS conditions by preventing ADS ACTUATION.***

#### **K/A 218000 Automatic Depressurization System**

A4 Ability to manually operate and/or monitor in the control room:

A4.04 ADS inhibit RO 4.1 SRO 4.1

Given the current ATWS conditions of this scenario, preventing ADS automatic operation and potential uncontrolled reactor level flood up prevents a significant transient and subsequent positive reactivity addition to the reactor. EOPs direct this action under the current conditions. This critical task is only applicable if RPV water level goes below -129". Failure to satisfactorily complete the task is demonstrated by an automatic ACTUATION of ADS such that the ADS SRVs open and reduce reactor pressure by 300 psig.

2.

- \* ***CREW maintains or restores adequate core cooling by restoring/maintaining Reactor water level to >-185" IAW HC.OP-EO.ZZ-0101A without Emergency Depressurizing.***

#### **K/A 295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown**

EA2 Ability to determine and/or interpret the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA2.02 Reactor water level RO 4.1 SRO 4.2

Maintaining adequate Core cooling under ATWS conditions is accomplished by maintaining/restoring level above -185". HPCI and RCIC are capable of maintaining level under the current conditions. AB.ZZ-0001 provides directions on manual initiation of HPCI which will mitigate the automatic initiation failure. An Emergency Depressurization is not warranted and would result in a large injection of cold water and the potential displacement of boron from the core.

3.

- \* ***CREW fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320.***

#### **K/A 295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown**

EA1. Ability to operate and/or monitor the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA1.01 Reactor Protection System RO 4.6 SRO 4.6

EA1.07 RMCS RO 3.9 SRO 4.0

Manually inserting all control rods, OR, implementing HC.OP-EO.ZZ-0320, provides the only methods for control rod insertion and substantial negative reactivity addition. It is critical for the crew to implement one of these methods to insert control rods and shut the reactor down. Failure to initiate these actions may result in requiring RPV level to be lowered to or below TAF to reduce power to <4%. This represents a significant challenge to maintaining adequate core cooling.

**HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM****INITIATING EVENTS THAT LEAD TO CORE DAMAGE**

<u>Y/N</u>	<u>EVENT</u>	<u>Y/N</u>	<u>EVENT</u>
<input type="checkbox"/>	Loss Of Offsite Power/SBO	<input type="checkbox"/>	Internal Flooding
<input type="checkbox"/>	LOCA		
	<u>TRANSIENTS:</u>		<u>LOSS OF SUPPORT SYSTEMS:</u>
<input type="checkbox"/>	Turbine Trip	<input type="checkbox"/>	Loss of SSW
<input type="checkbox"/>	Loss of Condenser Vacuum	<input type="checkbox"/>	Loss of SACS
<input type="checkbox"/>	Loss of Feedwater		
<input checked="" type="checkbox"/>	Manual Scram		

**COMPONENT/TRAIN/SYSTEM UNAVAILABILITY  
THAT INCREASES CORE DAMAGE FREQUENCY**

<u>Y/N</u>	<u>KEY EQUIPMENT</u>	<u>Y/N</u>	<u>KEY SYSTEMS</u>
<input type="checkbox"/>	HPCI	<input type="checkbox"/>	SRVs
<input type="checkbox"/>	RCIC	<input type="checkbox"/>	Condensate/Feedwater
<input type="checkbox"/>	B/D EDG	<input type="checkbox"/>	SSW
<input type="checkbox"/>	A/B RHR Pump	<input type="checkbox"/>	RPS
<input type="checkbox"/>	A/B SACS Loop		
<input type="checkbox"/>	1E 4.16KV Bus		
<input type="checkbox"/>	1E 480 VAC Bus		
<input type="checkbox"/>	120VAC 481 Inverter		
<input type="checkbox"/>	1E 125VDC		
<input type="checkbox"/>	Hard Torus Vent		

**OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE**

<u>Y/N</u>	<u>OPERATOR ACTION</u>
<input type="checkbox"/>	Manual Depressurization of the RPV w/ no HP Injection Available
<input type="checkbox"/>	Reopen SSW Discharge Valve to SACS Hx After Level 1 or Hi DW Press. Signal
<input type="checkbox"/>	Control RPV Water Level w/ HP Injection during ATWS Sequence
<input type="checkbox"/>	Align Portable Power Supply to Battery Chargers
<input type="checkbox"/>	Venting of Primary Containment
<input type="checkbox"/>	Restore Switchgear Cooling
<input type="checkbox"/>	Restart Condensate
<input type="checkbox"/>	Control Plant via Remote Shutdown Panel during Control Room Flooding Sequence

Complete this evaluation form for each ESG.

**VIII. TURNOVER SHEET:**

---

**ONLINE RISK: GREEN**

**WORK WEEK CHANNEL: A**

---

**PROTECTED EQUIPMENT**

None

---

**REACTIVITY / Plant Status**

100% Power

---

**ESF/SAFETY SYSTEMS**

None

---

**COOLING WATER**

None

---

**BOP**

'A' EHC Pump tagged for planned maintenance

---

**ELECTRICAL**

None

---

**ADVERSE CONDITION MONITORING**

None

Initiate & secure N2 makeup to the primary containment to test the flow recorder (a calibration was just performed)

## IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

---

**Note:** The following criteria list scenario traits that are numerical in nature for a single scenario.

**ESG:**    Scenario 2

### **SELF-CHECK**

- \_\_\_\_\_ 1. Total malfunctions inserted: 4-8
- \_\_\_\_\_ 2. Malfunctions that occur after EOP entry: 1-4
- \_\_\_\_\_ 3. Abnormal Events: 1-2
- \_\_\_\_\_ 4. Major Transients: 1-2
- \_\_\_\_\_ 5. EOPs used beyond primary scram response EOP: 1-3
- \_\_\_\_\_ 6. EOP Contingency Procedures used: 0-3
- \_\_\_\_\_ 7. Approximate scenario run time: 45-60 minutes (one scenario may approach 90 minutes)
- \_\_\_\_\_ 8. EOP run time: 40-70% of scenario run time
- \_\_\_\_\_ 9. Crew Critical Tasks: 2-5
- \_\_\_\_\_ 10. Technical Specifications are exercised during the test:  $\geq 1$

**Comments:**

---

---

---

---

---

**EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)**

Crew Validation      Rev:   01        Date Validated:           

**Validation Comments**

**Disposition**

Crew Validation      Rev:             Date Validated:           

**Validation Comments**

**Disposition**

Crew Validation      Rev:             Date Validated:           

**Validation Comments**

**Disposition**

# **SIMULATOR**

## **EXAMINATION SCENARIO GUIDE**

**SCENARIO TITLE:** APRM Upscale, Single Rod Scram, Loss of Drywell Clg, Loss of 10B430, HPCI Steam Leak, ED

**SCENARIO NUMBER:** Scenario #3 2013 NRC Exam

**EFFECTIVE DATE:** Effective when approved.

**EXPECTED DURATION:** 60 minutes

**REVISION NUMBER:** 01

**PROGRAM:** ☐ L.O. REQUAL  
☒ INITIAL LICENSE  
☐ OTHER \_\_\_\_\_

**REVISION SUMMARY:**

2013 Initial NRC Exam

**PREPARED BY:** \_\_\_\_\_  
NRC Examiner

01/22/13  
\_\_\_\_\_  
DATE

**Reviewed BY:** \_\_\_\_\_  
Chief Examiner

\_\_\_\_\_  
DATE

**APPROVED BY:** \_\_\_\_\_  
OLB Branch Chief

\_\_\_\_\_  
DATE

## **I. OBJECTIVE(S):**

---

### **Enabling Objectives**

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Critical tasks within this examination scenario guide are identified with an “\*.”)

## **II. MAJOR EVENTS:**

---

- A. APRM channel C Upscale w/Single Rod Scram
- B. Loss of TB Chilled water
- C. Loss of 10B430
- D. HPCI Steam Leak w/Failure to Isolate
- E. FRVS Vent Fan Trips
- F. Trip of EHC Pumps w/Turbine Bypass Valves Failing Shut
- G. RCIC Pump Room High Temperature

## **III. SCENARIO SUMMARY:**

---

The scenario begins with the plant at 75% power and TACS on the 'B' SACS loop. The DK111 Turbine Chiller is C/T for a freon leak and CP161 is C/T for a bearing oil leak. The turnover directed the crew to raise power using recirc flow. After the power maneuver, C APRM fails upscale causing a half scram. Due to a mispositioned SRI Test Toggle switch, a single rod will scram in when the RPS half scram occurs. After Tech Specs have been referenced, the AP161 will trip due to a bearing problem. The BP161 goes into runout and trips shortly thereafter. This results in a loss of TB Chilled water, which will require the Crew to align RACS to cool the drywell and vent the drywell to restore pressure back below 0.75 psig. After the Loss of Drywell Cooling has been addressed, the 10B430 1E 480 VAC Unit Substation will be lost due to a transformer failure. This will result in a loss of the operating CRD pump and the CP228 ECCS jockey pump. After these failures are addressed, a steam leak develops in the HPCI room. The inboard steam isolation valve is not available due to the loss of the 10B430 Substation, and the outboard steam isolation valve binds and will not close. The leak will impact the RCIC room, due to the door between HPCI and RCIC not being properly dogged shut. When HPCI room temperature reaches 200 degrees, the door will pop open, admitting steam to the RCIC room. The unisolable leak will require the Crew to scram. RPS and the mode switch will fail to SCRAM the unit, requiring ARI for successful shutdown. The rising temperatures in the HPCI and RCIC rooms will ultimately require Emergency Depressurization.

#### IV. INITIAL CONDITIONS:

I.C.

Initial	
	<b>INITIALIZE</b> the simulator to 100% power, MOL.
	<b>MAKEUP</b> N2 to the drywell until drywell and Suppression Chamber pressure are 0.53-0.57 psig.
	<b>ENSURE</b> BOTH Steam Tunnel unit Coolers are in service.
	<b>ENSURE</b> the 'A' CRD pump is in service.
	<b>ENSURE</b> the 'A' EHC pump is in service.
	<b>ENSURE</b> TACS is being supplied by the 'B' SACS loop.
	<b>ENSURE</b> the 'B' Control Room Vent Train is in service.
	<b>ENSURE</b> the 'C' SSW pump is in standby.
	<b>ENSURE</b> the 'C' SACS pump is in standby.
	C/T CP161 TB Chilled water circ pump as follows:
	<ul style="list-style-type: none"> <li>• <b>ENSURE</b> CP161 is not in service.</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>PLACE</b> CP161 in MAN.</li> </ul>
	C/T DK111 as follows:
	<ul style="list-style-type: none"> <li>• <b>ENSURE</b> DK111 is not in service</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>PRESS</b> DK111 STOP pushbutton</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>ENSURE</b> HV-9503D is CLOSED</li> </ul>
	<b>ENSURE</b> associated Schedule file open and running.
	<b>ENSURE</b> associated Events file open.

PREP FOR TRAINING (i.e., RM11 set points, procedures, bezel covers)

Initial	Description
	<b>PLACE</b> red bezel cover on DK111.
	<b>PLACE</b> red bezel cover on HV-9503D.
	<b>PLACE</b> red bezel cover on CP161.
	<b>PREPARE</b> a Fire Alarm for FA015 Fire Zone 4109.
	At a minimum review the Scenario Reference section and <b>CLEAN</b> the <u><b>bolded</b></u> EOPs, ABs and SOPs listed. (80091396 0270)
	<b>TREND</b> plant parameters needed for Critical Task determination:
	<ul style="list-style-type: none"> <li>○ HPCI Room Temperature</li> </ul>
	<ul style="list-style-type: none"> <li>○ RCIC Room Temperature</li> </ul>
	<ul style="list-style-type: none"> <li>○ Reactor Pressure</li> </ul>
	<ul style="list-style-type: none"> <li>○ Wide Range RPV Level</li> </ul>
	<b>COMPLETE</b> "Simulator Ready-for-Training/Examination Checklist".

## EVENT FILE:

Initial	ET #	Event code: Description:
	6	<b>hpvv(1) &lt;= 0.90</b> // HPCI HV-F003 valve position Trips breaker for HPCI HV-F003 when closure is attempted from the Control Room.
	7	<b>hvtr4111 &gt; 160</b> // HPCI Room Temp Triggers RCIC Steam leak to allow raising RCIC Room temp.
	8	<b>crqnm1 &lt;= 15</b> // Reactor Power Inserts HPCI Steam Leak at 40% on reactor scram.
	9	<b>rrprv &lt; 650</b> // Reactor Pressure in psia Raises severity of HPCI leak if Crew depressurizes
	10	<b>hvtr4111 &gt; 200</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	11	<b>hvtr4111 &gt; 210</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	12	<b>hvtr4111 &gt; 220</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	13	<b>hvtr4111 &gt; 230</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	14	<b>hvtr4111 &gt; 240</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	15	<b>hvtr4111 &gt; 250</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	16	<b>hvtr4111 &gt; 255</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	17	<b>hvtr4111 &gt; 260</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	18	<b>hvtr4111 &gt; 265</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	19	<b>hvtr4111 &gt; 270</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	20	<b>hvtr4111 &gt; 271</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	21	<b>hvtr4111 &gt; 272</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	22	<b>hvtr4111 &gt; 273</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	23	<b>hvtr4111 &gt; 274</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	24	<b>hvtr4111 &gt; 275</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	25	<b>hvtr4111 &gt; 276</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	26	<b>hvtr4111 &gt; 277</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	27	<b>hvtr4111 &gt; 278</b> // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
		Event code: Description:

# **MALFUNCTION SCHEDULE:**

<b>Initial</b>	<b>@Time</b>	<b>Event</b>	<b>Action</b>	<b>Description</b>
	None	None	Insert malfunction AN-E5F1	CRYWOLF ANN E5F1 CHILLED WTR SYSTEM TROUBLE
	None	None	Insert malfunction HP10	HPCI steam isolation valves F002 & F003 failure to auto close
	None	None	Insert malfunction AD02DC	ADS/Relief valve F013D (MS LINE D) sticks close
	None	None	Insert malfunction NM21C to 100 on event 2	APRM C failure
	None	None	Insert malfunction CD060227 after 1 on event 2	Control Rod 02-27 SCRAM
	None	None	Insert malfunction CW18A on event 3	Chilled water circ pump AP161 trip
	None	None	Insert malfunction CW18B after 5 on event 3	Chilled water circ pump BP161 trip
	None	None	Insert malfunction ED13C1 on event 4	Loss of 480 VAC essential bus C 10B430
	None	None	Insert malfunction HP09 from 5.00000 to 40.00000 in 60 on event 5	HPCI steam line break inside HPCI Room 4111
	None	None	Insert malfunction AN-A2A5 on event 5	CRYWOLF ANN A2A5-FIRE PROT PANEL 10C671
	None	None	Insert Malfunction ???? on event 6	FRVS Vent Fan Trip
	None	None	Insert malfunction RC09 to 1.00000 on event 7	RCIC steam line break inside the RCIC ROOM 4110
	None	None	Insert malfunction TC07A on event 7	EHC pump A trip
	None	None	Insert malfunction TC07B after 60 on event 8	EHC pump B trip
	None	None	Insert malfunction TC01-10 after 120 on event 8	All turbine bypass valves fail closed
	None	None	Insert malfunction CD030227 on event 16	Control Rod 02-27 stuck

REMOTE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert remote HP04 to FAIL_OPEN	HP04 GROUP 5A HV-F002 HPCI Steam Supply Isol
	None	None	Insert remote HP06 to RACK_OUT on event 6	HP06 GROUP 5A HV-F003 HPCI Steam Supply Isol
	None	None	Insert remote CX11 after 120 to OPEN on event 3	CX11 CX valve AP-V041 to Core Spray header A
	None	None	Insert remote CX15 to OPEN on event 3	CX15 CX valve AP-V044 to RHR header A
	None	None	Insert remote CX17 after 60 to OPEN on event 3	CX17 CX valve AP-V047 to RHR header C
	None	None	Insert remote HV06 to STOP on event 5	HV06 RBVS Supply fan C
	None	None	Insert remote HV05 after 1 to STOP on event 5	HV05 RBVS Supply fan B
	None	None	Insert remote HV04 after 1 to STOP on event 5	HV04 RBVS Supply fan A
	None	None	Insert remote HV03 after 2 to STOP on event 5	HV03 RBVS Exhaust fan C
	None	None	Insert remote HV02 after 3 to STOP on event 5	HV02 RBVS Exhaust fan B
	None	None	Insert remote HV01 after 3 to STOP on event 5	HV01 RBVS Exhaust fan A
	None	None	Insert remote CW33B to 50	CW33 Turbine Bldg chiller CK111 Winterization

OVERRIDE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert override 1A181_A2_LO to On	INOP-CHILLED WATER CPRSR DC111-CPRSR MOT (LO)
	None	None	Insert override 1A181_D_DI to Off	DK111 START-CHILLED WATER CPRSR DC111-CPRSR MOT (DI)
	None	None	Insert override 1A181_E1_DI to Off	SAFETY CKT COMPLETE/ON-CHILLED WATER CPRSR DK111 (DI)
	None	None	Insert override 1A181_F_LO to Off	STOP-CHILLED WATER CPRSR DC111-CPRSR MOT (LO)
	None	None	Insert override 1A182_E_DI to Off	HV-9503D OPEN-CH W DISCH SHUTOFF V (DI)
	None	None	Insert override 1A182_F_LO to Off	HV-9503D CLOSE-CH W DISCH SHUTOFF V (LO)
	None	None	Insert override 1A136_A2_LO to On	INOP-CH W CIRC PUMP CP161 (LO)
	None	None	Insert override 1A136_D_DI to Off	AUTO-CH W CIRC PUMP CP161 (DI)
	None	None	Insert override 1A136_E_DI to Off	START-CH W CIRC PUMP CP161 (DI)
	None	None	Insert override 1A136_F_LO to Off	STOP-CH W CIRC PUMP CP161 (LO)

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><b><u>Raise Power Using Recirc Flow:</u></b></p> <p>After the crew assumes the watch they will raise power per maneuvering sheet.</p>	<ul style="list-style-type: none"> <li>CRS directs ATC to raise power 5% using Recirc Flow.</li> </ul> <p>ATC adjusts Recirc flow and monitors Reactor power, pressure, and level and ensure plant conditions are stable.</p>	
<p><b><u>APRM C Upscale w/Single Rod Scram:</u></b></p> <p>After the Crew raises power, OR, at the discretion of the Lead Examiner, <b>TRIGGER ET-1.</b></p>	<ul style="list-style-type: none"> <li>Crew monitors Reactor power, pressure, and level and ensure plant conditions are stable. Ensures no scram setpoints have been exceeded</li> </ul>	
	<ul style="list-style-type: none"> <li>Crew recognizes RPS ½ scram by: <ul style="list-style-type: none"> <li>⇒ OHA C3-A3 "REACTOR SCRAM TRIP LOGIC A2"</li> <li>⇒ RPS Trip Logic A2 NORMAL/RESET status lights extinguished</li> <li>⇒ Pilot Scram Valve Solenoid LOGIC A NORMAL status lights for all four groups extinguished.</li> <li>⇒ CRIDS D2132 "REACTOR SCRAM Y TRIP"</li> </ul> </li> </ul> <p>CRIDS D2115 "REAC VESSEL HI PRESS SCRAM Y"</p>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
-----------------------------	---------------------------------	----------

- 
- Crew recognizes APRM C  
Upscale by:
    - ⇒ C5-A1 NEUTRON MONITORING SYSTEM
    - ⇒ C3-C4 APRM SYS A TRIP/INOP
    - ⇒ C3-D4 APRM UPSCALE
    - ⇒ D2143 APRM CHANNEL C UPSCALE TRIP
    - ⇒ D4306 APRM CH C UPSCALE THERMAL TRIP
    - ⇒ C023 APRM INOPERATIVE
  
  - Crew recognizes single rod  
scram by:
    - ⇒ OHA C6-E3 "ROD DRIFT"
    - ⇒ Rod 02-27 "DRIFT", "SCRAM", and "FULL IN" lights on Full Core display
    - ⇒ RWM "DR 02-27" indication
    - ⇒ CRIDS C078 "ROD DRIFT ALARM ALM"
  
  - Crew ensures only one rod is drifting.

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>WHEN</u> requested, <u>THEN</u> as RE, <b>REPORT</b>:</p> <ul style="list-style-type: none"> <li>Thermal Limits are SAT.</li> <li>All other control rods are at target their position.</li> <li>There is no immediate problem with leaving 02-27 inserted.</li> <li>You will develop a recovery plan to withdraw 02-27.</li> </ul>	<ul style="list-style-type: none"> <li>CRS implements AB.IC-0001 Condition C</li> </ul>	
<p><u>IF</u> dispatched to troubleshoot rod 02-27 scram, <u>THEN REPORT</u> you found the 'B' S.R.I. test toggle on the 02-27 HCU out of "Normal". There are workers decontaminating the HCU bank, and one of them remembers bumping something. (02-27 is in the North HCU bank by HPCI pipechase. See EOP-303 map.)</p>	<p>Crew dispatches RBEO to 02-27 HCU.</p> <ul style="list-style-type: none"> <li>Crew contacts Rad Pro to survey scram discharge volume due to change in radiological conditions.</li> <li>RO resets the Rod Drift alarm IAW HC.OP-AR.ZZ-0020.</li> </ul>	
	<ul style="list-style-type: none"> <li>RO bypasses APRM C.</li> <li>RO resets RPS half scram.</li> <li>Crew contacts Maintenance to troubleshoot APRM C failure.</li> </ul>	
	<p>SM contacts Operations Management</p>	

## V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to electrically disarm rod 02-27,  <u>THEN TRIGGER ET-16</u> to  <b>INSERT</b> Malfunction <b>cd030227</b>  (stuck rod).</p>	<ul style="list-style-type: none"> <li>• CRS determine Tech Spec actions required. Enter Action statement for: <ul style="list-style-type: none"> <li>⇒ Reactor Protection System Instrumentation 3.3.1</li> <li>⇒ Control Rod Block Instrumentation 3.3.6</li> </ul> (Crew may declare rod 02-27 inoperable until cause of scram is determined and enter T/S 3.1.3.1).</li> </ul>	<p>For both T/S, still meet the Minimum Operable Channels per Trip Function. Tracking Action statement only.</p>

### **Loss of Drywell Cooling:**

After TS call has been addressed or at the discretion of the Lead Examiner,  
**TRIGGER ET-2** (Loss of TB Chilled Water/Drywell Cooling).

- Loss of Drywell Cooling by:
  - ⇒ OHA E5-E1 "CHILLED WTR PANEL 10C152"
  - ⇒ OHA E5-F1 "CHILLED WTR SYSTEM TROUBLE"
  - ⇒ OHA A4-F5 "COMPUTER POINT IN ALARM"
  - ⇒ Flashing "OVLDPWR FAIL", "HI/LOW FLOW", and "STOP" lights on AP161 and BP161 TB Chilled Water Circ pumps
  - ⇒ Loss of "START" lights on AK111/BK111 TB Chillers
  - ⇒ CRIDS D5608 "CHW PUMP AP161 MALFUNCTION"
  - ⇒ CRIDS D5609 "CHW PUMP BP161 MALFUNCTION"
  - ⇒ CRIDS D4053 "WTR CHILLER AK111 REMOTE PANEL TRBL"
  - ⇒ CRIDS D4054 "WTR CHILLER BK111 REMOTE PANEL TRBL"
  - ⇒ Rising drywell temperature
  - ⇒ Rising drywell pressure

Drywell pressure will peak at less than 1.2 psig; however, IF the Crew manually scrams during the Loss of Drywell Cooling, THEN the HPCI Steam Leak will be automatically inserted. The HPCI HV-F002 is failed open to prevent isolation of HPCI in this event since the 10B430 will still have power.

- CRS implements AB.CONT-001:
  - ⇒ Condition A
  - ⇒ Condition B
- Crew announces loss of Turbine Building Chilled Water on the plant page.
- RO/PO ensure drywell cooling is maximized.

IF dispatched to investigate loss of TB Chilled Water,

**THEN REPORT:**

- AK111 and BK111 have Evaporator Low Water Flow alarms in
  - AP161 and BP161 have Discharge Flow Hi/Low alarms in
  - Both AP161 and BP161 motors are hot to the touch
  - AP161 inboard pump bearing is hot to the touch
- Crew dispatches TBEO and Maintenance to investigate.

- RO/PO align RACS to supply drywell cooling IAW AB.CONT-0001 Condition B.

Drywell pressure will begin to drop as soon as the RACS and Chilled Water valves start to swap. The 9532-1/2 are not in the RACS flowpath.

IF directed to prepare a release permit,

**THEN REPORT** it will take about 30 minutes and

**REQUEST** the Crew to record start and stop times for the release.

- IF Drywell Pressure is not restored below 0.75 psig, **THEN** CRS implements AB.CONT-0001:  
⇒ Condition C

- IF directed, **THEN** PO Vents the drywell IAW AB.CONT-001 Condition C.

- CRS contacts Operations Management to initiate a Prompt Investigation and ERT callout.

**Loss of 10B430 Unit Sub:**

After the Crew aligns RACS to cool the drywell,

**OR,**

at the discretion of the Lead Examiner,

**TRIGGER ET-3.**

- Crew monitors Reactor power, pressure, and level and ensures plant conditions are stable.

- Crew recognizes loss of AP207 CRD pump by:
  - ⇒ OHA C6-F2 "CRD SYSTEM TROUBLE"
  - ⇒ AP207 "OVLDPWR FAIL" light
  - ⇒ AP207 flashing "STOP" light
  - ⇒ CRIDS D2244 "CRD WATER PUMP A MOTOR TRBL"
  
- Crew recognizes loss of CP228 ECCS Jockey pump by:
  - ⇒ OHA A6-C3 "ECCS JOCKEY PUMP 1CP228 TROUBLE"
  - ⇒ Jockey pump indications on 10C650A
  - ⇒ OHA A6-B1 "RHR LOOP A TROUBLE"
  - ⇒ OHA A6-B2 "RHR LOOP C TROUBLE"
  - ⇒ OHA B3-C1 "CORE SPRAY LOOP A TROUBLE"
  - ⇒ CRIDS D4434 "ECCS JOCKEY PMP CP228 OPF"
  - ⇒ CRIDS D4373 "RHR PUMP A DISCHARGE PRESSURE HILO"
  - ⇒ CRIDS D4397 "RHR PUMP C DISCHARGE PRESSURE HILO"
  - ⇒ CRIDS D3157 "CS LOOP A INJECTION LINE PRESSURE HILO"

RHR and Core Spray Low Pressure alarms will not be received if Condensate Transfer is lined up before discharge header pressures decay to alarm setpoints. (≈11 minutes)
  
- Crew recognizes loss of AK202 PCIG compressor by:
  - ⇒ OHA A1-A1 "INST GAS SYSTEM A TROUBLE"
  - ⇒ OHA A1-A3 "INST GAS RECEIVER A PRESSURE LO"
  - ⇒ OHA A1-A5 "INST GAS PANEL A/B C213"
  - ⇒ Loss of "START" and "STOP" indication for AK202

Instrument gas pressure is not actually low. The alarm is the result of a loss of power to the AC213 panel.

- Crew recognizes loss of 10B430 Unit Substation by:
  - ⇒ OHA E3-E3 "USS FEEDER BRKR TRBL"
  - ⇒ OHA E3-F2 "4.16KV FDR TO USS XFMR BRKR MALF"
  - ⇒ CRIDS D4565 "4.16KV BUS A403 FDR CKT BRKR TRBL"
  - ⇒ CRIDS D4611 "UNIT SUBSTA 10B430 FDR CKT BRK TRBL"
  - ⇒ Flashing TRIP light on 40310 breaker
  - ⇒ Various OVLD/PWR FAIL lights on 'C' Channel equipment

- Crew announces loss of the 10B430 bus on the plant page.

IF dispatched to 10B430,  
THEN REPORT:

- 52-40310 has 51B and 51C Time overcurrent trip flags dropped
- CX400 xfmr is very warm with acrid odor and telltale in the red zone

- Crew dispatches ABEO and Maintenance to investigate the loss of the 10B430 bus.

- CRS implements AB.ZZ-0172.

**SUPPORT** any requests for BP207 discharge valve manipulations with Remote Function **CD02**.

- Crew places BP207 CRD pump in service IAW either:
  - ⇒ SO.BF-0001 Sect 5.2
  - OR
  - ⇒ HC.OP-AB.22-0001 Hardcard
  - OR
  - ⇒ ARP for CRIDS D2244

Accumulator trouble alarms will begin to come in after about 14 minutes with no CRD pump in service.

AVERAGE HCU accumulator pressure can be read with InSight Item **lcpac**.

- CRS directs aligning Condensate Transfer keepfill to 'A' Core Spray loop and A/C RHR loops.

INDIVIDUAL HCU accumulator pressures can be read with InSight Item **lcpaccx(n)**. See Sim Op Manual under Reactor Building Operator for "n" value.

- IF any HCU accumulators become inoperable with no CRD pump I/S,  
THEN CRS implements AB.IC-0001:  
⇒ Condition A

IF dispatched to align AP to 'A' Core Spray and A & C RHR  
THEN:

- **REFER** to SO.BC-0001 Section 5.9
- **TRIGGER ET-3** to open AP-V044/V047/V041

- RO/PO coordinate with RBEO to align Condensate Transfer IAW SO.BC-0001 for removal of CP228 from service.

- Crew places BK202 PCIG compressor in AULD.

- CRS/STA recognize the following Tech Spec applies:  
⇒ Distribution – Operating 3.8.3.1 action a

Must re-energize 10B430 within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

May cascade to T/S 3.8.2.1.a due to loss of CD444 battery charger (2 hour LCO)

- IF any HCU accumulators become inoperable with no CRD pump I/S,  
THEN CRS recognize the following Tech Spec applies:  
⇒ Control Rod Scram Accumulators 3.1.3.5 action a.2.a

Within 20 minutes of discovery, restore charging water pressure  $\geq 940$  psig or place Mode switch in SHUTDOWN.

IF directed to perform fill and vent.  
THEN **REPORT** no air found.

- CRS refer to OP-HC-108-115-1001 for loss of CP228 ECCS jockey pump AND for SSW to RACS isolation valves.

Actions required for jockey pump are dependent on whether discharge header low pressure alarms were received for Core Spray and RHR loops.

- CRS contacts Operations Management to initiate an ERT callout.

**Inadvertent HPCI Initiation:**

After loss of 10B430 actions are complete

OR

At the discretion of the lead evaluator, **TRIGGER ET-4**  
Inadvertent HPCI Initiation

- Crew recognizes inadvertent HPCI initiation by:
  - ⇒ Insert OHAs
  - ⇒ Insert OHAs
  - ⇒ Insert OHAs
- Crew implements HC.OP-AB.RPV-0001, Section C
- Crew verifies Reactor Level > -38" AND Drywell Pressure < 1.68#
- Crew terminates AND Prevents HPIC Injection IAW HC.OP-AB.ZZ-0001
- Crew DEPRESSES the initiation Logic RESET PB AND VERIFIES HV-F006 is CLOSED (if required, override and close IAW Att 2)

**Steam Leak in HPCI Room:**

After actions for inadvertent HPCI initiation are completion, OR at the discretion of the Lead Examiner,

**TRIGGER ET-5 AND**

**PROVIDE** Fire Computer indication of point **FA015** (Fire Computer point may be provided by Examiner or by Fire Computer Simulation).

- Crew recognizes a steam line break in the HPCI room by:
  - ⇒ OHA B1-A5 "HPCI STEAM LINE DIFF PRESSURE HI"
  - ⇒ OHA A2-A5 "FIRE PROT PANEL 10C671"
  - ⇒ Fire Comp Pt FA015 "RM 4111 HPCI PUMP AND TURBINE ROOM"
  - ⇒ HPCI room temperature trending up (Rm 4111)
  - ⇒ Lowering Main Gen MWe
  - ⇒ Offsite release rate trending up
  - ⇒ HPCI Turbine Inlet Pressure on PI-R602.
  - ⇒ ISLN INIT status lights

B1-A5 and ISLN INIT status lights will be received when the leak severity reaches 23% (about 30 seconds)

InSight Items:

- HPCI Room Temp  
**hvtr4111**
- RCIC Room Temp  
**hvtr4110**

- Crew announces steam leak in HPCI room on plant page.

IF dispatched to HPCI Room,  
THEN REPORT the room is  
filled with steam.

- Crew recognizes failure of HPCI to isolate by:
  - ⇒ HV-F002 power failure
  - ⇒ F003 valve position
  - ⇒ HPCI room temperature trending up (Rm 4111)

The HV-F002 is  
powered from the  
10A403 bus.

- PO attempts to close HV-F003 using Control Room keylock switch.

Immediate Operator  
Action IAW  
AB.CONT-0002

- Crew recognizes failure of HV-F003 to close by:
  - ⇒ OHA B1-F3 "HPCI COMPONENT O/PF"
  - ⇒ OVLD/PWR FAIL light
  - ⇒ CRIDS D3513 "HPCI ST LINE ISLN HV-F003 OPF"
  - ⇒ HPCI room temperature continuing to trending up (Rm 4111)
  - ⇒ Main Gen MWe continuing to trend down
  - ⇒ Offsite release rate continuing to trend up

**RECORD** time when  
switch for HV-F003 is in  
CLOSE AND OHA  
B1-A5 is in alarm for 15  
min ECG Classification.  
Time: \_\_\_\_\_

IF dispatched to reclose  
breaker 52-212053,  
THEN REPORT the breaker  
will not close.

- Crew dispatches RBEO and Maintenance to breaker for HV-F003 (52-212053)

ARP for D3513 gives  
breaker number.

IF dispatched to the HV-F003  
valve,  
THEN REPORT the valve is  
bound and will not close.

- CRS determines an SAE  
Classification is required IAW  
ECG Section:
  - ⇒ RB3.L VALID isolation signal  
exists with an UNISOLABLE  
Break outside primary  
containment (after isolation  
from the Control Room has or  
should have been attempted)  
in ANY of the following  
systems: HPCI steam line (5  
pts.)
  - ⇒ CB3.L UNISOLABLE  
leakage outside primary  
containment (after isolation  
from the Control Room has or  
should have been attempted)  
AND Direct downstream  
pathway to the environment  
exists. (3 pts.) OR
  - ⇒ CB5.L UNISOLABLE primary  
system leakage outside  
primary containment (after  
isolation from the Control  
Room has or should have  
been attempted) as indicated  
by exceeding EITHER of the  
following: (3 pts.)
    - ANY EOP 103 Reactor  
Bldg room temp Table 1,  
Column 2 (Max Safe)
    - ANY Reactor Bldg rad  
level > 1000 times normal

STRATEGIES FOR SUCCESSFUL  
TRANSIENT MITIGATION  
**EOP-103 Secondary Containment  
Control.**

1. It is impossible to predict all possible break points in a system and proceduralize all possible points of isolation. Therefore, for reasons of system isolation as directed by EOP-103, the operator does not need written guidance beyond EOP-103 direction to isolate faulted systems.
2. It is important to remember ***it takes 2 or more areas (as defined in the EOP)*** with max safe Rads or Temps or Levels AND a Primary system discharging into the Reactor Building to enter EOP-202 RPV Blowdown.
3. Verification of "discharging" can be by either of the following:
  - a. Visual verification of a leak or break in an area.
  - b. Rising temperatures and/or rising radiation levels in an area.
4. Post scram, if the main condenser and sufficient RPV feed sources are available, the Control Room Supervisor should consider depressurizing the reactor within the cooldown limits (to approximately 500-600 psig) to reduce the driving head of the leak. If EOP-202 implementation is anticipated, then the depressurization is allowed to exceed the cooldown rate.

- **WHEN** HPCI Room temperature reaches 115 degrees, **THEN** CRS implements EOP-103.

- CRS implements AB.CONT-004:
  - ⇒ Condition A
  - ⇒ Condition C

**IF** dispatched to secure Rx Bldg Ventilation,  
**THEN:**

- **REFER** to SO.GU-0001 Section 5.3
- **TRIGGER ET-6** to secure fans

- PO places FRVS in service IAW SO.GU-0001 Section 5.3.

STRATEGIES FOR SUCCESSFUL  
TRANSIENT MITIGATION

**Reactor Scram Reports**

Following a Reactor scram, the NCO should make an initial scram report by announcing reactor status IAW HC.OP-AB.ZZ-0001.

Crew personnel should hold all other non-essential communications until after the initial scram report is complete.

The Control Room Supervisor should silence alarms during the scram report and the SM/CRS is not required to make a statement directing the NCO to check the overhead alarms, since these actions are already expected immediately following the scram.

During the scram report, the NCO should report reactor level and pressure and their trends to the Control Room staff IAW HC.OPAB.ZZ-0001.

- BEFORE HPCI Room temperature reaches 250 degrees, THEN CRS directs reducing recirc pumps to minimum speed and locking the Mode Switch in SHUTDOWN

- RO reduces recirc pumps to minimum speed and locks the Mode Switch in SHUTDOWN.

\* ***Before HPCI Room temperature exceeds 250 °F by Control Room indication, the Crew places the Mode Switch in SHUTDOWN.***

- Crew recognizes Scram Condition and Reactor Power Above 4% EOP entry condition.

**RECORD** time of Mode Switch to SHUTDOWN OR RPV LVL 3 (whichever was first) for 15 min ECG Classification.  
Time: \_\_\_\_\_

## STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION

### Reactor Scram Reports

Following a Reactor scram, the NCO should make an initial scram report by announcing reactor status IAW HC.OP-AB.ZZ-0001.

Crew personnel should hold all other non-essential communications until after the initial scram report is complete.

The Control Room Supervisor should silence alarms during the scram report and the SM/CRS is not required to make a statement directing the NCO to check the overhead alarms, since these actions are already expected immediately following the scram.

During the scram report, the NCO should report reactor level and pressure and their trends to the Control Room staff IAW HC.OPAB.ZZ-0001.

- RO performs scram actions IAW AB.ZZ-0001 Att. 1.

### HPI USED:

STAR ☐

HARD CARD ☐

The Mode Switch will not actuate A1/A2 RPS, but the Arm & Depress Pushbuttons will.

ARI will not automatically initiate, but can be manually initiated.

- \* ***Before Reactor Water Level reaches LVL 1, the Crew manually actuates RPS and/or ARI to shutdown the reactor.***

**RECORD** the RPV level at which RPS or ARI is actuated.

RPV Level: \_\_\_\_\_

- Crew recognizes RPV Level Below 12.5" EOP entry condition by:
  - ⇒ OHA C5-A4 "RPV WATER LEVEL LO"
  - ⇒ OHA A7-D5 "RPV LEVEL 3"
  - ⇒ Various water level indicators
- CRS implements EOP-101.
- PO stabilizes and restores level IAW AB.ZZ-0001 Att. 14 as directed by CRS.
- Crew recognizes lowering reactor pressure by:
  - ⇒ OHA C8-B3 "NSSSS ISLN SIG – MN STM PRESSURE LO"
  - ⇒ Various reactor pressure indications

- IF reactor pressure lowers to 550 psig,  
THEN CRS enters AB.RPV-0005:  
⇒ Retainment Override
- STA monitors AB.RPV-0005 implementation and Retainment Override applicability.
- CRS directs closing:
  - ⇒ MSIVs
  - ⇒ HV-F016
  - ⇒ HV-F019
- RO/PO close:
  - ⇒ MSIVs
  - ⇒ HV-F016
  - ⇒ HV-F019
- Crew recognizes rising temperature in the RCIC pump room by:
  - ⇒ OHA B1-A1 "RCIC TURBINE TRIP"
  - ⇒ OHA B1-B2 "RCIC OUT OF SERVICE"
  - ⇒ OHA D3-A2 "RCIC/RHR B AREA LEAK TEMP HI"
  - ⇒ RCIC Logic B/D "ISLN INIT" lights
  - ⇒ RCIC HV-F007/8 closing
  - ⇒ SPDS Room temp indication

HPCI Room temperature needs to be 275 degF before reactor pressure drops below 200 psig.

IF necessary,

THEN manually raise HPCI Room temperature using

InSight Item **hvtr4111**:

- Raise to 270 degrees in 5 degree increments
- Raise from 270 to 277 degrees in 1 degree increments  
(RCIC Room temp will reach 250 when HPCI room temp reaches 275)

- WHEN HPCI AND RCIC room temperatures exceed 250 degrees (Max Safe Op), THEN CRS implements EOP-202 to Emergency Depressurize.

- RO/PO opens five SRVs IAW AB.ZZ-0001 Att. 13.

- \* ***Crew actuates five SRVS within two minutes of RCIC room temperature exceeding 250 degrees by Control Room indication (SPDS/CRIDS).***

**RECORD** time from RCIC reaching 250 degrees to SRV actuation.

TIME: \_\_\_\_\_

**RECORD** RPV pressure at which fifth SRV is opened.

PRESSURE: \_\_\_\_\_

- Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by:
  - ⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH"
  - ⇒ Flashing 95 degree status light on 10C650C
  - ⇒ RM11 9AX833/834 alarm
  - ⇒ Various Suppression Pool temperature indicators
- CRS enters EOP-102.
- CRS directs placing all available RHR pumps in Suppression Pool Cooling.

- RO/PO place RHR in Supp Pool Cooling IAW AB.ZZ-0001 Att. 3.
- RO/PO align SACS to support second RHR Hx IAW SO.EG-0001 Section 5.9.

**Termination Requirement:**

The scenario may be terminated at the discretion of the Lead Examiner when the reactor has been depressurized.

## VI. SCENARIO REFERENCES:

---

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. **Emergency Plan (ECG)**
- G. **Alarm Response Procedures (Various)**
- H. HU-AA-101 Performance Tools and Verification Practices
- I. HU-AA-104-101 Procedure Use and Adherence
- J. HU-AA-1081 Fundamentals Toolkit
- K. HU-AA-1211 Briefing
- L. OP-AA-101-111-1004 Operations Standards
- M. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- N. OP-AA-106-101-1001 Event Response Guidelines
- O. OP-AA-108-114 Post Transient Review
- P. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- Q. OP-HC-108-106-1001 Equipment Operational Control
- R. **HC.OP-SO.AE-0001 Feedwater System Operation**
- S. **HC.OP-SO.SF-0001 Reactor Manual Control**
- T. **HC.OP-SO.SF-0003 Rod Worth Minimizer Operation**
- U. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- V. **HC.OP-AB.RPV-0005 Reactor Pressure**
- W. **HC.OP-AB.IC-0001 Control Rod**
- X. **HC.OP-AB.CONT-0001 Drywell Pressure**
- Y. **HC.OP-AB.CONT-0002 Primary Containment**
- Z. **HC.OP-AB.CONT-0004 Radioactive Gaseous Release**
- AA. **HC.OP-AB.ZZ-0172 Loss of 4.16 KV Bus 10A403 C Channel**
- BB. **HC.OP-AB.ZZ-000 Reactor Scram**
- CC. **HC.OP-EO.ZZ-0101 RPV Control**
- DD. **HC.OP-EO.ZZ-0102 Primary Containment Control**
- EE. **HC.OP-EO.ZZ-0103 Reactor Building Control**
- FF. **HC.OP-EO.ZZ-0202 Emergency RPV Depressurization**
- GG. **HC.RE-AB.ZZ-0001 Insertion of Control Rods in Response to an ATWS**
- HH. **HC.OP-IO.ZZ-0006 Power Changes During Operation**
- II. Strategies For Successful Transient Mitigation

## VII. ESG CRITICAL TASK RATIONAL

### 2013 NRC Scenario #3, Rev. 0

1.

- \* ***Before HPCI Room temperature exceeds 250 °F by Control Room indication, the Crew places the Mode Switch in SHUTDOWN.***

#### **K/A 295032 High Secondary Containment Area Temperature**

EK3 Knowledge of the reasons for the following responses as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EK3.02 Reactor SCRAM RO 3.6 SRO 3.8

EA2 Ability to determine and/or interpret the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EA2.01 Area temperature RO 3.8 SRO 3.8

The steam leak from HPCI cannot be isolated. Since isolation cannot be accomplished, the only remaining course of action is to remove the energy input to the RCS by scrambling the reactor. 250°F is the Max Safe Op temperature for the HPCI Room (4111), and EOP-103 directs reducing recirc to minimum and initiating a manual scram. In this scenario, the rate of rise in room temperature provides ample time to implement the guidance in EOP-103. Reducing recirc to minimum is not critical to shutting down the reactor, and is not included as part of this critical task. The first action AB.ZZ-0001 directs for initiating a manual scram is to LOCK the Mode Switch in SHUTDOWN. For the purposes of shutting down the reactor, LOCKING the Mode Switch in SHUTDOWN is not required, only initiating a scram is critical.

2.

- \* ***Crew actuates five SRVS within two minutes of RCIC room temperature exceeding 250 degrees by Control Room indication (SPDS/CRIDS).***

#### **K/A 295032 High Secondary Containment Area Temperature**

EK3 Knowledge of the reasons for the following responses as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EK3.01 Emergency/normal depressurization RO 3.5 SRO 3.8

EA2 Ability to determine and/or interpret the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EA2.01 Area temperature RO 3.8 SRO 3.8

The steam leak in the HPCI room is now affecting a second area. The reactor must be depressurized to place it in its lowest energy state due to the potential for multiple inoperable safety systems, to reduce the driving head for the leak, and to reject decay heat to the suppression pool rather than the Reactor Building. The term "Crew actuates five SRVs" takes into account the F013D failure, which is already inserted. Two minutes is deemed adequate time to recognize the condition and implement EOP-202 and AB.ZZ-0001 Att. 13.

3.

\*

**HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM****INITIATING EVENTS THAT LEAD TO CORE DAMAGE**

<u>Y/N</u>	<u>EVENT</u>	<u>Y/N</u>	<u>EVENT</u>
<u>      </u>	Loss Of Offsite Power/SBO	<u>      </u>	Internal Flooding
<u>  Y  </u>	LOCA		
	<u>TRANSIENTS:</u>		<u>LOSS OF SUPPORT SYSTEMS:</u>
<u>      </u>	Turbine Trip	<u>      </u>	Loss of SSW
<u>      </u>	Loss of Condenser Vacuum	<u>      </u>	Loss of SACS
<u>      </u>	Loss of Feedwater		
<u>  Y  </u>	Manual Scram		

**COMPONENT/TRAIN/SYSTEM UNAVAILABILITY  
THAT INCREASES CORE DAMAGE FREQUENCY**

<u>Y/N</u>	<u>KEY EQUIPMENT</u>	<u>Y/N</u>	<u>KEY SYSTEMS</u>
<u>  Y  </u>	HPCI	<u>      </u>	SRVs
<u>  Y  </u>	RCIC	<u>      </u>	Condensate/Feedwater
<u>      </u>	B/D EDG	<u>      </u>	SSW
<u>      </u>	A/B RHR Pump	<u>      </u>	RPS
<u>      </u>	A/B SACS Loop		
<u>      </u>	1E 4.16KV Bus		
<u>      </u>	1E 480 VAC Bus		
<u>      </u>	120VAC 481 Inverter		
<u>      </u>	1E 125VDC		
<u>      </u>	Hard Torus Vent		

**OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE**

<u>Y/N</u>	<u>OPERATOR ACTION</u>
<u>      </u>	Manual Depressurization of the RPV w/ no HP Injection Available
<u>      </u>	Reopen SSW Discharge Valve to SACS Hx After Level 1 or Hi DW Press. Signal
<u>      </u>	Control RPV Water Level w/ HP Injection during ATWS Sequence
<u>      </u>	Align Portable Power Supply to Battery Chargers
<u>      </u>	Venting of Primary Containment
<u>      </u>	Restore Switchgear Cooling
<u>      </u>	Restart Condensate
<u>      </u>	Control Plant via Remote Shutdown Panel during Control Room Flooding Sequence

Complete this evaluation form for each ESG.

**VIII. TURNOVER SHEET:**

---

**ONLINE RISK: GREEN**

**WORK WEEK CHANNEL: C**

---

**PROTECTED EQUIPMENT**

None

---

**REACTIVITY / Plant Status**

75% Power

---

**ESF/SAFETY SYSTEMS**

None

---

**COOLING WATER**

None

---

**BOP**

DK111 for freon leak  
CP161 for bearing oil leak

---

**ELECTRICAL**

None

---

**ADVERSE CONDITION MONITORING**

None

## IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

---

### EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

---

**Note:** The following criteria list scenario traits that are numerical in nature for a single scenario.

ESG: Scenario 3

#### **SELF-CHECK**

- \_\_\_\_\_ 1. Total malfunctions inserted: 4-8
- \_\_\_\_\_ 2. Malfunctions that occur after EOP entry: 1-4
- \_\_\_\_\_ 3. Abnormal Events: 1-2
- \_\_\_\_\_ 4. Major Transients: 1-2
- \_\_\_\_\_ 5. EOPs used beyond primary scram response EOP: 1-3
- \_\_\_\_\_ 6. EOP Contingency Procedures used: 0-3
- \_\_\_\_\_ 7. Approximate scenario run time: 45-60 minutes (one scenario may approach 90 minutes)
- \_\_\_\_\_ 8. EOP run time: 40-70% of scenario run time
- \_\_\_\_\_ 9. Crew Critical Tasks: 2-5
- \_\_\_\_\_ 10. Technical Specifications are exercised during the test:  $\geq 1$

#### **Comments:**

---

---

---

---

---

## EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION (con't)

Crew Validation Rev: 01 Date Validated: \_\_\_\_\_

Validation Comments

Disposition

Crew Validation Rev: \_\_\_\_\_ Date Validated: \_\_\_\_\_

Validation Comments

Disposition

Crew Validation Rev: \_\_\_\_\_ Date Validated: \_\_\_\_\_

Validation Comments

Disposition