STATIONek

B¥SCTEMRecirculation

PASK m Scoop Tube Positioner Lock-up Operation

TASK MUMBER:

BRENS RURNLEER:

SAPICEP.BB03E

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APPLICABIL	ITY:		
X SRQ			

DEAVELOPED BY:

Instructor

DREVIEWED BY:

Operations Representative

DAPHEROVED BY:

Training Department

				<u>TQ-AA-1</u>	06-0303
STATION:	Hope Creek				
JPM NUMBER:	2013 NRC S-1		REV:	01	
SYSTEM:	Reactor Recirculation				
TASK NUMBER:	2020080101				
TASK:	Perform Scoop Tube	Positioner Lock-up	Operatio	on	
ALTERNATE PAT	н: 🔀	K/A NUME	BER:	202002	A2.05
	IM	PORTANCE FACT	OR:	3.1	3.1
APPLICABILITY:				RO	SRO
EO	ROX STA	SRO X			
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.					
TIME PERIOD ID	DENTIFIED FOR TIME CR	ITICAL STEPS:	N/A	Minutes	
JPM PERFORMED) BY:	GRADE		SAT	UNSAT
	ACTUAL COM	PLETION TIME:		Minutes	
ACTU	AL TIME CRITICAL COM	PLETION TIME:	N/A	Minutes	
REASON, IF UNSATISFACTORY:					
EVALUATOR	'S SIGNATURE:			DATE:	

Ν	A	M	E	:

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 JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 1

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 JOB PERFORMANCE MEASURE

NAME: ______ 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, DETERMINE the desired SIC-621A(B) SPEED DEMAND	Operator determines the desired SIC-R621A SPEED DEMAND to be 58-62% IAW Attachment 3.	*		
fr S	for the actual SPEED indicated on SIC-621A(B).	Examiner Note: 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	PRESS 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.	#		
		Examiner Note: <u>+</u> 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	PRESS SCOOP TUBE TRIP RESET AND ENSURE 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.			
	HC.OP-AB.RPV-0001				
	Single Reactor Recirc Pump runaway.				

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

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	PRESS the SCOOP TUBE TRIP Pushbutton for the affected Recirc Pump Controller.	Operator presses the Pump A SCOOP TUBE TRIP pushbutton. Examiner Note: 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	PLACE BOTH Recirc Pump individual controllers in MANUAL.	Operator observes the SIC-R621A MAN <u>AND</u> SIC-R621B MAN is illuminated and AUTO is extinguished. Examiner Note: Since SIC-R621A and B are already in Manual, it is not critical to press the MAN pushbuttons.			
3	REDUCE 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 ≤ 80%.	*		

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP time.				
	(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.)		n an		
	REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".				
	STOP TIME:				

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

		DATE:	
JPM Number: 2013 N	RC S-1		
TASK: Perform Scoo	p Tube Positioner Lock-up Opera	tion	
TASK NUMBER: 2020	080101		
	-		
	······································		
RESPONSE:			
RESULT:	SAT	UNSAT	
QUESTION:			
RESPONSE:			
RESULT:	SAT	UNSAT	

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.

I. INITIAL CONDITIONS:

	1.C.
Initial	
	INITIALIZE the simulator to 80% power, MOL.
	 REDUCE Reactor Recirc pump speeds to 60% (It is critical that 'A' Recirc pump speed is 60%).
	• INSERT 9B rods to 00.
	PRESS the REACTOR RECIRCULATION PUMP A TRIPS SCOOP TUBE TRIP pushbutton.
	ENSURE SIC-R621A AND SIC-R621B are in Manual.
	REDUCE SIC-R621A Demand Output by 4% AND allow SIC-R621A SPEED DEMAND to saturate low.
	ENSURE SIC-R620 MAST CONT OUTPUT A SELECT is selected.
	REMOVE Crossflow from service by toggling Remote Function PP04 to Not Applied.

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

Initial	Description						
	INITIAL a copy of HC.OP-SO.BB-0002 Section 5.5 for the 'A' Reactor Recirc Pump.						
	COMPLETE Simulator Ready-for-Training/Examination Checklist.						
	ENSURE Data Collection is trending the following parameters:						
	APRM Power Channel A						

EVENT TRIGGERS:

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

MALFUNCTION SUMMARY:

· · · · · · · · · · · · · · · · · · ·		T		···		
Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RR08A 'A' Recirc Pump Runaway			ET-1		

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

I/O OVERRIDE SUMMARY:

Initial Description Trigger Init Val Final Val Delay Ramp -----------------____ -------------

REVISION HISTORY

JPM NUMBER: 2013 NRC S-1

Rev #	Date	Description	Validation Required?

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.
- 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.
- 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: 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:	X

APPLICABILITY: EO RO X

X STA

SRO X

DEVELOPED BY:		DATE:	
	Instructor		
REVIEWED BY:		DATE:	
	Operations Representative		
APPROVED BY:		DATE:	
	Training Department		

			TQ-AA-106-0303
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	X	K/A NUMBER:	209001 A4.01
	IMPO	ORTANCE FACTOR:	3.8 3.7
APPLICABILITY:		SROX	RO SRO
EVALUATION SETT	ING/METHOD: Simulator	r/Perform	
REFERENCES: H	IC.OP-AB.ZZ-0001 Attachm	ient 5 Rev. 25	
TOOLS, EQUIPMEN	T AND PROCEDURES:	None	
	ESTIMATED COMPL	ETION TIME: 7	Minutes
TIME PERIOD IDE	INTIFIED FOR TIME CRITI	CAL STEPS: N/A	Minutes
JPM PERFORMED	BY:	GRADE:	SAT UNSAT
	ACTUAL COMPL	ETION TIME:	Minutes
ACTUA	L TIME CRITICAL COMPL	ETION TIME: N/A	Minutes
REASON, IF UNSA	TISFACTORY:		
EVALUATOR'S			DATE:

Г	Q-	A	Α-'	10	6-	0	3	0:	3
-	_		-	•••	-	-	-		-

	-	 	
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

1

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Core Spray

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 obtains/locates procedure HC.OP-AB.ZZ-0001, Attachment 5.	Operator obtains the correct procedure.			
1.0	IF an Initiation Signal is present, THEN PERFORM 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.	ENSURE 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

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Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Core Spray

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.	ENSURE 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.	ENSURE HV-F015B is CLOSED.	Operator observes that HV-F015B is CLOSED.			
1.0.D.	ENSURE HV-F004B is OPEN.	Operator observes that HV-F004B is OPEN.			

JPM: 2013 NRC S-2

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Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Core Spray

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, ENSURE 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.	PERFORM the following as necessary to control Reactor Level:			in the second se	
1.0.F. 1	PRESS 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	CYCLE 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

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OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev:

SYSTEM: Core Spray

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STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.G.	<u>WHEN</u> flow is > 775 gpm, ENSURE HV-F031B is CLOSED.	Operator observes Core Spray System B flow on FI-R601B to be >775 gpm.			
	Examiner Note: 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 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) S⊺ANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
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> RECORD the STOP time. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 				
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 N	RC S-2		
TASK: Manually Start	the Core Spray System		
TASK NUMBER: 2090	030101		
		·····	. <u> </u>
RESPONSE:			
	·		
RESULT:	SAT	UNSAT	
QUESTION:			
	· · · · · · · · · · · · · · · · · · ·		
		· · · · · · · · · · · · · · · · · · ·	
RESULT:	SAT	UNSAT	

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.

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.
	ENSURE associated Schedule file open and running.
	ENSURE associated Events file open.

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

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

EVENT FILE:

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

MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description
	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:

Initial	@Time	Event	Action	Description
	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

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OVERRIDE SCHEDULE:

Initial	@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)

REVISION HISTORY

JPM NUMBER: 2013 NRC S-2

Rev #	Date	Description	Validation Required?
-			

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 >3.0 (LOR) or >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.
 8.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*). Sequence 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.
 12.	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.
 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

NameQualSignatureDateNameQualSignatureDate

STATION:	Hope Creek		
SYSTEM:	High Pressure Coolant Injection	I	
TASK:	Place HPCI In Full Flow Recirc		
TASK NUMBER:	2060180201		
JPM NUMBER:	2013 NRC S-3	REV #:	1
SAP BET:	NOH05JPBJ06E		
ALTERNATE PATH:			
APPLICABILITY:	ROXSTASF	χο Χ	

DEVELOPED BY:		DATE:	
_	Instructor		
REVIEWED BY:		DATE:	
_	Operations Representative		
APPROVED BY:		DATE:	
-	Training Department		

			TQ-AA-106-0303			
STATION:	Hope Creek					
JPM NUMBER:	2013 NRC S-3	REV:	1			
SYSTEM:	High Pressure Coolant I	njection				
TASK NUMBER:	2060180201					
TASK:	Place HPCI In Full Flow	Recirc				
ALTERNATE PATH	:	K/A NUMBER:	206000 A4.06			
	IMPC	ORTANCE FACTOR:	4.3 4.3			
APPLICABILITY:	RO X STA	SROX	RO SRO			
EVALUATION SET	FING/METHOD: Simulato	r/Perform				
REFERENCES: H	IC.OP-AB.ZZ-0001 Rev 25					
TOOLS, EQUIPMEN	T AND PROCEDURES:					
	ESTIMATED COMPL	ETION TIME:12	Minutes			
TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes						
JPM PERFORMED	BY:	GRADE:				
	ACTUAL COMPL		Minutes			
ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes						
REASON, IF JPM U	JNSATISFACTORY:					
EVALUATOR'S	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

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Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: High Pressure Coolant Injection

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

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Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: High Pressure Coolant Injection

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 ≈ 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

11

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: High Pressure Coolant Injection

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

11

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____ DATE: _____

SYSTEM: High Pressure Coolant Injection

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 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)
1.0.1	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.			
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> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 	N/A			
N/A	TASK STANDARD:	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 I	Full Flow Recirc		
TASK NUMBER: 2060	180201		
QUESTION:			
		<u></u>	
RESPONSE:			
RESULT:	SAT	UNSAT	
QUESTION:			
RESPONSE:		- /	
,			
RESULT:	SAT	UNSAT	

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:

	EVE	ENT FILE:
Initial	ET #	Description
	1	Event code: Description:

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

MALFUNCTION SCHEDULE:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

REMOTE SCHEDULE:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

I/O OVERRIDE SCHEDULE:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

REVISION HISTORY

JPM NUMBER: 2013 NRC S-3

Rev #	Date	Description	Validation Required?

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC S-3

REV#: 1

TASK: Place HPCI In Full Flow Recirc

	1. 2.	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.
	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.
	8.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*). Sequence 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.
	1 1.	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.	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).
VALID	ATE	D BY:

Qualification Level Required: RO

Qual Signature Name Date Signature Qual Date Name

STATION:	Hope Creek	
SYSTEM:	Residual Heat Removal	
TASK:	Transfer Shutdown Cooling to th	e Standby Shutdown
TASK NUMBER:	2050120101	
JPM NUMBER:	2013 NRC S-4	REV #: 1
SAP BET:	NOH05JPBC15E	
ALTERNATE PATH:	x	
EO	ROX STA SR	

DEVELOPED BY:		DATE:	
_	Instructor		
REVIEWED BY:		DATE:	
	Operations Representative		
APPROVED BY:		DATE:	
-	Training Department		

			TQ-AA-106-0303
STATION:	Hope Creek		
JPM NUMBER:	2013 NRC S-4	REV:	1
SYSTEM:	Residual Heat Removal		
TASK NUMBER:	2050120101		
TASK:	Transfer Shutdown Cool	ing to the Standby Shut	down Cooling Loop
AI TERNATE PATH	X		205000 A4 03
			36 35
			<u> </u>
		SROX	
EVALUATION SETTI	NG/METHOD: Simulato	or/Perform	
REFERENCES: HC	C.OP-SO.BC-0002 Rev. 28	3	
TOOLS, EQUIPMENT	AND PROCEDURES:	None.	
	ESTIMATED COMPL	ETION TIME:	Minutes
TIME PERIOD IDEN	NTIFIED FOR TIME CRIT	CAL STEPS: N/A	Minutes
JPM PERFORMED B	Y:	GRADE:	
	ACTUAL COMPL		Minutes
ACTUAL	TIME CRITICAL COMPL	ETION TIME: N/A	Minutes
REASON, IF UNSAT	IISFACTORY:		
EVALUATOR'S	SIGNATURE:		DATE:

-

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 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.

INIIATING 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

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OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev:

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 <u>AFTER</u> 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	<u>IF</u> excessive time is taken reviewing precautions and limitations, <u>THEN</u> 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

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OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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.	SECURE the inservice Shutdown Cooling Loop as follows:	N/A			
5.3.5. A	ENSURE 1-BC-V262 (1-BC-V212), ECCS Jockey Pmp D(C) DISCH to RHR Loop B(A) is LOCKED OPEN (local), AND INITIAL Attachment 1.	Operator contacts Equipment Operator and directs opening 1-BC-V262.			
CUE	The valve is in the position requested.	N/A			
	NOTE Steps 5.3.5.B through 5.3.5.C should be performed in rapid succession.	Operator reads NOTE.			
5.3.5. B	CLOSE BC-HV-F015B(A) RHR LOOP B(A) RET TO RECIRC AND INITIAL Attachment 1.	Operator presses and holds the BC- HV-F015B RHR LOOP B RET TO RECIRC CLSD pb.	*		

Rev:

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____ 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 STOP 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.	*		

Rev: 1

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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	CLOSE BC-HV-F006B(A) RHR PMP B(A) SUCT FROM RECIRC AND INITIAL 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.	ENSURE 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.			

Rev: 1

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 1

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)
	CAUTION Manual OR automatic opening of BC-HV-F007A(B) RHR PMP A(B) MIN FLOW MOV will drain Reactor Vessel to Suppression Pool.	Operator reads CAUTION.			
	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.				
	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.				

JPM: 2013 NRC S-4

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Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

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.	START RHR PUMP A(B)P202 AND IMMEDIATELY THROTTLE 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 ≈ 3000 gpm.	Operator presses the AP202 START pb.	*		
		Operator observes the AP202 START light illuminated and STOP light extinguishes.			
	Examiner Note: 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 JOB PERFORMANCE MEASURE

NAME: ______ 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.	*		
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> RECORD the STOP time.				
	REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".				
	STOP TIME:				
N/A	TASK STANDARD:	Operator lines up and starts A RHR pump in Shutdown Cooling. When the F015A fails to open, the operator stops the A RHR pump.			

Rev:

1

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

	NAME:
	DATE:
JPM Number: 2	013 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

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:

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

		A. S. Salaka S. S. S. S. S. S. Sakari M. J. N.		
	사람이 다 가지 않는 것 같아요. 이 가지 않는 것 같아요. 이 것 같아요. 이 것 같아요. 이 것 같아요.	ten handen en en besternen er be	·····································	그는 물건에 가지 않는 것 같은 것을 했다.
	(I A PN/11 cot pointe	nrocoduroe	hozol covore	· ' 이 문' 생산' · ' 적 신
		DIOCEULIES.		Statistic Constraints
지수는 사람이 가지 않는 것이 가지 않는 것 같은 것이라. 지난 것에 가지 않는 것이 가지 않는 것이 같이 있는 것이 없다.		p ,		12 PLATER

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

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

Server de				
Initial	@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

REMOTE SCHEDULE:

REVISION HISTORY

JPM NUMBER: 2013 NRC S-4

Rev #	Date	Description	Validation Required?

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC S-4

REV#: 1

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

. <u> </u>	1.	Task description and number, JPM description and number are identified. Knowledge and Abilities ($K(A)$ is identified, and is >3.0 (LOR) or >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.
	8.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*). Sequence 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
	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

STATION:	Hope Creek		
SYSTEM:	Primary Containment		
TASK:	Suppression Chamber Makeup From Loop B	n Servi	ce Water
TASK NUMBER:			
JPM NUMBER:	2013 NRC S-5 REV	/ #:	1
SAP BET:			
ALTERNATE PATH:			
APPLICABILITY: EO	ROX STA SRO	X	
DEVELOPED BY:	Instructor	DATE:	
REVIEWED BY:	Operations Representative	DATE:	
	Operations Representative		

APPROVED BY: ______
Training Department DATE: _____

			IQ-AA-106-0303
STATION:	Hope Creek		
JPM NUMBER:	2013 NRC S-5	REV:	01
SYSTEM:	Primary Containment		
TASK NUMBER:			
TASK:	Suppression Chamber M	lakeup From Service W	ater Loop B
ALTERNATE PATH:		K/A NUMBER:	223001 A2.11
	IMPO	ORTANCE FACTOR:	3.6 3.8
	ROX STA		RO SRO
EVALUATION SETTI	NG/METHOD: Simulator	/Perform	
REFERENCES: HO	C.OP-EO.ZZ-0314 Rev. 05		
TOOLS, EQUIPMENT	AND PROCEDURES:	HC.OP-EO.ZZ-0314	
	ESTIMATED COMPLI		Minutes
TIME PERIOD IDEN	NTIFIED FOR TIME CRITI	CAL STEPS: N/A	Minutes
JPM PERFORMED B	Y:	GRADE:	SAT UNSAT
	ACTUAL COMPLI	ETION TIME:	Minutes
ACTUAL	TIME CRITICAL COMPLI	ETION TIME:N/A	Minutes
REASON, IF JPM UI	NSATISFACTORY:		
EVALUATOR'S	SIGNATURE:		DATE:

NAME:	
DATE:	

SYSTEM: Primary Containment

TASK: Suppression Chamber Makeup From Service Water Loop B

TASK NUMBER:

INITIAL CONDITIONS:

Suppression Chamber level is 70 inches and normal means of make-up are unavailable.
 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 JOB PERFORMANCE MEASURE

NAME: ______

Rev: 01

SYSTEM: Primary Containment

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-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</u> INFORM 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 JOB PERFORMANCE MEASURE

NAME: ______

Rev: 01

SYSTEM: Primary Containment

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: ENSURE that all prerequisites have been satisfied IAW Section 2.2 of this procedure.	Operator Verifies Prerequisites.			
5.2.2.	CLOSE 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.	VERIFY CLOSED BC-HV-F048B //B RHR HX SHELL SIDE BYP MOV//	Operator verifies closed BC-HV-F048B	#		
5.2.4	OPEN 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 JOB PERFORMANCE MEASURE

NAME: _____ DATE: _____

Rev: 01

SYSTEM: Primary Containment

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.5	ENSURE 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	OPEN 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	OPEN 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, MONITOR temperatures of all on-service, SACS and	Operator monitors temperatures			
	RACS cooling loads.				

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

SYSTEM: Primary Containment

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

JPM: 2013 NRC S-5 OPERATOR TRAINING PROGRAM NAME: Rev: 01 JOB PERFORMANCE MEASURE DATE:

SYSTEM: Primary Containment

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:	
IPM Number: 2013 NRC	S-5		
ASK: Suppression Cha	amber Makeup From Service Wa	ater Loop B	
QUESTION:			
RESPONSE:			
RESULT:	SAT	UNSAT	
QUESTION:			
· · · · · · · · · · · · · · · · · · ·			
······································			· · · · · · · · · · · · · · · · · · ·
RESPONSE:			
······			
	SAT		
KEOULI:	541	UNSAT	

JPM NUMBER: 2013 NRC S-5

REV#: 01

I. **INITIAL CONDITIONS:**

	I,C.
Initial	
	INITIALIZE the simulator to IC (Shutdown)
	ESTABLISH Suppression chamber level at 70".
	ENSURE associated Schedule file open and running.
	ENSURE associated Events file open.

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

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

EVENT FILE:

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

MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description

REMOTE SCHEDULE:

Initial	@Time	Event	Action	Description
	+			······································

OVERRIDE SCHEDULE:

Initial	@Time	Event	Action	Description
	-	1		

REVISION HISTORY

JPM NUMBER: 2013 NRC S-5

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

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

 Name
 Qual
 Signature
 Date

INITIAL CONDITIONS:

Suppression Chamber level is 70 inches and normal means of make-up are unavailable.
 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 Gene	rator to the Grid
TASK NUMBER:		
JPM NUMBER:	2013 NRC S-6 R	EV #: 1
SAP BET:		
ALTERNATE PATH:	X	
APPLICABILITY: EO	ROX STA SRO	X
		DATE:
DEVELOPED BY:	Instructor	DATE:
REVIEWED BY:	Operations Representative	DATE:
APPROVED BY:	Training Department	DATE:

			2013 NRC S-6
STATION:	Hope Creek		
JPM NUMBER:	2013 NRC S-6	REV:	01
SYSTEM:	Electrical		
TASK NUMBER:			
TASK:	Synchronize and Lo	oad Main Generator to	the Grid
ALTERNATE PATH:	X	K/A NUMBER:	262001 A4.04
	IMI	PORTANCE FACTOR:	3.6 3.7
APPLICABILITY: EO			RO SRO
EVALUATION SETTI	NG/METHOD: Simulat	tor/Perform	
REFERENCES: HO	C.OP-SO.MA-0001, Rev	56, HC.OP-AB.BOP-0002	2, Rev 13
TOOLS, EQUIPMENT	AND PROCEDURES:		
	ESTIMATED COMP		Minutes
TIME PERIOD IDEI	NTIFIED FOR TIME CRI	TICAL STEPS: N/A	Minutes
JPM PERFORMED B	Y:	GRADE:	SAT UNSAT
	ACTUAL COMP		Minutes
ACTUAL	TIME CRITICAL COMP	PLETION TIME:N/A	Minutes
REASON, IF JPM U	NSATISFACTORY:		
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 JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

SYSTEM: Electrical

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- SO.MA-0001, Rev 56			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<u>IF</u> excessive time is taken reviewing precautions and limitations, <u>THEN</u> 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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.0	ENSURE that all prerequisites have been satisfied IAW Section 2.0 of this procedure.	Operator Verifies Prerequisites.			
5.2.16	PERFORM the following to synchronize the Main Generator using Manual Load Control:		#		
5.2.16. A	SELECT 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	SELECT Load Set, Ramp Rate <u>AND</u> ENTER 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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.16. C	SELECT 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</u> REQUEST permission from SM/CRS to bypass the synch check relay <u>AND</u> GO TO Step 5.2.17.	The operator notes that the green light turns on.	#		
5.2.16. E	PERFORM the following (with Steps 5.16.E.1 thru 5.2.16.E.3 being performed in rapid succession):		#		
5.2.16. E.1	WHEN 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> CLOSE 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	IMMEDIATELY SELECT Load Set: Setpoint <u>AND</u> ENTER 30%.	The operator immediately selects Load Set: Setpoint and enters 30%.	* #		

JPM: 2013 NRC S-6

Rev: 01

SYSTEM: Electrical

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

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	 IMMEDIATELY OBSERVE the following: Bypass Valves close as generator loads to 30% Load Set Generator phase current increases MW load and MVAR increases Synchroscope pointer steady at 12 o'clock position 	Operator observes listed parameters.	#		
5.2.16. E.4	ADJUST 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

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____ DATE: _____

SYSTEM: Electrical

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	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	*		
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> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 	N/A			

Rev: 01 JOB PERFORMANCE MEASURE DATE:	JPM:	2013 NRC S-6	OPERATOR TRAINING PROGRAM	NAME:
	Rev:	01	JOB PERFORMANCE MEASURE	DATE:

SYSTEM: Electrical

TASK:	Svnchronize	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 NF	RC S-6		
TASK: Synchronize ar	nd Load Main Turbine to the Grid		
QUESTION:			
			······
RESPONSE:			
RESULT:	SAT	UNSAT	
RESPONSE:			
RESULT :	SAT	UNSAT	

JPM NUMBER: 2013 NRC S-6

REV#: 01

I. INITIAL CONDITIONS:

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

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

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

EVENT FILE:

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

MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description

REMOTE SCHEDULE:

Initial	@Time	Event	Action	Description

OVERRIDE SCHEDULE:

Initial	@Time	Event	Action	Description
				· · · · · · · · · · · · · · · · · · ·

JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: 2013 NRC S-6

Rev #	Date	Description	Validation Required?
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

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.

NC.TQ-WB	.ZZ-0310(Z)
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			N	IC. I Q-WB.2	(Z-0310(Z)	
STATION:	OPERA JOB P Hope Creek	ATOR TRAINING ERFORMANCE	B PROGRAM MEASURE:			
SYSTEM:	Reactor Pro	tection System				
TASK:	Defeat RPS	Interlocks				
TASK NUMBER:	2001040501					
JPM NUMBER:	305H-JPM.	SB-012-04				
ALTERNATE PAT	ГН:	IMPOR	K/A NUMBER:	2950	37 EA1.01	
APPLICABILITY: EO X	ROX	STA		RO	SRO	
EVALUATION SE	TTING/METHOD	: Simulator/P	erform <u>OR</u> Control	Room Simu	ılate	
REFERENCES:	HC.OP-EO.ZZ-0	320, Rev. 2				
TOOLS, EQUIPM EOP-320 Impleme VALIDATED JPM	ENT AND PROCE entation Kit COMPLETION T	EDURES:	Minutes			
TIME PERIOD ID	ENTIFIED FOR TI	ME CRITICAL	STEPS: N	/A		
APPROVAL: BARGAININ REPRESEN	NG UNIT ITATIVE	CHAR WAR TRAINING SUI	PERVISOR GNEE	ESC OPERATIONS OR DES		
 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 CC	MPLETION TIME	i:	Minutes			
ACTUAL TIME C	RITICAL COMPLI	ETION:	Minutes			
JPM PERFORME	D BY:		GRADE:	SAT	UNSAT	
REASON, IF UNS	ATISFACTORY:					
EVALUATOR'S S	IGNATURE:			DATE:		
Nuclear Common		Page 1 (of 8		Rev. 1	

NC.TQ-WB.ZZ-0310(Z)

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

SYSTEM: Reactor Protection System

TASK: Defeat RPS Interlocks

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NC.TQ-WB.ZZ-0310(Z)

NAME: ______ DATE: _____

# *	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.		
			Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.		
	4.0 4.1 4.2	EQUIPMENT REQUIRED 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:	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. Examiner Cue: Supply operator with EOP-320 implementation kit.		
		1 flashlight 1 plastic bag for ARI fuses 4 banana plug jumpers			

NC.TQ-WB.ZZ-0310(Z)

JPM: 2013 NRC S-7

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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	ENSURE that Prerequisites have been satisfied IAW Section 2.2.	Operator ensures Prerequisites are satisfied.		
			Examiner Cue: If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.		
*		START TIME:			
	5.2.2	On H11-P609, front, Division 1, left test box, INSERT a jumper between test point C71A-K10A-2A (first	Operator installs jumper at H11-P609 between test points C71A-K10A-2A and C71A-K12E-2B.		
		column-first row, red jack) and test point C71A-K12E-2B (fourth column-second row, black jack).	Examiner Cue: <u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.		
*	5.2.3	On H11-P609, front, Division 3, left test box, INSERT a jumper between test point C71A-K10C-2A (third	Operator installs jumper at H11-P609 between test points C71A-K10C-2A and C71A-K12G-2B.		
		column-fourth row, red jack) and test point C71A-K12G-2B (fourth column-third row, black jack)	Examiner Cue: <u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.		

JPM: 2013 NRC S-7

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE NC.TQ-WB.ZZ-0310(Z)

NAME: ______ 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, INSERT 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. Examiner Cue: <u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.		
*	5.2.5	On H11-P611, front, Division 4, left test box, INSERT 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. Examiner Cue: <u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.		

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

NC.TQ-WB.ZZ-0310(Z)

OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

	NAME:		
	DATE:		
SYSTEM: Reactor Protection System			
TASK: 2013 NRC S-6 Defeat RPS Interlocks			
TASK NUMBER: 2001040501			
QUESTION:			
	······································		
RESPONSE:			
RESULT: SAT	- UNSAT		
QUESTION:			
RESPONSE:			
	·		
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: TASK NUMBER:	Vent to Control Containment Pressure With Suppression Pool Level Less Than 180 inches				
JPM NUMBER:	2013 NRC S-8	REV #: 1			
SAP BET:	NOH05JPGS05E				
ALTERNATE PATH:	X				
APPLICABILITY: EO					
DEVELOPED BY:	Instructor	DATE:			
REVIEWED BY:	Operations Representative	DATE:			
APPROVED BY:	Training Department	DATE:			

			<u>IQ-AA-10</u>	10-0303		
STATION:	Hope Creek					
JPM NUMBER:	2013 NRC S-8	REV:	1			
SYSTEM:	Containment Atmosphere Control					
TASK NUMBER:	2000950501					
TASK:	Vent to Control Containment Pressure Less Than 180 inches	With Supp	pression Poo	l Level		
ALTERNATE PATH:	X K/A NUI	MBER:	295024 E	A1.19		
	IMPORTANCE FA		3.3	3.4		
EO			RO	SRO		
EVALUATION SETT	ING/METHOD: Simulator/Perform					
REFERENCES: H	C.OP-EO.ZZ-0318(Q) Rev. 7					
TOOLS, EQUIPMEN	T AND PROCEDURES: None					
	ESTIMATED COMPLETION TIME:	23	Minutes			
TIME PERIOD IDE	NTIFIED 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:			
1						

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- -

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 <u>AND</u> 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

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OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Containment Atmosphere Control

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 obtains/locates procedure HC.OP-EO.ZZ-0318.	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, inform operator that all are satisfied.				
	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 JOB PERFORMANCE MEASURE

NAME: ______ 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	 VENT the containment via the Hard Torus Vent as follows: A. ENSURE that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure. 	Operator reviews Prerequisites and ensures Prerequisites complete.			
CUE	If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.				
5.1.1	B. <u>NOTIFY</u> the Emergency Duty Officer that containment venting via the Hard Torus Vent will be performed.	Operator notifies the CRS to notifiy the EDO that containment venting via the Hard Torus Vent will be performed.			
CUE	Acknowledge the communication to the EDO.				
5.1.1	C. In the Lower Relay Room, Elev 102' at panel 1YF404 (see Attachment 2), INSTALL F22 (6 amp fuse).	Operator directs the field operator to install fuse F22 at panel 1YF404.	* #		

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JPM: 2013 NRC S-8

01

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______

SYSTEM: Containment Atmosphere Control

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<u>WHEN</u> directed to install 1YF404 fuse F22, <u>THEN</u> TRIGGER ET-3 <u>AND</u> REPORT the fuse is installed.				
5.1.1	D. <u>DEPRESS</u> ISLN OVRD and <u>OPEN</u> 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. <u>ANNOUNCE</u> 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

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OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Containment Atmosphere Control

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 <u>OPEN</u> 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.	Examiner Note: 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

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OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Containment Atmosphere Control

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 <u>CLOSE</u> 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. REPEAT 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	 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	VENT 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.			

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OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

SYSTEM: Containment Atmosphere Control

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<u>IF</u> the Operator requests the status of the "angled piping downstream of 1-GS-V058", <u>THEN</u> INFORM the Operator the piping has NOT been rotated to align the vent path and the Reactor Building is NOT accessible.				-
5.1.3	VENT 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	<u>VENT</u> the containment via the Suppression Chamber 2" exhaust as follows:	Operator determines the Suppression Chamber 2" exhaust is the next most preferable path. Examiner Note : 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).			

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OPERATOR TRAINING PROGRAM

Rev: 01 JOB PERFORMANCE MEASURE

NAME: _____ DATE: _____

SYSTEM: Containment Atmosphere Control

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.4	A. <u>ENSURE</u> that all prerequisites have been satisfied in accordance with Section 2.0 of this procedure.	Operator reviews Prerequisites and ensures Prerequisites complete.			
CUE	If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.				
5.1.4	B. <u>NOTIFY</u> the Emergency Duty Officer that containment venting of the Suppression Chamber to the Reactor Building will be performed.	Operator notifies the CRS to notifiy the EDO that containment venting of the Suppression Chamber to the Reactor Building will be performed.			
CUE	Acknowledge the communication to the EDO.				
5.1.4	C. <u>DEPRESS</u> ISLN OVRD and OPEN 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 JOB PERFORMANCE MEASURE

NAME: ______ 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. <u>DEPRESS</u> ISLN OVRD and <u>OPEN</u> 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.			
		Examiner Note: 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. <u>ANNOUNCE</u> 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.	* #		

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JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

Rev: 01

SYSTEM: Containment Atmosphere Control

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 <u>DEPRESS</u> ISLN OVRD and <u>OPEN</u> GS-HV-4963 SUPP CHMBR N ₂ 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 <u>CLOSE</u> GS-HV-4963 SUPP CHMBR N ₂ 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 JOB PERFORMANCE MEASURE

NAME: ______ 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	IF the operator cannot see the pressure reduction on the 10C650E indicators, <u>THEN</u> inform the operator Drywell pressure reduction is observable on SPDS.	Examiner Note: 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	 <u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP time. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 				
N/A	TASK STANDARD:	Operator vents primary containment through alternate vent path.			

01 Rev:

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

	NA	ME:	
	DA	ATE:	
JPM Number: 2013 NI	RC S-8		
TASK: Vent to Contro	I Containment Pressure With Suppression	on Pool Level Les	s Than 180 inches
TASK NUMBER: 2000	950501		
QUESTION:			
RESPONSE:			
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	· · · · · · · · · · · · · · · · · · ·		
RESULT:	SAT	UNSAT	
QUESTION:			
	······································		
			/
RESPONSE:			
	· · · · · · · · · · · · · · · · · · ·		
RESULT:	SAT	UNSAT	
		L	
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 <u>AND</u> 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.
- 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.

Initial	
	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 AFTER 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)

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

EVENT FILE:

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

JOB PERFORMANCE MEASURE

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Initial	@Time	Event	Action	Description
	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	Downcomer break

MALFUNCTION SCHEDULE:

REMOTE SCHEDULE:

Initial	@Time	Event	Action	Description
None None		None	Insert remote RH23B to TAGGED	RH23 RHR Pump B
	None	None Insert remote RH20A to RH20 HV- RACK_OUT SPRAY		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		Insert remote EP38 to Emergency	EP38 EOP-319, Restoring Instrument Air in an Emergency

OVERRIDE SCHEDULE:

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

REVISION HISTORY

JPM NUMBER: 2013 NRC S-8

Rev #	Date	Description	Validation Required?

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC S-8

REV#: 01

Vent to Control Containment Pressure With Suppression Pool Level TASK: 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.
 8.	Critical steps meet the criteria for critical steps and are identified with an asterisk (*). Sequence 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.
 12.	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. 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

Signature Name Qual Date Signature Name Qual Date

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					
APPLICABILITY:	ROX STA SR	οΧ				

DEVELOPED BY:		DATE:	
	Instructor		
REVIEWED BY:		DATE:	
_	Operations Representative		
APPROVED BY:		DATE:	
_	Training Department		*****

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 ALTERNATE PATH: K/A NUMBER: 295031 A1.08 ALTERNATE PATH: K/A NUMBER: 295031 A1.08 APPLICABILITY: 295031 A1.08 3.8 EO RO X STA EO RO X STA EO RO X STA SRO EVALUATION SETTING/METHOD: Plant/Simulate REFERENCES: HC.OP-EO.ZZ-0310 Rev. 7 TOOLS, EQUIPMENT AND PROCEDURES: HC.OP-EO.ZZ-0310 ESTIMATED COMPLETION TIME: 20 Minutes TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes Minutes JPM PERFORMED BY:						IQ-AA-	106-0303
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:	STATION:	Hope Creek					
SYSTEM: Residual Heat Removal TASK NUMBER: 2000490504 TASK: Align Fire Water System For Alternate RPV Injection ALTERNATE PATH: K/A NUMBER: 295031 A1.08 ALTERNATE PATH: K/A NUMBER: 295031 A1.08 ALTERNATE PATH: K/A NUMBER: 295031 A1.08 ALTERNATE PATH: MPORTANCE FACTOR: 3.8 APPLICABILITY: 2050 MILLION 3.9 EO RO X 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. 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:	JPM NUMBER:	2013 NRC P-1			REV:	01	
TASK NUMBER: 2000490504 TASK: Align Fire Water System For Alternate RPV Injection ALTERNATE PATH: K/A NUMBER: 295031 A1.08 APPLICABILITY: BMPORTANCE FACTOR: 3.8 3.9 APPLICABILITY: RO X STA SRO X 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. 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. 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. 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. 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. 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. 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. JPM PERFORMED BY:	SYSTEM:	Residual Heat Re	emoval				
TASK: Align Fire Water System For Alternate RPV Injection ALTERNATE PATH: K/A NUMBER: 295031 A1.08 IMPORTANCE FACTOR: 3.8 3.9 APPLICABILITY: RO X EO RO X STA 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. 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:	TASK NUMBER:	2000490504					
ALTERNATE PATH:K/A NUMBER: 295031 A1.08 IMPORTANCE FACTOR: 3.8 3.9 RO X STA SRO X 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: N/A Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:	TASK:	Align Fire Water	System	For Alternate R	PV Injec	ction	
IMPORTANCE FACTOR: 3.8 3.9 RO RO SRO EO RO X STA SRO X 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:	ALTERNATE PATH:	[]		K/A NUMI	BER:	295031	A1.08
APPLICABILITY: RO SRO EO RO X STA STA SRO X 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: N/A Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:		L	IMPO	RTANCE FAC		3.8	3.9
EO RO X STA SRO X 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: Minutes TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: Minutes JPM PERFORMED BY: GRADE: SAT UNSAT ACTUAL COMPLETION TIME: Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:	APPLICABILITY:					RO	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: Minutes TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: Minutes JPM PERFORMED BY: GRADE: SAT UNSAT ACTUAL COMPLETION TIME: Minutes ACTUAL TIME CRITICAL COMPLETION TIME: Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:		RO X STA		SRO X		no	ente
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: N/A Minutes ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE:	EVALUATION SETTI	NG/METHOD: P	lant/Sim	ulate			
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: N/A Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:	REFERENCES: HO	C.OP-EO.ZZ-0310	Rev. 7				
ESTIMATED COMPLETION TIME: 20 Minutes TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes JPM PERFORMED BY:	TOOLS, EQUIPMENT EOP-310 equipment loc HC.OP-EO.ZZ-0310.	AND PROCEDUF ated in EOP locker c	RES: on E1.102	HC.OP-EO.ZZ-(2' Diesel Bldg. Ke	0310 ey(s) spe	cified in sec	tion 4.0 of
TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes JPM PERFORMED BY: GRADE: SAT UNSAT Minutes Minutes ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes REASON, IF JPM UNSATISFACTORY: DATE: DATE:		ESTIMATED C	COMPLE		20	Minutes	5
JPM PERFORMED BY: GRADE: SAT UNSAT ACTUAL COMPLETION TIME: Minutes ACTUAL TIME CRITICAL COMPLETION TIME: Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:	TIME PERIOD IDEI	NTIFIED FOR TIME	E CRITI	CAL STEPS:	N/A	Minutes	3
ACTUAL COMPLETION TIME: Minutes ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:	JPM PERFORMED B	Y:		GRADE	:: 🗌	SAT	
ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE: DATE:		ACTUAL C	COMPLE			Minutes	5
REASON, IF JPM UNSATISFACTORY: EVALUATOR'S SIGNATURE: DATE:	ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes						
EVALUATOR'S SIGNATURE: DATE:	REASON, IF JPM U	NSATISFACTORY	' :				
	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 JOB PERFORMANCE MEASURE

NAME: ______

Rev: 1

SYSTEM: Residual Heat Removal

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	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-EO.ZZ-0310			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<u>IF</u> excessive time is taken reviewing precautions and limitations, <u>THEN</u> INFORM 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 JOB PERFORMANCE MEASURE

NAME: _____ 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 or 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 1-5" 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 or 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. Examiner Note: After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location. 			
5.1.1	ENSURE all prerequisites of Section 2.1 are satisfied.	Operator ensures that all prerequisites have been satisfied.			

Rev: 1

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____ DATE:

Rev: 1

SYSTEM: Residual Heat Removal

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	<u>IF</u> excessive time is taken reviewing prerequisites, <u>THEN</u> INFORM operator that all are satisfied.	N/A			
5.1.2	CONNECT hose to the appropriate flange adaptor <u>AND</u> TIGHTEN .	Operator accesses the EOP locker and identifies the 1.5" fire hose and correct adapter.			
	 1.5" hose and adapter for fire hose station 	Examiner Note: Based on the Initiating Cue, Operator determines the 1.5" hose			
	 2.5" hose and adapter for yard fire hydrant or fire truck 	and adapter is the correct equipment. From this point on, actions will be simulated. <i>The installed white hose on</i> <i>the Fire Hose Station is</i> NOT <i>the</i> <i>correct hose for this task.</i>			
CUE	Once the operator identifies the correct equipment, INFORM 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 JOB PERFORMANCE MEASURE

NAME: _____

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	REMOVE fire hose fill connection blank flange on 1-BC-V426 (local, Diesel Building, Elev. 102', see Attachment 2) <u>AND</u> INSTALL 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.				

Rev: 1

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 1

JOB PERFORMANCE MEASURE

DATE:

SYSTEM: Residual Heat Removal

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	 CONNECT fire hose to one of the following sources of Fire Water: Fire Hose Station Yard Fire Hydrant Fire Truck 	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 JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 1

SYSTEM: Residual Heat Removal

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	 OPEN one of the following as applicable: Fire Hose Station Isolation Valve Fire Hydrant Line Valve (side) and Plug Valve (top) Fire Truck Valves 	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', OPEN 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 JOB PERFORMANCE MEASURE

NAME: _____ DATE: _____

Rev: 1

SYSTEM: Residual Heat Removal

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	OPEN 1-BC-V426, SSWS Sup to RHR Fire Hose Fill Conn Sup VIv (local, diesel truck bay, elevation 102 inside stairway door - see Attachment 2).	Operator opens 1-BC-V426.	*		Y N STAR
	Examiner Cue: The valve you indicated is open; flow noise can be heard past the valve.				
5.1.8	OPEN 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
CUE	Acknowledge messages from the operator and report that BC-HV-F075 has been opened.	·			

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 1

SYSTEM: Residual Heat Removal

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	 <u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 	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:	
IPM Number: 2013 NR	C P-1		
ASK: Align Fire Water	r System For Alternate RPV Injection	n	
ASK NUMBER: 20004	90504		
QUESTION:			
······································			
RESULT:	SAT	UNSAT	
OUESTION			
	······································		
RESPONSE:			
	······································		
RESULT:	SAT	UNSAT	

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

JPM NUMBER: 2013 NRC P-1

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)

REVISION HISTORY

JPM NUMBER: 2013 NRC P-1

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

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC P-1

REV#: 1

TASK: Align Fire Water System For Alternate RPV Injection

1. 2.	Task description and numb Knowledge and Abilities (K provided.	per, JPM descrip (/A) is identified,	tion and number are identified. and is \geq 3.0 (LOR) or \geq 2.5 (ILT) or justification	is		
3.	License level identified. (S	RO,RO,STA,NLO))			
4.	Performance location spec	ified (in-plant, co	ntrol room, simulator, or classroom).			
5.	5. Initial setup conditions are identified.					
6.	6. Initiating and terminating cues are properly identified.					
7. 8.	Task standards for successful completion are identified. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). Sequence Critical Steps are identified with a pound sign (#).					
9. 10.	 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.	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. 13.	procedural step. Statements describing imp operator are included (if re	ortant actions or quired.)	observations that should be made by the			
14.	Validation time is included					
15.	JPM is identified as Time (Critical Y/N and i	ncludes Critical Time (if required).			
VALIDATE	D BY:					
Qualificatio	on Level Required:	RO				
	Name	Qual	Signature	Date		

Signature

Date

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 Cree	k				
SYSTEM:	Emergency	/ Diesel Genera	ator			
TASK:	Manually E	mergency Star	t A Diesel Gener	ator From The	Remote Panel	
TASK NUMBER:	2640170404	4				
JPM NUMBER:	2013 NRC	P-2				
ALTERNATE PAT	гн: 🛄	IMPO	K/A NUMBI RTANCE FACTO	ER: <u>264</u> DR: <u>3.7</u>	000 A2.09	
APPLICABILITY: EO X	ROX	STA	SRO X	RO	SRO	
EVALUATION SE	TTING/METHO	D: Aux Bldg/S	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:						
BARGAININ REPRESEN	IG UNIT TATIVE	OPS TRAININ OR DES	G MANAGER SIGNEE	OPERATION OR DES	S DIRECTOR SIGNEE	
 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 S	IGNATURE:			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 (El. 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 JOB PERFORMANCE MEASURE

NC.TQ-WB.ZZ-0310(Z)
NAME: _____
DATE: _____

Rev: 01

SYSTEM: Emergency Diesel Generator

* #	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.		
			Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.		
			Examiner Note: It is not critical to initial the procedure step, nor complete Attachment 1 in this and subsequent steps.		
	4.0	EQUIPMENT REQUIRED 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	1 ENSURE that all prerequisites have been satisfied IAW Section 2.4 of this procedure.	Operator ensures that all prerequisites have been satisfied.		
			Examiner Cue: If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.		

JPM: 2013 NRC P-2

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Emergency Diesel Generator

* #	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: OBSERVE that READY FOR AUTO START is ON (Panel 1A(B,C,D)-C423 EI. 130').	Operator observes the READY FOR AUTO START is on. Examiner Cue: The light identified is illuminated. The operator then initials the appropriate procedure step.		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

SYSTEM: Emergency Diesel Generator

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.4.3	OBSERVE that Control is transferred to Remote Panels through one of the following: • PRESS REMOTE PB AND ENSURE (10C651E). REMOTE light is ON. <u>OR</u>	 Operator requests that the Control Room press the REMOTE push button for AG400. Examiner Cues: IF the operator requests the Control Room to press REMOTE, <u>THEN</u> respond as the Control Room you are <u>NOT</u> able to transfer the AG400 to Remote control. REMOTE push button for AG400 has been depressed and the REMOTE light is <u>NOT</u> on. IF the operator requests the status of the local indications <u>THEN</u> inform them: On the 423 panel the Main Control Room has Control light is illuminated and the Remote Engine Panel has Control light is extinguished. On the 422 panel, the Main Control lights are illuminated and the Remote Generator Panel has Control lights are extinguished. 		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

SYSTEM: Emergency Diesel Generator

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		OBTAIN key #51 – KIRK – Diesel Emg Takeover/Local Cont., from Work Control Center <u>AND PLACE EMERGENCY</u> TAKE-OVER Switch in EMERG position.	 Operator obtains key #51 from WCC, unlocks the AG400 EMERGENCY TAKE-OVER Switch, and places the AG400 EMERGENCY TAKE-OVER Switch in EMERG position The operator then initials the appropriate procedure step. Examiner Cues: The switch identified is in the stated position. IF the operator requests the status of the local indications <u>THEN</u> tell them: On the 423 panel the Main Control Room has Control light is extinguished and the Remote Emergency Takeover light is illuminated. On the 422 panel, the Main Control AND Emergency Takeover in Normal lights are extinguished. The Remote Emergency Takeover light is illuminated. 		evaluation

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Emergency Diesel Generator

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
* #	5.4.4	PLACE REMOTE ENGINE CONTROL in START	Operator places the AG400 REMOTE ENGINE CONTROL in START.		
		(Panel 1A(B,C,D)-C423 El. 130').	EXAMINER NOTE: The following cues are dependent upon correct step performance. Cue appropriately.		
			EXAMINER CUE: On panel 1AC423:		
			1. The Diesel Engine can be heard starting.		
			2. Engine Stopped indicator is extinguished		
			The operator then initials the appropriate procedure step.		
	5.4.5	• GENERATOR EREQUENCY	Operator observes: GENERATOR FREQUENCY indicates about 60 Hz.		
		indicates about 60 Hz.	Examiner Cue: The indicator identified indicates 60 Hz.		
			The operator then initials the appropriate procedure step.		
		 GENERATOR VOLTS indicates about 4160 Volts. 	GENERATOR VOLTS indicates about 4160 Volts.		
			Examiner Cue: The indicator identified indicates 4160 volts.		
			The operator then initials the appropriate procedure step.		

Rev: 01

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

SYSTEM: Emergency Diesel Generator

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.4.6	 OBSERVE the status of the following indicating lights (Panel 1A(B,C,D)-C423 El. 130'). JACKET WATER HEATER is OFF. 	Operator observes: JACKET WATER HEATER OFF light is illuminated and JACKET WATER HEATER ON light is extinguished. Examiner Cue: The JACKET WATER HEATER OFF light is illuminated and JACKET WATER HEATER ON light is extinguished.		
			The operator then initials the appropriate procedure step.		
		 LUBE OIL KEEPWARM HEATER is OFF. 	Operator observes: LUBE OIL KEEPWARM SYSTEM HEATER OFF light is illuminated and LUBE OIL KEEPWARM SYSTEM HEATER ON light is extinguished.		
			Examiner Cue: The LUBE OIL KEEPWARM SYSTEM HEATER OFF light is illuminated and LUBE OIL KEEPWARM SYSTEM HEATER ON light is extinguished.		
			The operator then initials the appropriate procedure step.		

JPM: 2013 NRC P-2

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: **Emergency Diesel Generator**

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		 JACKET WATER KEEPWARM PUMP is OFF. 	Operator observes: JACKET WATER KEEPWARM PUMP OFF light is illuminated and JACKET WATER KEEPWARM PUMP ON light is extinguished. Examiner Cue: JACKET WATER KEEPWARM PUMP OFF light is illuminated and JACKET WATER KEEPWARM PUMP ON light is extinguished.		
			The operator then initials the appropriate procedure step.		
		 GENERATOR SPACE HEATER is OFF. 	Operator observes: GENERATOR SPACE HEATER OFF light is illuminated and GENERATOR SPACE HEATER ON light is extinguished.		
			Examiner Cue: GENERATOR SPACE HEATER OFF light is illuminated and GENERATOR SPACE HEATER ON light is extinguished.		
			The operator then initials the appropriate procedure step.		

JPM: 2013 NRC P-2

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Emergency Diesel Generator

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		 DIESEL RUNNING – NOT LOADED is ON. 	DIESEL RUNNING - NOT LOADED is on.		
			Examiner Cue: The light identified is illuminated.		
			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'), OBSERVE that EDG BREAKER CLOSED is ON.	Examiner Cue: The light identified is extinguished.		
			Operator determines the step does NOT apply.		
			The operator then initials the appropriate procedure step.		
	5.4.8	REFER to Attachment 5, Start/Failure Criteria for determining the validity of the start or failure to start, <u>THEN</u> LOG results in Control Room log(s).	Operator refers to Attachment 5.		

JPM: 2013 NRC P-2

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

DATE:

SYSTEM:

Emergency Diesel Generator

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

* #	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. Examiner Cue: Repeat back request from Operator. Inform Operator the Start Attempt was a Failure and has been logged in the Control Room log. The operator then initials the appropriate procedure step.		
	5.4.9	IF loading of the EDG is required locally, PROCEED 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"

OPERATOR TRAINING PROGRAM OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

	NAME:		
		DATE:	
(STEM: Emergency D)iesel Generator		
ASK: 2013 NRC P-2 M	anually Emergency Start A D	iesel Generator From The Remote Pa	anel
ASK NUMBER: 26401	70404		
QUESTION:			
		· · · · · · · · · · · · · · · · · · ·	
RESPONSE:	·		
			·····
RESULT	SAT	UNSAT	
QUESTION:			
	4		
RESPONSE:		····	
		······································	
	[]		
RESULT:	SAT	UNSAT	
uclear Common	Pao	Page 12 of 13	

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.
STATION:	Hope Creek		
SYSTEM:	Control Rod Drive Hydraulics		
TASK:	Manually Vent SCRAM Air Head	der	
TASK NUMBER:	2000430504		
JPM NUMBER:	2013 NRC P-3	REV #: 1	
SAP BET:	NOH05JPBF04E		
ALTERNATE PATH:			
APPLICABILITY: EO X RO X STA SRO X			

DEVELOPED BY:		DATE:	
	Instructor		
REVIEWED BY:		DATE:	
_	Operations Representative		
APPROVED BY:		DATE:	
	Training Department		

STATION: Hope Creek
JPM NUMBER: 2013 NRC P-3 REV: 1
SYSTEM: Control Rod Drive Hydraulics
TASK NUMBER: 2000430504
TASK: Manually Vent SCRAM Air Header
ALTERNATE PATH: K/A NUMBER: 295037 A1.05
IMPORTANCE FACTOR: 39 40
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

Manually Vent SCRAM Air Header TASK:

TASK NUMBER: 2000430504

INITIAL CONDITIONS:

- 1.
- The plant has experienced an ATWS The Scram Air Header has failed to vent. 2.
- 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 JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 1

SYSTEM: Control Rod Drive Hydraulics

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	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-EO.ZZ-0306.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<u>IF</u> excessive time is taken reviewing precautions and limitations, <u>THEN</u> INFORM operator that all are satisfied.	N/A			
CUE	<u>IF</u> excessive time is taken reviewing prerequisites, <u>THEN</u> INFORM operator that all are satisfied.	N/A			

JPM: 2013 NRC P-3

Rev: 1

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______

SYSTEM: Control Rod Drive Hydraulics

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	EQUIPMENT REQUIRED 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. 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.			
	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

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 1

SYSTEM: Control Rod Drive Hydraulics

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	UNLOCK <u>AND</u> CLOSE 1BFV-073 //B/U SCRAM PILOT VLVS AIR SUP VLV//.	Operator simulates removing the lock from 1BFV-073.	* #		Y N STAR
CUE	The locking device has been removed.	N/A			
		Operator simulates closing 1BFV-073 by turning valve handwheel clockwise until coming to a hard stop.	*		Y N STAR
CUE	The valve you indicated is in the position stated.	N/A			
5.1.2	UNCAP <u>AND</u> OPEN 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
CUE	The cap device has been removed.	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

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	OBSERVE 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	WHEN operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete" . STOP TIME :	N/A			
	STOP TIME:				

OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

PM Number: 2013 NRC	P-3		
ASK: Manually Vent SC	RAM Air Header		
ASK NUMBER: 200043	0504		
QUESTION:			
RESPONSE:			
RESULT:	SAT	UNSAT	
RESPONSE:			
RESULT:	SAT	UNSAT	

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

JPM NUMBER: 2013 NRC P-3	REV#: 1
I. INITIAL CONDITIONS:	

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:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
				NONE		
				NONE		
				NONE		
				NONE		
				NONE		
				NONE		

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
				NONE		

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
				NONE		
				NONE		
				NONE		
				NONE		

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:

Qual

Signature

Signature

Date

Date



Qual

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.

STATION:	Hope Creek	
SYSTEM:	Radiation Control	
TASK:	Monitor, Log and Control the Dry Chamber Purge System Valves	well and Suppression
TASK NUMBER:	2991660301	
JPM NUMBER:	305H-JPM.ZZ001	REV #: 01
SAP BET:	NOH05JPZZ01E	
ALTERNATE PATH:		
APPLICABILITY: EO	RO X STA SR	

DEVELOPED BY:	J. Berglund	DATE:	11/16/08
	Instructor	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	
REVIEWED BY:	mit.	DATE:	12/12/8
	Operations Representative	novali mili kie kaa	A set of the
APPROVED BY:	Marke Carl	DATE:	12/12/8
	Training Department		

				TQ-AA-1	06-0303
STATION:	Hope Creek				
JPM NUMBER:	RO A-1		REV:	01	
SYSTEM:	Radiation Contro	ol			
TASK NUMBER:	2991660301				
TASK:	Monitor, Log and System Valves	d Control	the Drywell and Suppr	ession Chan	nber Purge
	I: []		K/A NUMBER:	2.3.1	11
		IMPC	RTANCE FACTOR:	3.8	4.3
APPLICABILITY:	RO X STA		SROX	RO	SRO
EVALUATION SET	TING/METHOD: C	Classroor	m/Perform		
REFERENCES:	OP-HC-103-105 Rev	/ 0			
TOOLS, EQUIPME	NT AND PROCEDU	RES:			
	ESTIMATED	COMPLE	ETION TIME:20	Minutes	
TIME PERIOD ID	ENTIFIED FOR TIM	E CRITI	CAL STEPS:N/A	Minutes	
JPM PERFORMED	BY:		GRADE:	SAT	UNSAT
	ACTUAL	COMPLE	ETION TIME:	Minutes	
ACTUA		COMPLE	ETION TIME: N/A	Minutes	
REASON, IF JPM	UNSATISFACTORY	(:		,	
EVALUATOR'	S SIGNATURE:			DATE:	

NAME:

DATE:

SYSTEM: Radiation Control

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

TASK NUMBER: 2991660301

INITIAL CONDITIONS:

- 1. A plant shutdown is in progress for a Refueling outage.
- 2. The Reactor is shutdown.
- At 0200 today Purging of the Primary Containment commenced.
 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 JOB PERFORMANCE MEASURE

NAME: _____ DATE: _____

Rev: 01

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	PROVIDE 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	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 4.4.2.			
4.4	Calculating Valve Open Time	N/A			
4.4.1	In Section C of Form 2, ENTER the time the valve(s) listed in Section 2.2 or the line(s) listed in Section 2.4 or 2.5 are opened in Condition 1, 2, or 3 or 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, ENTER the time the valve(s) listed in Section 2.2 or the line(s) listed in Section 2.4 or 2.5 are closed in Condition 1, 2, or 3 or when Condition 4 is entered from Condition 2 or 3 with the valve(s)/line(s) open. [T/S 1.34]	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 JOB PERFORMANCE MEASURE

NAME: _____

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	COMPUTE 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, or mode change to Condition 4 has occurred, or the day has ended TOTAL 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.			
CUE	SIGN and DATE the appropriate spaces and RETURN to the operator.	N/A			

JPM: 2013 NRC RO A-1

01

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Radiation Control

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

4.4.7	On Form 1, ENTER 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	On Form 1, the operator enters the		
	entering this information should initial in the appropriate space.	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.		
CUE	WHEN operator informs you the task is complete, OR the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".	N/A		

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

		NAME:	
		DATE:	
JPM Number: 2013 NF	RC RO A-1		
TASK: Monitor, Log a	nd Control the Drywell and Sup	pression Chamber Purge S	System Valves
TASK NUMBER: 2991	660301		
	- 		
			· · · ·
RESPONSE:			
RESULT:	SAT	UNSAT	
QUESTION:			
RESPONSE:			
RESULT:	SAT	UNSAT	

TRAINING ONLY Examiner's Copy <u>FORM 1</u>

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

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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	PO	13.0	25.0	O. North	ON
3/3/08	22.5	24	H. Davidson	SD	5.5	28.0	A. West	SD
6/25/08	18.5	24	G. Washington	TRW	3.5	22.0	G. Clooney	TRW
8/30/08	22.0	24	O.W. Holmes	R	24.00	46.0	V. Price	R
8/31/08	46.0	24	B. Lee	E	2.5	48.5	V. Bono	E
Today	35.5	24	A. Jones	JS	7.0	42.5	SM/CRS Name	INIT
		-						

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

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

Examiner's Copy

CONTAINMENT		INCOTING		VALVE DEDMIT
CONTAINMENTP	REPURGE CLEANUP	, INERTING,	OR PRESSURE CONTROL	. VALVE PERMII

	SECTION A				
Date: Today	NOTE: This permit is valid only until 240	0 of this date			
Gaseous Effluent Permit #:	020020001				
a ann an a	SECTION B	- <u>, , , , , , , , , , , , , , , , , , ,</u>			
HOURS VALVES	LINES OPEN PREVIOUS YEAR (Note	ə 1)			
Calculate Total Hours Open During Previous Year (Note 1)	(1) Max. allowed for 365 days (Admin Limit)	452 hrs			
DATE NUMBER OF HOURS	(2) Total previous year (NOTE 1)	(-) 35.5			
3/3/08 5.5	Hours available this date (line 1 minus line 2 OR 24, whichever is less)	(=) 24			
6/25/08 3.5 8/30/08 24.0	Hours authorized this date (max 24 hours)	24			
8/31/08 2.5	NCO performing calculation	Date/Time			
	John Smith	Today/0100			
	SM/CRS verification and authorization	Date/Time			
	Andrew Jones	Today/0130			
VAL	<u>SECTION C</u> VE/LINE OPEN TIME (Note 2)				
START TIME	STOP TIME	TOTAL HOURS			
Time at which valve/line was open or Condition 1, 2, or 3 was entered with valve/line open	Time at which valve/line was closed or Total n Condition 4 or 5 was entered with valve/line opened	umber of hours valve/line d this cycle (NOTE 3)			
0200	0836	7.0			
Total numbe	er of hours valves/line open this permit:				
NCO performing calculations	Operator Signature Date/Time	Date/Time			
SM/CRS Closing permit	Examiner 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.)

INITIAL CONDITIONS:

- 1. A plant shutdown is in progress for a Refueling outage.
- 2. The Reactor is shutdown.
- At 0200 today Purging of the Primary Containment commenced.
 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 <u>FORM 1</u>

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

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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	PO	13.0	25.0	O. North	ОЛ
3/3/08	22.5	24	H. Davidson	SD	5.5	28.0	A. West	SD
6/25/08	18.5	24	G. Washington	TRW	3.5	22.0	G. Clooney	TRW
8/30/08	22.0	24	O.W. Holmes	R	24.00	46.0	V. Price	R
8/31/08	46.0	24	B. Lee	E	2.5	48.5	V. Bono	E
Today	35.5	24	A. Jones	JS				
								-

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

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



CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT

SECTION A				
Date: Today	NOTE: This permit is valid only until 240	00 of this date		
Gaseous Effluent Permit #:	020020001			
HOURS VALVES	SECTION B S/LINES OPEN PREVIOUS YEAR (Not	e 1)		
Calculate Total Hours Open During Previous Year (Note 1)	(1) Max. allowed for 365 days (Admin Limit)	452 hrs		
	(2) Total previous year (NOTE 1)	(-) 35.5		
3/3/08 5.5	Hours available this date (line 1 minus line 2 OR 24, whichever is less)	(=) 24		
6/25/08 3.5 8/30/08 24.0	Hours authorized this date (max 24 hours)	24		
8/31/08 2.5	NCO performing calculation	Date/Time		
	John Smith	Today/0100		
	SM/CRS verification and authorization	Date/Time		
	Andrew Jones	Today/0130		
VAL	<u>SECTION C</u> VE/LINE OPEN TIME (Note 2)			
START TIME	STOP TIME	TOTAL HOURS		
Time at which valve/line was open or Condition 1, 2, or 3 was entered with valve/line open	Time at which valve/line was closed or Total Condition 4 or 5 was entered with valve/line opened	number of hours valve/line ad this cycle (NOTE 3)		
0200				
NCO performing calculations	Date/Tim	e		
SM/CRS Closing permit	Date/Tim	e		

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 RO A-1

Rev #	Date	Description	Validation Required?

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.
- 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:	Reactor Recirculation					
TASK:	Perform a Reactor Recirculation Pump Quick Restart					
TASK NUMBER:	2020160101					
JPM NUMBER:	2013 NRC RO A-2	EV #: 01				
SAP BET:	NOH05JPZZ11E					
ALTERNATE PATH:						
APPLICABILITY:	RO X STA SRO					
DEVELOPED BY:	Instructor	DATE:				
REVIEWED BY:	Operations Representative	DATE:				
APPROVED BY:	Training Department	DATE:				

			TQ-AA-106-0303	
STATION:	Hope Creek			
JPM NUMBER:	2013 NRC RO A-2	REV:	01	
SYSTEM:	Reactor Recirculation			
TASK NUMBER:	2020160101			
TASK:	Perform a Reactor Reci	culation Pump Quick Re	estart	
ALTERNATE PATH	1: []	K/A NUMBER:	2.2.40	
	IMP(DRTANCE FACTOR:	3.4 4.7	
APPLICABILITY:	RO X STA	SRO	RO SRO	
EVALUATION SETTING/METHOD: Simulator/Perform				
REFERENCES:	HC.OP-AB.RPV-0003 Rev 2	3		
TOOLS, EQUIPME Steam Tables/Calci	NT AND PROCEDURES: ulator ESTIMATED COMPL	ETION TIME: 8	Minutes	
TIME PERIOD ID	ENTIFIED FOR TIME CRIT	ICAL STEPS: N/A	Minutes	
JPM PERFORMED	BY:	GRADE:	SAT UNSAT	
	ACTUAL COMPL		Minutes	
ACTUA	AL TIME CRITICAL COMPL	ETION 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

01

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____ 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 <u>AFTER</u> 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 JOB PERFORMANCE MEASURE

NAME: _____

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 = 532 degF (Steam Tables)	*		
	· · · · · · · · · · · · · · · · · · ·	Operator records value in space provided on Attachment 1.			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

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 467 degF from CRIDS point A2942.	*		

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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 65 degF <u>+</u> 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

01

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

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 510 degF 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

01

Rev:

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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. Examiner Note: Actual value is 22 degF <u>+</u> 1F.	*		
2.4	Time Readings taken:	Operator records current time in space provided.	*		
	HC.OP-AB-RP	/-0003			
G.12	ENSURE Differential Temperature requirements are met by completing Attachment 2. [T/S 4.4.1.4]	Operator initials step G.12.	*		
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> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 	N/A			

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

		NAME:	
		DATE:	
JPM Number: 2013 NR	C RO A-2		
TASK: Perform a Reac	tor Recirculation Pump Quic	k Restart	
TASK NUMBER: 20201	60101		
RESPONSE:		<u></u>	
RESULT:	SAT	UNSAT	
QUESTION:			
	· · · · ·		
RESPONSE:			
			······································
RESULT:	SAT	UNSAT	

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
	MARKUP a copy of HC.OP-AB.RPV-0003 up to and including step G.11.
	ENSURE Mode Switch key is removed.
	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:

Initial	@Time	Event	Action	Description

REMOTE SCHEDULE:

Initial	@Time	Event	Action	Description	

OVERRIDE SCHEDULE:

Initial	@Time	Event	Action	Description
	-,			
				· · · · · · · · · · · · · · · · · · ·

REVISION HISTORY

JPM NUMBER: 2013 NRC RO A-2

Rev #	Date	Description	Validation Required?

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 Cor	ntrol			
TASK:	Identify Core S	pray Leak	Isolations and Ver	nt & Drain Pa	aths
TASK NUMBER:					
JPM NUMBER:	2013 NRC RO	A-3			
ALTERNATE PATH:			K/A NUMBE	R:	2.2.41
APPLICABILITY:	ROX ST		SRO	R: <u>3.5</u> RO	3.9 SRO
EVALUATION SETTI	NG/METHOD:	Classroon	n/Perform		
REFERENCES: M	-52-1 Sh. 1 Core	Spray P&I	D		
TOOLS, EQUIPMEN M-52-1 Sh. 1 Core Sp Electrical Core Spray VALIDATED JPM CO TIME PERIOD IDENT	TAND PROCEDU oray P& ID P&ID for F001A / MPLETION TIMI	URES: AND CSS E: 20 E CRITICA	'A' Pump Motor Minutes L STEPS:	N/A	
APPROVAL:					
BARGAINING L REPRESENTAT	NIT T	TRAINING S OR DES	UPERVISOR SIGNEE	OPERATIO OR DI	NS MANAGER ESIGNEE
CAUTION: No p with 1. F 2. C 3. V	olant equipment out the following ermission from Direct oversight l ranting permiss erification of the	shall be o g: the SM or by a qualit ion based e "as left"	perated during th Unit CRS; fied individual (de on plant condition by a q	ne performa etermined b ons). ualified ind	ince of a JPM by the individual ividual.
ACTUAL JPM COMF	LETION TIME:		Minutes		
ACTUAL TIME CRIT	CAL COMPLETI	ON:	Minutes		
JPM PERFORMED E	Y:		GRADE:	SAT	
REASON, IF UNSAT	SFACTORY:				
EVALUATOR'S SIGN	IATURE:		······	DATE	::

NC.TQ-WB.ZZ-0310(Z)

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 <u>isolate</u>, <u>vent</u>, and <u>drain</u> 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 JOB PERFORMANCE MEASURE

NC.TQ-WB.ZZ-0310(Z)

DA**T**E:

Rev: 1

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)
		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:			
*		 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: HV-F001A SHUT V-009 SHUT V-027 SHUT V-037 OPEN (check valve bypass) V-045 SHUT V-049 SHUT V-107 SHUT PSV F-032A GAGGED OPEN V-9974 SHUT V-9996 SHUT V-9998 SHUT V-9999 SHUT		

JPM: 2013 NRC RO A-3

Rev: 1

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NC.TQ-WB.ZZ-0310(Z)

NAME: ______ 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)
		 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: MCC 10B212, breaker 012 (HV-F001A) 10A401, breaker 05 ('A' CSS Pump Motor) 		
*		 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: • V-041 OPEN		
*		 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: • V-108		
		5. STOP TIME:			

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

NC.TQ-WB.ZZ-0310(Z)

OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

		NA	ME:	
		C	DATE <u>:</u>	_
SYSTEM: Equipme	nt Control			
TASK: Identify Cor	e Spray Leak Isolations and	d Vent & Drain Pa	aths	
TASK NUMBER:				
QUESTION:				_
				_
				_
				_
				-
RESPONSE:				-
				_
				_
RESULT:	- SAT		- UNSAT	
QUESTION:				
				-
· · · · · · · · ·				-
RESPONSE:			· · · · · · · · · · · · · · · · ·	-
				_
				_
RESULT:	_ SAT			
	- 341			

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 <u>isolate</u>, <u>vent</u>, and <u>drain</u> the pump using controlled station mechanical drawings.

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 RE	V #: 01						
SAP BET:	NOH05JPZZ19E							
ALTERNATE PATH:								
APPLICABILITY: EO	ROX STA SRO							
DEVELOPED BY:	Instructor	DATE:						
		DATE.						
	Operations Representative							
APPROVED BY:		DATE:						
	Training Department							

		······································	TQ-AA-106-0303				
STATION:	Hope Creek						
JPM NUMBER:	2013 NRC RO A-4	REV:	01				
SYSTEM:	Administrative						
TASK NUMBER:	4000270401						
TASK:	Respond To An Abnorm Noble Gas Release Rele	al Release Of Gaseous ease Rates	Radioactivity - Calculate				
ALTERNATE PAT	гн:	K/A NUMBER:	295938 EA1.01				
	IMPC	DRTANCE FACTOR:	3.9 4.2				
	RO X STA	SRO	RO SRO				
EVALUATION SE	TTING/METHOD: Simulator	r/Perform					
REFERENCES:	HC.OP-AB.CONT-0004 Rev HC.OP-DL.ZZ-0026 Rev. 12	. 5 8					
TOOLS, EQUIPM	ENT AND PROCEDURES:	Calculator					
	ESTIMATED COMPL	ETION TIME: 10	Minutes				
TIME PERIOD I	DENTIFIED FOR TIME CRITI	CAL STEPS: N/A	Minutes				
JPM PERFORME	D BY:	GRADE:	SAT UNSAT				
	ACTUAL COMPL		Minutes				
ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes							
REASON, IF JPM UNSATISFACTORY:							
EVALUATOR	R'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.

2013 NRC RO A-4 **OPERATOR TRAINING PROGRAM** JPM: JOB PERFORMANCE MEASURE 01

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)
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.			

Rev:

JPM: 2013 NRC RO A-4

01

Rev:

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.	ELEME	ENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	IF the effluent (µCi/sec) of CALCULATE the Noble	channel on the RM-11 is Gas release rate for tha	NOT operating for a specific plant vent, <u>THEN</u> It vent using the following:			
	*		472 =			
	μCi/cc (n.g.)	Plant Vent Exh Flow in cfm	µCi/sec (n.g.)			
X	Where: µCi/sec (n.g.) - µCi/cc (n.g.) - 472 -	the calculated release The concentration of channel will be highlig plant vent The conversion facto	e rate from the specified plant vent (Noble Gas) Noble Gas obtained from the RM-11 (the operable ghted in GREEN) <u>OR</u> from an actual sample of the r in units of cc/sec/cfm			
			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. 3.65E-7 uCi/cc .	*		
			Operator transfers the Plant Vent Exh Flow value from Attachment 3u of HC.OP-DL.ZZ-0026 (provided). 49613.9 CFM	*		

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 = 3.65E-7 µCi/cc * 49613.9 CFM * 472 = <u>8.547 µCi/sec</u> (+ 0.5)	*		
CUE	 WHEN operator informs you the task is complete, OR the JPM has been terminated for other reasons, THEN RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 	N/A			

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

	NAME:
	DATE:
JPM Number: 2013	NRC RO A-4
TASK: Respond To Release Rates	An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release
TASK NUMBER: 40	00270401
	· · · · · · · · · · · · · · · · · · ·
RESPONSE:	
RESULT:	SAT UNSAT
QUESTION:	
·	
RESPONSE:	
RESULT:	SAT UNSAT
	Page 7 of 13

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.

HC.OP-DL.ZZ-0026(Q)

JOB PERFORMANCE MEASURE ATTACHMENT 3u Radioactive Gaseous Effluent Monitoring (North Plant Vent) T/S 6.8.4.g ODCM TABLE 3.3.7.11-1 ACTION 122

Page 1 of 1

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 <u>not</u> exceeded per administrative requirements <u>and</u> 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 Location Aux/Turb/Radwaste	DATE:	Tod	ay's Date	9						
					ENTER T	IME OF EAC	H READIN	G BELOW		
PARAMETER		NORM	NOW							COMMENTS
SOLID RADWASTE EXH FAN	A318	17,000	17358						1	
SOLID RADWASTE EXH FAN	B318	17,000	17163							
CHEM LAB EXH	A307	7,500	7528					real and the second sec		
CHEM LAB EXH	B307	7,500	7519				Telles (T Secol			
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		
	INITIAL	IZE the simulator to 100% power, MOL.
	INSER	T Malfunctions:
	•	RM9590 @ 0.0E+00
	•	RM9591 @ 0.0E+00
	•	RM9602 @ 3.65E-7
	•	RM9603 @ 0.0E+00
	•	CC03 SPDS CRT Failure
	Acknov	vledge alarms.
	Put Sin	nulator 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:							
Initial	@Time	Event	Action	Description			
	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:

Initial	@Time	Event	Action	Description

OVERRIDE SCHEDULE:

Initial	@Time	Event	Action	Description
			· · · · · · · · · · · · · · · · · · ·	

REVISION HISTORY

JPM NUMBER: 2013 NRC RO A-4

Rev #	Date	Description	Validation Required?
-			

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

- **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:		DATE:	
	Instructor		
REVIEWED BY:		DATE:	
	Operations Representative		
APPROVED BY:		DATE:	
_	Training Department		

			TQ-AA-106-0303
STATION:	Hope Creek		
JPM NUMBER:	2013 NRC SRO A-1	REV:	01
SYSTEM:	Radiation Control		
TASK NUMBER:	2990420302		
TASK:	Verify Compliance with	Gaseous Release Permi	t
ALTERNATE PATH		K/A NUMBER:	2.3.6
APPLICABILITY:	RO STA		RO SRO
EVALUATION SET	FING/METHOD: Classroc	om/Perform	
REFERENCES: 0	DP-HC-103-105 Rev 1		
TOOLS, EQUIPMEN Prepared OP-HC-10	NT AND PROCEDURES: 3-105 Form 2, Calculator ESTIMATED COMPL	ETION TIME: 9	Minutes
TIME PERIOD IDE	ENTIFIED FOR TIME CRIT	ICAL STEPS:N/A	Minutes
JPM PERFORMED	BY:	GRADE:	SAT UNSAT
	ACTUAL COMPL		Minutes
ACTUA	L TIME CRITICAL COMPL	ETION TIME: N/A	Minutes
REASON, IF JPM U	JNSATISFACTORY:		
EVALUATOR'S	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 <u>AND</u> 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

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______

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	 PROVIDE the operator the initiating cue <u>AND</u>: □ Prepared OP-HC-103-105 log Forms 1 & 2 (Attached) □ Copy of OP-HC-103-105 	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue: START TIME:	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 JOB PERFORMANCE MEASURE

NAME: ______ 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 OPCON 4 time IAW step 4.4.2.	×		
CUE	<u>IF</u> the operator requests the NCO to make changes, <u>THEN</u> DIRECT the operator to make any required changes.	N/A			

Rev: 01

JPM: 2013 NRC SRO A-1

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

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. Examiner Note: Refer to Examiners Copy for appropriate corrections.	*		
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> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME: 	N/A			

Rev: 01

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:	
	<u> </u>
RESPONSE:	
RESULT: SAT	UNSAT
	· · · · · · · · · · · · · · · · · · ·
RESPONSE:	
RESULI: SAI	

FORM 2

CONTAINMENT PREPURGE CLEANUP,	INERTING,	OR PRESSURE CONTRO	OL VALVE PERMIT

SECTION A								
Date: Today <u>NOTE</u> : This permit is valid only until 2400 of this date								
Gaseous Effluent Permit #:	020020001	<u> </u>						
SECTION BALLA								
HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)								
Calculate Total Hours Open During Previous Year (Note 1)	(1) Max - allowed for 365 days (Arel	nin Limit)	452 hrs					
NUMBER OF HOURS	(2) Paranchevious year (NOTE)	<i>.</i>	(-) 35.5					
<u>DATE</u> 4/3/11 55	Hours available this date line 1 mi DR 24, whichever is less)	nus line 2	(=) 24					
<u>6/25/11</u> <u>8/30/11</u> <u>3.5</u>	Hours automotion this date (max 2	4 hours)	24					
8/31/11 2.5 NCO performing calculation		on	Date/Time					
	John Smith		Today/0100					
	SM/CRS verification and autho	rization	Date/Time					
	Andrew Jones		Today/0130					
VAL	<u>SECTION C</u> VE/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	STOP TIME Time at which valve/line was closed or Condition 4 or 5 was entered with valve/line opened	Total nu opened	TOTAL HOURS umber of hours valve/line this cycle (NOTE 3)					
0200 0436			2.5 3.0					
<u>0800</u> <u>1548</u> <u>1252</u> <u>8.0</u> <u>5.0</u>								
Total numb	er of hours valves/line open this perr	 nit:	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.)

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 <u>AND</u> Close Out today's Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit in accordance with OP-HC-103-105.

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

TRAINING ONLY OPERATOR COPY FORM 1

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	SD	5.5	28.0	S. West	SD
6/25/11	18.5	24	G. Williams	TRW	3.5	22.0	G. Cloon	TRW
8/30/11	22.0	24	W. Holmes	R	24.00	46.0	P. Price	R
8/31/11	46.0	24	B. Lee	E	2.5	48.5	V. Bonovan	E
Today	35.5	24	A. Jones	JS				

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

FORM 2

CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT						
	SECTION A					
Date: Today	NOTE: This permit is valid only ur	ntil 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)	(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 OR 24, whichever is less)	line 2 <u>(=) 24</u>				
6/25/11 3.5	Hours authorized this date (max 24 he	ours)24				
8/30/11 24.0 8/31/11 2.5	NCO performing calculation	Date/Time				
	John Smith	Today/0100				
	SM/CRS verification and authoriza	tion Date/Time				
	Andrew Jones	Today/0130				
VAL	<u>SECTION C</u> VE/LINE OPEN TIME (Note 2)					
START TIME	STOP TIME	TOTAL HOURS				
Time at which valve/line was open or Condition 1, 2, or 3 was entered with valve/line	Time at which valve/line was closed or Condition 4 or 5 was entered with valve/line opened	Total number of hours valve/line opened this cycle				
0200	0436	(NOTE 3) 2.5				
0800	1548	8.0				
Total number	er of hours valves/line open this permit:	10.5				
NCO performing calculations	Andy Granatelli Da	te/Time <u>Today/Now</u>				
SM/CRS Closing permit	Da	te/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.)

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

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

 Name
 Qual
 Signature
 Date

STATION:	Hope Creek		
SYSTEM:	Conduct of Operations		
TASK:	Initiate and Review Sys	tem Lineup Sheets	
TASK NUMBER:	2991110302		
JPM NUMBER:	2013 NRC SRO A-2		
ALTERNATE PATH:		K/A NUMBER	2.1.29
APPLICABILITY:		SRO X	RO SRO
EVALUATION SETTI	NG/METHOD: Classro	om/Perform	
REFERENCES: H	C.OP-IO.ZZ-0003 Rev 71		
TOOLS, EQUIPMENT NSSSS Elementary P VALIDATED JPM CC	TAND PROCEDURES: Print B21-1090-0062, P&IC IMPLETION TIME:	0 M-041, Computer wi Minutes	ith access to SAP
TIME PERIOD IDENT	TIFIED FOR TIME CRITIC		J/A
APPROVAL:			
N/A			
BARGAINING U REPRESENTAT	INIT TRAINING IVE OR D	SUPERVISOR DESIGNEE	OPERATIONS MANAGER OR DESIGNEE
CAUTION: No p with 1. P 2. D g 3. V	plant equipment shall be out the following: Permission from the SM Direct oversight by a qua ranting permission bas Verification of the "as lef	e operated during the or Unit CRS; alified individual (det ed on plant condition ft" condition by a qua	e performance of a JPM termined by the individual ns). alified individual.
ACTUAL JPM COMP	PLETION TIME:	<u>Minutes</u> Minutes	
 JPM PERFORMED B	SY:	GRADE:	
REASON, IF UNSATI	ISFACTORY:		

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.
- 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 <u>NOT</u> 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

Rev: 01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ 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	GENERATE a Components In Off-Normal Position Report USING WCM Reports/Off Normal Report function.	Examiner Cue: PROVIDE the Operator the attached Components In Off-Normal Position Report for review.	N/A	N/A
*	IV.1.2.4	START TIME: POSITION 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. Examiner Note: 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: Cond	luct of Operations		
TASK: Initiate ar	าd Review System Lineup Sh	eets	
TASK NUMBER:	2013 NRC SRO A-3		
QUESTION:			
		·	
RESPONSE: _			
		· · · · · · · · · · · · · · · · · · ·	
RESULT:	- SAT	- UNSAT	
QUESTION:			
			· · · · · · · · · · · · · · · · · · ·
RESPONSE: _			
RESULT:	- SAT	- UNSAT	

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 <u>NOT</u> reflect the current status of the actual plant. Do <u>NOT</u> perform <u>ANY</u> changes to actual plant data.

JOB PERFORMANCE MEASURE

User: NUJ8B Plant: NNUC Date: 10/26/2005 Time: 09:10:58

Off Normal Report Mode_01

Technical Object	Description	Current	Normal	Location	Lo	c. Description	Status	ChangeDat	Remark
								e	
H0KD -0-KD-V455	AUX BLDG TRUCK WASH DRAIN	0	X	001020AP	HC	YARD-EAST OF POWER BLOCK	OffNormal	08/14/2005 F	REF NOTIF# 20248261
H0KD -0-KD-V456	AUX BLD TRK W/DWN EXTER HYDRT	k	b	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	k	b	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	но	YARD-OIL & WASTEWTR TRT AREA	OffNormal	09/08/2005	AS PER CHEMISTRY
H0ZZ -00B508-01	SPARE	x	0	28102DWPHS	HC	DEEPWELL PUMPHOUSE	OffNormai	10/01/2003	CLOSED TO SUPPORT TEMPORARY LIGHTING
H0ZZ -00B508-03	SPARE	X	p	28102DWPHS	HC	DEEPWELL PUMPHOUSE	OffNormal	01/04/2004	GANGED TO BKRS 1 & 5
H0ZZ -00B508-05	SPARE	x	þ	28102DWPHS	HC	CONTRACTOR C	OffNormal	01/04/2004	GANGED TO BREAKERS 1 & 3
H0ZZ -00L327-08	SPARE	×	þ	031023305B	HC	UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-09	SPARE	X	þ	031023305B	HC	UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -00L327-10	SPARE	k i	þ	031023305B	HC	UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-12	SPARE	×	р	031023305B	HC	UNRESTRICTED MACHINE SHOP B	OffNormal	06/22/2005 F	PER ORDER # 60055303
H0ZZ -00L327-23	SPARE	X	о	031023305B	нс	UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -0BJ595-22	SPARE	X	ρ	071047000B	HC	CHC/SALEM COMMON GDHSE EL.104	OffNormal	07/29/2005	SUPPLYING UNKNOWN LOAD NOT# 20247903
H0ZZ -0BJ595-23	SPARE	X	О	071047000B	HC	CHC/SALEM COMMON GDHSE EL.104'	OffNormal	07/29/2005	SUPPLYING UNKNOWN LOAD NOT# 20247903
H0ZZ -52-595071	SPARE	X	р	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	но	; FUTURE CONTROLLED STOR AREA D	OffNormal	05/25/2005	20240203 NO THREADS TO PUT CAP ON
H1QA -10L221-08	LTG,TORUS PLATF EL 77	р	X	041024303C	нс	C MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1QA -10L221-09	RECEPT, TORUS PLATF EL 77	þ	X	041024303C	н	C MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1QA -10L221-10	LTG,TORUS PLATF EL 77	р	X	041024303C	HC	C MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1AB –1ABV501	INST PDT-N086C&DISO VLV PEN J25	р	р	040774227A	но	CTORUS AREA A, AZIMUTH 0-45	OffNormal	10/20/2005	CLOSED FOR I&C
H1AB –1ABV504	INST PDT-N086C&DISO VLV PEN J25	р	р	040774227A	но	CTORUS AREA A, AZIMUTH 0-45	OffNormal	10/20/2005	CLOSED FOR I&C
H1ZZ -10L221-11	RECEPT, TORUS PLATF EL 77	р	X	041024303C	но	C MCC AREA C	OffNormal	12/18/2003	TORUS PROPER CLOSEOUT-RP PROCEDURE
H1ZZ -1CD318-08	SPARE	X	р	031243432	но	AUXILIARY PANEL ROOM	OffNormal	02/09/2005	SEE NOTIFICATION 20223509
H1ZZ -1CD318-23	SPARE	X	р	031243432	но	CAUXILIARY PANEL ROOM	OffNormal	02/09/2005	SEE NOTIFICATION 20223509
H1ZZ -52-272024	SPARE	RE	р	040774218B	HC	C MCC AREA B	OffNormal	11/20/2004	Breaker removed
H1ZZ -52-313035	SPARE	р	Ř	031553602B	HC	H&V EQUIPMENT AREA B	OffNormal	11/19/2004	SPARE
H1ZZ -52-313053	SPARE	0	X	031553602B	HC	H&V EQUIPMENT AREA B	OffNormal	11/19/2004	SPARE
H1ZZ -52-313054	SPARE	<u>о</u>	X	031553602B	HC	H&V EQUIPMENT AREA B	OffNormal	11/19/2004	SPARE

STATION:	Hope Cree	k					
SYSTEM:	Equipment Control						
TASK:	Identify Co	re Spray Leak	Isolations and Vent	& Drain Pa	aths		
TASK NUMBER:							
JPM NUMBER:	2013 NRC	SRO A-3					
ALTERNATE PATH:			K/A NUMBER:		2.2.41		
APPLICABILITY:	RO 📃		SRO X	3.5 RO	<u>3.9</u>		
EVALUATION SETTI	NG/METHO	D: Classroor	m/Perform				
REFERENCES: M	-52-1 Sh. 1 C	ore Spray P&	ID				
TOOLS, EQUIPMENT M-52-1 Sh. 1 Core Sp Electrical Core Spray Technical Specificatio VALIDATED JPM CO TIME PERIOD IDENT	TAND PROC Tray P& ID P&ID for F00 ns MPLETION TIFIED FOR 1	EDURES: 01A AND CSS TIME:20 TIME CRITICA	'A' Pump Motor Minutes AL STEPS: N	/A			
ALL NOVAL.							
BARGAINING U REPRESENTAT	NIT IVE	TRAINING S OR DE	SUPERVISOR SIGNEE	OPERATIO OR DI	NS MANAGER ESIGNEE		
BARGAINING U REPRESENTAT CAUTION: No p with 1. P 2. D g 3. V	NIT IVE out the follo ermission fr irect oversig ranting perm erification o	TRAINING S OR DE OR DE wing: rom the SM o ght by a qual nission base of the "as left"	SUPERVISOR SIGNEE operated during the r Unit CRS; ified individual (dete d on plant condition ' condition by a qua	operatio OR Di performa ermined k is). ilified ind	NS MANAGER ESIGNEE ance of a JPM by the individual ividual.		
BARGAINING U REPRESENTAT	NIT IVE Jant equipm out the follo ermission fr irect oversig ranting perm erification o	TRAINING S OR DE OR DE wing: rom the SM o ght by a qual nission base of the "as left"	SUPERVISOR SIGNEE operated during the r Unit CRS; ified individual (dete d on plant condition ' condition by a qua	OPERATIO OR DI performa ermined k is). ilified ind	NS MANAGER ESIGNEE ance of a JPM by the individual ividual.		
BARGAINING U REPRESENTAT	NIT IVE out the follo ermission fr irect oversig ranting perm erification o	TRAINING S OR DE OR DE or the SM o ght by a qual nission based of the "as left"	SUPERVISOR SIGNEE operated during the r Unit CRS; ified individual (dete d on plant condition ' condition by a qua <u>Minutes</u> <u>Minutes</u>	operatio OR Di performa ermined k is). ilified ind	NS MANAGER ESIGNEE ance of a JPM by the individual ividual.		
BARGAINING U REPRESENTAT	NIT IVE IVE olant equipm out the follo ermission fr irect oversig ranting perm erification o LETION TIM CAL COMPL	TRAINING S OR DE OR DE wing: rom the SM o ght by a qual nission base of the "as left"	SUPERVISOR SIGNEE operated during the r Unit CRS; ified individual (dete d on plant condition ' condition by a qua <u>Minutes</u> <u>Minutes</u>	OPERATIO OR DI performa ermined k is). Ilified ind	NS MANAGER ESIGNEE Ince of a JPM by the individual ividual.		
BARGAINING U REPRESENTAT	NIT IVE lant equipm out the follo ermission fr irect oversig ranting perm erification o LETION TIM CAL COMPL	TRAINING S OR DE OR DE or the SM o ght by a qual nission base of the "as left"	SUPERVISOR SIGNEE operated during the r Unit CRS; ified individual (dete d on plant condition ' condition by a qua <u>Minutes</u> <u>Minutes</u>	OPERATIO OR DI performa ermined k is). ilified ind	NS MANAGER ESIGNEE ance of a JPM by the individual ividual.		

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 <u>isolate</u>, <u>vent</u>, and <u>drain</u> the pump using controlled station mechanical drawings.
- Identify the most limiting Tech Spec condition (if any) <u>AFTER</u> 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 JOB PERFORMANCE MEASURE

NC.TQ-WB.ZZ-0310(Z)

DATE: _____

Rev: 1

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)
		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:			
*		 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: HV-F001A SHUT V-009 SHUT V-027 SHUT V-037 OPEN (check valve bypass) V-045 SHUT V-049 SHUT V-107 SHUT ?? PSV F-032A SHUT ?? V-9974 SHUT V-9975 SHUT V-9996 SHUT V-9998 SHUT V-9999 SHUT 		

JPM: 2013 NRC SRO A-3

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NC.TQ-WB.ZZ-0310(Z)

DA**T**E: _____

Rev: 1

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: MCC 10B212, breaker 012 (HV-F001A) 10A401, breaker 05 ('A' CSS Pump Motor) 		
*		 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: V-041 OPEN 		
*		 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: • V-108		
		 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: 3.5.1.a.1 Restore within 7 days of be in Hot S/D within 12hrs and Cold S/D within 24hrs 		
		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: Equipr	oment Control	
TASK: Identify C	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) <u>AFTER</u> the leak has been isolated.

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

01

Χ

JPM NUMBER: 2013 NRC SRO A-4 REV #:

SAP BET: NOH05JPZZ36E

ALTERNATE PATH:	

APPLICABILITY:			
EO	ROX	STA	SRO

DEVELOPED BY:		DATE:	
	Instructor		
REVIEWED BY:		DATE:	
	Operations Representative		
APPROVED BY:		DATE:	
	Training Department		

					TQ-AA-	106-0303		
STATION:	Hope Cree	ek						
JPM NUMBER:	2013 NRC	SRO A-4	R	EV:	01			
SYSTEM:	Equipmen	t Control						
TASK NUMBER:	29900101	01						
TASK:	Perform th Operator (Cooling To	e Watchstandi Determine Liqu ower Blowdown	ng Duties of the Nu iid Radwaste Radia Weir Flow)	clear ation I	Control R Monitoring	oom 9 System		
ALTERNATE PATH:			K/A NUMBER	:	2.2	.23		
	<u></u>	IMPO	RTANCE FACTOR	R:	3.1	4.6		
APPLICABILITY: EO	x0 🔀	STA	SRO X		RO	SRO		
EVALUATION SETTIN	NG/METHO	D: Classroon	n/Perform					
REFERENCES: HC	.op-dl.zz	-0026 Rev 128						
TOOLS, EQUIPMENT Blank HC.OP-DL.ZZ-0	AND PRO 026 ESTIMA	CEDURES:	TION TIME: 1	0	Minutes	3		
TIME PERIOD IDEN	ITIFIED FO	R TIME CRITIC	CAL STEPS: N	/A	Minutes	3		
JPM PERFORMED B	Y:		GRADE:	s		UNSAT		
	ACT	UAL COMPLE	TION TIME:		Minutes	5		
ACTUAL	TIME CRIT	ICAL COMPLE		I/A	Minutes	6		
REASON, IF JPM UN	REASON, IF JPM UNSATISFACTORY:							
EVALUATOR'S	SIGNATUR	E:			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 JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

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)
CUE	 PROVIDE the operator the initiating cue <u>AND</u>: A blank copy of HC.OP-DL.ZZ-0026. 	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue: START TIME:	N/A			
	HC.OP-DL.ZZ-0026 Attachment 1a	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 JOB PERFORMANCE MEASURE

NAME: ______ 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.			
	Examiner Note: Refer to steps below and Examiner Copy of Attachment 3Y for Standards associated with this step.				

Rev: 01

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____ 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			

Rev: 01

JPM: 2013 NRC SRO A-4

01

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

SYSTEM: Equipment Control

Rev:

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 CRIDS A2440 /A2441. (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 CRIDS A2440/ A2441 . (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 JOB PERFORMANCE MEASURE

NAME: ______ 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 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.	Operator determines Evaporative Losses from * Footnote at bottom of page for 3 Circ Water Pump operation as 12,500 gpm.			

Rev: 01

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: _____

DA**T**E: _____

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			
	Examiner Note: 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.			

Rev: 01

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______

Rev: 01

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)
	DAY	Operator logs DAY reading of F/I or INOP on ATTACHMENT 1a for ITEM 47.			
	Examiner Note: 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.			

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> RECORD the STOP TIME.		
	REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:	N/A	

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

	NAME:
	DATE:
JPM Number: 2013 NR	C SRO A-4
TASK: Perform the Wa Radwaste Radiation M	tchstanding Duties of the Nuclear Control Room Operator (Determine Liquid onitoring System Cooling Tower Blowdown Weir Flow)
TASK NUMBER: 29900	10101
RESPONSE:	
RESULT:	SAT UNSAT
	· ·
RESPONSE:	
· · · · · · · · · · · · · · · · · · ·	
RESULT:	SAT UNSAT
	Page 12 of 15

JOB PERFORMANCE MEASURE

HC.OP-DL.ZZ-0026(Q)

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ATTACHMENT 1a Surveillance Log - Control Room

Operational Condition



SUMMARY DOES NOT PROVIDE AN ADEQUATE VALUE. [70037325] TO OBTAIN VALUES 000 OR 002, PRESS MON PE, KEY IN 006 OR 002, THEN ITEM PB. 33

35. TO OBTAIN VALUES 022, 029, OR 073, PRESS MON PB, KEY IN 022, 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 ISO/RAD PRO INVESTIGATE OPERABILITY.
- 41. TO OBTAIN VALUE 009, PRESS LIQ 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 SSWS PUMPS ARE IN-SERVICE, AND, THE RM-111/S AVAILABLE, RECORD THE LOWEST OF THE LAST 12 (HOURLY) AVERAGES FOR 9AX327 (CTB FLOW) AS FOLLOWS: FROM THE TOP LEVEL MENU THAT CAN BE ARRIVED AT BY DEPRESSING THE TESC" 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 I PIDS (COMMA DELIMITED):" ENTER "TR604861-4". 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. 1700265061

46. IF INSTRUMENT IS INOP, USE ATTACHMENT BY TO ESTIMATE WEIR FLOW. THIS IS REQUIRED REGARDLESS OF WHETHER A RADIOACTIVE L'QUID RELEASE IS IN PROGRESS.

47. REFER TO HC.OP-SO.SP-0001(Q), RADIATION MONITORING SYSTEM OPERATION, FOR NOTES ON OPERABILITY.

Hope Creek

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HC.OP-DL.ZZ-0026(Q)

ATTACHMENT 3y

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

With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, then effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump performance curves (VTD 322848) should be used if using Method 3. [70042554]

Readings are taken regardless of whether a Liquid Release is in progress.

DATE TODAY Readings are taken every 3 hours to ensure that the 4 hour Tech Spec Action limit is NOT exceeded per administrative requirements.

Any one of the following Methods may be used to satisfy the requirements of Action 112.

			NTER TIME	OF EACH F	READING	N THE T-= 0	, T + 3 HRS,	T + 6 HRS.	, BLOCK	S
METHOD 1 DIRECT READING OF WEIR FLOW		T = 0	T + 3 HRS	T + 6 HRS	T+9HRS	T + 12 HRS	T + 15 HR\$	T + 18 HRS	T+21 HRS	T + 24 HRS
(USE ANY ONE OF THE FOLLOWING)	TIME									
A) - CRIDS POINT A9327 (CTB BLOWDOWN DISCH FLOW)										
B) - RM-11, 9RX599 (PROCESS FLOW N)										
C) - 10C604 PANEL, LIQUID R/W 0SP-RI4861 (CTB FLOW P.B.)		•								

METHOD 2 C	ALCULATED WEIR FLOW								
TIME	SSW LOOP A FLOW #	+	SSW LOOP B FLOW #	=	TOTAL SSW FLOW	-	EVAPORATIVE LOSSES *	=	TOTAL WEIR FLOW
Now	13560	+	21345	=	34905	•	12500	=	22405
		+		=		-		=	
		+		=		-		\Box	
		+		=		-		VL	
		+		=					
		+		=		17	VOUPL	\square	
		+		=		\Box		\Box (
		+		=		H		=	
METHOD 3 E	STIMATED WEIR FLOW (VTD 3	22848	SHOULD BE USED FOR PU	PA	For the trunger of the	ORT	Ed MA 17 2554		
DATE/TIME	A & C SSW PUMP FLOW	+	B&DSSW PI	F	TA FL AT		ORATIVE LOSSES *	=	TOTAL WEIR FLOW
		+		F		5.	\sim	=	
		∇		Π		-		=	
				$\Lambda \Gamma$		-		=	
		(+)				•		=	
		+	AT CLIM	=		-		=	
		V		=		-		=	
		-I-		=				=	
REFE	RENCE PRINT 10855-M15-181-	FOF	EVAPORATIVE LOSS ESTIMA	TES.	USE 16,700 GPM FOR DEFAU	LT VAI	UE(MIN, DILUTION FLOW), FO	R EVA	PORATIVE LOSS ES

REFERENCE PRINT 10855-M15-151-1 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, <u>OR</u> 12,600 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/8 OR FR-2218-1/2 OR CRIDS A2440/A2441, (BISSW LOOP FLOW (FIT-2218B) IS OBTAINED LOCALLY AT PANAMETRICS MONITOR, FLOW VALUE IS THE AVERAGE VOLUMETRIC FLOW RATE WHICH IS DISPLAYED AS TAVE VOLUMETRIC GALIMINT ON THE MONITOR DISPLAY.

Hope Creek

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.
- 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.

REVISION HISTORY

JPM NUMBER: 2013 NRC SRO A-4

Rev #	Date	Description	Validation Required?

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC SRO A-4

REV#: 01

Perform the Watchstanding Duties of the Nuclear Control RoomTASK: 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

STATION:	Hope Creek						
SYSTEM:	Administrative Duties/Reporting Requirements						
TASK: TASK NUMBER:	ASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition 2000500302/2000020505						
JPM NUMBER:	2013 NRC SRO A-5 RE	V #:	01				
SAP BET:	NOH05JPCL05E						
ALTERNATE PATH:							
APPLICABILITY: EO	RO STA X SRO	X					
DEVELOPED BY:	Instructor	DATE					
REVIEWED BY:	Operations Representative	DATE	:				
APPROVED BY:	Training Department	DATE	:				

			TQ-AA-106-0303		
STATION:	Hope Creek				
JPM NUMBER:	2013 NRC SRP A-5				
SYSTEM:	Administrative Duties/Re	porting Requirements			
TASK NUMBER:	2000500302/200002050	5			
TASK:	Utilize The ECG To Dete Reportability Of An Even	rmine The Emergency t And/Or Plant Conditio	Classification And/Or n		
ALTERNATE PATH		K/A NUMBER:	2.4.38		
		RTANCE FACTOR:	2.2 4.0		
APPLICABILITY:	RO STA X		RO SRO		
EVALUATION SETT	ING/METHOD: Simulator	/Perform or In Plant/Sir	nulate		
REFERENCES: Hope Creek Event Classification Guide, TOC Rev 0					
TOOLS, EQUIPMEN	IT AND PROCEDURES:				
	ESTIMATED COMPLE	ETION TIME:13	Minutes		
TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: 15/13 Minutes					
JPM PERFORMED BY: GRADE: SAT UNSAT					
	ACTUAL COMPLE		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 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)
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:	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.			

Rev: 01
JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: ______ DATE: _____

Rev: 01

JOB PERFORMANCE MEASURE

SYSTEM: Administrative Duties/Reporting Requirements

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 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	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			

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JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

Rev: 01

JOB PERFORMANCE MEASURE

NAME: ______ DATE: ______

SYSTEM: Administrative Duties/Reporting Requirements

STEP NO.		E	LEMENT		(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.5.d	For eac IDENT DETEF accord the Fist in EAL 1).	ch thresh IFY its po RMINE th ance with sion Proo Technica	hold that is exce bint value and the classification the instruction duct Barrier Tab al Bases, Attach	eded, level in s on ble (or nment	N/A			
	lf 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	AET	ANY loss or ANY potential loss of either Fuel Clad or RCS	2				
	6-11	STEAREA BMERCENCY	Loss or potential loss of ANY two barriers	3				
	12,13	(BNFFRL BMFRCBNCY	Loss of ANY two barriers ANDLoss or potential loss of the third barrier	4				

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: ______ DATE: _____

Rev: 01

JOB PERFORMANCE MEASURE

SYSTEM: Administrative Duties/Reporting Requirements

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

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Rev: 01

JOB PERFORMANCE MEASURE

DATE:

SYSTEM: Administrative Duties/Reporting Requirements

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	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. 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., \geq 15 minutes).	Operator reviews the EALs in section S, and determines that EAL # SS1.1 is the highest emergency action level met or exceeded (SITE AREA EMERGENCY).			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM JOB PERFORMANCE MEASURE

NAME: ______ DATE: _____

Rev: 01

SYSTEM: Administrative Duties/Reporting Requirements

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 seperately 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.	Examiner Note: 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. Examiner Note: 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 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)
CUE	IF the Operator requests the STA/IA to independently verify the EAL Classification, <u>THEN</u> INFORM the Operator the STA/IA is not available.	N/A			
ECG Section 8.4.9	 IDENTIFY and IMPLEMENT the referenced ECG form based on the Emergency Classification Level. Unusual Event Implement EP-HC-111-F1 Alert Implement EP-HC-111-F2 Site Area Emergency Implement EP-HC-111-F3 General Emergency Implement EP-HC-111-F4 Unusual Event (Common Site) Implement EP-HC-111-F24 	Operator identifies and implements EP- HC-111-F3 Attachment 3 Site Area Emergency.			
ECG Att. 3	I. <u>EMERGENCY COORDINATOR</u> (EC) LOG SHEET				
ECG Att. 3. A	CLASSIFICATION				
ECG Att. 3 1.	CALL communicators to the Control Room.	Operator calls communicators to the Control Room.			

Rev: 01

JPM: 2013 NRC SRO A-5

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JOB PERFORMANCE MEASURE

DATE:

SYSTEM: Administrative Duties/Reporting Requirements

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); STA or designee performs Independent Verification for SM SM or designee performs Independent Verification for EDO EDO or designee performs Independent Verification for EDO 	IF time permits, <u>THEN</u> Operator requests STA/IA verification of classification. Examiner Note: 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 JOB PERFORMANCE MEASURE

NAME: _____

Rev: 01

DATE: _____

SYSTEM: Administrative Duties/Reporting Requirements

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	IF the Operator requests the STA/IA to independently verify the EAL Classification, <u>THEN</u> INFORM the Operator the STA/IA is not available.	N/A			
ECG Att. 3 4.	While classification verification is in progress and if time allows, COMMENCE filling out the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment).	Operator commences filling out ICMF.			
ECG Att. 3 5.	After classification verification and before 15 minute EAL assessment clock expires, DECLARE a SITE AREA EMERGENCY at Hope Creek. 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. Examiners Note: ENTER 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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 3 B.	NOTIFICATIONS				
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. Examiner Note: <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. Examiners Note: 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 JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

Rev: 01

SYSTEM: Administrative Duties/Reporting Requirements

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.			
CUE	<u>IF</u> the Operator requests a Peer Check, <u>THEN</u> INFORM 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 ECG Attachment 6.	Operator provides the ICMF to CM1 and directs implementation of Att.6.	*		
CUE	LOG the time the ICMF is provided to CM1. LOG TIME: Role-play as CM1 and repeat back the direction as given.	Examiners Note: The difference between the "DECLARED AT" TIME and this LOG TIME is the second critical time (13 min.)			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

Rev: 01

JOB PERFORMANCE MEASURE

NAME: _____ DATE:

SYSTEM: Administrative Duties/Reporting Requirements

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 ECG Attachment 8 for a SITE AREA EMERGENCY.	Operator directs CM2 to implement Att. 8 for a SITE AREA EMERGENCY.	*		
CUE	ROLE-PLAY as CM2 and REPEAT BACK 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> RECORD the STOP time.				
	REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete" .				
N/A	TASK STANDARD:	Operator declares a Site Area Emergency IAW ECG SS1.1 , and makes notifications within identified Critical Times.			

JOB PERFORMANCE MEASURE OPERATOR TRAINING PROGRAM EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

JPM Number: 2013 NR	C SRO A-5
TASK: Utilize The ECG And/Or Plant Condition	To Determine The Emergency Classification And/Or Reportability Of An Event
TASK NUMBER: 20005	00302/2000020505
	· · · · · · · · · · · · · · · · · · ·
RESULT:	SAT UNSAT
OUESTION	
RESPONSE:	
RESULT:	SAT UNSAT
	Page 17 of 21

JOB PERFORMANCE MEASURE

TQ-AA-106-0303

		ECG ATT 3 Pg. 2 of 2 INITIAL CONTACT MESSAGE FORM
I.	THIS	S IS Not Required , COMMUNICATOR IN THE CONTROL ROOM (NAME) ITSC EOF
	AI I	HE HOPE CREEK NUCLEAR GENERATING STATION.
II.	Ø	THIS IS NOTIFICATION OF A SITE AREA EMERGENCY WHICH WAS
		DECLARED AT Todays Time ON Todays Date (TIME - 24 HOUR CLOCK) (DATE)
		EAL #(s) SS1.1
		DESCRIPTION OF EVENT:Loss of Power to All Vital Buses
 III.		
	R N	<u>NOTE</u> : adiological Release is defined as: Plant Effluent > Tech Spec Limit of 1.20E+04 μCi/sec oble Gas or 1.70E+01 μCi/sec I-131.
	X	NO RADIOLOGICAL RELEASE IS IN PROGRESS.
		THERE <u>IS</u> A RADIOLOGICAL RELEASE IN PROGRESS.
IV.	Ø	33 FT. LEVEL WIND DIRECTION (From): 332 (From MET Computer /SPDS) (DEGREES) (MPH)
	Ø	<u>NO</u> PROTECTIVE ACTIONS ARE RECOMMENDED AT THIS TIME
		Initials

EC Initials (Approval to Transmit ICMF)

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 Valida Requi	

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

Task description and number, JPM description and number are identified. 1. Knowledge and Abilities (K/A) is identified, and is \geq 3.0 (LOR) or \geq 2.5 (ILT) or justification is 2. provided. 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 are included (if required.) 13. 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

Date

Name

Qual

Signature

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
	X INITIAL LICENSE
	OTHER
REVISION SUMMARY:	

1.

PREPARED BY:

	Senior Simulator Instructor	DATE
APPROVED BY:		
	Nuclear Operations Training Supervisor –	DATE
	Hope Creek	
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		
	INITIA	LIZE the simulator to 100% power.
	C/T RC	CIC 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
	ENSU	RE 'B' and 'C' RACS pumps are in service.
	PREP I	OR TRAINING (i.e., RM11 set points, procedures, bezel covers)
Initial	Descript	ion
	PLAC	E red bezel covers on the following RCIC controls:

- HV-F007
- HV-F008
- HV-F076
- HV-F045
- HV-F025
 - HV-F026

INITIAL 10-6 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: COMMAND: PURPOSE:	<pre>rrvib(1) >= 11 // 'A' Recirc Pump Radial Vibration Triggers INBD Seal Failure when vibrations reach Alert Level</pre>
	8	EVENT ACTION: COMMAND: PURPOSE:	<pre>rrvib(1) >= 16 // 'A' Recirc Pump Radial Vibration Triggers pump seizure when vibrations reach Danger Level</pre>
	9	EVENT ACTION: COMMAND: PURPOSE:	<pre>zcrprun <= 0.0 // Mode Switch NOT in RUN Triggers Feedwater Line Break and LOCA on scram.</pre>
	10	EVENT ACTION: COMMAND: PURPOSE:	ad:k40b(2) >= 1.0 // SRV F013B 'B' Channel solenoid energized Triggers blowing of fuses when valve opened to ED.
	11	EVENT ACTION: COMMAND: PURPOSE:	<pre>ad:k40d(2) >= 1.0 // SRV F013B 'D' Channel solenoid energized Triggers blowing of fuses when valve opened to ED.</pre>
	12	EVENT ACTION: COMMAND: PURPOSE:	<pre>rr:52(1) <= 0.0 && rr:52(2) <= 0.0 // No Recirc Pumps running Inserts Power Oscillations when both recirc pumps are tripped.</pre>
	13	EVENT ACTION: COMMAND: PURPOSE:	<pre>rrprv <= 815 // Reactor Pressure <800# Fails bypass valves shut to prevent anticipating ED and depressurizing to condenser.</pre>
	14	EVENT ACTION: COMMAND: PURPOSE:	rhf27(1) >= 100 & rh_bkr(2) // 'A' RHR in Chamber Spray with 'B' RHR run Trips AP202 RHR pump when placed in Chamber Spray if BP202 is still running
	15	EVENT ACTION: COMMAND: PURPOSE:	rhf27(2) >= 100 & rh_bkr(1) // 'B' RHR in Chamber Spray with 'A' RHR run Trips BP202 RHR pump when placed in Chamber Spray if AP202 is still running
	16	EVENT ACTION: COMMAND: PURPOSE:	rhf21(1) >= 500 & rh_bkr(2) // 'A' RHR in Drywell Spray with 'B' RHR run Trips AP202 RHR pump when placed in Drywell Spray if BP202 is still running
	17	EVENT ACTION: COMMAND: PURPOSE:	rhf21(2) >= 500 & rh_bkr(1) >= 1.0 // 'B' RHR in Drywell Spray with 'A' RHR run Trips BP202 RHR pump when placed in Drywell Spray if AP202 is still running

			a la control de la control Talenda de la control de la Talenda de la control de la			
Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RC02 RCIC Auto Start Failure			NONE		
	AD01 ADS Failure to Auto-Initiate			NONE		
	ED04 Loss of 10A120 Bus			ET-3		
	RR26A2 'A' Recirc Pump High Vibration		12:00	ET-4	3	15
	RR05A 'A' Recirc Pump INBD Seal Failure		2:00	ET-7	0%	100%
	RR11A 'A' Recirc Pump Trip			ET-8		
	CR02B Power Oscillations APRMs		1:00	ET-12	0%	30%
	FW32 Feedwater Line Break Inside Containment			ET-9		100%
	RR31A2 'A' Recirc Loop Large Break LOCA		30:00	ET-9	0%	2%
	RR31B2 'B' Recirc Loop Large Break LOCA		15:00	ET-9	0%	2%
	FW26A 'A' RFPT Trip	5 sec		ET-9		
	FW26B 'B' RFPT Trip	5 sec		ET-9		
	FW26C 'C' RFPT Trip	5 sec		ET-9		
	TC01-10 All Bypass Valves Failed Shut			ET-13		
	CD09A 'A' CRD FCV Failure	90 sec		ET-6		75%
	CD09B 'B' CRD FCV Failure			ET-6		0%

MALFUNCTION SUMMARY:

REMOTE/FIELD FUNCTION SUMMARY:

Final Val RACK CLOSE RACK CLOSE
RACK CLOSE RACK CLOSE
RACK CLOSE
RACK CLOSE
STOP
NORM
OPEN
100%
ON

Insert malfunction QQ21 to S	HORT			
AD01B-B PSV-F013B 'B' Char	nnel Fuse	 	ET-10	 REMOVE
AD01B-D PSV-F013B 'D' Cha	nnel Fuse	 	ET-11	 REMOVE

I/O OVERRIDE SUMMARY:

-			N 21 1	···· · · · · · ·		
Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	9S9 A LO RCIC HV-F045 OVLD/PWR FAIL			NONE		ON
	9S10 A DI RCIC HV-F045 OPEN Pb			NONE		OFF
	9S10 B LO RCIC HV-F045 CLOSED light			NONE		OFF
	9S8 A DI RCIC HV-F025 OPEN Pb			NONE		OFF
	9DS26 B LO RCIC HV-F025 CLOSED light			NONE		OFF
	9S16 A DI RCIC HV-F026 OPEN Pb			NONE		OFF
	9DS27 B LO RCIC HV-F026 CLOSED light			NONE		OFF
	9S45 A DI RCIC Manual Initiation Pb			NONE		OFF
	4A1 F DI HV-F032A CLOSE Pb			NONE		OFF
	1A175 E DI HD-9414B OPEN PB			ET-1		OFF
	1A175 F DI 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					

Event / Instructor Activity	Expected Plant/Student Response	Comments
Swapping RACS pumps: Crew places AP209 RACS pump in service and secures BP209 RACS pump after assuming the watch.	CRS directs PO to place AP209 RACS pump in service and secure BP209 RACS pump.	
IF dispatched to AP209, THEN REPOR T the AP209 RACS pump is ready for a start.	 PO dispatches RBEO to perform pre-start checks and locally observe start of AP209 RACS pump IAW HC.OP-AP.ZZ-0109 (motherhood procedure). 	
AFTER AP209 is in service, THEN REPORT AP209 is running SAT. Monitor Items: • Normalized AP209 speed cwnra209	 PO starts AP209 and secures BP209 IAW SO.ED-0001 Section 5.3. 	HPI USED: STAR PEER CHECK FLAGGING OP BARRIERS
Loss of RBVS: After the Crew swaps RACS pumps, OR at the discretion of the Lead Examiner, TRIGGER ET-1 (RBVS Exhaust Damper HD-9414A Fails shut).	 Crew recognizes Loss of RBVS by: ⇒ OHA E1-F5 "COMPUTER PT IN ALARM" ⇒ CRIDS B7164 "REACTOR BLDG DIFF PRESS" ⇒ OHA E6-C5 "RBVS & WING AREA HVAC PNL 10C382" (delayed) ⇒ CRIDS D3960 "RBVS EXH RMT PNL C382 TRBL" ⇒ CRIDS D3961 "RBVS SUPPLY RMT PNL C382 TRBL" ⇒ RB D/P indication on 10C650E ⇒ SPDS RB PARAMETERS D/P indication. 	

<u>IF</u> dispatched to 10C382, <u>THEN</u> **REPORT** Low Flow Trip alarms on all Reactor Bldg Supply and exhaust fans. • Crew dispatches RBEO to 10C382 to investigate.

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 RO/PO recognize HD-9414A failed shut by 10C651E indication and inform CRS. 	
<u>IF</u> directed to secure RBVS, <u>THEN</u> TRIGGER ET-2 .	 RO/PO place FRVS in service IAW SO.GU-0001 -or- hardcard. 	HPI USED: STAR PEER CHECK FLAGGING OP BARRIERS
<u>IF</u> dispatched to HD-9414B, <u>THEN</u> REPORT there is no obvious reason for the closure.	 Crew dispatches NEO and Maintenance to investigate closure of HD-9414B. 	GU-HD-9414B is located in Room 4624.
	 CRS recognize the following Tech Specs apply: ⇒ Secondary Containment Integrity 3.6.5.1 ⇒ Secondary Containment Automatic Isolation Dampers 3.6.5.2 action a or b or c 	
Loss of 10A120 Bus: 15 minutes after the Loss of RBVS, <u>OR,</u> at the discretion of the Lead Examiner, TRIGGER ET-3.	 Crew recognizes: ⇒ Reactor power lowering ⇒ Reactor level swell 	
	 Crew monitors Reactor power, pressure, and level until plant conditions are stable. 	
	 PO ensures feedwater restores and maintains RPV level between LVL 4 and LVL 7. 	

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 Crew recognizes Loss of 'B' Reactor Recirc pump by: ⇒ C1-D5 "REACTOR RECIRC B TROUBLE" ⇒ CRIDS D2918 "RECIRC MG DRIVE MOTOR B BRKR" ⇒ Flashing TRIP light for 'B' Recirc MG Drive Motor bkr ⇒ 'B' Reactor Recirc pump flow and d/p indications on 10C651C 	
	 RO ensures at least one recirc pump still running. 	
	 Crew recognizes trip of 'B' PCP and 'B' SCP by: ⇒ OVLD/PWR FAIL lights ⇒ STOP lights lit ⇒ Motor amps zero 	The trips of 'B' PCP and 'B' SCP are silent and may not be immediately recognized by the Crew.
	 Crew validates automatic actions: ⇒ Feedwater PCP Speed Limiter on ⇒ Recirc pump Int and Full Runbacks 	
	 Crew recognizes entry into the OPRM Enable Region by: ⇒ C3-F1 "OPRM TRIP ENABLE" 	Rx Power ≈55% Core Flow ≈39 mlbm/hr
	 Crew recognizes loss of BK111 TB chiller by: ⇒ OVLD/PWR FAIL light ⇒ STOP light lit ⇒ Motor amps zero 	The trip of BK111 is silent and may not be immediately recognized by the Crew.

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 Crew recognizes loss of 10A120 bus from: → OHA E3-E1 7.2 KV SYS INCOMING BRKR MALF ⇒ Solid OVLD/PWR FAIL lights on loads lost ⇒ Flashing TRIP light for infeed bkr 52-12008 ⇒ CRIDS D3682 "SWGR BUS A120 DIFF LOCKOUT" ⇒ CRIDS D3684 "SWGR BUS A120 UNDERVOLTAGE" 	
	 Crew announces loss of 10A120 on the plant page. 	
IF the Crew manually scrams, THEN the Feedwater Line Break and LOCA will be automatically inserted.	 CRS implements AB.RPV-0003: ⇒ Condition A ⇒ Condition B 	The pace of the scenario will not allow the Crew to fully address single loop requirements.
	 <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. 	HPI USED: STAR □ PEER CHECK □
	 RO/PO close HV-F031B Recirc pump discharge valve for 5 minutes, then re-open. 	HPI USED: STAR □ PEER CHECK □ FLAGGING □ OP BARRIERS □
	 RO/PO implement DL.ZZ-0026 Att. 3v. 	
	 CRS implements AB.RPV-0001: ⇒ Condition B 	
	 CRS implements AB.RPV-0004: ⇒ Condition D ⇒ Condition G 	
	 PO closes HV-1680B PCP discharge valve. 	HPI USED: STAR □ PEER CHECK □ FLAGGING □

OP BARRIERS □

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 PO closes HV-1651B SCP discharge valve. 	HPI USED: STAR PEER CHECK FLAGGING OP BARRIERS
	 PO bypasses Feedwater Runbacks. 	HPI USED: STAR PEER CHECK
<u>WHEN</u> dispatched, <u>THEN</u> REPORT the 10A120 Bus Differential Overcurrent Relays are tripped. There is no visible indication of damage to the bus.	 Crew dispatches TBEO and Maintenance to investigate loss of 10A120 bus. 	
As RE, REPORT 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.	 Crew contacts RE for guidance and to check thermal limits. 	
	 Crew references Power Maneuvering Tech Specs in AP.ZZ-108. 	
	 CRS recognize the following actions apply: ⇒ Recirculation Loops 3.4.1.1 action a ⇒ Reactor Coolant System Specific Activity T/S Table 4.4.5-1 Item 4(b) ⇒ ODCM Table 4.11.2.1.2-1 Items (c) & (f) 	
	 CRS notifies Shift Rad Pro and Shift Chem Tech to take samples IAW: ⇒ T/S Table 4.4.5-1 Item 4(b) ⇒ ODCM Table 4.11.2.1.2-1 Items (c) & (f) 	

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 CRS recognize the following Tech Specs apply: ⇒ Recirculation Loops 3.4.1.1 action a 4.4.1.1.1 	
	 Crew contacts ESOC and Trading Floor, gives estimate of MWe output limitations and duration of limitation. 	
	 CRS contacts Operations Management. 	
 <u>'A' Recirc Pump High</u> <u>Vibration</u>: 15 minutes after the Loss of 10A120, <u>OR</u>, at the discretion of the Lead Examiner, TRIGGER ET-4. 	 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" 	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.
	 CRS implements AB.RPV-0003: ⇒ Condition F ⇒ <u>WHEN</u> it is determined that	
	 RO locks the Mode Switch in SHUTDOWN and performs scram actions IAW AB.ZZ-0001 Att. 1. 	HPI USED: STAR I HARD CARD I PEER CHECK II

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 Crew manually scrams the Reactor within 60 seconds following the loss of both Reactor Recirc pumps. Scramming before the 'A' Reactor Recirc pump trips satisfies this Critical Task. 	IF the 'A' Recirc pump tripped BEFORE the Reactor was scrammed, <u>THEN</u> RECORD the time between the trip of the 'A' Recirc pump and the reactor scram.
Feedwater Line Break: 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.	 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 Crew recognizes High Drywell Pressure EOP entry condition: ⇒ OHA A7-D4 "DRYWELL PRESSURE HI/HI" ⇒ OHA C5-B5 "DRYWELL PRESSURE HI/HI" ⇒ Various system initiations and isolations CRS implements: ⇒ EOP-101 ⇒ DD 400 	Time: RECORD Drywell Pressure reached 1.68psig for 15 min ECG Classification. Time:
	 ⇒ EOP-102 PO attempts to maintain level as directed by CRS. 	HPI USED: STAR HARD CARD PEER CHECK The feedwater line break will prevent restoring level with HPCI or feedwater.
	 CRS determines an Alert Classification is required IAW ECG Section 3.2.2.b (Valid High Drywell Pressure Condition). 	RECORD time Alert declared. Time Declared:

1

Event / Instructor Activity	Expected Plant/Student Response	Comments
IF directed to open the breaker for the HPCI HV-8278 in an attempt to fail the valve shut, <u>THEN</u> REPORT 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.	 Crew recognizes 'A' feedwater line break by: ⇒ High Flow / Low Discharge Pressure on condensate ⇒ High Flow / Low Discharge Pressure on HPCI ⇒ Ability to vary HPCI flow with Setpoint ⇒ Absence of OHA B1-E5 "HPCI PUMP DISCHARGE FLOW LO" ⇒ Rapidly rising torus level ⇒ Lowering hotwell level ⇒ RPV Pressure trend not consistent with a LOCA greater than the capacity of HPCI/Condensate ⇒ HV-F074A open and HV-F074B shut 	
<u>IF</u> directed to close the F032A, <u>THEN</u> REPORT the actuator appears to be broken. The valve will not stroke from the bucket or locally with the manual handwheel.	 Crew may attempt to isolate the 'A' Feedwater line if they successfully diagnose a FW line break. 	HPI USED: STAR I PEER CHECK I FLAGGING I OP BARRIERS I The HV-F032A will not close from the Control Room.
	 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 re-enters EOP-102.

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 IF feedwater and condensate remained aligned to feed the reactor vessel, <u>THEN</u> Crew recognizes low main condenser hotwell levels by: OHA A6-F1 "CONDENSATE TRAIN A TROUBLE" OHA A6-F2 "CONDENSATE TRAIN B TROUBLE" OHA A6-F3 "CONDENSATE TRAIN B TROUBLE" OHA A6-F3 "CONDENSATE TRAIN C TROUBLE" CRIDS D2943 "CONDENSER AE108 LEVEL" CRIDS D2945 "CONDENSER BE108 LEVEL" CRIDS D2947 "CONDENSER CE108 LEVEL" 10C651A Hotwell Level indication 	
	 CRS directs injection with: ⇒ SLC ⇒ Two CRD pumps (If RPV level continues to lower) 	
	 RO/PO initiate SLC. 	HPI USED: STAR II PEER CHECK II

Event / Instructor Activity	Expected Plant/Student Response	Comments
IF directed to align for two CRD pump injection, THEN PERFORM the following: REFER to SO.BF-0001 Sect 5.4. TRIGGER ET-5 (Suction filter). SET Remote Function for Stby CRD pump discharge valve to 0% (CD01/CD02). REPORT Stby CRD pump ready for start. WHEN Stby CRD is running, THEN RAMP discharge valve to 100% open. AFTER HV-F003 is open, THEN TRIGGER ET-6. WHEN two minutes have elapsed, THEN MODIFY Malfunctions CD09A/B to control injection	 RO/PO align CRD for Emergency Two CRD Pump Injection IAW SO.BF-0001 Section 5.4. 	HPI USED: STAR HARD CARD PEER CHECK D
RHR Pump Trip & HVO-16B <u>fails to open</u> : The 'A' RHR pump starts on Local Level 1 signal and immediately trips. -AND- HVO-16B Drywell Spray Valve fails to open	 Crew recognizes 'A" RHR pump trip by: ⇒ OHA RHR LOGIC OUT OF SERVICE ⇒ OUT OF SERVICE status light ⇒ PUMP MOTOR OVERCURRENT status light ⇒ Pump STOP, amp and flow indications 	
 <u>IF</u> dispatched to investigate the trip of the 'A' RHR pump, <u>THEN</u> REPORT: The breaker has target flags dropped on the 51A and 51B Time Overcurrent relays (401/402 bkr 06) The pump motor is hot to the touch and bearing oil levels are normal 	 Crew dispatches operator and Maintenance to the tripped RHR pump and breaker. 	

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 <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 >9.5psig in the suppression chamber). 	* <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.
	 RO/PO places 'B' RHR pump in Suppression Chamber Cooling/Spray or Drywell Spray IAW AB.ZZ-0001 Att. 2 or 3. 	HPI USED: STAR I HARD CARD II
	 Crew recognizes the failure of HVO-16B to open (Drywell Spray Valve) 	
	 Crew recognizes containment not performing properly by: ⇒ Suppression Chamber pressure approaching Action Required area of PSP curve ⇒ Suppression Chamber airspace temperature significantly above water temperature ⇒ Drywell Pressure response 	
<u>IF</u> necessary, <u>THEN</u> REDUCE the ramp on malfunction rr31a2 to raise Supp Pool pressure.	<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.	·

Event / Instructor Activity	Expected Plant/Student Response	Comments
STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION 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	 Crew prevents injection from Core Spray and LPCI pumps not required for adequate core cooling. 	

• RO/PO open ADS valves IAW AB.ZZ-0001 Attachment 13.

HPI USED: STAR II HARD CARD II

INPO Fundamentals: CONTROL

* Crew actuates five SRVs before Suppression Chamber pressure has been in the Action Required region of the PSP curve for over three minutes.

NOTE: Preventing entry into the Action Required Region of the PSP curve satisfies this critical task.

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 Crew recognizes failure of PSV-F013B to remain open by: ⇒ Acoustic Monitor position indication on 10C650C ⇒ Tailpipe temperature on TR-R614 	
	 RO/PO opens additional SRV IAW AB.ZZ-0001 Att. 13, informs CRS of PSV-F013B failure. 	HPI USED: STAR II HARD CARD II PEER CHECK II
	 CRS directs restoring RPV level to -38" to 54" with Low Pressure ECCS. 	
	 RO/PO restore RPV level as directed by CRS IAW AB.ZZ-0001: ⇒ Att. 4 for RHR ⇒ Att. 5 for Core Spray 	HPI USED: STAR I HARD CARD I PEER CHECK I FLAGGING I IF RPV water level drops below –311", THEN the CRS may implement EOP-206.
	 WHEN adequate core cooling is assured, <u>THEN</u> CRS directs placing: ⇒ One loop of RHR in Supp Pool Cooling and Spray ⇒ One loop of RHR in Drywell Spray (If Supp Pool Level is less than 124") 	* <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.
	 RO/PO align RHR IAW AB.ZZ-0001: ⇒ Att 2 Drywell Spray ⇒ Att 3 Supp Pool Clg 	HPI USED: STAR HARD CARD PEER CHECK FLAGGING OP BARRIERS
Event / Instructor Activity	Expected Plant/Student Response	Comments
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Termination Requirement:		If the scenario does not
 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 <u>OR</u> EOP-202 is being implemented and RPV pressure is being maintained 50 psig above Suppression Chamber pressure with five SRVs open. 		run for a full 15 minutes after –161" is reached, the SAE Classification may not be declared.

- 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

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.

* <u>WHEN</u> Emergency Depressurization is initiated and the PSV-F013B fails to remain open, <u>THEN</u> 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.

* <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.

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>	EVENT	Y/N	<u>EVENT</u>
	Loss Of Offsite Power/SBO		Internal Flooding
<u>Y</u>	LOCA		
	TRANSIENTS:		LOSS OF SUPPORT SYSTEMS:
	Turbine Trip		Loss of SSW
	Loss of Condenser Vacuum		Loss of SACS
	Loss of Feedwater		Loss of Instrument Air
	Inadvertent MSIV Closure		
	Inadvertent SRV Opening		
Y	Manual Scram		

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

<u>Y/N</u>	KEY EQUIPMENT	<u>Y/N</u>		KEY EQUIPMENT
	Hard Torus Vent		SLC	
	HPCI		CRD	
	1E 4.16KV Bus		1E 125VDC	
	SACS Hx/Pump			
	EDG			KEY SYSTEMS
	120VAC 481/482 Inverter		500KV AC P	ower
	A/B RHR		SRVs	
Y	RCIC		Condensate/F	eedwater
	SSW Pump		PCIG	

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

<u>Y/N</u>

OPERATOR ACTION

- Y Aligning RHR for Suppression Pool Cooling
- Emergency Venting of Primary Containment
- Y Emergency Depressurize RPV W/O High Pressure Injection
- Initiating LP ECCS with No High Pressure Injection Available
- Restoration of AC Power after a LOP (EDG / Offsite)
- Monitoring and Control of SACS heat loads
- _____ Preventing LVL 8 trip of Feedwater during a transient
- Align Core Spray Suction to CST when at NPSH limits
- Cross-Tie De-Energized B/D 125VDC Battery Charger to Energized Bus
- Inhibit ADS during ATWS

Complete this evaluation form for each ESG.

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

- 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:

<u>Rev.</u>	Date	<u>Comments</u>
	· · · · · · · · · · · · · · · · · · ·	

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:

ESG:	Scenario #1	

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
	X INITIAL LICENSE
[OTHER

REVISION SUMMARY:

PREPARED BY:		
	Instructor	DATE
APPROVED BY		
	LORT Group Lead or Designee	DATE
APPROVED BT:	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:

nitial	
	INITIALIZE the simulator to 100% power, 3840 MWth, MOL.
	REDUCE reactor power to 84.5%.
	REMOVE the 'C' RFPT from service IAW SO.AE-0001 Section 5.11 up through the point of reducing lube of temperature to 90 degF.
·	IF N2 makeup to containment will be performed, THEN REDUCE drywell and suppression chamber pressure to approximately 0.30 psig.
	ENSURE 'D' SACS pump is in service.
	ENSURE 'B' CRD pump is in service.
	ENSURE 'B' FPCC pump is in service.
	ENSURE 'A' Control Room Vent Train is in service.
	ENSURE BOTH Steam Tunnel unit Coolers are in service.
	ENSURE 'A' EHC pump is in service.
	ENSURE associated Schedule file open and running.
	ENSURE associated Events file open.

Initial	Description				
	INITIAL SO.AE-0001 Section 5.11 up through the point of reducing lube oil temperature to 90 degF.				
	PREPARE an SO.AE-0001 Attachment 3 for 'C' RFPT pump casing d/t.				
	INITIAL IO.ZZ-006 for the power reduction.				
	<u>IF</u> performing N2 Makeup, <u>THEN</u> INITIAL SO.GS-0001 up to the and including increasing vaporizer temperature to 100 degF (Step 5.2.8 of Rev 30).				
	ENSURE Data Collection is trending the following parameters:				
	W/R Reactor Water Level				
	Fuel Zone Reactor Water Level				
	W/R Reactor Pressure				
	At a minimum review the Scenario Reference section and CLEAN the <u>bolded</u> EOPs, ABs and SOPs listed. (80091396 0270)				
	COMPLETE the "Simulator Ready for Training/Examination" Checklist.				

EVENT FILE:

Initial	ET #	<u> </u>	
		Event code: Description:	<pre>rrp_rpm(1) <= 1400 // 'A' Recirc pump rpm imf rr26a2 3 15 Increases malfunction vibration when Crew reduces recirc pump speed.</pre>
		Event code: Description:	rhf27(1) >= 100 & rh_bkr(2) // 'A' RHR in Chamber Spray with 'B' RHR run Trips AP202 RHR pump when placed in Chamber Spray if BP202 is still running
		Event code: Description:	rhf27(2) >= 100 & rh_bkr(1) // 'B' RHR in Chamber Spray with 'A' RHR run Trips BP202 RHR pump when placed in Chamber Spray if AP202 is still running
		Event code: Description:	rhf21(1) >= 500 & rh_bkr(2) // 'A' RHR in Drywell Spray with 'B' RHR run Trips AP202 RHR pump when placed in Drywell Spray if BP202 is still running
		Event code: Description:	rhf21(2) >= 500 & rh_bkr(1) >= 1.0 // 'B' RHR in Drywell Spray with 'A' RHR run Trips BP202 RHR pump when placed in Drywell Spray if AP202 is still running

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)

Event / Instructor Activity	Expected Plant/Student Response	Comments
<u>N2 M/U to the Primary</u> <u>Containment</u> :	CRS directs N2 Makeup to the Primary Containment.	
Refer to SO.GS-0001 Section 5.2 and SUPPORT 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).	 PO conducts N2 makeup to the Primary Containment IAW SO.GS-0001 Section 5.2 and 5.3. 	
Power Reduction: Crew places lowers power to 90% RTP using recirculation pumps.	• RO reduces and maintains recirc flow to establish 90% RTP (not to exceed 1%/min).	HPI USED: STAR □ PEER CHECK □
RECIRC LOOP FLOW SUMMER 'C' FAILURE: At the discretion of the lead Examiner, TRIGGER ET-1 (RECIRC LOOP FLOW SUMMER FAILURE to 0 percent).	Crew monitors Reactor power, pressure, and level and ensure plant conditions are stable. Ensures no scram setpoints have been exceeded.	

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" 	

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 Crew recognizes 'C' RECIRC LOOP FLOW SUMMER FAILURE Downscale by: ⇒ FLOW UNIT C and A "COMPAR" status lights ⇒ APRM A, C, and E "UPSC ALARM" status lights ⇒ CRIDS C026 "EITHER RBM CHANNEL UPSCALE" ⇒ CRIDS C049 "RECIRC FLOW COMPR OUT LIMITS" 	
	 CRS implements AB.IC-0004: ⇒ Condition F 	
	 CRS references AB.IC-0003: ⇒ Condition B 	
	 RO bypasses 'C' Flow Unit. 	HPI USED: STAR II PEER CHECK II
	 CRS refers to DD.ZZ-0020 for a failed PPC Sensor. 	
	 CRS directs Reactor Engineering to evaluate the flow unit failure on the PPC. 	
<u>IF</u> directed to place the Flow Unit C MODE Switch in the unlabeled position, <u>THEN</u> CHANGE Malfunction NM12C Final value to 100%.	 RO directs I&C to place the MODE Switch, on the applicable flow unit, to the "UNLABELED" position between STANDBY and ZERO. 	

• RO verifies RPS trip clear.

Event / Instructor Activity	Expected Plant/Student Response	Comments
· · · · · · · · · · · · · · · · · · ·	 RO resets RPS trip as follows: ⇒ TURN the affected RPS Trip Logic key to RESET, AND RETURN to the NORMAL position. ⇒ VERIFY that RPS is reset. 	HPI USED: STAR I PEER CHECK I
	 CRS determine no Tech Spec actions required. Enter Tracking Action statement for: ⇒ Table 3.3.6-1 Function 6 	
Loss of CD481: After the Crew assumes the watch and at the discretion of the Lead Examiner, TRIGGER ET-2 (Loss of CD481 120AC 1E Inverter).	 Crew recognizes loss of CD481 by: → OHA D3-E3 "120VAC UPS TROUBLE" ⇒ OHA C6-A1 "RSP/RSS TAKEOVER" ⇒ Downscale indications for 'A' Channel DC systems and CD481 on 10C650D ⇒ 'C' Channel ECCS "TRIP UNIT OUT OF FILE OR PWR FAIL" lights ⇒ CRIDS page 167 indications 	
 	 Crew recognizes loss of Reactor Building Ventilation by: ⇒ Supply/Exhaust Dampers HD- 9370A AND HD-9414A closure ⇒ Fans trip 	
	CRS implements AB.ZZ-0136.	
	 Crew verifies that 'B' Control Room vent train automatically starts. 	
	Crow recognizes that TACS	

 Crew recognizes that TACS loops failed to automatically swap

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 CRS directs manually swapping TCAS pumps IAW HC.OP- AB.22-0001, Att 10. Crew recognizes various other effects of CD481 loss: ⇒ AP210 SACS pump running ⇒ 'C' Channel LOCA LVL 2 load shed breakers open on 10C650E ⇒ PCIG valve isolations including common suction line isolation ⇒ HPCI suction swap to torus 	
 IF dispatched to CD481 inverter , <u>THEN REPORT</u>: The Inverter Output breaker CB10 is tripped. The AC Reg Output breaker CB302 is tripped There is an acrid odor coming from the static switch section 	Crew dispatches ABEO and Maintenance to CD481 inverter.	
	 CRS implements AB.COMP-002: ⇒ Condition F 	
IF dispatched to check the A/BK202 Safety Circuit, <u>THEN</u> REPORT status IAW the following Monitor Items: • AK202 – ia_6cr • BK202 – ia_6crb ⇒ False = reset ⇒ True = tripped IF directed to reset a compressor safety lockout, <u>THEN</u> TOGGLE associated Remote Function IA08/IA09 to	 RO/PO align BK202 PCIG compressor to supply PCIG through the Accident suction 	HPI USED: STAR □

RESET.

	 CRS implements AB.CONT-0002: ⇒ Condition B 	
	 CRS recognize the following Tech Spec actions apply: ⇒ Distribution - Operating 3.8.3.1 action a 	Must restore CD481 within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours.
	 CRS contacts Operations Management. 	
Recirc Pump Seal Failure: After loss of Inverter actions are complete, <u>AND</u> at the discretion of the Lead Examiner, TRIGGER ET-3 ('A' Recirc Pump Dual Seal Failure).	 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 	First stage seal failure will occur three minutes after the second stage.

 \Rightarrow Condition D

n en	And a second	
Event / Instructor Activity	Expected Plant/Student Response	Comments
 <u>IF</u> dispatched to report local seal pressures on 77' Rx Bldg, <u>THEN</u> REPORT readings consistent with CRIDS (Page 85), <u>OR</u> the following Monitor Items: (Monitor Items are psia) 'A' Recirc Inbd (#1) Seal rrpsl1(1) – 15 = psig 'A' Recirc Outbd (#2) Seal rrpsl2(1) – 15 = psig 	 Crew recognizes 'A' Recirc pump dual seal failure by: → OHA C1-F5 "COMPUTER PT IN ALARM" reflash ⇒ Changing seal pressures ⇒ Rising seal temperatures ⇒ OHA C6-B1 "DLD SYSTEM ALARM/TRBL" ⇒ RM11 9AX317/318/320 DLD CCM alarms ⇒ RM11 9AX314 DLD Floor Drain Flow alarm ⇒ Rising drywell pressure 	RECORD time dual recirc pump seal failure is recognized <u>OR</u> OHA C6-B1 is received (whichever is first) for ECG Classification. Time:
	 CRS implements AB.CONT-001: ⇒ Condition A 	
	 RO/PO ensure drywell cooling is maximized. 	HPI USED: STAR 디
Monitor Items: • HV-F023A rrvf23(1) • HV-F100 cuvf100 • HV-F031A	* CREW trips and isolates the 'A' RR pump before DRWL pressure reaches 1.68 psig by closing the: HV-F023A HV-F100	RECORD drywell pressure when 'A' Reactor Recirc pump is isolated: Drywell Pressure:
rrvt31(1)	 CRS implements AB.RPV-0006: ⇒ Condition B ⇒ Condition C 	
IF the Crew scrams during the seal failure, <u>THEN</u> proceed to the ATWS. Power Oscillations <u>NOT</u> be observed.	 Crew validates successful recirc isolation by: ⇒ Seal pressures and temperatures ⇒ Trending DLD flows ⇒ Trending drywell pressure and temperature 	

Event / Instructor Activity	Expected Plant/Student Response	Comments
	Crew monitors plant response to the transient.	
Power Oscillations At the discretion of the lead evaluator, insert Trigger ET-4 Power Oscillations	Crew recognizes power oscillation and locks the mode switch in Shutdown IAW AB.RPV-0003 Immediate Operator Actions	
ATWS >4%: Full core electrical ATWS w/ failure of ARI.	 Crew recognizes Scram Condition and Reactor Power Above 4% EOP entry condition: ⇒ APRM indications ⇒ Absence of rod FULL IN lights on the Full Core Display ⇒ Rod position indications 	RECORD time of Mode Switch to SHUTDOWN or Turbine Trip (whichever was first) for 15 min ECG Classification. Time:
STRATEGIES FOR SUCESSFUL 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 Attachment 1.	HPI USED: STAR II HARD CARD II

Event / Instructor Activity	Expected Plant/Student Response	Comments
 STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION Prioritize the Power Leg to establish SLC injection as soon as possible. Terminating and Preventing HPCI in a timely mean an in aritigation. 	CRS implements EOP-101A.	
order to reduce reactor power by establishing and maintaining a - 50" to -100" RPV level band		
 Maximize steam loads IAW with the post scram pressure control hard card actions when reactor power exceeds bypass valve capability. 		
 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		
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		
 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. 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 stabilized above -185" 		
 As control rods are inserted, reduce injection flow to maintain reactor level low in the assigned band to reduce reactor power. 		

Event / Instructor Activity	Expected Plant/Student Response	Comments
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STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION For ATWS conditions where reactor power remains >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.

 PO stabilizes and maintains RPV level as directed by CRS.

- CRS directs:
 - ⇒ Initiating SLC
 - ⇒ Verifying RWCU Isolates
- RO/PO initiate SLC and verify RWCU isolates.
- HPI USED: STAR D PEER CHECK D



- Crew recognizes failure of RWCU to isolate by:
 - ⇒ OHA C1-A2 "RWCU DIFF FLOW HI"
 - ⇒ CRIDS D5870 "RWCU DIFF FLOW CH D"
 - ⇒ CRIDS D5872 "RWCU DIFF FLOW CH A"

If RWCU is isolated before differential flow setpoint is reached, isolation will not be received.

	-		
Event / Instructor Activity	Expected Plant/Student Response	Comments	
 InSight Items: A' Channel Isolation cu_k6a09 'D' Channel Isolation cu_k6d11 HV-F001 cuvf001 HV-F004 cuvf004 	 RO/PO close RWCU HV-F001 and HV-F004. 	HPI USED: STAR I Immediate Operator action IAW AB.CONT-0002.	
	 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. 	RECORD 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.	
	 Crew isolates RWCU IAW SO.BG-0001. 	HPI USED: STAR 🗆	
	 CRS implements AB.CONT-002: ⇒ Condition A ⇒ Condition B 	Condition A applies if C1-A2 is received.	
	• STA/IA monitors AB.CONT-0002 implementation.		
	 Crew validates isolation by trending: ⇒ RWCU differential flow ⇒ Offsite release rates 		
	• CRS recognize primary Continuous Conductivity Monitoring is lost, contact Shift Chem Tech to ensure compliance with UFSAR section 5.2.3.2.2.2	References to UFSAR section 5.2.3.2.2.2 can be found in: • ARP for OHA C1-F2 • SO.BG-0001	

Event / Instructor Activity Expected Plant/Student Response		Comments
	* Crew starts AP208 SLC pump before Suppression Pool temperature reaches 110 degrees.	ENTER Supp Pool temp when AP208 SLC pump is started: Temp:
Trip of both SLC Pumps: ~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, TRIGGER ET-5 (Trip of AP208 & BP208 SLC Pumps).	 Crew recognizes trip of AP208 & BP208 SLC pumps by: ⇒ OHA C1-B1 "SLC PUMP/VALVE O/PF" ⇒ OHA C1-F1 "SLC/RRCS INITIATION FAILURE" ⇒ CRIDS D3023 "SLC INJ PMP BP208 TROUBLE TRBL" ⇒ CRIDS D3023 "SLC INJ PMP AP208 TROUBLE TRBL" ⇒ Flashing STOP light for AP208 and BP208 	
<u>IF</u> dispatched to investigate trip of AP208 & BP208, <u>THEN</u> REPORT that both motors are hot to the touch and the breakers will not reset. (52-222101)	 Crew dispatches NEO and Maintenance to investigate trip of AP208 & BP208 SLC pumps. 	
	 CRS determines a SAE Classification is required IAW ECG Section SS3.1 (An automatic scram failed to shutdown the reactor as indicated by reactor power > 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 > 4%). 	

Event / Instructor Activity	Expected Plant/Student Response	Comments
· · · · · · · · · · · · · · · · · · ·	 CRS declares SAE IAW ECG Section SS3.1. 	RECORD time SAE declared.
	(Note: declaration may be completed after scenario termination at lead evaluators discretion)	Time Declared:
	CRS directs inhibiting ADS.	
	 RO/PO inhibit ADS IAW AB.ZZ-0001 Att. 13. 	HPI USED: STAR II HARD CARD II
	* CREW prevents an uncontrolled depressurization during ATWS conditions by preventing ADS ACTUATION.	This Critical Task is not applicable if RPV level never reaches –129". See justification for failure criteria.

 REFER to the appropriate EOP and SUPPORT Crew requests for EOPs IAW with the following. Validated execution time delays are built-in: EOP-301: ET-5 EOP-301: ET-5 EOP-311: ET-6 EOP-312: ET-7 EOP-320: ET-8 EOP-322: ET-9 STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION Promptly initiate actions IAW the 300 series EOPs to shutdown the reactor. Timely actions will reduce the potential continued challenges to containment. In addition, once the post scram hard card actions have been completed and RPV level has stabilized in the required band, an NCO should be assigned the responsibility to insert control rods IAW the post ATWS CRD operation hard card and CRAM move sheets. When control room portions of EOP-320 have been completed and the NCO is ready to re-insert a manual 	Event / Instructor Activity	Expected Plant/Student Response	Comments
scram, the NCO should perform a crew update and utilize the post scram hard card to implement the applicable post scram actions following the manual scram attempt.	REFER to the appropriate EOP and SUPPORT Crew requests for EOPs IAW with the following. Validated execution time delays are built-in: EOP-301: ET-5 EOP-311: ET-6 EOP-319: ET-7 EOP-320: ET-8 EOP-322: ET-9 STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION Promptly initiate actions IAW the 300 series EOPs to shutdown the reactor. Timely actions will reduce the potential continued challenges to containment. In addition, once the post scram hard card actions have been completed and RPV level has stabilized in the required band, an NCO should be assigned the responsibility to insert control rods IAW the post ATWS CRD operation hard card and CRAM move sheets. When control room portions of EOP- 320 have been completed and the NCO is ready to re-insert a manual scram, the NCO should perform a crew update and utilize the post scram hard card to implement the applicable post scram actions following the manual scram attempt.	 CRS directs performance of the following EOPs: ⇒ EO.ZZ-0320 "Defeating ARI and RPS Interlocks" ⇒ EO.ZZ-0301 "Bypassing MSIV Isolation Interlocks" ⇒ EO.ZZ-0311 "Bypassing Primary Containment Instrument Gas Isolation Interlocks" ⇒ EO.ZZ-0319 "Restoring Instrument Air in an Emergency" ⇒ EO.ZZ-0322 "Core Spray Injection Valve Override" 	The timing, order, and priority of the EOP performance may vary

- ⇒ SLC
- \Rightarrow CRD
- ⇒ RCIC
- RO/PO terminate and prevent • injection IAW AB.ZZ-0001:
 - \Rightarrow Attachment 16 (10C651)
 - ⇒ Attachment 17 (10C650)

HPI USED: STAR D HARD CARD

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 CRS directs maintaining RPV water level between –50" and -185". 	Typically, the lower end of the level band is set above –129".
	 RO/PO control level as directed by CRS with: ⇒ Feedwater IAW AB.ZZ-0001 Att. 14 ⇒ RCIC IAW AB.ZZ-0001 Att. 6 ⇒ HPCI IAW EOP-322 	HPI USED: STAR HARD CARD If the turbine trips before the reactor is scrammed, an RRCS feedwater runback may occur.
	 Crew lowers RPV level to -50", and ensures adequate core cooling by maintaining or restoring RPV level above - 185" without Emergency Depressurizing. 	
	 CRS directs bypassing the RWM and commencing manual rod insertion. 	
	 RO/PO align CRD for ATWS operation IAW AB.ZZ-0001 Attachment 18. 	HPI USED: STAR □ HARD CARD □
	 RO/PO bypass RWM and insert control rods IAW RE-AB.ZZ-0001 Attachment. 1. 	HPI USED: STAR I HARD CARD II
Total Loss of EHC: ~4min after the plant is tripped, and at the discretion of the Lead Examiner, TRIGGER ET-6 (Trip of the 'B' EHC pump). Note: the BPVs will fail close ~3min after total loss of EHC.	 Crew recognizes trip of the 'B' EHC pump by: ⇒ OHA D3-F5 "TURB HYDR PUMP TROUBLE" 	

Event / Instructor Activity	Expected Plant/Student Response	Comments
	 Crew recognizes turbine bypass valves failing shut by: ⇒ OHA D3-D5 "EHC UNIT PANEL 10C363" ⇒ DEHC Bypass Valve Positioning Error alarms ⇒ Reactor pressure rising above Pressure Setpoint 	
STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION Pressure Leg 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.	 CRS directs stabilizing pressure below 1037 psig with: ⇒ Main Steam Line Drains ⇒ SRVs ⇒ RPFT 	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.
	 RO/PO control pressure as directed by CRS with: ⇒ Main Steam Line Drains IAW AB.ZZ-0001 Att. 15 ⇒ SRVs IAW AB.ZZ-0001 Att. 13 ⇒ RFPTs 	HPI USED: STAR □ HARD CARD □
	 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 	

Event / Instructor Activity	Expected Plant/Student Response	Comments	
Strategies For Successful Transient Mitigation Torus Temperature Leg Start all available Torus cooling as soon as possible to remove heat from containment.	CRS implements EOP-102.		
	 CRS directs placing AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray. 		
	 RO/PO place AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray IAW AB.ZZ-0001 Att. 3. 	HPI USED: STAR II HARD CARD II	
STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION EOP-102 Primary Containment Control. Primary Containment Pressure Leg 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 evolvate further	 <u>WHEN</u> Suppression Chamber pressure exceeds 9.5 psig, <u>THEN</u> CRS directs initiating drywell spray. 		

 RO/PO place AP202 RHR pump in Drywell Spray IAW AB.ZZ-0001 Att. 2.

HPI USED: STAR HARD CARD BP202 is not available due to 10D420 failure.

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.



<u>UNTIL</u> Reactor power is <4%, <u>OR</u> RPV level reaches –129", OR SRVs remain closed.

Event / Instructor Activity Expected Plant/Student Response		Comments	
	 <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. 	HPI USED: STAR II HARD CARD II	
<u>WHEN</u> the Crew has reset RPS, <u>THEN</u> DELETE Malfunction RP07 to allow full rod insertion on the next scram.	• <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.	HPI USED: STAR II PEER CHECK II	
At the Lead Examiners discretion, MODIFY InSight Item IcIsdv to accelerate draining of the SDV.	 <u>WHEN</u> OHA C6-E4 clears, <u>THEN</u> the Crew initiates a manual scram IAW EOP-320 Section 5.3. 	HPI USED: STAR I PEER CHECK I	
	 CREW fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320. 		
	 Crew recognizes the reactor is shutdown by: ⇒ SPDS ALL RODS IN ⇒ RWM Confirm Shutdown ⇒ CRIDS Rod positions 		
Termination Requirement:The scenario may be terminated at the discretion of the Lead Examiner when:• RPV Level is being maintained above -185" AND• All rods are fully inserted	CRS exits EOP-101A, enters EOP-101.		

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

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>	EVENT	<u>Y/N</u>	EVENT
	Loss Of Offsite Power/SBO LOCA		Internal Flooding
	TRANSIENTS: Turbine Trip Loss of Condenser Vacuum Loss of Feedwater		LOSS OF SUPPORT SYSTEMS: Loss of SSW Loss of SACS
Y	Manual Scram		

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

<u>Y/N</u>	KEY EQUIPMENT	<u>Y/N</u>	KEY SYSTEMS
	HPCI		SRVs
	RCIC		Condensate/Feedwater
	B/D EDG		SSW
	A/B RHR Pump		RPS
	_ A/B SACS Loop		
	1E 4.16KV Bus		
	1E 480 VAC Bus		
	_ 120VAC 481 Inverter		
	_ 1E 125VDC		
	Hard Torus Vent		

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

<u>Y/N</u>	OPERATOR ACTION
	Manual Depressurization of the RPV w/ no HP Injection Available
	Reopen SSW Discharge Valve to SACS Hx After Level 1 or Hi DW Press. Signal
	Control RPV Water Level w/ HP Injection during ATWS Sequence
	Align Portable Power Supply to Battery Chargers
	Venting of Primary Containment
	Restore Switchgear Cooling
	Restart Condensate
	Control Plant via Remote Shutdown Panel during Control Room Flooding Sequence

Complete this evaluation form for each ESG.
ONLINE RISK: GREEN	WORK WEEK CHANNEL: A
PROTECTED	EQUIPMENT
None	
REACTIVITY	/ Plant Status
100% Power	
ESF/SAFETY	Y SYSTEMS
None	
COOLING	G WATER
None	
BC)P
'A' EHC Pump tagged for planned maintenance	
ELECT	RICAL
None	
ADVERSE CONDIT	ION MONITORING
None	

Initiate & secure N2 makeup to the primary containment to test the flow recorder (a calibration was just performed)

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
- 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: ≥1

Comments:

EXAMINATION SCENARIO GUIDE (ESG) VALIDATION (con't)							
Crew Validation	Rev: 01	Date Validated:					
	Validation Co	mments			Dispositio	ວກ	
Crew Validation	Rev:	Date Validated:					
	Validation Co	mments			Dispositio	nc Millionna (1997)	
Crew Validation	Rev:	Date Validated:					
	Validation Co	mments			Dispositio		

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: PROGRAM:	01 L.O. REQUAL INITIAL LICENSE OTHER

REVISION SUMMARY:

2013 Initial NRC Exam

PREPARED BY:		01/22/13
-	NRC Examiner	DATE
Devices of DV		
Reviewed BY:	Chief Eveminer	
	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:

	l.C.								
Initial									
	INITIALIZE the simulator to 100% power, MOL.								
	MAKEUP N2 to the drywell until drywell and Suppression Chamber pressure are 0.53-0.57 psig.								
	ENSURE BOTH Steam Tunnel unit Coolers are in service.								
	ENSURE the 'A' CRD pump is in service.								
	ENSURE the 'A' EHC pump is in service.								
	ENSURE TACS is being supplied by the 'B' SACS loop.								
	ENSURE the 'B' Control Room Vent Train is in service.								
	ENSURE the 'C' SSW pump is in standby.								
	ENSURE the 'C' SACS pump is in standby.								
	C/T CP161 TB Chilled water circ pump as follows:								
	ENSURE CP161 is not in service.								
	PLACE CP161 in MAN.								
	C/T DK111 as follows:								
	ENSURE DK111 is not in service								
	PRESS DK111 STOP pushbutton								
	ENSURE HV-9503D is CLOSED								
	ENSURE associated Schedule file open and running.								
	ENSURE associated Events file open.								

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

Initial	Description				
	PLACE red bezel cover on DK111.				
	PLACE red bezel cover on HV-9503D.				
-	PLACE red bezel cover on CP161.				
	PREPARE a Fire Alarm for FA015 Fire Zone 4109.				
	At a minimum review the Scenario Reference section and CLEAN the <u>bolded</u> EOPs, ABs and SOPs listed. (80091396 0270)				
	TREND plant parameters needed for Critical Task determination:				
	 HPCI Room Temperature 				
	RCIC Room Temperature				
	o Reactor Pressure				
	 Wide Range RPV Level 				
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".				

EVENT FILE:

Initial	ET #		
	6	Event code: Description:	hpvv(1) <= 0.90 // HPCI HV-F003 valve position Trips breaker for HPCI HV-F003 when closure is attempted from the Control Room.
7 Event code: Description:		Event code: Description:	hvtr4111 > 160 // HPCI Room Temp Triggers RCIC Steam leak to allow raising RCIC Room temp.
	8	Event code: Description:	crqnmi <= 15 // Reactor Power Inserts HPCI Steam Leak at 40% on reactor scram.
	9	Event code: Description:	rrprv < 650 // Reactor Pressure in psia Raises severity of HPCI leak if Crew depressurizes
	10	Event code: Description:	hvtr4111 > 200 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	11	Event code: Description:	hvtr4111 > 210 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	12	Event code: Description:	hvtr4111 > 220 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	13	Event code: Description:	hvtr4111 > 230 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	14	Event code: Description:	hvtr4111 > 240 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	15	Event code: Description:	hvtr4111 > 250 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	16	Event code: Description:	hvtr4111 > 255 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	17	Event code: Description:	hvtr4111 > 260 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	18	Event code: Description:	hvtr4111 > 265 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	19	Event code: Description:	hvtr4111 > 270 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	20	Event code: Description:	hvtr4111 > 271 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	21	Event code: Description:	hvtr4111 > 272 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	22	Event code: Description:	hvtr4111 > 273 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	23	Event code: Description:	hvtr4111 > 274 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	24	Event code: Description:	hvtr4111 > 275 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	25	Event code: Description:	hvtr4111 > 276 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	26	Event code: Description:	hvtr4111 > 277 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
	27	Event code: Description:	hvtr4111 > 278 // HPCI Room Temp Raises RCIC Room Temperature as HPCI Room Temperature rises.
		Event code: Description:	

MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description	
	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:

Initial	@Time	Event	Action	Description
	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

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Initial	@Time	Event	Action	Description	
	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)	

Event / Instructor Activity	Expected Plant/Student Response	Comments
Raise Power Using Recirc Flow: After the crew assumes the watch they will raise power per maneuvering sheet.	 CRS directs ATC to raise power 5% using Recirc Flow. ATC adjusts Recirc flow and monitors Reactor power, pressure, and level and ensure plant conditions are stable. 	
APRM C Upscale w/Single Rod Scram: After the Crew raises power, OR, at the discretion of the Lead Examiner, TRIGGER ET-1.	Crew monitors Reactor power, pressure, and level and ensure plant conditions are stable. Ensures no scram setpoints have been exceeded	
	 Crew recognizes RPS ½ scram by: ○ OHA C3-A3 "REACTOR SCRAM TRIP LOGIC A2" ⇒ RPS Trip Logic A2 NORMAL/RESET status lights extinguished ⇒ Pilot Scram Valve Solenoid LOGIC A NORMAL status lights for all four groups extinguished. ⇒ CRIDS D2132 "REACTOR SCRAM Y TRIP" CRIDS D2115 "REAC VESSEL HI PRESS SCRAM Y" 	

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.	

-		
Event / Instructor Activity	Expected Plant/Student Response	Comments
 WHEN requested, <u>THEN</u> as RE, REPORT: Thermal Limits are SAT. All other control rods are at target their position. There is no immediate problem with leaving 02-27 inserted. You will develop a recovery plan to withdraw 02-27. 	CRS implements AB.IC-0001 Condition C	
IF dispatched to troubleshoot rod 02-27 scram, THEN REPORT 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.)	 Crew dispatches RBEO to 02-27 HCU. Crew contacts Rad Pro to survey scram discharge volume due to change in radiological conditions. RO resets the Rod Drift alarm IAW HC.OP-AR.ZZ-0020. 	
	RO bypasses APRM C.	
	RO resets RPS half scram.	
	Crew contacts Maintenance to troubleshoot APRM C failure.	
	SM contacts Operations Management	

Event / Instructor Activity	Expected Plant/Student Response	Comments	
<u>IF</u> directed to electrically disarm rod 02-27, <u>THEN</u> TRIGGER ET-16 to INSERT Malfunction cd030227 (stuck rod).	 CRS determine Tech Spec actions required. Enter Action statement for: ⇒ Reactor Protection System Instrumentation 3.3.1 	For both T/S, still meet the Minimum Operable Channels per Trip Function. Tracking Action statement only.	
	 ⇒ Control Rod Block Instrumentation 3.3.6 (Crew may declare rod 02-27 inoperable until cause of scram is determined and enter T/S 3.1.3.1). 		

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 "OVLD/PWR 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
- CRS implements AB.CONT-001:
 - \Rightarrow Condition A
 - \Rightarrow Condition B
- Crew announces loss of Turbine Building Chilled Water on the plant page.
- RO/PO ensure drywell cooling is maximized.

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. <u>IF</u> dispatched to investigate loss of TB Chilled Water, <u>THEN</u> **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.

- <u>IF</u> Drywell Pressure is not restored below 0.75 psig, <u>THEN</u> CRS implements AB.CONT-0001:
 - \Rightarrow Condition C
- <u>IF</u> directed, <u>THEN</u> 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, <u>OR</u>, 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 "OVLD/PWR FAIL" light
 - \Rightarrow 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"
- 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.

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 10B430 Unit Substation by:
 - ⇒ OHA E3-E3 "ÚSS 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.
- <u>IF</u> dispatched to 10B430, <u>THEN</u> **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

SUPPORT any requests for BP207 discharge valve manipulations with Remote Function **CD02**.

<u>AVERAGE</u> HCU accumulator pressure can be read with InSight Item **Icpac**. <u>INDIVIDUAL</u> HCU accumulator pressures can be read with InSight Item **Icpaccx(n)**. See Sim Op Manual under Reactor Building Operator for "n" value. • Crew dispatches ABEO and Maintenance to investigate the loss of the 10B430 bus.

- CRS implements AB.ZZ-0172.
- Crew places BP207 CRD pump in service IAW either:
 - ⇒ SO.BF-0001 Sect 5.2 <u>OR</u>
 - ⇒ HC.OP-AB.22-0001 Hardcard OR
 - \Rightarrow ARP for CRIDS D2244
- CRS directs aligning Condensate Transfer keepfill to 'A' Core Spray loop and A/C RHR loops.

Accumulator trouble alarms will begin to come in after about 14 minutes with no CRD pump in service. IF any HCU accumulators become inoperable with no CRD pump I/S, <u>THEN</u> CRS implements AB.IC-0001:
 ⇒ Condition A

<u>IF</u> dispatched to align AP to 'A' Core Spray and A & C RHR <u>THEN</u>:

- **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)

 <u>IF</u> any HCU accumulators become inoperable with no CRD pump I/S, <u>THEN</u> CRS recognize the following Tech Spec applies:
 ⇒ Control Rod Scram

CRS refer to OP-HC-108-115-

1001 for loss of CP228 ECCS

jockey pump AND for SSW to

Accumulators 3.1.3.5 action a.2.a

Within 20 minutes of discovery, restore charging water pressure >= 940 psig or place Mode switch in SHUTDOWN.

Actions required for jockey pump are dependent on whether discharge header low pressure alarms were received for Core Spray and RHR loops.

IF directed to perform fill and vent. THEN **REPORT** no air found.

RACS isolation valves.

	(
Inadvertent HCPI Initiation: After loss of 10B430 actions are complete OR At the discretion of the lead evaluator, TRIGGER ET-4 Inadvertent HPCI Initiation	• (
	• (
	• (
Steam Leak in HPCI Room:	•
After actions for inadvertent HPCI initiation are completion, <u>OR</u> at the discretion of the Lead Examiner, TRICCER ET 5 AND	
PROVIDE Fire Computer indication of point FA015 (Fire Computer point may be provided by Examiner or by	
Fire Computer Simulation).	

InSight Items:

- HPCI Room Temp
 hvtr4111
- RCIC Room Temp hvtr4110

- CRS contacts Operations Management to initiate an ERT callout.
- Crew recognizes inadvertent HPCI initiation by:
 ⇒ Insert OHAs
 - \Rightarrow Insert OHAs \Rightarrow Insert OHAs
 - \Rightarrow Insert OHAs
- Crew implements HC.OP-AB.RPV-0001, Section C
- Crew verifies Reactor Level > -38" <u>AND</u> Drywell Pressure < 1.68#
- Crew terminates <u>AND</u> Prevents HPIC Injection IAW HC.OP-AB.ZZ-0001
- Crew DEPRESSES the initiation Logic RESET PB <u>AND</u> VERIFIES HV-F006 is CLOSED (if required, override and close IAW Att 2)
- 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)
 - \Rightarrow Lowering Main Gen MWe
 - ⇒ Offsite release rate trending up
 - ⇒ HPCI Turbine Inlet Pressure on PI-R602.
 - \Rightarrow ISLN INIT status lights

B1-A5 and ISLN INIT status lights will be received when the leak severity reaches 23% (about 30 seconds)

• 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:
 - \Rightarrow HV-F002 power failure
 - \Rightarrow F003 valve position
 - ⇒ HPCI room temperature trending up (Rm 4111)
- PO attempts to close HV-F003 using Control Room keylock switch.
- 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"
 - \Rightarrow HPCI room temperature continuing to trending up (Rm 4111)
 - ⇒ Main Gen MWe continuing to trend down
 - ⇒ Offsite release rate continuing to trend up

IF dispatched to reclose breaker 52-212053, THEN REPORT the breaker will not close.

IF dispatched to the HV-F003 valve.

THEN **REPORT** the value is bound and will not close.

 Crew dispatches RBEO and Maintenance to breaker for HV-F003 (52-212053)

The HV-F002 is powered from the 10A403 bus.

Immediate Operator Action IAW AB.CONT-0002

RECORD time when switch for HV-F003 is in CLOSE AND OHA B1-A5 is in alarm for 15 min ECG Classification.

Time: _____

ARP for D3513 gives breaker number.

- 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 SUCESSFUL 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.

<u>IF</u> dispatched to secure Rx Bldg Ventilation, <u>THEN</u>:

- **REFER** to SO.GU-0001 Section 5.3
- TRIGGER ET-6 to secure fans

<u>WHEN</u> HPCI Room temperature reaches 115 degrees, <u>THEN</u> CRS implements EOP-103.

- CRS implements AB.CONT-004:
 - \Rightarrow Condition A
 - \Rightarrow Condition C
- PO places FRVS in service IAW SO.GU-0001 Section 5.3.

STRATEGIES FOR SUCESSFUL 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.

- <u>BEFORE</u> HPCI Room temperature reaches 250 degrees, <u>THEN</u> 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 <u>OR</u> RPV LVL 3 (whichever was first) for 15 min ECG Classification. Time: _____

STRATEGIES FOR SUCESSFUL 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.
 - Crew recognizes RPV Level Below 12.5" EOP entry condition
 - by:
 - ⇒ OHA C5-A4 "RPV WATER LEVEL LO"
 - ⇒ OHA A7-D5 "RPV LEVEL 3"
 - \Rightarrow 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

RECORD the RPV level at which RPS or ARI is actuated. RPV Level:

- IF reactor pressure lowers to 550 psig, <u>THEN</u> CRS enters AB.RPV-0005: ⇒ Retainment Override
- STA monitors AB.RPV-0005 implementation and Retainment Override applicability.
- CRS directs closing:
 - \Rightarrow MSIVs
 - \Rightarrow HV-F016
 - \Rightarrow HV-F019
- RO/PO close:
 - \Rightarrow MSIVs
 - \Rightarrow HV-F016
 - \Rightarrow 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
 - \Rightarrow RCIC HV-F007/8 closing
 - ⇒ SPDS Room temp indication

HPCI Room temperature needs • to be 275 degF before reactor pressure drops below 200 psig.

<u>IF</u> necessary, <u>THEN</u> 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)
- <u>WHEN</u> HPCI AND RCIC room temperatures exceed 250 degrees (Max Safe Op), <u>THEN</u> 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
 - \Rightarrow RM11 9AX833/834 alarm
 - ⇒ Various Suppression Pool temperature indicators
- CRS enters EOP-102.
- CRS directs placing all available RHR pumps in Suppression Pool Cooling.

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- 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

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 scramming 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 it's 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>	EVENT	<u>Y/N</u>	EVENT
Y	Loss Of Offsite Power/SBO LOCA		Internal Flooding
Y	<u>TRANSIENTS:</u> Turbine Trip Loss of Condenser Vacuum Loss of Feedwater Manual Scram		LOSS OF SUPPORT SYSTEMS: Loss of SSW Loss of SACS

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

<u>Y/N</u>	KEY EQUIPMENT	<u>Y/N</u>	KEY SYSTEMS
Y	HPCI	SI	RVs
Y	RCIC	Co	ondensate/Feedwater
	B/D EDG	S	SW
	A/B RHR Pump	RI	PS
	A/B SACS Loop		
	1E 4.16KV Bus		
	1E 480 VAC Bus		`
	120VAC 481 Inverter		
	_ 1E 125VDC		
	Hard Torus Vent		

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

Y/N

OPERATOR ACTION

- Manual Depressurization of the RPV w/ no HP Injection Available
- Reopen SSW Discharge Valve to SACS Hx After Level 1 or Hi DW Press. Signal
- Control RPV Water Level w/ HP Injection during ATWS Sequence
- _____ Align Portable Power Supply to Battery Chargers
- _____ Venting of Primary Containment
- _____ Restore Switchgear Cooling
- _____ Restart Condensate
- Control Plant via Remote Shutdown Panel during Control Room Flooding Sequence

Complete this evaluation form for each ESG.

VIII.	TURNO	VER SHEET:
• • • • •		The second s

ONLINE RISK: GREEN		WORK WEEK CHANNEL: C
PRO	TECTED E	QUIPMENT
None		
REA	CTIVITY /	Plant Status
75% Power		
ESI	F/SAFETY	SYSTEMS
None		
(COOLING	WATER
None		
	BO	P
DK111 for freon leak CP161 for bearing oil leak		
	ELECTR	RICAL
None		
ADVERSE	CONDITI	ON MONITORING

None

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
- Malfunctions that occur after EOP entry: 1-4
- Abnormal Events: 1-2
- _____ 4. Major Transients: 1-2
- 5. EOPs used beyond primary scram response EOP: 1-3
- 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: ≥1

Comments:

EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION (con't)

Rev : 01	Date Validated:			
Validation Co	omments			Disposition
Rev:	Date Validated:			-
Validation Co	omments			Disposition
Rev:	Date Validated:			
Validation Co	omments			Disposition
	Rev: Validation Co Rev: Validation Co Rev: Validation Co	Rev: 01 Date Validated: Validation Comments Rev: Date Validated: Validation Comments Rev: Date Validated: Validation Comments	Rev: 01 Date Validated: Validation Comments Rev: Date Validated: Validation Comments Validation Comments Rev: Date Validated: Validation Comments Validation Comments Validation Comments Validation Comments Validation Comments	Rev: 01 Date Validated: Validation Comments Rev: Date Validated: Validation Comments Rev: Date Validated: Validation Comments Validation Comments