

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Perform Core Thermal Limits Surveillance

TASK NUMBER: 4010010201

JPM NUMBER: 305H-JPM.ZZ040

REV #: 00

*** NRC ADMIN JPM RO A1***

SAP BET: NOH05JPZZ40E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

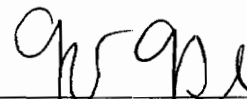
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DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 6/30/10

REVIEWED BY: 
Operations Representative

DATE: 6/30/2010

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: ZZ040

REV: 00

SYSTEM: Conduct of Operations

TASK NUMBER: 4010010201

TASK: Perform Core Thermal Limits Surveillance

ALTERNATE PATH: ☒

K/A NUMBER: 2.1.18

IMPORTANCE FACTOR: 3.6 3.8

APPLICABILITY:

EO ☐RO ☒STA ☐SRO ☒

RO

SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-DL.ZZ-0026 Rev. 121

HC.RE-ST.ZZ-0001 Rev. 19

TOOLS, EQUIPMENT AND PROCEDURES: Prepared copies of HC.RE-ST.ZZ-0001
Blank copies of HC.OP-DL.ZZ-0026 Att 1b page 4, HC.RE-ST.ZZ-0001 Att 2, ALTERNATE P1
Report.

ESTIMATED COMPLETION TIME: 12 Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ DATE: _____

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Perform Core Thermal Limits Surveillance

TASK NUMBER: 4010010201

INITIAL CONDITIONS:

1. The plant is operating at 99.8 percent core thermal power following a startup.
2. HC.OP-DL.ZZ-0026(Q) Surveillance Log Attachment 1a is being performed for Midnight Shift.
3. The normal P1 Report is not available.

INITIATING CUE:

PERFORM DL-26 Attachment 1a – Surveillance Log Items 20, 21, and 22 with materials provided below:

- DL-26 Attachment 1a – Surveillance Log page 22.
- ALTERNATE P1 REPORT.
- HC.RE-ST.ZZ-0001 CORE THERMAL LIMITS SURVEILLANCE procedure without EXHIBITS, completed up to and including Step 5.3.
- HC.RE-ST.ZZ-0001 CORE THERMAL LIMITS SURVEILLANCE Attachment 2.

WHEN FINISHED, RETURN ALL PAPERWORK TO THE PROCTOR.

JPM: ZZ040

Rev: 00

SYSTEM: Conduct of Operations

TASK: Perform Core Thermal Limits Surveillance

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)
CUE	PROVIDE the operator the initiating cue <u>AND</u> a prepared copy of: <ul style="list-style-type: none"> DL-26 Attachment 1a – Surveillance Log page 22. ALTERNATE P1 REPORT. HC.RE-ST.ZZ-0001 CORE THERMAL LIMITS SURVEILLANCE procedure without EXHIBITS, completed up to and including Step 5.3. HC.RE-ST.ZZ-0001 CORE THERMAL LIMITS SURVEILLANCE Attachment 2. 	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			

JPM: ZZ040

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**TASK: **Perform Core Thermal Limits Surveillance**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.5	<u>IF</u> using the Alternate P1 Report, THEN OBTAIN AND RECORD the below required data from the Alternate P1 Report.				
	<ul style="list-style-type: none"> Date and Time of the Monitor case ("Calculated" date and time) 	Operator fills in date and time from ALTERNATE P1 Calculation time. 23 – AUG – 2010 23:31			
	<ul style="list-style-type: none"> MFLCPR (First MFLCPR value listed under "Most Limiting Locations") 	Operator fills in MFLCPR value from Alternate P1 Sheet on Attachment 2 Form. 0.945	*		
	<ul style="list-style-type: none"> MFLPD (First MFLPD value listed under "Most Limiting Locations") 	Operator fills in MFLPD value from Alternate P1 Sheet on Attachment 2 Form. 1.002	*		
	<ul style="list-style-type: none"> MAPRAT (First MAPRAT value listed under "Most Limiting Locations") 	Operator fills in MAPRAT value from Alternate P1 Sheet on Attachment 2 Form. 1.001	*		

JPM: ZZ040

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Perform Core Thermal Limits Surveillance

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.6	DETERMINE whether the Acceptance Criteria have been met.	Operator determines Acceptance Criteria is not met.			
		Operator marks UNSATISFACTORY Check Box.	*		
NOTE	Failure to meet the Acceptance Criteria for a core thermal limit requires entry into the T/S Action Statement for that core thermal limit if Core Thermal Power is $\geq 24\%$ RTP. With respect to T/S required actions, violation of an administrative limit is treated <u>identically</u> to a violation of a T/S Limit.	Operator reads NOTE.			
5.7	<u>IF</u> any of the core thermal limits fails to meet its Acceptance Criteria, <u>THEN</u> immediately NOTIFY the SM/CRS.	Operator notifies CRS of UNSATISFACTORY surveillance.			
CUE	ACKNOWLEDGE report from operator that Thermal Limits MFLPD and MAPRAT are above Maximum Acceptable Limits.	N/A			

JPM: ZZ040

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Perform Core Thermal Limits Surveillance

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.8	DETERMINE whether the core is in a Limiting Control Rod Pattern.	Operator determines Limiting Control Rod Pattern criteria is not met.			
NOTE	The definition of a Limiting Control Rod Pattern <u>includes</u> any administrative limits on core thermal limits. With respect to T/S required actions, a core thermal limit exactly at the administrative limit (i.e. Limiting Control Rod Pattern) is treated <u>identically</u> to a core thermal limit on a T/S limit.	Operator reads NOTE. Examiner Note: The definition of a Limiting Control Rod Pattern is only met if all 3 limits are exactly 1.000.			
		Operator marks NOT LIMITING Check Box.			
5.9	<u>IF</u> the core is in a Limiting Control Rod Pattern, <u>THEN</u> immediately NOTIFY the SM/CRS.	Operator determines Limiting Control Rod Pattern criteria is not met.			

JPM: ZZ040

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**TASK: **Perform Core Thermal Limits Surveillance**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.10	RECORD any comments concerning the procedure performance on Attachment 1.	Not required for RO's.			
5.11	SIGN AND DATE as the Performer.	Operator signs and fills in date/time in "Performed By" line on Attachment 2.			

JPM: ZZ040

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Perform Core Thermal Limits Surveillance

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 1a				
ITEM 20	MFLCPR	Operator fills in MFLCPR value. 0.945.	*		
ITEM 21	MFLPD	Operator fills in MFLPD value. 1.002.	*		
	Examiner Note: It is not critical to circle Out Of Spec reading.	Operator circles Out Of Spec reading.			
ITEM 22	MAPRAT	Operator fills in MAPRAT value. 1.001.	*		
	Examiner Note: It is not critical to circle Out Of Spec reading.	Operator circles Out Of Spec reading.			
CUE	ACKNOWLEDGE report from operator that Thermal Limits MFLPD and MAPRAT are above Maximum Acceptable Limits.	N/A			

JPM: ZZ040

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Conduct of Operations**TASK: **Perform Core Thermal Limits Surveillance**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____
DATE: _____

JPM Number: ZZ040

TASK: Perform Core Thermal Limits Surveillance

TASK NUMBER: 4010010201

QUESTION: _____

RESPONSE: _____

RESULT: SAT ☐ UNSAT ☐

QUESTION: _____

RESPONSE: _____

RESULT: SAT ☐ UNSAT ☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is operating at 99.8 percent core thermal power following a startup.
2. HC.OP-DL.ZZ-0026(Q) Surveillance Log Attachment 1a is being performed for Midnight Shift.
3. The normal P1 Report is not available.

INITIATING CUE:

PERFORM DL-26 Attachment 1a – Surveillance Log Items 20, 21, and 22 with materials provided below:

- DL-26 Attachment 1a – Surveillance Log page 22.
- ALTERNATE P1 REPORT.
- HC.RE-ST.ZZ-0001 CORE THERMAL LIMITS SURVEILLANCE procedure without EXHIBITS, completed up to and including Step 5.3.
- HC.RE-ST.ZZ-0001 CORE THERMAL LIMITS SURVEILLANCE Attachment 2.

WHEN FINISHED, RETURN ALL PAPERWORK TO THE PROCTOR.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

TASK NUMBER: 2990090301

JPM NUMBER: 305H-JPM.ZZ030

REV #: 02

NRC ADMIN JPM RO A2

SAP BET: NOH05JPZZ30E

ALTERNATE PATH:

☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

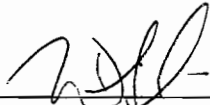
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DEVELOPED BY: A. Faulkner

Instructor

DATE: 6/30/10

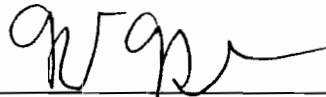
REVIEWED BY:



Operations Representative

DATE: 6/30/2010

APPROVED BY:



Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** ZZ030**REV:** 02**SYSTEM:** Conduct of Operations**TASK NUMBER:** 2990090301**TASK:** Generate An SAP System Valve/Breaker Alignment**ALTERNATE PATH:** ☐**K/A NUMBER:** 2.1.29

IMPORTANCE FACTOR:	
4.1	4.0
RO	SRO

APPLICABILITY:EO ☐RO ☒STA ☐SRO ☒**EVALUATION SETTING/METHOD:** Classroom/Perform**REFERENCES:** HC.OP-DL.ZZ-0015 Rev 21
OP-AA-109-115-1001 Rev 0**TOOLS, EQUIPMENT AND PROCEDURES:** SAP Computer and accessible SAP printer.**ESTIMATED COMPLETION TIME:** _____ Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____**DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

TASK NUMBER: 2990090301

INITIAL CONDITIONS:

1. The plant is at 100% power steady state.
2. The current time is 3:30 am.

INITIATING CUE:

You are the Tuesday Night Shift Plant Operator.

PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) for the Shift Routine.

JPM: ZZ030

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Conduct of Operations**TASK: **Generate An SAP System Valve/Breaker Alignment**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	SETUP ENSURE a printout of an OFF-NORMAL report is available on the day of the exam to compare operator results.	N/A			
CUE	SETUP Logon to the SAP Training Client Using: PSEG Applications Online Click on: TRAINING folder Click on: Enterprise Training System - ECC6 icon User: train20 Password: welcome9 Ensure the "WCM: Area Menu" is open (Fast Path ZWCMM)	N/A			
CUE	PROVIDE the operator the initiating cue <u>AND</u> the following: <input type="checkbox"/> A prepared copy of HC.OP-DL.ZZ-0015 with an Attachment 1 completed for Dayshift (Attached) <input type="checkbox"/> OP-AA-109-115-1001	Operator repeats back initiating cue.			

JPM: ZZ030

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	HC.OP-DL.ZZ-0015	N/A			
3.6.1. A	PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) <u>AND FILE</u> in the Control Room	Examiner Note: Refer to steps below for Standards associated with this step.			
	<u>IF</u> necessary, <u>THEN</u> Operator obtains the correct procedure.	Operator obtains procedure OP-AA-109-115-1001. Examiner Note: The procedure is only a desktop guide and the operator may be proficient at the task and <u>NOT</u> reference the desktop guide.			
	OP-AA-109-115-1001	N/A			
5.3.6	Printing/Reviewing Off-Normal From the WCM: Area Menu A. Click "WCM Reports" menu, then click "Off Normal Report (Version 1)".	Operator Clicks: "WCM Reports" menu. Operator then clicks "Off Normal Report (Version 1)".			

JPM: ZZ030

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	B. Complete "Object Info" section for report to be obtained.	Operator enters the following Object Info: Planning Plant: NNUC	*		
		Plant Section: HC	*		
		Mode: 01	*		
		Type: F	*		
		Technical Object: * <u>OR</u> H * <u>OR</u> H1 *	*		
	C. Select desired "Display Filter" either "Off Normal" or "Tagged" or both.	Operator selects "Display Filter" for "Off Normal" <u>ONLY</u> .	*		
	D. If printing report:	Based on Initiating Cue, Operator determines printing the report <u>IS</u> required. Examiner Note: It is <u>NOT</u> critical in the following steps <u>HOW</u> the Operator prints the Report. For instance, may select preview mode and then use printer icon. It is also <u>NOT</u> critical to actually retrieve the printout. (Not all SAP printers work in the Training Client) Critical portion is to execute steps to generate a printout.			
	• Under "Program" select "Execute and Print".	Under "Program", Operator selects "Execute and Print".	*		

JPM: ZZ030

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>IF</u> in the LDC, <u>THEN</u> PROVIDE the Operator with an accessible SAP printer number.</p> <p>PRINTER PROVIDED: _____</p> <p><u>IF</u> in the LDC and the applicant does not have permission to print the report <u>THEN</u> terminate at this point.</p>	N/A			
	<ul style="list-style-type: none"> Select output device then click "Continue". 	Operator Selects an output device then clicks "Continue".	*		
	E. If reviewing report, click "Execute".	Based on Initiating Cue, Operator determines this step is not required.			
	F. Click "Back".	Operator clicks "Back" to exit.			
	HC.OP-DL.ZZ-0015	N/A			
CUE	RETRIEVE printed Off-Normal AND INFORM the operator the Report has been filed.	N/A			
3.6.1. A	PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) AND FILE in the Control Room	<u>WHEN</u> printed Off-Normal is filed, <u>THEN</u> Operator enters time (simulated to be 03:30) <u>AND</u> initials Attachment 1.			

JPM: ZZ030

Rev: 02

SYSTEM: Conduct of Operations

TASK: Generate An SAP System Valve/Breaker Alignment

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

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ030

TASK: Generate An SAP System Valve/Breaker Alignment

TASK NUMBER: 2990090301

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power steady state.

OPERATOR COPY

INITIATING CUE:

You are the Tuesday Night Shift Plant Operator.

PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) for the Shift Routine.

JOB PERFORMANCE MEASURE

ATTACHMENT 1
(Page 1 of 1)
TUESDAY SHIFT ROUTINE LOG

Date: TODAY

REQUIRED	ROUTINES	0600 - 1800	1800 - 0600
1 X Shift	3.6.1.B PERFORM lamp test on all possible Sections of 10C800.	<i>99</i>	
NOTE	3.6.3 MARK all Control Room strip charts (Date & Initial), VERIFIED status of Paperless Recorders. NOTIFIED I&C if Memory Space digital reading $\geq 20\%$.	<i>99</i>	

NOTE - Only recorders that are Operating or Operable need be checked.

REQUIRED	ROUTINES	TIME COMPLETED	INITIALS
1800 - 0600	3.6.1.A PRINT a copy of the WCM Off-Normal Report (Off-Normal and NOT Tagged) AND FILE in the Control Room		
1800 - 0600	3.6.2 Control Room cleanup		
1800 - 0600	3.6.4 Attachment 2 of SH.OP-DL.ZZ-0027(Z), has been completed and Temporary Log package for the next day has been prepared.		
1800 - 0600	3.6.5 PLACE the out-of-service TSC Chilled Water Pump 1A(B)-P-414 in-service (pump only) for a 1-hour run to purge any air from piping high points IAW HC.OP-SO.GJ-0002(Q), A(B)K403 1E Panel Room Chilled Water System Operation.. [70036044]		
1800 - 0600	3.6.6 PLACE the out-of-service Control Area Chilled Water Pump 1A(B)-P-400 in-service (pump only) for a 1-hour run to purge any air from piping high points IAW HC.OP-SO.GJ-0001(Q), Control Area Chilled Water System Operation. [70086974]		

Performed By: John JonesSupervisor Review: Tim Johnson

0600-1800

1800-0600

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Equipment Control

TASK: Perform An Accident Monitoring Instrumentation
Channel Check

TASK NUMBER: 2160010201

JPM NUMBER: 305H-JPM.ZZ025

REV #: 02

NRC ADMIN JPM RO A3

SAP BET: NOH05JPZZ25E

ALTERNATE PATH: ☒

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

DEVELOPED BY: A. Faulkner
Instructor

DATE: 6/30/10

REVIEWED BY: 
Operations Representative

DATE: 6/30/2010

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: ZZ025

REV: 02

SYSTEM: Equipment Control

TASK NUMBER: 2160010201

TASK: Perform An Accident Monitoring Instrumentation Channel Check

ALTERNATE PATH: ☒

K/A NUMBER: 2.2.12

IMPORTANCE FACTOR: 3.7 4.1

APPLICABILITY:

EO ☐RO ☒STA ☐SRO ☒

RO

SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-ST.SH-0001 Rev 29

TOOLS, EQUIPMENT AND PROCEDURES: Prepared copy of HC.OP-ST.SH-0001

ESTIMATED COMPLETION TIME: 18 Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Equipment Control

TASK: Perform An Accident Monitoring Instrumentation Channel Check

TASK NUMBER: 2160010201

INITIAL CONDITIONS:

1. HC.OP-ST.SH-0001(Q), Accident Monitoring Instrumentation Channel Check – Monthly is required.
2. No other testing or maintenance is in progress that will adversely affect the performance of this test.

INITIATING CUE:

PERFORM Steps 5.1 through 5.6.3 of HC.OP-ST.SH-0001(Q).
Another operator will complete the rest of the Surveillance (Steps 5.7 to end).

JPM: ZZ025

Rev: 02

SYSTEM: Equipment Control

TASK: Perform An Accident Monitoring Instrumentation Channel Check

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)
CUE	PROVIDE the operator the initiating cue <u>AND</u> a prepared copy of HC.OP-ST.SH-0001 with Attachment 1 Section 1.0 PRETEST INFORMATION completed.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	<u>IF</u> excessive time is taken reviewing precautions and limitations, THEN INFORM operator that all are satisfied.	N/A			
5.1	LOG test start time in the Control Room log(s).	Operator requests that the start time be logged in the Control Room log.			
CUE	<u>WHEN</u> asked to log the surveillance in the Control Room logs, THEN REPORT the surveillance has been logged in the Control Room logs.	Operator initials step 5.1.			

JPM: ZZ025

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Equipment Control**TASK: **Perform An Accident Monitoring Instrumentation Channel Check**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2	ENSURE that all prerequisites have been satisfied IAW Section 2.0.				
CUE	<u>IF</u> excessive time is taken reviewing prerequisites, THEN INFORM operator that all are satisfied.	N/A			
2.1	Permission to perform this test has been obtained from the SM/CRS as indicated by the completion of Attachment 1, Section 1.0.	Operator ensures permission to perform test is authorized on Attachment 1 Section 1.0.			
2.2	All personnel performing any steps in this procedure should complete Attachment 1, Section 3.0 prior to performing any part of this procedure.	Operator signs Attachment 1.0, Section 3.0.			
2.3	Plant is in any condition.	Operator observes plant is in any condition.			
2.4	No other testing <u>OR</u> maintenance is in progress that will adversely affect the performance of this test.	Based on initial conditions, operator recognizes no testing or maintenance is in progress that will adversely affect the performance of the test.			

JPM: ZZ025

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Equipment Control**TASK: **Perform An Accident Monitoring Instrumentation Channel Check**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3	ENSURE Attachment 1, Section 1.0 of the SM/CRS Data and Signature Sheet has been completed <u>AND</u> Regular Surveillance <u>OR</u> Retest is indicated.	Operator observes Attachment 1 Section 1.0 has been completed and Regular Surveillance is indicated.			
5.4	PERFORM a Channel Check of the following Reactor Vessel Pressure instruments, RECORD AND COMPARE the indicated pressure readings on Attachment 2: [T/S 4.3.7.5-1, item 1]	Examiner Note: Refer to following steps for standards associated with this step.			
5.4.1	REACTOR PRESSURE Indicator PI-3684A (Red)	Operator records the value of PI-3684A (Red) on Attachment 2.			
5.4.2	REACTOR PRESSURE Recorder PR-3684A-1 (Red) (alternate indication for PI-3684A) (Panel 10C650 Section B Subsection B)	Operator records the value of PI-3684A-1 (Red) on Attachment 2.			
5.4.3	REACTOR PRESSURE Recorder PR-3684B (Red)	Operator records the value of PR-3684B (Red pen) on Attachment 2.			

JPM: ZZ025

Rev: 02

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Equipment Control

TASK: Perform An Accident Monitoring Instrumentation Channel Check

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.4	VERIFY Reactor Pressure instrumentation Channel Check complete, ENTER SAT or UNSAT <u>AND INITIAL</u> the appropriate space on Attachment 2.	Operator compares the values recorded for PI-3684A (Red), PI-3684A-1, and PR-3684B (Red pen) and verifies they are within 75 psig, then enters SAT on Attachment 2.	*		
		Operator initials Attachment 2.			
5.5	PERFORM a Channel Check of the following Reactor Vessel Water Level instruments, RECORD AND COMPARE the indicated level readings on Attachment 2: [T/S 4.3.7.5-1, item 2]	Examiner Note: Refer to following steps for standards associated with this step.			
5.5.1	REACTOR FUEL ZONE Water Level Recorder LR-R615 (10C650 A Subsection F)	Operator records the value of LR-R615 (10C650 A Subsection F) on Attachment 2.			
5.5.2	REACTOR FUEL ZONE Water Level Indicator LI-R610 (10C650 A Subsection G)	Operator records the value of LI-R610 (10C650 A Subsection G) on Attachment 2.			
5.5.3	REACTOR CHANNEL A Water Level Recorder LR-R623A (Red)	Operator records the value of LR-R623A (Red pen) on Attachment 2. [32 inches]			

JPM: ZZ025

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Equipment Control

TASK: Perform An Accident Monitoring Instrumentation Channel Check

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.5.4	REACTOR CHANNEL B Water Level Recorder LR-R623B (Red)	Operator records the value of LR-R623B (Red pen) on Attachment 2. [26 inches]			
5.5.5	REACTOR WATER Level Recorder LR-3622A (Blue)	Operator records the value of LR-3622A (Blue pen) on Attachment 2.			
5.5.6	REACTOR WATER Level Recorder LR-3622B (Blue)	Operator records the value of LR-3622B (Blue pen) on Attachment 2.			

JPM: ZZ025

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Equipment Control

TASK: Perform An Accident Monitoring Instrumentation Channel Check

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.5.7	VERIFY Reactor Water Level instrumentation Channel Check complete, ENTER SAT or UNSAT <u>AND</u> INITIAL the appropriate space on Attachment 2.	Operator compares the values recorded for: <ul style="list-style-type: none"> • LR-R615 (10C650 A Subsection F), • LI-R610 (10C650 A Subsection G) And verifies they are within 10 inches, <u>AND</u> , <ul style="list-style-type: none"> • LR-R623A (Red pen) • LR-R623B (Red pen) And verifies they are within 10 inches, <u>AND</u> , <ul style="list-style-type: none"> • LR-3622A (Blue pen) • LR-3622B (Blue pen), Are within 20 inches, then enters SAT on Attachment 2.	*		
		Operator initials Attachment 2.			
		Operator: refers to NOTE 1 , determines the difference between LR-R623A and LR-R623B exceeds half the Max Variance, and notifying System Engineering is required.	*		
CUE	ACKNOWLEDGE report from operator that variance between LR-R623A and LR-R623B exceeds half the Max Variance.	N/A			

JPM: ZZ025

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Equipment Control**TASK: **Perform An Accident Monitoring Instrumentation Channel Check**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.6	PERFORM a Channel Check of the following Suppression Pool Water Level instruments, RECORD AND COMPARE the indicated level readings on Attachment 2: [T/S 4.3.7.5-1, item 3]	Examiner Note: Refer to following steps for standards associated with this step.			
5.6.1	SUPPRESSION POOL Water Level Recorder LR-4805-1 (RED) (10C650B Subsection B)	Operator records the value of LR-4805-1 (10C650B Subsection B) on Attachment 2.			
5.6.2	SUPPRESSION POOL Water Level Indicator LI-4801 (BLUE)	Operator records the value of LI-4801 on Attachment 2.			
5.6.3	VERIFY Suppression Pool Water Level instrumentation Channel Check complete, ENTER SAT or UNSAT AND INITIAL the appropriate space on Attachment 2. [CD-488E]	Operator compares the values recorded for LR-4805-1 and LI-4801 and verifies they are within 9 inches, then enters SAT on Attachment 2.			
		Operator initials Attachment 2.			

JPM: ZZ025

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Equipment Control**TASK: **Perform An Accident Monitoring Instrumentation Channel Check**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ025

TASK: Perform An Accident Monitoring Instrumentation Channel Check

TASK NUMBER: 2160010201

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

ATTACHMENT 1

(Page 1 of 3)

SM/CRS DATA AND SIGNATURE SHEET**ACCIDENT MONITORING INSTRUMENTATION CHANNEL CHECK - MONTHLY****1.0 PRETEST INFORMATION****1.1 Reason for the Test**

1.1.1 Regular Surveillance

gmg
INITIALS

1.1.2 Retest/Other

INITIALS

1.1.3 IF not performing the complete test,
THEN LIST subsection(s)/valves to be performed, as well as
 marking N/A on the applicable subsection(s)/valves on the
 Attachment(s) that will not be performed,
OR, that do not require an independent verification
 IAW OP-AA-108-101-1002, Component Configuration Control

SUBSECTION(S)/VALVE(S)**1.2 Plant Conditions**

1.2.1 Operational Condition

1

1.2.2 Reactor Power Level

100%

1.2.3 GMWe

1260**1.3 Permission to Perform the Test**

1.3.1 Permission granted to perform this test.

Joe Johnson
OS/CRS/WCCSToday/Now
DATE-TIME

1.3.2 Work Order No. _____

SM/CRS DATA AND SIGNATURE SHEET ACCIDENT MONITORING INSTRUMENTATION CHANNEL CHECK - MONTHLY

2.0 POST TEST INFORMATION

2.1 The data acquired during the performance of this test has been reviewed for completeness and compliance with Technical Specifications 4.3.7.5, Table 4.3.7.5-1 items 1 thru 12 and 14 and UFSAR 6.2.5.2.5 and the test is considered:

2.1.1 SATISFACTORY (All acceptance criteria is marked SAT)

SM/CRS

Date/Time

2.1.2 UNSATISFACTORY and IF necessary the T/S ACTION statement has been implemented.

SM/CRS

Date/Time

2.1.3 Order No. _____

2.1.4 Remarks Variance between LR-R623A and LR-R623B exceeds half of the allowable variance. System Engineering notified.

3.1 I have read and understand the steps of this procedure that I am required to Perform.
(All Departments)

[illegible]

CONTROL ROOM DATA SHEET ACCIDENT MONITORING INSTRUMENTATION CHANNEL CHECK - MONTHLY

REACTOR VESSEL PRESSURE INSTRUMENTATION			
STEP	INSTRUMENT NUMBER	MAX VARIANCE BETWEEN CHs	PRESSURE
5.4.1	PI-3684A (RED)	75 PSIG (NOTE 1)	
5.4.2	PR-3684A-1 (Red)		
5.4.3	PR-3684B (RED)		

5.4.4 Reactor Vessel Pressure Instrumentation Channel Check

*

 SAT/UNSAT INITIAL

REACTOR VESSEL WATER LEVEL INSTRUMENTATION			
STEP	INSTRUMENT NUMBER	MAX VARIANCE BETWEEN CHs	LEVEL
5.5.1	LR-R615	10 INCHES (NOTE 1)	
5.5.2	LI-R610		
5.5.3	LR-R623A (RED)	10 INCHES (NOTE 1)	32
5.5.4	LR-R623B (RED)		26
5.5.5	LR-3622A (BLUE)	20 INCHES (NOTE 1)	
5.5.6	LR-3622B (BLUE)		

5.5.7 Reactor Water Level Instrument Channel Check

*

 SAT/UNSAT INITIAL

* The asterisk indicates acceptance criterion - in order to satisfy the requirements of the acceptance criteria, the SAT/UNSAT block must be marked SAT

NOTE 1 IF maximum channel variance exceeds half the required value
NOTIFY System Engineer. [CD-772F]

CONTROL ROOM DATA SHEET ACCIDENT MONITORING INSTRUMENTATION CHANNEL CHECK - MONTHLY

SUPPRESSION POOL WATER LEVEL INSTRUMENTATION			
STEP	INSTRUMENT NUMBER	MAX VARIANCE BETWEEN CHs	LEVEL
5.6.1	LR-4805-1 (RED)	9 INCHES	
5.6.2	LI-4801 (BLUE)		

5.6.3 Suppression Pool Level Instrumentation Channel Check

*

SAT/UNSAT INITIAL

SUPPRESSION CHAMBER PRESSURE INSTRUMENTATION			
STEP	INSTRUMENT NUMBER	MAX VARIANCE BETWEEN CHs	PRESSURE
5.7.1	PR-4960A1 (RED)	10 PSIG	
5.7.2	PR-4960B1 (RED)		
5.7.3	PR-4960B3 (GREEN)	0.5 PSIG	
5.7.4	PI-4960B3 (RED)		

5.7.5 Suppression Chamber Pressure Instrumentation Channel Check

*

SAT/UNSAT INITIAL

* The asterisk indicates acceptance criterion - in order to satisfy the requirements of the acceptance criteria, the SAT/UNSAT block must be marked SAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. HC.OP-ST.SH-0001(Q), Accident Monitoring Instrumentation Channel Check – Monthly is required.
2. No other testing or maintenance is in progress that will adversely affect the performance of this test.

INITIATING CUE:

PERFORM Steps 5.1 through 5.6.3 of HC.OP-ST.SH-0001(Q).
Another operator will complete the rest of the Surveillance (Steps 5.7 to end).

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
----------------	--

INITIALIZE the simulator to 100% power.

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

<i>Initial</i>	Description
----------------	-------------

COMPLETE Section 1 of HC.OP-ST.SH-0001 to support the surveillance.

ENSURE LR-R623A-B21 indicates 32. Adjust I/O Override as necessary.

ENSURE LR-R623B-B21 indicates 26. Adjust I/O Override as necessary.

ENSURE HPCI LR-PR 3684A-1 is in Trend display mode.

ENSURE other indications are SAT IAW the surveillance. Adjust as necessary.

REMOVE any simulated plant Red Stripes associated with surveillance instruments.

EVENT TRIGGERS:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

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

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	8AR22 R AO REAC LEVEL LR-R623A-B21	---	---	NONE	---	31.2
	8AR22 R AO REAC LEVEL LR-R623B-B21	---	---	NONE	---	26.5

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Administrative

TASK: Respond To An Abnormal Release Of Gaseous
Radioactivity

TASK NUMBER: 4000270401

JPM NUMBER: 305H-JPM.ZZ020

REV #: 01

NRC ADMIN JPM RO A4

SAP BET: NOH05JPZZ20E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 6/2/10

REVIEWED BY: 
Operations Representative

DATE: 6/30/2010

APPROVED BY: 
Training Department

DATE: 7/10/10

STATION: Hope Creek

JPM NUMBER: ZZ020

REV: 01

SYSTEM: Administrative

TASK NUMBER: 4000270401

TASK: Respond To An Abnormal Release Of Gaseous Radioactivity

ALTERNATE PATH: ☐

K/A NUMBER: 295038 A1.01

IMPORTANCE FACTOR: 3.9 4.2

APPLICABILITY:

EO ☐RO ☒STA ☐SRO ☒

RO

SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.CONT-0004 Rev.4

TOOLS, EQUIPMENT AND PROCEDURES: Calculator

ESTIMATED COMPLETION TIME: _____ Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Administrative**TASK:** Respond To An Abnormal Release Of Gaseous Radioactivity**TASK NUMBER:** 4000270401**INITIAL CONDITIONS:**

1. The plant is operating at 100% power.
2. A Fuel Bundle was damaged while being moved in the Spent Fuel Pool.
3. Rising activity is observed on the following RM-11 radiation monitors:
 - South Plant Vent (SPV) (9RX580)
 - Refuel Floor Exhaust A, B, and C (9RX627, 628, 629)
4. SPDS is unavailable.
5. CRIDS is unavailable.
6. Abnormal HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release, and HC.OP-AB.CONT-0005(Q), Irradiated Fuel Damage, are being executed concurrently to stop the release of activity.

INITIATING CUE:

Using the RM-11, determine the Total Noble Gas Release Rate in accordance with Action A.4 of HC.OP-AB.CONT-0004(Q).

JPM: ZZ020

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Administrative

TASK: Respond To An Abnormal Release Of Gaseous Radioactivity

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 AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
CUE	IF candidate attempts to use CRIDS state "CRIDS is unavailable".				
	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. OR USE one of the Formulas in Table "A".	Operator manipulates the RM-11 terminal to obtain the values of Noble Gas release from the 9RX580, 9RX590, 9RX680, and 9RX518 detectors and enters the value into the formula; then the operator calculates the Total Noble Gas Release Rate as follows:			
		Operator determines SPDS is not available.			

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

JPM NUMBER: ZZ020

REV#: 01

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	RM9627 RFE 'A' - Refuel Floor Exhaust Chan 'A' Vent Duct	---	---	NONE	---	1.38E-3
	RM9628 RFE 'B' - Refuel Floor Exhaust Chan 'B' Vent Duct	---	---	NONE	---	1.44E-3
	RM9629 RFE 'C' - Refuel Floor Exhaust Chan 'C' Vent Duct	---	---	NONE	---	1.49E-3
	RM9580 SPV EFF - South Plant Vent Noble Gas Effluent	---	---	NONE	---	1.46
	RM9680 FRVSV EFF - FRVS Vent Noble Gas Effluent	---	---	NONE	---	41.8
	RM9590 NPV EFF - North Plant Vent Noble Gas Effluent	---	---	NONE	---	10.4
	AN-C6C5 CRYWOLF ANN C6C5 SPDS SYS	---	---	NONE	---	---
		---	---	---	---	---
		---	---	---	---	---

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is operating at 100% power.
2. A Fuel Bundle was damaged while being moved in the Spent Fuel Pool.
3. Rising activity is observed on the following RM-11 radiation monitors:
 - South Plant Vent (SPV) (9RX580)
 - Refuel Floor Exhaust A, B, and C (9RX627, 628, 629)
4. SPDS is unavailable.
5. CRIDS is unavailable.
6. Abnormal HC.OP-AB.CONT-0004(Q), Radioactive Gaseous Release, and HC.OP-AB.CONT-0005(Q), Irradiated Fuel Damage, are being executed concurrently to stop the release of activity.

INITIATING CUE:

Using the RM-11, determine the Total Noble Gas Release Rate in accordance with Action A.4 of HC.OP-AB.CONT-0004(Q).

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Verify DL-26 log requirements for resuming Core Alterations

TASK NUMBER: H304000007

JPM NUMBER: 305H-JPM.ZZ41

REV #: 00

NRC ADMIN JPM SRO A1

SAP BET: NOH05JPZZ41E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☐

STA

☐

SRO

☒

DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 6/30/10

REVIEWED BY: 

Operations Representative

DATE: 6/30/2010

APPROVED BY: 

Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: ZZ41 **REV:** 00

SYSTEM: Conduct of Operations

TASK NUMBER: H304000007

TASK: Verify DL-26 log requirements for resuming Core Alterations

ALTERNATE PATH: ☒ **K/A NUMBER:** 2.1.18

IMPORTANCE FACTOR:

3.6	3.8
RO	SRO

APPLICABILITY:

EO ☐ RO ☒ STA ☐ SRO ☒

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-DL-ZZ-0026(Q) Rev. 121
HC.OP-ST.KE-0001 Rev. 31

TOOLS, EQUIPMENT AND PROCEDURES: Blank Core Map

Marked up copy of HC.OP-ST.SF-0001,
Marked up copy of HC.OP-DL-ZZ-0026(Q) Attachment 2

ESTIMATED COMPLETION TIME: _____ Minutes

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

JPM PERFORMED BY: _____ **GRADE:** ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

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

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations**TASK:** Verify DL-26 log requirements for resuming Core Alterations**TASK NUMBER:** H304000007**INITIAL CONDITIONS:**

1. Operational Condition 5, with the reactor core fully loaded.
2. The One-Rod-Out Interlock is operable.
3. Control Rod Drive Mechanism (CRDM) 34-39 has been removed.
4. All other rods are at 00.
5. CRDM 26-43 is scheduled to be replaced once CRDM 34-39 is restored.
6. The following Control Rods are hydraulically disarmed for this work:

18-51	22-51	26-51	30-51	34-51		
18-47	22-47	26-47	30-47	34-47	38-47	42-47
18-43	22-43	26-43	30-43	34-43	38-43	42-43
18-39	22-39	26-39	30-39	34-39	38-39	42-39
18-35	22-35	26-35	30-35	34-35	38-35	42-35
			30-31	34-31	38-31	42-31

- As the CRS, you direct HC.OP-DL.ZZ-0026 logs for Attachment 2 ITEMS 13, 14, and 15 to be taken for the midnight shift.

INITIATING CUE:

Validate the completed HC.OP-DL.ZZ-0026 Attachment 2 ITEMS 13, 14, and 15 for the midnight shift.

JPM: ZZ41

Rev: 00

SYSTEM: Conduct of Operations

TASK: Verify DL-26 log requirements for resuming Core Alterations

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)
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			
CUE	Provide operator marked-up copy of HC.OP-DL-ZZ-0026 Attachment 2.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 3.2.			
3.2	If in OP CON 4 or 5 then complete Attachment 2 as follows daily.	Operator reviews Attachment 2.			
	Examiner Note: Initialing steps is not critical.	N/A			

JPM: ZZ41

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Verify DL-26 log requirements for resuming Core Alterations

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ITEM 13	4 FUEL ASSEMBLIES SURROUNDING EACH REMOVED CONTROL ROD OR MECHANISM HAVE BEEN REMOVED FROM THE CORE CELL OR ALL OTHER CONTROL RODS IN A 5X5 ARRAY HAVE BEEN INSERTED AND DISARMED.				
CUE	Provide copy of blank Control Rod map.	N/A			
		Operator uses list of hydraulically disarmed Control Rods to determine that Control Rod 34-39 DOES NOT meet this requirement.			
		Operator identifies ITEM 13 is incorrectly marked YES .	*		

JPM: ZZ41

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Verify DL-26 log requirements for resuming Core Alterations

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator marks ITEM 13 in the MID column NO or UNSAT ,	*		
		Operator adds an entry in the COMMENTS section to indicate Rod 34-39 does not meet the 5 X 5 requirement because 26-31 is not disarmed.			
CUE	If necessary, cue the operator to continue with the remaining items.	N/A			
ITEM 14	VERIFY HC.OP-ST.SF-0001(Q) IS CURRENT.				
CUE	Provide operator with marked up copy of HC.OP-ST.SF-0001.	N/A			

JPM: ZZ41

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Conduct of Operations

TASK: Verify DL-26 log requirements for resuming Core Alterations

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains last completion date of the last performance from Attachment 1 of HC.OP-ST.SF-0001.			
		Operator determines difference of 19 months is correct.			
	EXAMINER NOTE: It is critical that the SRO identify 4.0.2 can be applied.	Operator identifies that ITEM 14 should be marked YES or 19 Mo. Tech Spec 4.0.2 grace period of 25% can be applied, and should be noted in the COMMENTS.	*		
CUE	If necessary, cue the operator to continue with the remaining items.				
ITEM 15	ALL OTHER CONTROL RODS ARE INSERTED	Operator determines from the Initial Conditions that all other rods are inserted.			

JPM: ZZ41

Rev: 00

SYSTEM: Conduct of Operations

TASK: Verify DL-26 log requirements for resuming Core Alterations

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

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: ZZ41

TASK: Verify DL-26 log requirements for resuming Core Alterations

TASK NUMBER: H304000007

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. Operational Condition 5, with the reactor core fully loaded.
2. The One-Rod-Out Interlock is operable.
3. Control Rod Drive Mechanism (CRDM) 34-39 has been removed.
4. All other rods are at 00.
5. CRDM 26-43 is scheduled to be replaced once CRDM 34-39 is restored.
6. The following Control Rods are hydraulically disarmed for this work:

18-51	22-51	26-51	30-51	34-51		
18-47	22-47	26-47	30-47	34-47	38-47	42-47
18-43	22-43	26-43	30-43	34-43	38-43	42-43
18-39	22-39	26-39	30-39	34-39	38-39	42-39
18-35	22-35	26-35	30-35	34-35	38-35	42-35
			30-31	34-31	38-31	42-31

- As the CRS, you direct HC.OP-DL.ZZ-0026 logs for Attachment 2 ITEMS 13, 14, and 15 to be taken for the midnight shift.

INITIATING CUE:

Validate the completed HC.OP-DL.ZZ-0026 Attachment 2 ITEMS 13, 14, and 15 for the midnight shift.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Initiate and Review System Lineup Sheets

TASK NUMBER: 2991110302

JPM NUMBER: 305H-JPM.ZZ031

REV #: 02

*** NRC ADMIN JPM SRO A2***

SAP BET: NOH05JPZZ31E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☐

STA

☐

SRO

☒

DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 6/1/10

REVIEWED BY: 

Operations Representative

DATE: 6/30/2010

APPROVED BY: 

Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** ZZ031**REV:** 02**SYSTEM:** Conduct of Operations**TASK NUMBER:** 2991110302**TASK:** Initiate and Review System Lineup Sheets**ALTERNATE PATH:** ☒**K/A NUMBER:** 2.1.29**IMPORTANCE FACTOR:**

4.1

4.0

RO**SRO****APPLICABILITY:**EO ☐RO ☐STA ☐SRO ☒**EVALUATION SETTING/METHOD:** Classroom/Perform**REFERENCES:** HC.OP-IO.ZZ-0003 Rev 91

M-42-1 Sheet 2

Tech Spec 3.3.2

TOOLS, EQUIPMENT AND PROCEDURES:

Simulated Off-Normal Report, Prepared HC.OP-IO.ZZ-0003 Attachment 4

ESTIMATED COMPLETION TIME: 15 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: 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 1.2.1 of Attachment 4.
4. A Components in OFF-Normal Position Report has been generated IAW step 1.2.3 of HC.OP-IO.ZZ-0003 Attachment 4.

INITIATING CUE:**COMPLETE** step 1.2.4 of HC.OP-IO.ZZ-0003 Attachment 4.

You will be allowed access to SAP and DCRMS to research component data.

The provided Off Normal Report does NOT reflect the current status of the actual plant.
Do NOT perform ANY changes to actual plant data.

JPM: ZZ031

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Conduct of Operations**TASK: **Initiate and Review System Lineup Sheets**

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> : <input type="checkbox"/> Prepared HC.OP-IO.ZZ-0003 Attachment 4 (Attached) <input type="checkbox"/> Prepared Components In Off-Normal Position Report (Attached)	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	HC.OP-IO.ZZ-0003 Attachment 4	N/A			
1.2.3	GENERATE a Components In Off-Normal Position Report USING WCM Reports/Off Normal Report function.	N/A			

JPM: ZZ031

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Initiate and Review System Lineup Sheets

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.2.4	POSITION all components as required.	Operator reviews Components In Off-Normal Position Report.			
		Operator recognizes the following isolation valves are closed and should be open: <ul style="list-style-type: none"> • H1AB -1ABV9979-B • H1AB -1ABV9980-B 	*		
		Operator determines these valves are required for isolation instrumentation in OPCON 1. Examiner Note: M-42-1 Sheet 2 - Transmitters are Main Steam Low Pressure to NSSSS T/S Table 3.3.2-1 Trip Function 3c	*		

JPM: ZZ031

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Conduct of Operations

TASK: Initiate and Review System Lineup Sheets

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>AFTER</u> the operator determines the V9979-B and V9980-B are required to be open, <u>THEN</u>:</p> <ul style="list-style-type: none"> • INFORM the operator investigation has determined the valves were inadvertently closed during I&C work on the opposite channels and have been re-opened. • PROVIDE the operator the updated Off-Normal with the V9979-B and V9980-B removed. 	Operator repeats initiating cue and accepts updated Off-Normal.			
1.2.4	POSITION all components as required.	Operator reviews Components In Off-Normal Position Report.			
		Operator recognizes NO components require re-positioning.			
		Operator initials IO.ZZ-0003 Attachment 4 step 1.2.4.	*		

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. A start-up is in progress IAW HC.OP-IO.ZZ-0003.
2. Preparations are being made to enter Operational Condition 1 IAW Attachment 4 of the IOP.
3. The Current Mode has been changed to Mode 1 IAW step 1.2.1 of Attachment 4.
4. A Components in OFF-Normal Position Report has been generated IAW step 1.2.3 of HC.OP-IO.ZZ-0003 Attachment 4.

INITIATING CUE:

COMPLETE step 1.2.4 of HC.OP-IO.ZZ-0003 Attachment 4.

You will be allowed access to SAP and DCRMS to research component data.

The provided Off Normal Report does NOT reflect the current status of the actual plant.
Do NOT perform ANY changes to actual plant data.

ATTACHMENT 4
STARTUP FROM COLD SHUTDOWN TO RATED POWER
FINAL CHECKS
(ENTERING OPERATIONAL CONDITION 1)
(Page 1 of 2)

NOTE

The following checks may be performed in any order.

1. FINAL CHECKS

- 1.1 System requirements AND surveillances required for entering Operational Condition 1 are completed. This review must include the disposition of all outstanding Equipment Non-Conformances to determine impact on system operability. Any shutdown LCO's which will not be exited prior to changing modes have been assessed IAW Tech Spec 3.0.4.b and OP-HC-108-115-1001.

1.1.1	Operations	<u>Bob Jones</u>	<u>Today</u>
1.1.2	I&C	<u>Bill Smith</u>	<u>Today</u>
1.1.3	Reactor Engineering	<u>Susan Anthony</u>	<u>Today</u>
1.1.4	Chemistry	<u>Chris Anderson</u>	<u>Today</u>
1.1.5	System Engineering	<u>Betty Kidman</u>	<u>Today</u>
			Date

- 1.2 PRIOR to taking the RPS MODE SWITCH to RUN, **PERFORM** the following:

- 1.2.1. **CHANGE** WCM "Current Operating Mode" from 2 to 1
USING the Mode Dependent Tagging/Current Mode/Change function.

JMB

- 1.2.2. **ENSURE** all current notifications are screened for operability prior to mode change. **[70021851]**

Joe Johnson
SM/CRS

Today/Now
DATE-TIME

NOTE

The Components in off - Normal Position Report will indicate all components NOT in the required position for POWER OPERATION.

- 1.2.3. **GENERATE** a Components In Off-Normal Position Report
USING WCM Reports/Off Normal Report function.

JMB

Continued on next page

ATTACHMENT 4
STARTUP FROM COLD SHUTDOWN TO RATED POWER
FINAL CHECKS
(ENTERING OPERATIONAL CONDITION 1)
(Page 2 of 2)

- 1.2.4. **POSITION** all components as required. _____
- 1.2.5. **UPDATE** WCM using the Mode/Dependent Tagging/Normal Positions/Change Function. _____
- 1.2.6. The above items have been completed with all equipment required for going into POWER OPERATION available.

SM/CRS

DATE-TIME

- 1.3 Pre-Startup Walk down COMPLETED. IF NOT required, **INDICATE "NA"**. IF completed, **ATTACH** completed NC.CC-AP.ZZ-0011(Q), Form-1, Pre-Startup Missile Hazard Inspection Report, to this procedure.

SM/CRS

DATE-TIME

Reviewed By:

SM/CRS

DATE-TIME

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

TASK NUMBER: 4010590202/2990640305

JPM NUMBER: 305H-JPM.ZZ029

REV #: 02

NRC ADMIN JPM SRO A3

SAP BET: NOH05JPZZ29E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☐

STA

☒

SRO

☒

DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 6/7/10

REVIEWED BY: 

Operations Representative

DATE: 6/30/2010

APPROVED BY: 

Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: ZZ029

REV: 02

SYSTEM: Equipment Control

TASK NUMBER: 4010590202/2990640305

TASK: Complete An Action Statement Log Sheet

ALTERNATE PATH: ☐

K/A NUMBER: 2.2.23

IMPORTANCE FACTOR: 3.1 4.6

APPLICABILITY:

RO

SRO

EO ☐RO ☐STA ☒SRO ☒

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: OP-HC-108-115-1001 Rev 10

Tech Spec 3.6.4.2 Amendment 133

HC.OP-ST.GS-0003 Rev 8

TOOLS, EQUIPMENT AND PROCEDURES: HC Technical Specifications

Prepared OP-HC-108-115-1001 Attachment 3-1, Blank OP-HC-108-115-1001 Form 1

ESTIMATED COMPLETION TIME: 15 Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Equipment Control**TASK:** Complete An Action Statement Log Sheet**TASK NUMBER:** 4010590202/2990640305**INITIAL CONDITIONS:**

1. The plant was at 100% power performing the monthly HC.OP-ST.GS-0003 Reactor Building/Suppression Chamber Vacuum Breaker Operability Test - Monthly.
2. The GS-PSV-5032 failed to stroke open when tested.
3. Local observation confirms the valve is failing to stroke due to a problem with the test actuator and the valve fully closed.
4. All other valves passed the surveillance.
5. The failure occurred one hour ago at _____. (**ENTER** Current Time minus one hour)
6. SAP is currently unavailable, and no NOTF has been written.
7. SAP LCO Tracking is NOT available.

INITIATING CUE:

You are the CRS.

Complete a manual Action Statement log entry for the failure of GS-PSV-5032.
Determination of retests is NOT required at this time.

JPM: ZZ029

Rev: 02

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

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)
CUE	PROVIDE the operator the initiating cue AND : <input type="checkbox"/> A blank OP-HC-108-115-1001 Attachment 3-1 with "SIM-001" already used as the first LCO index number <input type="checkbox"/> Copy of OP-HC-108-115-1001 <input type="checkbox"/> A blank OP-HC-108-115-1001 Form 1 <input type="checkbox"/> Copy of HC.OP-ST.GS-0003 <input type="checkbox"/> Technical Specifications	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 5.3.1.			

JPM: ZZ029

Rev: 02

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

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)
5.3.1	Any time it is determined that a TECH SPECS/LAOT SSC is or will be INOPERABLE either due to a Condition Adverse to Quality identified via the NOTF process (Section 5.1), a planned activity (Section 5.2), or following a Plant Transient, the appropriate T/S LCO/LAOT Action Statement is entered.	Operator determines a T/S LCO must be entered.			

JPM: ZZ029

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.2	<p>DETERMINE if the T/S LCO/LAOT Action Statement is ACTIVE or TRACKING based on the following criteria:</p> <p>ACTIVE: An Active T/S LCO/LAOT Action Statement is entered for those conditions where the SSC is INOPERABLE and the SSC design function is specifically required to be OPERABLE in the current Operational Condition by Technical Specifications/LAOTs. An example of an Active T/S LCO/LAOT Action Statement is a failure of an Emergency Diesel Generator to satisfy its surveillance requirements in Operational Condition 1.</p> <p>TRACKING: A Tracking T/S LCO/LAOT Action Statement is entered whenever either of the following conditions exists: The SSC is INOPERABLE, but is not required by Technical Specifications/LAOTs to be OPERABLE in the current Operational Condition. An example of this type of Tracking T/S LCO/LAOT Action Statement is a failure of an Emergency Diesel Generator to satisfy surveillance requirements in Operational Condition 5. This includes refuel outage LCOs not required for the current operational condition.</p>	<p>Operator determines failure requires ACTIVE LCO due to INOPERABLE SSC and the the SSC design function is specifically required to be OPERABLE in the current Operational Condition by Technical Specification 3.6.4.2.</p>			

JPM: ZZ029

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Equipment Control**TASK: **Complete An Action Statement Log Sheet**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.2 cont	<u>OR</u> The SSC is INOPERABLE, but there is 100% redundant equipment that satisfies the Operability requirements of Technical Specifications/LOATs for the current Operational Condition. An example of this type of Tracking T/S LCO/LAOT Action Statement is the inoperability of one 1E 125 VDC battery charger in Operational Condition 1, provided the other battery charger is OPERABLE (100% redundant). [CD-026F]	Operator determines failure requires ACTIVE LCO due to absence of 100% redundant equipment IAW T/S 3.6.4.2.			
5.3.3	IF the cause of the SSC being INOPERABLE is a planned Operations, Maintenance, Radiation Protection, or Chemistry Evolution that satisfies the following criteria: [CD-524G CD-538G CD-421Y]	Operator determines the cause was NOT planned and this step does NOT apply.			
5.3.4	For activities that cause a TECH SPECS/LAOT SSC to be INOPERABLE that do not meet the criteria of Section 5.3.3, DOCUMENT the condition as follows:	Operator determines the cause does NOT meet the criteria of Section 5.3.3 and the following steps apply.			

JPM: ZZ029

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**TASK: **Complete An Action Statement Log Sheet**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	TS LCO/LAOT Action Statement Tracking may be accomplished using either the computerized SAP LCO Tracking System or Attachment 3-1 and Form 1.	N/A			
5.3.4.1	For SAP LCO tracking, REFER TO guidance provided in OP-AA-108-115-1001, SAP LCO Entry.	Based on Initial Conditions (Electronic LCO Tracking NOT available), operator recognizes this step does NOT apply.			
NOTE	Preparation of Form 1 is not limited to the SM/CRS. Form 1 may be prepared by appropriate personnel in advance to support planned activities, or, after the fact during plant transients. During normal operations, the SM/CRS remains responsible for the accuracy of the information provided and authorizing entry into T/S LCO/LAOT Action Statements.	N/A			

JPM: ZZ029

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.4.2	For LCO tracking using Attachment 3-1 and Form 1, PEFORM the following:	Based on Initial Conditions (Electronic LCO Tracking NOT available) and Initiating Cue, operator recognizes the following steps apply.			
5.3.4.2. A	ASSIGN the next consecutive LCO Index Number obtained from the Action Statement Log Index (Attachment 3-1) and LOG the T/S LCO/LAOT ACTION Statement on the Index.				
CUE	PROVIDE the operator with the Index Number... SIM-001 .	N/A			
		Operator assigns next consecutive log number SIM-001 from Attachment 3-1.			
		Operator logs the TSAS on the Index.			
5.3.4.2. B	COMPLETE Sections 1 and 2 of Form 1 by performing the following:				
	– RECORD the LCO Index Number (from Attachment 3-1)	Operator records SIM-001 in LCO INDEX NUMBER.			
	– RECORD the LCO Status (Active / Tracking)	Operator records ACTIVE in LCO STATUS.	*		

JPM: ZZ029

Rev: 02

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

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)
5.3.4.2. B (cont)	— RECORD the applicable Technical Specification/LAOT LCO number. When an INOPERABLE TECH SPECS/LAOT SSC affects multiple LCO Action Statements, RECORD the LCO number with the most limiting Action Time.	Operator records 3.6.4.2 in TECH SPEC NUMBER.	*		
	— RECORD the Date/Time Entered.	Operator records current date and failure time from Initial Conditions in DATE/TIME ENTERED.	*		
	— RECORD the Operational Condition Applicability for the LCO.	Operator records 1,2 and 3 in the APPLICABILITY.	*		
	— RECORD the Date/Time Action Required. When recording the date and time that Action is required for an LCO Action Statement that has multiple actions, use the most limiting Action time. For Tracking Action Statements, record 'N/A'.	Operator records a Date/Time of failure time plus 72 hours in DATE/TIME ACTION REQUIRED.	*		
	— RECORD Other Applicable T/S. List only active LCOs. Applicable tracking LCOs should be listed separately in the Summary Description of the Log Sheet.	Operator recognizes no other T/S apply and leaves blank.			

JPM: ZZ029

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**TASK: **Complete An Action Statement Log Sheet**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.4.2. B (cont)	— RECORD the Equipment description.	Operator records GS-PSV-5032 , or similar in EQUIPMENT.			
	— Briefly STATE the reason for the SSC condition in the Summary Description section and include a brief summary of actions required, including submittal of any special reports to the NRC. NOTIFY the Shift Operations Superintendent of any reporting requirements.	Operator enters verbiage from T/S 3.6.4.2 Action a. or similar.			
	— INITIATE Responsible Department Notifications for required compensatory actions and DOCUMENT Name of Department and Person Notified with the Notification Date/Time, as well as Name of Person Making Notification. (Include NOTIF # if applicable)	Operator determines no compensatory actions or notifications are required.			

JPM: ZZ029

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**TASK: **Complete An Action Statement Log Sheet**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.4.2. B (cont)	<ul style="list-style-type: none"> The individual being notified will come to the Control Room and sign the NOTIF# box next to their name to indicate that they have received the information and they fully understand the action they have been directed to take. In the TSAS Description Addendum section they will list the procedure they will use to take the action to comply with the license. 	Due to absence of compensatory actions, operator determines this step does not apply.			
	<ul style="list-style-type: none"> For recurring samples, analysis, hook-up of sample equipment, etc., the departmental individual performing this action will report to the Control Room and document in the description addendum of the TSAS each time an action is taken. This will be audited at a frequency determined by Licensed Operations Supervision. 	Due to absence of compensatory actions, operator determines this step does not apply.			

JPM: ZZ029

Rev: 02

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

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)
5.3.4.2. B (cont)	<ul style="list-style-type: none"> When actions are no longer required or an instrument is to be restored to the pre-LCO condition (example: OGPTRMS correction factor) the action taken will be documented and signed for by the departmental individual performing the action in the description addendum section of the TSAS. 	Due to absence of compensatory actions, operator determines this step does not apply.			
	<ul style="list-style-type: none"> ENSURE all applicable Non-Conforming Component/Material (NCCM) Evaluations, Notifications/Orders, Work Clearance Documents (WCD) etc., are entered on the Order and WCD Addendum. INCLUDE any surveillances required to restore the equipment to operability as part of the Addendum. Surveillance tests should be reviewed to determine if the appropriate prerequisites would exist for the equipment scheduled restoration. 	Operator leaves ORDER AND WCD ADDENDUM blank, since none is available and determination of retests is NOT required IAW Initiating Cue.			
	<ul style="list-style-type: none"> RECORD Redundant Equipment Operable (Y/N). 	Operator enters Y in REDUNDANT EQUIPMENT OPERABLE.			

JPM: ZZ029

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Equipment Control**TASK: **Complete An Action Statement Log Sheet**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.4.2. C	<u>IF</u> the INOPERABLE SSC will impact Secondary Containment Integrity per T/S 3.6.5.1 - during Fuel Handling and CORE ALTERATIONS when Secondary Containment Integrity and FRVS actuation is not required, <u>THEN COMPLETE</u> Attachment 5, "Contingency Plan for Sealing Secondary Containment Penetrations During Fuel Handling and CORE ALTERATIONS" for EACH inoperable penetration. Attachment 5, Section 1 and 2 may be completed in advance as part of refueling outage preparations.	Based on Initial Conditions (OPCON 1), and absence of effect on Secondary Containment, operator recognizes this step does not apply.			

JPM: ZZ029

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control**TASK: **Complete An Action Statement Log Sheet**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	<p>For a planned entry into an action statement, SRO/STA concurrence is required, but the signature on the Action Statement Log Sheet is not required prior to entering the action statement.</p> <p>For an unplanned entry into an action statement, SRO/STA concurrence should be obtained as soon as practical after entering the action statement.</p> <p>If the person who completed Sections 1 and 2 of Form 1 (Step 5.3.4.2.B) was not an actively licensed and proficient SRO, or a qualified and proficient STA, then the following step requires concurrence review from an actively licensed and proficient SRO, and/or a qualified and proficient STA. The actively licensed and proficient SRO, and/or the qualified and proficient STA completing the concurrence review shall not be the same person who authorizes entry into the TECH SPECS/LAOT Action Statement in 5.3.4.B.5</p>	N/A			

JPM: ZZ029

Rev: 02

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

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)
5.3.4.2. D	OBTAIN CONCURRENCE REVIEW from an actively licensed and proficient SRO and/or a qualified and proficient STA of plant conditions, T/S, existing active and tracking action statements, and, the T/S Action Statement Log, to ensure the equipment can be, or, is properly removed from service (for unplanned entry into a T/S LCO/LAOT Action Statement) and, that redundant equipment is operable. For planned entry into a T/S LCO/LAOT Action Statement, this review should be performed within a reasonable time prior to removal of the equipment from service to ensure plant conditions are reflective of conditions when the SSC will be removed form service. [CD-079A]	Operator obtains CONCURRENCE REVIEW.			
CUE	ROLE PLAY as STA and sign for CONCURRENCE.	N/A			

JPM: ZZ029

Rev: 02

SYSTEM: Equipment Control

TASK: Complete An Action Statement Log Sheet

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)
5.3.4.2. E	OBTAIN SM/CRS AUTHORIZATION for entry into the TECH SPECS/LAOT Action Statement. The SM/CRS should review plant conditions, T/S, existing active and tracking action statements, and the T/S Action Statement Log to ensure the equipment can be, or is properly removed from service (for unplanned entry into a TS LCO/LAOT Action Statement) and that redundant equipment is operable. [CD-079A]	Operator obtains SM/CRS AUTHORIZATION.			
CUE	ROLE PLAY as SM and sign for AUTHORIZATION.	Examiner Note: Once the Action Statement entry is Authorized, the JPM is complete.			
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: ZZ029

TASK: Complete An Action Statement Log Sheet

TASK NUMBER: 4010590202/2990640305

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

ATTACHMENT 3-1

Examiner Copy

FORM 1**TECHNICAL SPECIFICATION ACTION STATEMENT LOG**

(Page 2 of 4)

2.0 ORDER AND WCD ADDENDUM

DR / NOTF / ORDER WCD NUMBER	DESCRIPTION	SYSTEM	TASK/ TYPE	RESP. DEPT/ GROUP	STATUS

(Continue on Page 3)

RETURN TO SERVICE (SM/CRS INITIAL OR N/A ALL BOXES)TAGS RELEASED, SYSTEM/EQUIPMENT FILLED & VENTED,
RESTORED FOR OPERATION

: _____

SURVEILLANCE RETESTS & SPECIAL TEST/ACTIONS COMPLETE

: _____

RESPONSIBLE DEPARTMENTS - INFORMED

: _____

DCP TURNOVER CHECKLIST COMPLETED

: _____

ACTION STATEMENT LOG INDEX UPDATED

: _____

VERIFICATION OF OPERABILITY REQUIREMENTS AND SYSTEM RESTORATION**CONCURRENCE****AUTHORIZATION**_____
SRO/STA (print name)_____
SM/CRS (print name)_____
SRO/STA (signature)_____
DATE/TIME_____
SM/CRS (signature)_____
DATE/TIME

TECHNICAL SPECIFICATION ACTION STATEMENT LOG

(Page 3 of 4)

2.0 ORDER AND WCD ADDENDUM (Continued)

INDEX NUMBER _____

Page Number ____ of ____

[illegible]

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant was at 100% power performing the monthly HC.OP-ST.GS-0003 Reactor Building/Suppression Chamber Vacuum Breaker Operability Test - Monthly.
2. The GS-PSV-5032 failed to stroke open when tested.
3. Local observation confirms the valve is failing to stroke due to a problem with the test actuator and the valve fully closed.
4. All other valves passed the surveillance.
5. The failure occurred one hour ago at _____. (**ENTER** Current Time minus one hour)
6. SAP is currently unavailable, and no NOTF has been written.
7. SAP LCO Tracking is NOT available.

INITIATING CUE:

Complete a manual Action Statement log entry for the failure of GS-PSV-5032.
Determination of retests is NOT required at this time.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water
Or Steam Filled Piping

TASK NUMBER: 2990740302

JPM NUMBER: 305H-JPM.ZZ032

REV #: 02

NRC ADMIN JPM SRO A4

SAP BET: NOH05JPZZ32E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☐

STA

☐

SRO

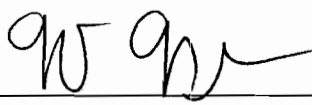
☒

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 6/30/10

REVIEWED BY: 
Operations Representative

DATE: 6/30/2010

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: ZZ032 **REV:** 02

SYSTEM: Radiation Control

TASK NUMBER: 2990740302

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

ALTERNATE PATH: ☒ **K/A NUMBER:** 2.3.11

IMPORTANCE FACTOR:

3.8	4.3
RO	SRO

APPLICABILITY:

EO ☐ RO ☐ STA ☐ SRO ☒

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-GP.ZZ-0004 Rev 7

TOOLS, EQUIPMENT AND PROCEDURES:

Prepared copy of HC.OP-GP.ZZ-0004 (Attached); Tech Specs

ESTIMATED COMPLETION TIME: 15 Minutes

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

JPM PERFORMED BY: _____ **GRADE:** ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

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

NAME: _____

DATE: _____

SYSTEM: Radiation Control**TASK:** Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping**TASK NUMBER:** 2990740302**INITIAL CONDITIONS:**

1. The plant is Operational Condition 2 with a startup in progress following a Refuel Outage.
2. Pressure has been raised to 905 psig, and preparations are being made to transition to Operational Condition 1.
3. Leakage into the Core Spray Loop A Injection Header resulted in loop pressurization above normal ECCS Jockey Pump discharge pressure observed at 1BEPISH-N654A (Panel 10C617) AND 1BEP1-R600A (Panel 10C650).
4. HC.OP-GP.ZZ-0004 REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE DETERMINATION was performed to determine the leakage rate.

INITIATING CUE:

PERFORM the CRS review of the completed HC.OP-GP.ZZ-0004 AND **COMPLETE** ATTACHMENT 1 Section 2 POST TEST INFORMATION.

JPM: ZZ032

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

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> the attached prepared copy of HC.OP-GP.ZZ-0004.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
ATT.1	<u>POST TEST INFORMATION</u>	N/A			
2.1	The data acquired during the performance of this test has been reviewed for completeness and compliance with Technical Specification 3.4.3.2, Reactor Coolant System Operational Leakage and the test is considered:	Operator reviews completed HC.OP-GP.ZZ-0004.			

JPM: ZZ032

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11	CALCULATE the leak rate through 1BE-V007 (HV-F005A) by dividing the volume recorded in Step 5.1.9 by the elapsed time recorded in Step 5.1.10. RECORD leak rate in gpm on Attachment 2.	Operator recognizes a math error was made when calculating Leak Rate in step 5.1.11. Actual leak rate is 6.3 gpm, <u>NOT</u> 0.63 gpm (6.25 gpm rounded up).			
		Operator ensures 5.1.11 ACTUAL block is corrected to 6.25 <u>OR</u> 6.3 gpm. Examiner Note: Operator may correct data or call Performer to correct data.	*		
CUE	<u>IF</u> directed as Performer to correct data entered, THEN ROLE PLAY as Performer and CORRECT ACTUAL block as directed by Operator.	N/A			

JPM: ZZ032

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11	CALCULATE the leak rate through 1BE-V007 (HV-F005A) by dividing the volume recorded in Step 5.1.9 by the elapsed time recorded in Step 5.1.10. RECORD leak rate in gpm on Attachment 2.	Operator recognizes 5.1.11 ACTUAL Leak Rate exceeds REQUIRED Leak Rate of ≤ 5 GPM.			
		Operator ensures 5.1.11 SAT/UNSAT block is corrected to UNSAT. Examiner Note: Operator may correct data or call Performer to correct data.	*		
CUE	IF directed as Performer to correct data entered, THEN ROLE PLAY as Performer and CORRECT SAT/UNSAT block as directed by Operator.	N/A			

JPM: ZZ032

Rev: 02

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

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)
T/S 3.4.3.2	<p>Reactor coolant system leakage shall be limited to:</p> <p>d. 0.5 gpm leakage per nominal inch of valve size up to a maximum of 5 gpm from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1, at rated pressure.</p> <p>APPLICABILITY: OPCON 1,2,3</p> <p>ACTION:</p> <p>c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one closed manual or deactivated automatic or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.</p>	<p>Operator determines T/S 3.4.3.2 Action c applies:</p> <p>With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least one closed manual or deactivated automatic or check* valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.</p> <p>Examiner Note: Determining the SPECIFIC compensatory action is beyond the scope of the JPM. It is only necessary for the Operator to IDENTIFY the applicable Tech Spec Action.</p>	*		

JPM: ZZ032

Rev: 02

SYSTEM: Radiation Control

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

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)
CUE	<u>AFTER</u> the Operator determines the applicable Tech Spec Action statement, <u>THEN INFORM</u> the Operator compensatory actions have been implemented.	N/A			
ATT.1	<u>POST TEST INFORMATION</u>	N/A			
2.1.2	UNSATISFACTORY <u>AND</u> <u>IF</u> necessary the T.S. ACTION statement has been implemented.	Operator signs UNSATISFACTORY block 2.1.2 of Attachment 1.			
CUE	<u>IF</u> the Operator goes beyond the Leak Rate Determination Tech Specs, <u>THEN CUE</u> the Operator to stay with the Leak Rate Determination.	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 RECORD</u> 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: ZZ032

TASK: Perform Leak Rate Measurement Data Sheet for Water Or Steam Filled Piping

TASK NUMBER: 2990740302

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is Operational Condition 2 with a startup in progress following a Refuel Outage.
2. Pressure has been raised to 905 psig, and preparations are being made to transition to Operational Condition 1.
3. Leakage into the Core Spray Loop A Injection Header resulted in loop pressurization above normal ECCS Jockey Pump discharge pressure observed at 1BEPISH-N654A (Panel 10C617) AND 1BEPI-R600A (Panel 10C650).
4. HC.OP-GP.ZZ-0004 REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE LEAKAGE DETERMINATION was performed to determine the leakage rate.

OPERATOR COPY

INITIATING CUE:

PERFORM the CRS review of the completed HC.OP-GP.ZZ-0004 AND **COMPLETE** ATTACHMENT 1 Section 2 POST TEST INFORMATION.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Administrative Duties/Reporting Requirements

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

TASK NUMBER: 2000500302/2000020505

NRC ADMIN JPM SRO A5

JPM NUMBER: 305H-JPM.ECG004

REV #: 02

SAP BET: NOH05JPCL04E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☐

STA ☒

SRO ☒

DEVELOPED BY: Archie E. Faulkner

DATE: 6/30/10

Instructor

REVIEWED BY: 

DATE: 6/30/2010

Operations Representative

APPROVED BY: 

DATE: 7/1/10

Training Department

STATION: Hope Creek

JPM NUMBER: ECG004

SYSTEM: Administrative Duties/Reporting Requirements

TASK NUMBER: 2000500302/2000020505

TASK: Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition

ALTERNATE PATH: ☐ **K/A NUMBER:** 2.4.38

IMPORTANCE FACTOR:

2.4	4.4
RO	SRO

APPLICABILITY: EO ☐ RO ☐ STA ☒ SRO ☒

EVALUATION SETTING/METHOD: Simulator/Perform or In Plant/Simulate

REFERENCES: Hope Creek Event Classification Guide, TOC Rev 90

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 13 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: 15/13 Minutes

JPM PERFORMED BY: _____ **GRADE:** ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: _____ / _____ Minutes

REASON, IF UNSATISFACTORY:

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

NAME: _____

DATE: _____

SYSTEM: Administrative Duties/Reporting Requirements**TASK:** Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**TASK NUMBER:** 2000500302/2000020505**INITIAL CONDITIONS:**

1. The plant is in OPERATIONAL CONDITION 4 and has been shutdown for 10 days.
2. 'B' RHR was in Shutdown Cooling at 10,000 gpm with an RCS temperature of 120 degF.
3. The torus access hatches have been removed for work on the Suppression Chamber to Drywell Vacuum Breakers.

Then, Hope Creek experiences an earthquake which indicates a magnitude of $> 0.1g$.

1. Control Room Annunciator C6-C4"SEISMIC MON PNL C673" is in.
2. On Panel 10C673:
 - The SMA-3 Event Indicator is White.
 - The Strong Motion Accelerograph Tape Machines have advanced but are not currently running.
 - The AMBER alarm light on the Seismic Switch Power Supply Drawer is lit.
3. Numerous amber lights and 8 red lights are lit on the response spectrum analyzer.
4. A LOCA occurs. RPV level dropped to, then stabilizes between $-150''$ and $-155''$, being maintained using all available ECCS.
5. Estimated restoration time for remaining ECCS is at least 1 hour.
6. FRVS Vent RMS failed. Alternate sampling methods are not yet in place.
7. The Rad Pro Shift Technician reports dose rates measured at the Security Center entrance are 150 mRem/hr.
8. The current 33 ft. elevation wind direction is from 291° at 4 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.

ECG004

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 AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains Hope Creek Event Classification Guide.			
ECG Section i.IV.C	Classification: To use this ECG volume, follow this sequence: 1. ASSESS the event and/or plant conditions and DETERMINE which ECG section(s) is most appropriate.	Operator assesses the initial conditions, and determines that Sections 6.0 (Radiological Releases), Sections 8.0 (System Malfunctions) and 9.0 (Hazards – Internal/External) are appropriate ECG sections.			
	2. REFER to Section EAL/RAL Flowchart diagram(s), and identify the Initiating Conditions that are related to the event/condition that has occurred or is ongoing.	Operator reviews the EALs and determines that the Initiating Conditions for EALs 6.1.3, 8.1.2, 8.1.3.a, and 9.5.2 are related to the event that has occurred Operator refers to the Initial Conditions for EAL are related to the event that has occurred.			

ECG004

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)
Table 3.0	In the table, review the Emergency Action Levels of all columns and identify which need further review.	Operator reviews the EALs of all columns, and determines the Barrier Table is not applicable in OC 4.			
ECG Section i.IV.C (cont.)	<p>3. REVIEW the associated EALs as compared to the event and SELECT the <u>highest</u> appropriate emergency or reportable action level. If identification of an EAL is questionable, refer to paragraph IV.A above.</p> <p>If there is any doubt with regard to assessment of a particular EAL, the <u>ECG Technical Basis Document</u> should be reviewed. Words contained in an EAL that are bold face are either threshold values associated with that action level or are words that are defined in the basis for that specific EAL.</p>	Operator reviews the EALs in section 6.1, and determines that EAL #6.1.3.b is the highest emergency action level met or exceeded (Site Area Emergency).			

ECG004

OPERATOR TRAINING PROGRAM

NAME: _____

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section i.IV.C (cont.)	4. If an EAL has been entered, then equal level EALs or lower level EALs and RALs are not required to be reported as long as the applicable information is communicated to the NRC using Attachment 5, NRC Data Sheet.	Examiner Note: Filling out the NRC Data Sheet is beyond the scope of this JPM.			
ECG Section i.IV.C (cont.)	5. The 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.	N/A			
CUE	<u>IF</u> the Operator requests the STA/IA to independently verify the EAL Classification, <u>THEN INFORM</u> the Operator the STA/IA is not available.	N/A			

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 i.IV.C (cont.)	6. IDENTIFY and IMPLEMENT the referenced Attachment under Action Required.	Operator identifies and implements ECG Attachment 3.			
ECG Att. 3	<p>I. <u>EMERGENCY COORDINATOR (EC) LOG SHEET</u></p> <p>A. DECLARE A SITE AREA EMERGENCY AT HOPE CREEK</p> <p>EAL #(s) _____, _____, _____</p> <p>DECLARED AT _____ hrs on _____</p> <p style="text-align: center;">time date</p>	<p>Operator declares a Site Area Emergency, places the EAL # s 6.1.3.b, time and date in the appropriate spots in attachment 3, and initials the step as the EC.</p> <p>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.</p>	*		
ECG Att. 3	<p>B. NOTIFICATIONS</p> <p>1. CALL the communicators to the Control Room</p>	<p>Operator calls the communicator using the plant page.</p> <p>Examiner Note: IF this JPM is being performed in a classroom, <u>THEN</u> this step will not be performed.</p>			

ECG004

OPERATOR TRAINING PROGRAM

NAME: _____

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Administrative Duties/Reporting Requirements**TASK: **Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	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.)			
ECG Att. 4	5. 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. Examiner Note: <u>IF</u> this JPM is being performed in a classroom, <u>THEN</u> this step will not be performed.			
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 ". STOP TIME:	N/A			

JOB PERFORMANCE MEASURE

ATT 3
Pg. 2 of 2

INITIAL CONTACT MESSAGE FORM

I. THIS IS (Not Required), COMMUNICATOR IN THE ☒ CONTROL ROOM
(NAME) (Check not required) ☐ TSC

☐ EOF

AT THE **HOPE CREEK** NUCLEAR GENERATING STATION.

II. ☒ THIS IS NOTIFICATION OF A **SITE AREA EMERGENCY** WHICH WAS
DECLARED AT Time -24 Hour ON Today's Date
(Time - 24 HOUR CLOCK) (DATE)

EAL # **6.1.3.a.** DESCRIPTION OF EVENT:
Radioactive Gas Release Exceeds 10% of the Protective Action Guide Limit

III. ☐ NO RADIOLOGICAL RELEASE IS IN PROGRESS. } see NOTE
☒ THERE IS A RADIOLOGICAL RELEASE IN PROGRESS. } for release
definition

IV. ☒ 33 FT. LEVEL WIND DIRECTION (From): 291 WIND SPEED: 4
(From MET computer / SPDS) (DEGREE (MPH)
S)

V. ☒ **NO PROTECTIVE ACTIONS ARE RECOMMENDED AT THIS TIME**

Initials

EC Initials

(Approval to Transmit ICMF)

NOTE:

Radiological Release is defined as: Plant Effluent > Federal Limit of 1.20E+04 μ Ci/sec Noble Gas or 1.70E+01 μ Ci/sec I-131.

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is in OPERATIONAL CONDITION 4 and has been shutdown for 10 days.
2. 'B' RHR was in Shutdown Cooling at 10,000 gpm with an RCS temperature of 120 degF.
3. The torus access hatches have been removed for work on the Suppression Chamber to Drywell Vacuum Breakers.

Then, Hope Creek experiences an earthquake which indicates a magnitude of $> 0.1g$.

1. Control Room Annunciator C6-C4"SEISMIC MON PNL C673" is in.
2. On Panel 10C673:
 - The SMA-3 Event Indicator is White.
 - The Strong Motion Accelerograph Tape Machines have advanced but are not currently running.
 - The AMBER alarm light on the Seismic Switch Power Supply Drawer is lit.
3. Numerous amber lights and 8 red lights are lit on the response spectrum analyzer.
4. A LOCA occurs. RPV level dropped to, then stabilizes between $-150''$ and $-155''$, being maintained using all available ECCS.
5. Estimated restoration time for remaining ECCS is at least 1 hour.
6. FRVS Vent RMS failed. Alternate sampling methods are not yet in place.
7. The Rad Pro Shift Technician reports dose rates measured at the Security Center entrance are 150 mRem/hr.
8. The current 33 ft. elevation wind direction is from 291° at 4 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

STATION: Hope Creek

SYSTEM: Feedwater

TASK: Start a Secondary Condensate Pump

TASK NUMBER: 2590020101

JPM NUMBER: 305H-JPM.AE009

REV #: 01

SAP BET: NOH05JP AE09E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

DEVELOPED BY: Archie E. Faulkner

DATE: 5/26/10

Instructor

REVIEWED BY:

DATE: 6/30/2010

Operations Representative

APPROVED BY:

DATE: 7/1/10

Training Department

STATION: Hope Creek

JPM NUMBER: AE009

REV: 01

SYSTEM: Feedwater

TASK NUMBER: 2590020101

TASK: Start a Secondary Condensate Pump

ALTERNATE PATH: ☐

K/A NUMBER: 256000 A4.01

IMPORTANCE FACTOR: 3.3 3.3

APPLICABILITY:

RO

SRO

EO ☐RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.AE-0001 Rev 63

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 11 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: Feedwater**TASK:** Start a Secondary Condensate Pump**TASK NUMBER:** 2590020101**INITIAL CONDITIONS:**

1. A plant startup is in progress IAW HC.OP-IO.ZZ-0003.
2. Reactor pressure is 500 psig.
3. "A" and "B" Primary Condensate Pumps are in service.
4. "A" Secondary Condensate Pump is in service.
5. "B" RFPT is in service.
6. The Start-Up Level Control Valve is in AUTO.
7. The Turbine Building Operator has been briefed and is standing by on location.

INITIATING CUE:

Start the second Secondary Condensate Pump BP102 IAW HC.OP-SO.AE-0001(Q).

JPM: AE009

Rev: 01

SYSTEM: Feedwater

TASK: Start a Secondary Condensate Pump

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)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-SO.AE-0001.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	IF excessive time is taken reviewing precautions and limitations, THEN INFORM operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1.11.			
5.1.11	WHEN required by HC.OP-IO.ZZ-0003(Q), Startup from Cold Shutdown to Rated Power START the first Secondary Condensate Pump A(B,C)P137, as follows:				

JPM: AE009

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Feedwater

TASK: Start a Secondary Condensate Pump

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11. A	ENSURE at least two Primary Condensate Pumps are running.	Operator observes the A and B Primary Condensate Pumps are running.			
5.1.11. B	ENSURE HV-1651A(B,C), SEC CNDS PUMP A(B,C) DISCH VLV, for the pump to be run is closed.	Operator observes the HV-1651B, SEC CNDS PUMP B DISCH VLV CLOSE light is illuminated and OPEN light is extinguished.			
5.1.11. C	ENSURE valve FV-1650A(B,C), MIN FLOW VALVE FLOW CONTROL (FIC-1650A(B,C)), is in AUTO with a setpoint of 4800 gpm. (Local Panel A(B,C)C102).	Operator contacts Turbine Building Equipment Operator (TBEO) to check FIC-1650B is in AUTO with a setpoint of 4800 gpm on local panel 1B-C-102.			
CUE	INFORM operator that FIC-1650B is in AUTO with a setpoint of 4800 gpm on local panel 1B-C-102.	N/A			
	NOTE DO NOT place Secondary Condensate Pump Auxiliary Lube Oil Pump in-service until just prior to starting the associated Secondary Condensate Pump.	Operator reads NOTE			

JPM: AE009

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Feedwater

TASK: Start a Secondary Condensate Pump

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11. D	START lube oil system for Secondary Condensate Pump A(B,C) as follows:				
5.1.11. D.1	OBSERVE LI-1671A(B,C), Secondary Condensate Pump Lube Oil Reservoir Level, indicates a normal level between LOW and HIGH marks (local).	Operator contacts the TBEO to OBSERVE LI-1671B, Secondary Condensate Pump Lube Oil Reservoir Level, indicates a normal level between LOW and HIGH marks locally on the pump skid.			
CUE	INFORM operator that LI-1671B, Secondary Condensate Pump Lube Oil Reservoir Level, indicates a normal level between LOW and HIGH marks.	N/A			
5.1.11. D.2	PRESS SEC CNDS PUMP A(B,C) AUX LUBE OIL PMP START pushbutton.	Operator presses the SEC CNDS PUMP B AUX LUBE OIL PMP START pushbutton.	*		Y N Flagging Y N STAR Y N Peer Check
		Operator observes the START light is illuminated and STOP light is extinguished.			

JPM: AE009

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Feedwater**TASK: **Start a Secondary Condensate Pump**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11. D.3	OBSERVE PI-1669A(B,C), AUX LUBE Condensate Pump A(B,C) Oil Pressure, indicates approximately 7 to 9 psig (local).	Operator contacts the TBEO to OBSERVE PI-1669B, AUX LUBE Condensate Pump B Oil Pressure, indicates approximately 7 to 9 psig locally on the pump skid.			
CUE	INFORM operator that PI-1669B, AUX LUBE Condensate Pump B Oil Pressure, indicates approximately 7 to 9 psig.	N/A			
5.1.11. E	OBSERVE SEC CNDS PUMP A(B,C) START ENABLE is illuminated.	Operator observes the START ENABLE is illuminated.			
	CAUTION When starting a SCP, the time between starting the pump and opening the discharge valve should be minimized. Operation with the min flow valve open diverts flow and may lower feed pressure to the RPV, challenging RPV level. RPV level and start-up level control valve operation should be monitored closely.	Operator reads CAUTION			

JPM: AE009

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Feedwater

TASK: Start a Secondary Condensate Pump

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11. F	START SEC CNDS Pump A(B,C) AND PERFORM the following:	Operator presses the SEC CNDS PUMP B START pushbutton.	*		Y N Flagging Y N STAR Y N Peer Check
		Operator observes the START light is illuminated and STOP light is extinguished.			
5.1.11. F.1	OBSERVE FV-1650A(B,C), SEC CNDS PUMP A(B,C) MIN FLOW VLV OPEN, is illuminated.	Operator observes FV-1650B, SEC CNDS PUMP B MIN FLOW VLV OPEN, is illuminated.			
5.1.11. F.2	OBSERVE AI-6317A(B,C), SEC CNDS PUMP A(B,C) MOT AMPS, indicates < 279 amps (< 481 amps for CP137).	Operator observes the AI-6317B, SEC CNDS PUMP B MOT AMPS, indicates < 279 amps.			
5.1.11. G	PRESS SEC CNDS Pump A(B,C) AUX LUBE OIL PMP STOP pushbutton.	Operator presses the SEC CNDS PUMP B AUX LUBE OIL PMP STOP pushbutton.			
		Operator observes the STOP light is illuminated and START light is extinguished.			

JPM: AE009

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Feedwater

TASK: Start a Secondary Condensate Pump

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11. H	PRESS SEC CNDS Pump A(B,C) AUX LUBE OIL PMP AUTO pushbutton.	Operator presses the SEC CNDS Pump B AUX LUBE OIL PMP AUTO pushbutton.	*		Y N Flagging Y N STAR Y N Peer Check
		Operator observes the AUTO light is illuminated and MAN light is extinguished.			
	NOTE AD-HV-1710 PRI CNDS FLOW PATH MIN FLOW RECIRC valve will not have an auto open signal present once two Secondary Condensate Pumps are in service.	Operator reads NOTE.			
	CAUTION Flow through Condensate Demineralizer should be maintained between 3000 - 6000 gpm during normal operation.	Operator reads CAUTION.			

JPM: AE009

Rev: 01

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Feedwater

TASK: Start a Secondary Condensate Pump

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11. I	IF TWO Secondary Condensate Pumps are now in service THEN PRESS AD-HV-1710 PRI CNDS FLOW PATH MIN FLOW RECIRC CLOSE PB.	Operator determines this step is applicable and presses the AD-HV-1710 PRI CNDS FLOW PATH MIN FLOW RECIRC CLOSE PB.	*		Y N Flagging Y N STAR Y N Peer Check
		Operator observes the AD-HV-1710 PRI CNDS FLOW PATH MIN FLOW RECIRC OPEN and CLOSE lights are illuminated.			
		Operator observes the AD-HV-1710 PRI CNDS FLOW PATH MIN FLOW RECIRC OPEN light extinguishes.			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: AE009

TASK: Start a Secondary Condensate Pump

TASK NUMBER: 2590020101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. A plant startup is in progress IAW HC.OP-IO.ZZ-0003.
2. Reactor pressure is 500 psig.
3. "A" and "B" Primary Condensate Pumps are in service.
4. "A" Secondary Condensate Pump is in service.
5. "B" RFPT is in service.
6. The Start-Up Level Control Valve is in AUTO.
7. The Turbine Building Operator has been briefed and is standing by on location.

INITIATING CUE:

Start the second Secondary Condensate Pump BP102 IAW HC.OP-SO.AE-0001(Q).

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to a startup I.C., 500 psig reactor pressure.
	ENSURE A and B Primary Condensate Pumps are in service.
	ENSURE A Secondary Condensate Pump is in service.

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

Initial	Description
	ENSURE a copy of HC.OP-SO.AE-0001 is available.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

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

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Reactor/Turbine Pressure Regulating System

TASK: Respond to a Low Turbine Hydraulic Pressure

TASK NUMBER: 4000570401

JPM NUMBER: 305H-JPM.CH002 **REV #:** 07

SAP BET: NOH05JPCH02E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO


☒

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 5/21/10

REVIEWED BY: 
Operations Representative

DATE: 6/30/2010

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** CH002**REV:** 07**SYSTEM:** Reactor/Turbine Pressure Regulating System**TASK NUMBER:** 4000570401**TASK:** Respond to a Low Turbine Hydraulic Pressure**ALTERNATE PATH:** ☒**K/A NUMBER:** 241000 A2.06**IMPORTANCE FACTOR:**

3.1	3.2
-----	-----

APPLICABILITY:EO ☐RO ☒STA ☐SRO ☒

RO

SRO

EVALUATION SETTING/METHOD: Simulator/Perform**REFERENCES:** HC.OP-SO.CH-0001 Rev. 42**TOOLS, EQUIPMENT AND PROCEDURES:** None**ESTIMATED COMPLETION TIME:** 8 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Reactor/Turbine Pressure Regulating System**TASK:** Respond to a Low Turbine Hydraulic Pressure**TASK NUMBER:** 4000570401**INITIAL CONDITIONS:**

1. The plant is at 100% power, steady state.
2. The BP116 EHC pump is in MAN and running, the AP116 is in Standby.
3. The BP116 EHC is scheduled for maintenance.

INITIATING CUE:

You are the Plant Operator.

Swap In service EHC pumps to AP116 in service, and BP116 in Standby.

Leave BP116 in Standby (AUTO) for a confidence run on AP116 prior to C/T the BP116.

JPM: CH002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 07

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor/Turbine Pressure Regulating System

TASK: Respond to a Low Turbine Hydraulic Pressure

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains and locates procedure HC.OP-SO.CH-0001.	Operator obtains the correct procedure.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations, and initials each precaution and limitation in the space provided in the procedure.			
CUE	If excessive time is taken to review precautions and limitations, inform operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step of procedure to be 5.12.			
5.12.1	ENSURE all prerequisites of Section 2.12 are satisfied.	Operator reviews Prerequisites and initials each Prerequisite in the space provided in the procedure. Examiner Note: It is NOT critical to initial the procedure steps.			

JPM: CH002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 07

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor/Turbine Pressure Regulating System

TASK: Respond to a Low Turbine Hydraulic Pressure

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.	N/A			
5.12.2	STATION an equipment operator at the EHC Skid to monitor pump performance during swap.	The operator contacts the equipment operator.			
CUE	Inform the operator that an equipment operator is standing by to monitor pump performance.	N/A			
5.12.3	PERFORM the following to alternate the EHC Pumps (Panel 10C651C):				
5.12.3. A	PRESS HYDR FLUID PUMP B(A)P116 MAN push-button AND OBSERVE AUTO lamp extinguish AND MAN lamp backlight illuminates.	Operator presses the HYDR FLUID PUMP AP116 MAN pushbutton.	* #		
		Operator observes AUTO lamp extinguishes AND MAN lamp backlight illuminates.			
5.12.3. B	PRESS HYDR FLUID PUMP B(A)P116 START push-button.	Operator presses the HYDR FLUID PUMP AP116 START push-button	* #		

JPM: CH002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 07

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor/Turbine Pressure Regulating System

TASK: Respond to a Low Turbine Hydraulic Pressure

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes the START pushbutton illuminates and the STOP pushbutton extinguishes.			
5.12.3. C	OBSERVE that B(A)P116, HYDR FLUID PUMP, starts <u>AND</u> develops flow, as indicated by AI-6427B(A), MOTOR AMPS, for both pumps indicating approximately the same current.	Operator observes the AP116, HYDR FLUID PUMP, starts <u>AND</u> develops flow, as indicated by AI-6427B(A), MOTOR AMPS, for both pumps indicating approximately the same current.			
5.12.3. D	VERIFY HYDR FLUID PUMP A(B)P116 is in manual <u>AND</u> the AUTO lamp is extinguished <u>AND</u> MAN lamp backlight is illuminated.	Operator verifies that BP116 MAN push-button lamp backlight is illuminated.			
5.12.3. E	PRESS HYDR FLUID PUMP A(B)P116 STOP push-button.	Operator presses the BP116 STOP push-button.	* #		
		Operator observes the START lamp extinguish <u>AND</u> STOP lamp backlight illuminates. Examiner Note: The operator may notice the reduction of system pressure at any time while performing the following.			

JPM: CH002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 07

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor/Turbine Pressure Regulating System

TASK: Respond to a Low Turbine Hydraulic Pressure

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.12.3. F	OBSERVE that A(B)P116, HYDR FLUID PUMP, stops <u>AND</u> that B(A)P116, HYDR FLUID PUMP, maintains system pressure. (1550 - 1700 psig using CRIDS Point A3290 <u>OR</u> equivalent)	Operator observes that BP116, HYDR FLUID PUMP, stops <u>AND</u> that AP116, HYDR FLUID PUMP, does <u>NOT</u> maintain system pressure. (1550 - 1700 psig using CRIDS point A3290 <u>OR</u> equivalent).			
5.12.3. G	<u>IF</u> the B(A)P116, HYDR FLUID PUMP, fails to maintain system pressure, <u>THEN IMMEDIATELY START</u> A(B)P116, HYDR FLUID PUMP.	Based on previous step, operator determines this step applies, IMMEDIATELY starts BP116, HYDR FLUID PUMP by pressing HYDR FLUID PUMP BP116 START pushbutton. Examiner Note: Starting the BP116, HYDR FLUID PUMP will prevent low pressure and turbine trip/reactor scram. If the turbine trips, then consider this step UNSAT.	* #		
		Operator observes that the pump starts <u>AND</u> develops flow, as indicated by AI-6427A/B, MOTOR AMPS, for both pumps indicating approximately the same current.			
CUE	If asked, direct the operator to start the BP116, "B" HYDR FLUID PUMP. After the Operator starts the BP116 <u>OR</u> the turbine trips, GIVE the terminating Cue.	N/A			

JPM: CH002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 07

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor/Turbine Pressure Regulating System

TASK: Respond to a Low Turbine Hydraulic Pressure

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: CH002

TASK: Respond to a Low Turbine Hydraulic Pressure

TASK NUMBER: 4000570401

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power, steady state.
2. The BP116 EHC pump is in MAN and running, the AP116 is in Standby.
3. The BP116 EHC is scheduled for maintenance.

INITIATING CUE:

You are the Plant Operator.

Swap In service EHC pumps to AP116 in service, and BP116 in Standby.

Leave BP116 in Standby (AUTO) for a confidence run on AP116 prior to C/T the BP116.

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to full power.
	ENSURE the BP116 EHC pump is in service in MAN and the AP116 is in Standby in AUTO.

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

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

EVENT TRIGGERS:

Initial	ET #	Description
	1	EVENT ACTION: zdtuehtb // 'B' EHC pump STOP pushbutton COMMAND: PURPOSE:
	2	EVENT ACTION: zdtuehsb // 'B' EHC pump START pushbutton COMMAND: dmf tc16 PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	TC16 EHC Pump Discharge Filter clogging	---	---	ET-1	---	100%
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	TC05 EHC pump A Discharge Filter Replacement	1	---	ET-2	---	REPLACE
	TC06 EHC pump B Discharge Filter Replacement	1	---	ET-2	---	REPLACE

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

TASK NUMBER: 2060180201

JPM NUMBER: 305H-JPM.BJ006

REV #: 08

SAP BET: NOH05JPBJ06E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

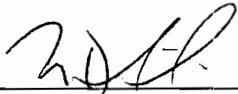
RO ☒

STA ☐

SRO ☒

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 7/1/10

REVIEWED BY: 
Operations Representative

DATE: 7/1/10

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** BJ006**REV:** 08**SYSTEM:** High Pressure Coolant Injection**TASK NUMBER:** 2060180201**TASK:** Place HPCI In Full Flow Recirc**ALTERNATE PATH:** ☐**K/A NUMBER:** 206000 A4.06**IMPORTANCE FACTOR:** 4.3 4.3**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.ZZ-0001 Rev 21**TOOLS, EQUIPMENT AND PROCEDURES:****ESTIMATED COMPLETION TIME:** 12 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

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

1. The Reactor has scrambled 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.

JPM: BJ006

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 08

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER 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: BJ006

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 08

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

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

JPM: BJ006

Rev: 08

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.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: BJ006

Rev: 08

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.0.G	IMMEDIATELY OPEN AP-HV-F011.	Operator presses the AP-HV-F011 OPEN pb.	* #		
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			
1.0.H	WHEN Discharge Pressure turns ADJUST FIC-R600 setpoint to 3000 gpm.	Operator observes HPCI Pump Discharge Pressure on PI-R601-E41 (red) ribbon 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: BJ006

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 08

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

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

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: BJ006

TASK: Place HPCI In Full Flow Recirc

TASK NUMBER: 2060180201

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

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

INITIATING CUE:

Place HPCI into the Full Flow Test Mode.

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	Place "B" RHR in Suppression Pool Cooling.
	Lower Suppression Pool level to approximately 75.0"
	Reduce Recirc to minimum.
	Place Mode Switch to S/D.
	Stabilize RPV level at approximately -20 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 -15 inches.
	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 TRIGGERS:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

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

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

TASK NUMBER: 3780050501

JPM NUMBER: 305H-JPM.KL003

REV #: 00

SAP BET: NOH05JPKL03E

ALTERNATE PATH: ☒

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 7/1/10

REVIEWED BY: 

Operations Representative

DATE: 7/1/10

APPROVED BY: 

Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** KL003**REV:** 00**SYSTEM:** Primary Containment Instrument Gas**TASK NUMBER:** 3780050501**TASK:** Operate The PCIG System During Post LOCA/Isolation Conditions**ALTERNATE PATH:** ☒**K/A NUMBER:** 223001 A4.11**IMPORTANCE FACTOR:** 3.1 3.0**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.COMP-0002 Rev. 6

HC.OP-SO.KL-0001 Rev. 25

TOOLS, EQUIPMENT AND PROCEDURES:**ESTIMATED COMPLETION TIME:** 12 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

TASK NUMBER: 3780050501

INITIAL CONDITIONS:

1. The plant is operating at 100 percent power.
2. An inadvertent Channel "A" isolation signal has occurred.

INITIATING CUE:

Restore Primary Containment Instrument Gas IAW HC.OP-AB.COMP-0002 PRIMARY
CONTAINMENT INSTRUMENT GAS Subsequent Action D.

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-AB.CONT-0002.			
		Operator reviews Retainment Override Conditions and Actions.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be Subsequent Operator Action D.			

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE 5	Both PCIG Compressors are placed in STOP to prevent a SAFETY LOCKOUT due to low suction pressure until the suction line up is restored.	Operator reads NOTE.			
D.1	PRESS A and B PCIG Compressors STOP PB.	Operator presses A PCIG Compressor STOP PB.	*		Y N STAR
		Operator observes the STOP light is illuminated and START light is extinguished.			
		Operator presses B PCIG Compressor STOP PB.	*		Y N STAR
		Operator observes the STOP light is illuminated and START light is extinguished.			

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
D.2	ENSURE Isolations per Attachment 5 for A Channel.	Operator turns to Attachment 5 of HC.OP-AB-COMP-0002.			
NOTE 1	Valves isolate on 1.68 psig DRYWELL PRESSURE, 1 X 10 ⁻³ uCi/cc REACTOR BUILDING EXHAUST RADIATION, Core Spray Manual Initiation Pushbutton and -129" Low Reactor Level unless otherwise noted.	Operator reads NOTE.			
Attach 5	KL-HV5152A INSTRUMENT GAS SUPPLY HDR A INBD ISLN	Operator observes the KL-HV5152A INSTRUMENT GAS SUPPLY HDR A INBD ISLN CLOSE light is illuminated and OPEN light is extinguished.			
Attach 5	KL-HV5148 INSTRUMENT GAS CPRSR SUCT INBD ISLN	Operator observes the KL-HV5148 INSTRUMENT GAS CPRSR SUCT INBD ISLN CLOSE light is illuminated and OPEN light is extinguished.			
Attach 5	KL-HV5172A CONT ATMOSPHERE A INSTR GAS EMER SUP	Operator observes the KL-HV5172A CONT ATMOSPHERE A INSTR GAS EMER SUP CLOSE light is illuminated and OPEN light is extinguished.			

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE 6	Opening of the Reactor Building Post Accident Compressor Suction Valves in Step D.3 or D.5 may cause a rise in Primary Containment Oxygen concentrations. Monitor Drywell and Suppression Chamber Oxygen Concentration for compliance. [TS 3.6.6.2]	Operator reads NOTE.			
D.3	PLACE B PCIG Compressor in service as follows:				
D.3.A	CLOSE HV-5162.	Operator presses the HV-5162 CLOSE PB.	* #		Y N STAR
		Operator observes the HV-5162 CLOSE light is illuminated and OPEN light is extinguished.			

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
D.3.B	OPEN HV-5160B using Key Lock Switch.	Operator opens HV-5160B using Key Lock Switch.	* #		Y N STAR
		Operator observes the HV-5160B OPEN light is illuminated and CLOSE light is extinguished.			
D.3.C	ENSURE B PCIG Compressor SAFETY LOCKOUT is RESET.	Operator contacts Reactor Building Equipment Operator and ensures B PCIG Compressor SAFETY LOCKOUT is RESET.			
CUE	IF contacted as Reactor Building Equipment Operator, THEN after approximately 1 minute, TRIGGER ET-3 and REPORT that the Safety Circuit Lockout is reset.	N/A			
D.3.D	PRESS B PCIG Compressor AUTO LEAD PB.	Operator presses the B PCIG Compressor AUTO LEAD PB.	*		Y N STAR
		Operator observes the B PCIG Compressor AUTO LEAD light is illuminated.			

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
D.4	ENSURE the following valves are OPEN:				
	• HV-5156A	Operator observes the HV-5156A OPEN light is illuminated and CLOSE light is extinguished.			
	• HV-5156B	Operator observes the HV-5156B OPEN light is illuminated and CLOSE light is extinguished.			
	B PCIG Trip				
	INSERT ET-5 after B PCIG placed in AUTO LEAD.	Operator recognizes trip of B PCIG by: <ul style="list-style-type: none"> • A1-A5 INST GAS PANEL A/B C213 			
		Operator reports trip of B PCIG to the CRS.			
CUE	"Take any required action"	N/A			

JPM: KL003

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	IF contacted as Reactor Building Equipment Operator, THEN after approximately 1 minute, REPORT that the B PCIG Compressor Safety Circuit Lockout is tripped and will not reset.	N/A			
D.5	If B PCIG Compressor is not available, PLACE A PCIG Compressor in service as follows:	Operator recognizes these steps are applicable.			
D.5.A	CLOSE HV-5147.	Operator presses the HV-5147 CLOSE PB.	* #		Y N STAR
		Operator observes the HV-5147 CLOSE light is illuminated and OPEN light is extinguished.			
D.5.B	OPEN HV-5160A using Key Lock Switch.	Operator opens HV-5160A using Key Lock Switch.	* #		Y N STAR
		Operator observes the HV-5160A OPEN light is illuminated and CLOSE light is extinguished.			

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Primary Containment Instrument Gas

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
D.5.C	ENSURE A PCIG Compressor SAFETY LOCKOUT is RESET.	Operator ensures A PCIG Compressor SAFETY LOCKOUT is RESET.			
		Operator contacts Reactor Building Equipment Operator and ensures A PCIG Compressor SAFETY LOCKOUT is RESET.			
CUE	IF contacted as Reactor Building Equipment Operator, THEN after approximately 1 minute, TRIGGER ET-4 and REPORT that the Safety Circuit Lockout is reset.	N/A			
D.5.D	PRESS A PCIG Compressor AUTO LEAD PB.	Operator presses the A PCIG Compressor AUTO LEAD PB.	*		Y N STAR
		Operator observes the A PCIG Compressor AUTO LEAD light is illuminated.			

JPM: KL003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Primary Containment Instrument Gas**TASK: **Operate The PCIG System During Post LOCA/Isolation Conditions**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p>WHEN operator informs you the task is complete, OR the JPM has been terminated for other reasons, THEN RECORD the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: KL003

TASK: Operate The PCIG System During Post LOCA/Isolation Conditions

TASK NUMBER: 3780050501

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is operating at 100 percent power.
2. An inadvertent Channel "A" isolation signal has occurred.

INITIATING CUE:

Restore Primary Containment Instrument Gas IAW HC.OP-AB.COMP-0002 PRIMARY CONTAINMENT INSTRUMENT GAS Subsequent Action D.

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to a 100 percent power IC.
	LOWER PCIG Gas pressure to ~85 psig using IA03 Loss of drywell instrument gas.
	INSERT PC03A in the tripped condition and allow valves to travel to required positions.
	ACKNOWLEDGE alarms and place simulator in FREEZE.

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

Initial	Description
	ENSURE a copy of HC.OP-AB.COMP-0002 is available.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

Initial	ET #	Description
	3	EVENT ACTION: ZDIA60BO >= 1.0 // HV5160 keyswitch to OPEN COMMAND: PURPOSE: Simulates opening of HV-5160B
	5	EVENT ACTION: ZDIAALCB >= 1.0 // B PCIG Auto Lead PB COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	IA03 Loss of drywell instrument gas	---	---	NONE	22	0
	PC03A Drywell pressure transmitter N094A failure	---	---	NONE	3	3
	AN-A1A5 CRYWOLF ANN A1A5 - INST GAS PANEL A/B C213	---	---	ET-5	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	IA09 Instrument gas compressor B reset	---	---	ET-4	---	RESET
	IA08 Instrument gas compressor A reset	---	---	ET-6	---	RESET
	AN01B A1-A5 Inst Gas Panel BC213	00:00:05	---	ET-4	---	NORM
	AN01A A1-A5 Inst Gas Panel AC213	00:00:05	---	ET-6	---	NORM
		---	---	---	---	---

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	10DS2 A HV-5160B OPEN-INSTRUMENT GAS HV-5160B	---	---	ET-3	---	ON
	10DS2 B HV-5160B CLOSED-INSTRUMENT GAS HV-5160B	00:00:27	---	ET-3	---	OFF
	10S8 A CLOSE HV-5160B	00:00:30	---	ET-3	---	ON
		---	---	---	---	---

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Safety Auxiliaries Cooling Water

TASK: Respond To A Safety Auxiliaries Cooling Water
Malfunction

TASK NUMBER: 4000780401

JPM NUMBER: 305H-JPM.EG008

REV #: 05

SAP BET: NOH05JPEG08E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

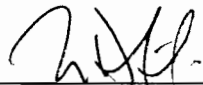
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DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 5/26/10

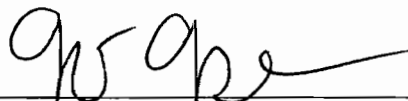
REVIEWED BY:



Operations Representative

DATE: 6/30/2010

APPROVED BY:



Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: EG008

REV: 05

SYSTEM: Safety Auxiliaries Cooling Water

TASK NUMBER: 4000780401

TASK: Respond To A Safety Auxiliaries Cooling Water Malfunction

ALTERNATE PATH: ☒

K/A NUMBER: 295018AA1.02

IMPORTANCE FACTOR: 3.3 3.4

APPLICABILITY:

RO SRO

EO ☐RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.COOL-0002, Rev 6

HC.OP-SO.KJ-0001, Rev 54

TOOLS, EQUIPMENT AND PROCEDURES: Annotated copy of HC.OP-SO.KJ-0001.

ESTIMATED COMPLETION TIME: 3 Minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: 9 Minutes

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: _____ Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ DATE: _____

NAME: _____

DATE: _____

SYSTEM: Safety Auxiliaries Cooling Water**TASK:** Respond To A Safety Auxiliaries Cooling Water Malfunction**TASK NUMBER:** 4000780401**INITIAL CONDITIONS:**

1. The plant is at 100% power with TACS being supplied by the 'A' SACS loop.
2. The 'D' EDG is INOPERABLE and has been placed in service for a loaded maintenance run following work on the governor.
3. The 'D' EDG has been loaded to 1000 KW and approximately 500 KVAR IAW HC.OP-SO.KJ-0001. Load is being held here while governor stability at low loads is being evaluated.
4. The 'B' SACS pump just tripped and HC.OP-AB.COOL-0002 is being implemented.

INITIATING CUE:

Implement Condition A of HC.OP-AB.COOL-0002.

You are only responsible for actions contained in HC.OP-AB.COOL-0002.

The Simulator is in freeze and you will be given five minutes to walk down the panels and obtain your procedure. Inform your examiner when you are ready to begin.

This is a time critical JPM.

JPM: EG008

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 05

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Safety Auxiliaries Cooling Water

TASK: Respond To A Safety Auxiliaries Cooling Water Malfunction

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.			
	Examiner Note: Keep the Simulator in freeze and allow the Operator to walk down the panels and obtain HC.OP-AB.COOL-0002.				
	Operator obtains procedure HC.OP-AB.COOL-0002.	Operator obtains the correct procedure.			
CUE	When <u>EITHER</u> five minutes has elapsed, <u>OR</u> the Operator has indicated he/she is ready to begin, PLACE the Simulator in RUN and INFORM the Operator the JPM has commenced.				
CUE	ENTER START TIME AFTER SIMULATOR IS REMOVED FROM FREEZE: START TIME:				

JPM: EG008

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 05

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Safety Auxiliaries Cooling Water

TASK: Respond To A Safety Auxiliaries Cooling Water Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
A.1	START the unaffected pump as follows:				
A.1.a	VERIFY INOP and OVLD/PWR FAIL are <u>not</u> illuminated.	Operator observes the SAFETY AUXILIARIES COOLING LOOP B PUMPS PUMP D INOP and OVLD/PWR FAIL lights are not illuminated.			
A.1.b	PLACE the pump in manual.	Operator presses the SAFETY AUXILIARIES COOLING LOOP B PUMPS PUMP D MAN pushbutton.	* #		
		Operator observes the MAN light illuminates and the AUTO light extinguishes.			

JPM: EG008

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 05

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
A.1.c	START the pump.	Operator presses the SAFETY AUXILIARIES COOLING LOOP B PUMPS PUMP D DP210 START pushbutton.	* #		TIME: _____
		Operator observes the PUMP D DP210 START light illuminates and the STOP light extinguishes			
		Operator observes the PUMP D DP210 AI-6356D (amps) goes off-scale high.			
		<p>After approximately 3 seconds, the 'D' SACS pump trips and the operator observes the following:</p> <ul style="list-style-type: none"> • PUMP D AI-6356D amps drop to zero • OHA A1-E5 SACS LOOP B TROUBLE reflashes • The PUMP D DP210 START light extinguishes • The PUMP D STOP light begins flashing 			

JPM: EG008

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OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
A.2	IF flow cannot be restored to the affected loop, <u>THEN</u> PERFORM the following:	Operator determines flow cannot be restored to the 'B' SACS loop.			
CUE	If the Operator questions who is responsible for the 'D' EDG, DIRECT the Operator to perform steps in A.2 of HC.OP-AB.COOL-0002.	N/A			
A.2	UNLOAD AND SECURE all EDG's aligned to the affected loop as follows:				
A.2.a	PRESS GEN VR LOWER pushbutton until Generator KVAR loading is < 200 KVAR.	Operator presses the EMERGENCY GENERATORS D DIESEL GENERATOR 1DG400 GEN VR LOWER pushbutton until GEN D VARI-6395D indicates < 200 KVAR.			
A.2.b	PRESS DIESEL ENG GOV DECR pushbutton until Generator load < 200 KW.	Operator presses the EMERGENCY GENERATORS D DIESEL GENERATOR 1DG400 DIESEL ENG GOV DECR pushbutton until GEN D WI-6394D indicates < 200 KW.			

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SYSTEM: Safety Auxiliaries Cooling Water

TASK: Respond To A Safety Auxiliaries Cooling Water Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	Examiner Note: The D EDG output breaker may trip on reverse power.				
A.2.c	TRIP associated EDG GEN BRKR.	Operator presses the EMERGENCY GENERATORS D DIESEL GENERATOR 1DG400 GEN BRKR TRIP pushbutton.			
		Operator observes the 40407 TRIP light illuminates and the CLOSE light extinguishes.			
A.2.d	STOP the EDG.	Operator presses the EMERGENCY GENERATORS D DIESEL GENERATOR 1DG400 DIESEL ENG STOP pushbutton.	*		TIME: _____
		Operator observes the DG400 STOP light illuminates and the START light extinguishes BEFORE the EDG catastrophically fails and trips (≈9 minutes with NO operator action).			

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	Examiner Note: Time Critical portion is satisfied if Operator secures EDG before it catastrophically fails and trips.				
	<ul style="list-style-type: none"> ENSURE Control Room Chilled Water is aligned to the unaffected loop.(GJ) 	Operator observes the 'A' Control Room Ventilation and Chilled Water train is in service.			
	<ul style="list-style-type: none"> ENSURE TSC Chilled Water is aligned to the unaffected loop.(GJ) 	Operator observes the 'A' TSC Ventilation and Chilled Water train is in service.			
	<ul style="list-style-type: none"> DECLARE the loop inoperable, <u>AND</u> IMPLEMENT Condition K. 	Operator informs CRS the 'B' SACS loop should be declared inoperable and Condition K should be implemented.			
	Examiner Note: It is not necessary for the Operator to perform any Condition K actions.				

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>				

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EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: EG008

TASK: Respond To A Safety Auxiliaries Cooling Water Malfunction

TASK NUMBER: 4000780401

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

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UNSAT

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QUESTION: _____

RESPONSE: _____

RESULT:

SAT

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UNSAT

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JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power with TACS being supplied by the 'A' SACS loop.
2. The 'D' EDG is INOPERABLE and has been placed in service for a loaded maintenance run following work on the governor.
3. The 'D' EDG has been loaded to 1000 KW and approximately 500 KVAR IAW HC.OP-SO.KJ-0001. Load is being held here while governor stability at low loads is being evaluated.
4. The 'B' SACS pump just tripped and HC.OP-AB.COOL-0002 is being implemented.

INITIATING CUE:

Implement Condition A of HC.OP-AB.COOL-0002.

You are only responsible for actions contained in HC.OP-AB.COOL-0002.

The Simulator is in freeze and you will be given five minutes to walk down the panels and obtain your procedure. Inform your examiner when you are ready to begin.

This is a time critical JPM.

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	ENSURE TACS is aligned to the 'A' SACS loop.
	ENSURE the 'A' Control Room Ventilation train is in service.
	ENSURE the 'A' TSC Ventilation train is in service.
	ENSURE the EG-HV-2314B is closed ('B' SACS to Fuel Pool Cooling Hx).
	START the 'D' EDG and LOAD to 1000 KW and 500 KVAR IAW SO.KJ-0001.
	ACKNOWLEDGE Control Room and Local alarms.
	INSERT the trip of the 'B' SACS pump as follows:
	1. ENSURE the 'B' SACS pump is in service and 'D' SACS pump is in standby.
	2. INSERT Malfunction CW10B
	3. Allow the pump to trip <u>AND</u> OHA A1-A5 to alarm, then FREEZE the simulator.

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

Initial	Description
	INITIAL HC.OP-SO.KJ-0001 for the 'D' EDG.
	UPDATE the LAST START and BAR information for 'D' EDG on 10C651E to the current date.
	PLACE Robust Op Barriers on the 'D' EDG BRKR and ENG controls
	FLAG the 'D' EDG GOV <u>AND</u> GEN VR pushbuttons
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

Initial	ET #	Description
	1	EVENT ACTION: cw:z52pd >= 1.0 // 'D' SACS pump start COMMAND: PURPOSE: Trips 'D' SACS pump shortly after start.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CW10B Trip of 'B' SACS pump	---	---	NONE	---	---
	CW10D Trip of 'D' SACS pump	3 sec	---	ET-1	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---
		---	---	---	---	---

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	5A29 A1 LO BP210 OVLD/PWR FAIL	---	---	NONE	---	ON
		---	---	---	---	---

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

TASK NUMBER: 4000070401

JPM NUMBER: 305H-JPM.SB004

REV #: 13

SAP BET: NOH05JPSB04E

ALTERNATE PATH: ☒

APPLICABILITY:

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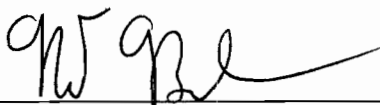
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DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 4/20/10

REVIEWED BY: 
Operations Representative

DATE: 6/30/2010

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** SB004**REV:** 13**SYSTEM:** Control Rod and Drive Mechanism**TASK NUMBER:** 4000070401**TASK:** Respond To A Control Rod System Malfunction**ALTERNATE PATH:** ☒**K/A NUMBER:** 295015 AA1.02**IMPORTANCE FACTOR:** 4.0 4.2**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-ST.SF-0003 Rev 12

HC.OP-AB.IC-0001 Rev 10

HC.OP-AB.ZZ-0001 Rev 20

TOOLS, EQUIPMENT AND PROCEDURES:**ESTIMATED COMPLETION TIME:** 14 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

TASK NUMBER: 4000070401

INITIAL CONDITIONS:

1. Reactor is at 100% power.
2. No other testing or maintenance is in progress.
3. A thermal scan of all 185 HCUs has been performed.

INITIATING CUE:

You are the Reactor Operator.
Perform HC.OP-ST.SF-0003, RPS MANUAL SCRAM TEST - WEEKLY.

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-ST.SF-0003.			
	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.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1.1.			
5.1.1	LOG test start time in the Control Room log(s).	Operator requests that the test start time be logged in the Control Room logs.			
CUE	INFORM the Operator the test start time has been logged in the Control Room logs.	N/A			

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.2	ENSURE all prerequisites have been satisfied IAW Section 2.1.	Operator reviews Prerequisites, completes Section 3.0 of Attachment 1, and initials each Prerequisite in the space provided in the procedure.			
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.	N/A			
5.1.3	ENSURE Attachment 1, Section 1.0 of the SM/CRS Data and Signature Sheet has been completed and Regular Surveillance or Retest is indicated.	Operator ensures that Attachment 1, Section 1.0 of the SM/CRS Data and Signature Sheet has been completed and Regular Surveillance is indicated			
5.1.4	ENSURE all RPS TRIPS are reset.	Operator observes RPS indications on the 10C651 panel and overhead annunciator panels, and determines that RPS is reset.			
5.1.5	ARM RPS TRIP SYS A1 MAN INIT PB.	Operator rotates the RPS TRIP SYS A1 MAN INIT push button clockwise.	* #		
5.1.6	VERIFY Annunciator MANUAL SCRAM SW ARMED alarms. [T/S 4.3.1.1]	Operator observes OHA C3-A1 MANUAL SCRAM SW ARMED alarms.			

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DATE: _____

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	The following step will cause a TRIP of RPS TRIP SYS A1.	Operator reads NOTE.			
5.1.7	PRESS RPS TRIP SYS A1 MAN INIT PB.	Operator presses the RPS TRIP SYS A1 MAN INIT push button.	* #		
5.1.8	VERIFY the following occurs:	N/A			
5.1.8. A	Annunciator MANUAL SCRAM alarms	Operator observes OHA C5-A3 MANUAL SCRAM annunciator alarms.			
5.1.8. B	RPS TRIP SYSTEM A TRIP LOGIC A1 NORMAL/RESET light extinguishes. [T/S 4.3.1.1]	Operator verifies the RPS TRIP SYSTEM A TRIP LOGIC A1 NORMAL/RESET light extinguishes.			
5.1.8. C	PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights extinguish. [T/S 4.3.1.1]	Operator verifies the PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights extinguish.			

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.8. D	Annunciator REACTOR SCRAM TRIP LOGIC A1 alarms.	Operator observes OHA C3-A2 REACTOR SCRAM TRIP LOGIC A1 annunciator alarms.			
5.1.9	UN-ARM RPS TRIP SYS A1 MAN INIT PB.	Operator rotates the RPS TRIP SYS A1 MAN INIT push button counterclockwise.			
5.1.10	RESET RPS Channel A1.	Operator momentarily rotates the RPS TRIP SYS A1 RESET key switch clockwise, then allows it to return to the counterclockwise position.	*		
5.1.11	VERIFY the following occurs:	N/A			
5.1.11. A	MANUAL SCRAM annunciator is clear.	Operator observes OHA C5-A3 MANUAL SCRAM annunciator extinguishes.			

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.11. B	MANUAL SCRAM SW ARMED annunciator is clear. [T/S 4.3.1.1]	Operator observes OHA C3-A1 MANUAL SCRAM SW ARMED annunciator extinguishes.			
5.1.11. C	RPS TRIP SYSTEM A TRIP LOGIC A1 NORMAL/RESET light is illuminated. [T/S 4.3.1.1]	Operator verifies the RPS TRIP SYSTEM A TRIP LOGIC A1 NORMAL/RESET light illuminates.			
5.1.11. D	PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights are illuminated. [T/S 4.3.1.1]	Operator observes the PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights illuminate.			
	Examiner Note: RPS is considered reset.	N/A			
5.1.11. E	REACTOR SCRAM TRIP LOGIC A1 is clear.	Operator observes that OHA C3-A2 REACTOR SCRAM TRIP LOGIC A1 clears.			

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.12	ENSURE all RPS Trips are RESET.	Operator observes RPS indications on the 10C651 panel and overhead annunciator panels, and determines that RPS is reset.			
5.1.13	ARM RPS TRIP SYS A2 MAN INIT PB.	Operator rotates the RPS TRIP SYS A2 MAN INIT push button clockwise.	* #		
5.1.14	VERIFY Annunciator MANUAL SCRAM SW ARMED alarms. [T/S 4.3.1.1]	Operator observes OHA C3-A1 MANUAL SCRAM SW ARMED alarms.			
NOTE	The following step will cause a TRIP of RPS TRIP SYS A2.	N/A			
5.1.15	PRESS RPS TRIP SYS A2 MAN INIT PB.	Operator presses the RPS TRIP SYS A2 MAN INIT push button.	* #		
5.1.16	VERIFY the following occurs:	N/A			

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.16. A	Annunciator MANUAL SCRAM alarms.	Operator observes OHA C5-A3 MANUAL SCRAM annunciator alarms.			
5.1.16. B	RPS TRIP SYSTEM A TRIP LOGIC A2 NORMAL/RESET light extinguishes. [T/S 4.3.1.1]	Operator verifies the RPS TRIP SYSTEM A TRIP LOGIC A2 NORMAL/RESET light extinguishes.			
5.1.16. C	PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights extinguish. [T/S 4.3.1.1]	Operator verifies the PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights extinguish.			
5.1.16. D	Annunciator REACTOR SCRAM TRIP LOGIC A2 alarms.	Operator observes OHA C3-A3 REACTOR SCRAM TRIP LOGIC A2 annunciator alarms.			
5.1.17	UN-ARM RPS TRIP SYS A2 MAN INIT PB.	Operator rotates the RPS TRIP SYS A2 MAN INIT push button counterclockwise.			

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STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.18	RESET RPS Channel A2.	Operator momentarily rotates the RPS TRIP SYS A2 RESET key switch clockwise, then allows it to return to the counterclockwise position.	*		
5.1.19	VERIFY the following occurs:	N/A			
5.1.19. A	MANUAL SCRAM annunciator is clear.	Operator observes OHA C5-A3 MANUAL SCRAM annunciator extinguishes.			
5.1.19. B	MANUAL SCRAM SW ARMED annunciator is clear. [T/S 4.3.1.1]	Operator observes OHA C3-A1 MANUAL SCRAM SW ARMED annunciator extinguishes.			
5.1.19. C	RPS TRIP SYSTEM A TRIP LOGIC A2 NORMAL/RESET light is illuminated. [T/S 4.3.1.1]	Operator verifies the RPS TRIP SYSTEM A TRIP LOGIC A2 NORMAL/RESET light illuminates.			

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.19. D	PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights are illuminated. [T/S 4.3.1.1]	Operator observes the PILOT SCRAM VALVE SOLENOID TRIP ACTUATOR LOGICS Groups 1, 2, 3 and 4 SOLENOIDS LOGIC A NORMAL lights illuminate.			
	Examiner Note: RPS is considered reset.	N/A			
5.1.19. E	REACTOR SCRAM TRIP LOGIC A2 is clear.	Operator observes that OHA C3-A3 REACTOR SCRAM TRIP LOGIC A2 clears.			
5.1.20	ENSURE all RPS Trips are RESET.	Operator observes RPS indications on the 10C651 panel and overhead annunciator panels, and determines that RPS is reset.			
5.1.21	ARM RPS TRIP SYS B1 MAN INIT PB.	Operator rotates the RPS TRIP SYS B1 MAN INIT push button clockwise.	* #		

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DATE: _____

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.22	VERIFY Annunciator MANUAL SCRAM SW ARMED alarms. [T/S 4.3.1.1]	Operator observes OHA C3-A1 MANUAL SCRAM SW ARMED alarms.			
NOTE	The following step will cause a TRIP of RPS TRIP SYS B1.	N/A			
5.1.23	PRESS RPS TRIP SYS B1 MAN INIT PB.	Operator presses the RPS TRIP SYS B1 MAN INIT push button.	* #		

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NAME: _____

DATE: _____

SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	HC.OP-AB.IC-0001	N/A			
	<u>IMMEDIATE OPERATOR ACTIONS</u> Multiple Control Rods are Drifting Simultaneously. LOCK the Mode Switch in SHUTDOWN.	Operator recognizes multiple rods drifting.			
		Operator rotates the Mode Switch Counterclockwise to SHUTDOWN.	*		
	Examiner Note: Operator may select drifting rods on Rod Select Matrix to verify drifting prior to placing Mode Switch to SHUTDOWN.	N/A			
	Examiner Note: Placing Mode Switch in SHUTDOWN may be performed during Hard card execution.	N/A			
		Operator removes the Mode Switch key.			
	HC.OP-AB.ZZ-0001 Attachment 1	N/A			
1.0	ANNOUNCE "Crew - Standby for Scram Report".	Operator announces "Crew - Standby for Scram Report".			

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SYSTEM: Control Rod and Drive Mechanism

TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.0	LOCK the Mode Switch in Shutdown.	<u>IF</u> not previously performed, <u>THEN</u> Operator rotates the Mode Switch Counterclockwise to SHUTDOWN and removes the key.			
3.0	ANNOUNCE the following: <ul style="list-style-type: none"> Rod Motion status 	Operator observes red FULL OUT lights extinguish and green FULL IN lights illuminate on the Full Core Display. Operator announces the presence of rod motion.			
	<ul style="list-style-type: none"> APRM Downscale status 	Operator observes the amber MONITOR STATUS DNSC lights for all APRMs are Illuminated. Operator announces the APRMs are downscale.			

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TASK: Respond To A Control Rod System Malfunction

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<ul style="list-style-type: none"> Reactor Shutdown status 	Operator observes all rods are fully inserted and/or reactor is shutdown on one or more of the following: <ul style="list-style-type: none"> Rod Worth Minimizer CRIDS Full Core display Four Rod Display Plant Process Computer SPDS Operator announces the reactor is shutdown.			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: SB004

TASK: Respond To A Control Rod System Malfunction

TASK NUMBER: 4000070401

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

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UNSAT

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QUESTION: _____

RESPONSE: _____

RESULT:

SAT

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UNSAT

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JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. Reactor is at 100% power.
2. No other testing or maintenance is in progress.
3. A thermal scan of all 185 HCUs has been performed.

INITIATING CUE:

You are the Reactor Operator.
Perform HC.OP-ST.SF-0003, RPS MANUAL SCRAM TEST - WEEKLY.

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 100% power.
	PERFORM any other set-up items that can be snapped.

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

<i>Initial</i>	Description
	ENSURE Copy of HC.OP-ST.SF-0003 with Attachment 1 Section 1.0 completed is available.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: rp:k14b <= 0.0 rp:k14d <= 0.0 // RPS B1 or B2 tripped COMMAND: PURPOSE: Initiates multiple rod scrams.
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CD010243 Control Rod 02-43 Drift In	---	---	ET-1	---	---
	CD012627 Control Rod 26-27 Drift In	---	---	ET-1	---	---
	CD011827 Control Rod 18-27 Drift In	---	---	ET-1	---	---

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Reactor Auxiliary Cooling System

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

TASK NUMBER: 5880040101

JPM NUMBER: 305H-JPM.ED001

REV #: 10

SAP BET: NOH05JPED01E

ALTERNATE PATH:

☐

APPLICABILITY:

EO

☐

RO

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STA

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SRO

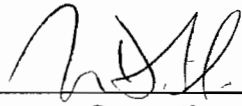
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DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 6/30/10

REVIEWED BY:



Operations Representative

DATE: 6/30/2010

APPROVED BY:



Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** ED001**REV:** 10**SYSTEM:** Reactor Auxiliary Cooling System**TASK NUMBER:** 5880040101**TASK:** Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)**ALTERNATE PATH:** ☐**K/A NUMBER:** 295018 AA1.01**IMPORTANCE FACTOR:** 3.3 3.4**APPLICABILITY:****RO SRO**EO ☐ RO ☒ STA ☐ SRO ☒**EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.CONT-0001 Rev 01**TOOLS, EQUIPMENT AND PROCEDURES:****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 UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Reactor Auxiliary Cooling System

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

TASK NUMBER: 5880040101

INITIAL CONDITIONS:

1. The plant is at 100% Reactor power.
2. The AP161 and BP161 Turbine Building chilled water circ pumps have tripped due to a Freon leak into the system.
3. All Turbine Building chillers have tripped and efforts to restart them have failed.
4. HC.OP-AB.CONT-0001 Drywell Pressure is being implemented.

INITIATING CUE:

Align RACS to supply drywell cooling IAW Condition B of HC.OP-AB.CONT-0001.

JPM: ED001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliary Cooling System

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-AB.CONT-0001.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be Condition B.			
	Condition B Turbine Bldg. Chill Water System is lost to the Drywell.	N/A			
CAUT 1	If the cause of the loss of Turbine Building Chilled Water is Gas/Air intrusion, there is a potential to displace air into the RACS system, degrading its operation.	Operator reads CAUTION			

JPM: ED001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliary Cooling System

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
B.1	ALIGN RACS to the Chill Water System for Drywell Cooling as follows:	N/A			
B.1.a	ENSURE RACS to the out of service Off-Gas Train is ISOLATED as follows:	N/A			
	<ul style="list-style-type: none"> IF the <u>Common</u> Off-Gas train is in service, <u>THEN</u> CLOSE HV-2577 	Operator recognizes this step does <u>NOT</u> apply, leaves the HV-2577 open.			
	<ul style="list-style-type: none"> IF the UNIT 1 Off-Gas train is in service, <u>THEN</u> CLOSE HV-7712A1. 	Operator presses the OFF GAS CLR CNDS COOLING 00E306 COMMON HV-7712A1 CLOSE pushbutton.	*		Y N STAR
		Operator observes the CLOSE light illuminates and OPEN light extinguishes.			

JPM: ED001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliary Cooling System

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
B.1.b	CLOSE HV-9532-1 <u>AND</u> HV-9532-2.	Operator presses the CHW ISLN RTN VLV HV-9532-1 CLOSE pushbutton.	*		Y N STAR
		Operator presses the CHW ISLN SUP VLV HV-9532-2 CLOSE pushbutton.	*		Y N STAR
		Operator observes the green CLOSE indicators illuminate and the red OPEN indicators extinguish.			
B.1.c	PRESS LOOP A SPLY/RTN OPEN RACS PB.	Operator presses the CONTAINMENT CLG SPLY SELECT LOOP A SPLY/RTN CHW/RACS SEL OPEN RACS pushbutton.	*		Y N STAR
B.1.d	PRESS LOOP B SPLY/RTN OPEN RACS PB.	Operator presses the CONTAINMENT CLG SPLY SELECT LOOP B SPLY/RTN CHW/RACS SEL OPEN RACS pushbutton.	*		Y N STAR

JPM: ED001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliary Cooling System

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
B.1.e	OBSERVE the following indications:	N/A			
	<ul style="list-style-type: none"> HV-9530A1/A3 CLOSED 	The green HV-9530A1/A3 CLOSED indicator illuminates and red OPEN indicator extinguishes.			
	<ul style="list-style-type: none"> HV-9530B1/B3 CLOSED 	The green HV-9530B1/B3 CLOSED indicator illuminates and red OPEN indicator extinguishes.			
	<ul style="list-style-type: none"> HV-9530A2/A4 OPEN 	The red HV-9530A2/A4 OPEN indicator illuminates and green CLOSED indicator extinguishes.			
	<ul style="list-style-type: none"> HV-9530B2/B4 OPEN 	The red HV-9530B2/B4 OPEN indicator illuminates and green CLOSED indicator extinguishes.			

JPM: ED001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Auxiliary Cooling System

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
B.1.f	OPEN HV-9532-1 <u>AND</u> HV-9532-2.	Operator presses the CHW ISLN RTN VLV HV-9532-1 OPEN pushbutton.	*		Y N STAR
		Operator presses the CHW ISLN SUP VLV HV-9532-2 OPEN pushbutton.	*		Y N STAR
		Operator observes the red OPEN indicators illuminate and the green CLOSED indicators extinguish.			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP time. 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: ED001

TASK: Manually Switch between Chill Water and The Reactor Auxiliary Cooling System (RACS)

TASK NUMBER: 5880040101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

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JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% Reactor power.
2. The AP161 and BP161 Turbine Building chilled water circ pumps have tripped due to a Freon leak into the system.
3. All Turbine Building chillers have tripped and efforts to restart them have failed.
4. HC.OP-AB.CONT-0001 Drywell Pressure is being implemented.

INITIATING CUE:

Align RACS to supply drywell cooling IAW Condition B of HC.OP-AB.CONT-0001.

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 100% power, MOL.
	PLACE CP161 in MANUAL.
	INSERT trips of AP161 and BP161 and allow TB Chillers to trip.
	PLACE CP161 in AUTO and allow it to start.
	MAXIMIZE Drywell Cooling.

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

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

EVENT TRIGGERS:

<i>Initial</i>	ET #	Description
	1	EVENT ACTION: mstunl >= 135 // Main Steam Tunnel temp . 135 degF COMMAND: PURPOSE: Starts BVH216 Steam Tunnel Unit Cooler to prevent MSIV isolation.
	2	EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	CW18A TB Chilled Water Circ Pump AP161 Trip	---	---	NONE	---	---
	CW18B TB Chilled Water Circ Pump BP161 Trip	---	---	NONE	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	HV12 BVH216 Steam Tunnel Unit Cooler	---	---	ET-1	---	RUN

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	1A95 E DI AK111 Safety Ckt Pushbutton	---	---	NONE	---	OFF
	1A113 E DI BK111 Safety Ckt Pushbutton	---	---	NONE	---	OFF
	1A134 E DI CK111 Safety Ckt Pushbutton	---	---	NONE	---	OFF
	1A181 E1 DI DK111 Safety Ckt Pushbutton	---	---	NONE	---	OFF
	1A97 A1 LO AP161 OVLD/PWR FAIL	---	---	NONE	---	OFF
	1A115 A1 LO BP161 OVLD/PWR FAIL	---	---	NONE	---	OFF

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

TASK NUMBER: 4880060101

JPM NUMBER: 305H-JPM.GK002

REV #: 00

SAP BET: NOH05JPGK02E

ALTERNATE PATH: ☒

APPLICABILITY:

EO ☐

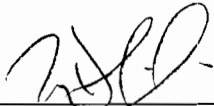
RO ☒

STA ☐

SRO ☒

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 7/1/10

REVIEWED BY: 
Operations Representative

DATE: 7/1/10

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: GK002

REV: 00

SYSTEM: Control Area Ventilation System

TASK NUMBER: 4880060101

TASK: Isolate the Control Room HVAC System

ALTERNATE PATH: ☒

K/A NUMBER: 290003 A4.01

IMPORTANCE FACTOR: 3.2 3.2

APPLICABILITY:

RO

SRO

EO ☐RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.HVAC-0002 Rev 6

HC.OP-SO.GK-0001 Rev 14

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 18 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 Area Ventilation System

TASK: Isolate the Control Room HVAC System

TASK NUMBER: 4880060101

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. "A" Control Room Ventilation train is in service.
3. The Aux Building Operator has been briefed and is standing by on location.

INITIATING CUE:

You are the Plant Operator.
Swap Control Room Ventilation to "B" Train IAW HC.OP-SO.GK-0001.

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

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.GK-0001.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.4.			
5.4.1	ENSURE all prerequisites of Section 2.4 are satisfied.	Operator ensures that all prerequisites have been satisfied.			
CUE	<u>IF</u> excessive time is taken reviewing prerequisites, <u>THEN</u> INFORM operator that all are satisfied.	N/A			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			

JPM: GK002

Rev: 00

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

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)
CUE	<u>IF</u> excessive time is taken reviewing precautions and limitations, <u>THEN</u> INFORM operator that all are satisfied.	N/A			
NOTE	All operations are performed from 10C651E unless otherwise noted. Procedure describes transfer from A Control Chilled Water Loop in service to the B Loop in service, values in parentheses used to transfer back to A in service. SACS Pump Room Unit Coolers 1AVH214 AND 1BVH214 are interlocked to operate in AUTO only IF Chilled Water Pump AP400 is in service. SACS Pump Room Unit Coolers 1CVH214 and 1DVH214 are interlocked to operate in AUTO only IF Chilled Water Pump BP400 is in service.	Operator reads NOTE.			
5.4.2	PRESS CH W CIRC PUMP B(A)P400 MAN PB. MAN comes on.	Operator presses the MAN PB.	*		

JPM: GK002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 00

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes the MAN light illuminates.			
5.4.3	STOP the running Chiller by performing the following:	N/A			
5.4.3. A	PRESS CH W CPRSR A(B)K400 MOT STOP PB. VERIFY STOP comes on.	Operator presses the CH W CPRSR AK400 MOT STOP PB.	*		
		Operator observes the STOP light illuminates.			
		Operator acknowledges OHA D1-A4 "BOP SAFETY SYS OUT OF SVCE"			
5.4.3. B	OBSERVE the following:	N/A			
5.4.3. B.1	CH W CPRSR MOT A (B) ON/AUTO goes off.	Operator observes the CH W CPRSR MOT A MAN light illuminates.			

JPM: GK002

Rev: 00

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

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)
5.4.3. B.2	CH W CPRSR A (B) OFF comes ON.	Operator observes the CH W CPRSR A OFF light illuminates.			
5.4.3. B.3	CH W CPRSR A (B) PROGRAM TIMER ON comes on.	Operator observes the CH W CPRSR A PROGRAM TIMER ON light illuminates.			
5.4.3. B.4	CH W CPRSR A (B) SAFETY CKT COMPLETE goes off.	Operator observes the CH W CPRSR A SAFETY CKT COMPLETE light extinguishes.			
5.4.3. B.5	After approximately 99 seconds PROGRAM TIMER ON goes off AND the Chiller is ready for re-start.	Operator observes the CH W CPRSR A PROGRAM TIMER ON light extinguishes.			
5.4.4	PRESS CH W CIRC PUMP A (B) P400 MAN PB. A (B) P400 MAN comes on.	Operator presses the CH W CIRC PUMP AP400 MAN PB.	*		
		Operator observes the CH W CIRC PUMP AP400 MAN light illuminates.			

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.5	PRESS CW W CIRC PUMP A (B) P400 STOP PB. STOP comes on AND the following actions occur:	Operator presses the CW W CIRC PUMP AP400 STOP PB.	*		
		Operator observes the CW W CIRC PUMP AP400 STOP light illuminates.			
5.4.5. A	Cont Rm Sply Fan 1A (B) VH403 stops.	Operator observes the Cont Rm Sply Fan 1AVH403 stops.			
5.4.5. B	Cont Eq Rm Sply Fan 1A (B) VH407 stops.	Operator observes the Cont Eq Rm Sply Fan 1AVH407 stops.			
		Operator acknowledges OHA E6B1 "CONTROL AREA HVAC FAN MALF"			
5.4.6	ACKNOWLEDGE fan trips by selecting STOP on the following:				
5.4.6. A	PRESS CONT RM SPLY FAN A(B)VH403 STOP PB. VERIFY STOP comes on.	Operator presses the CONT RM SPLY FAN AVH403 STOP PB.	*		

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes the CONT RM SPLY FAN AVH403 STOP light illuminates.			
5.4.6. B	PRESS CONT EQ RM SPLY FAN A (B) VH407 STOP PB. VERIFY STOP comes on.	Operator presses the CONT EQ RM SPLY FAN AVH407 STOP PB.	*		
		Operator observes the CONT EQ RM SPLY FAN AVH407 STOP light illuminates.			
5.4.7	PRESS CONTROL RM RTN AIR FAN A (B) VH415 MAN PB THEN STOP PB to secure fan.	Operator presses the CONTROL RM RTN AIR FAN AVH415 MAN PB.	*		
		Operator observes the CONTROL RM RTN AIR FAN AVH415 MAN light illuminates.			
		Operator presses the CONTROL RM RTN AIR FAN AVH415 STOP PB. Examiner Note: The AVH415 fan may have tripped on low flow.			

JPM: GK002

Rev: 00

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

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)
		Operator observes the CONTROL RM RTN AIR FAN AVH415 STOP light illuminates.			
5.4.8	PRESS CONTROL RM RTN AIR FAN A (B) VH415 AUTO PB. VERIFY AUTO comes on AND INITIAL Attachment 1.	Operator presses the CONTROL RM RTN AIR FAN AVH415 AUTO PB.	*		
		Operator observes the CONTROL RM RTN AIR FAN AVH415 AUTO light illuminates.			
NOTE	Control Area Chilled Water Pumps 1AP400 and 1BP400 are interlocked to operate in AUTO mode with SACS Pumps CP210 and DP210 respectively.	Operator reads NOTE.			

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.9	PLACE the B(A) Control Area Chilled Water Loop in service as follows:				
5.4.9. A	PRESS CH W CIRC PUMP B (A) P400 START PB B(A)P400. VERIFY START comes on.	Operator presses the CH W CIRC PUMP BP400 START PB.	* #		
		Operator observes the CH W CIRC PUMP BP400 START light illuminates.			
5.4.9. B	PRESS CONT RM SPLY FAN B (A) VH403 START PB. VERIFY B (A) VH403 START comes on AND OBSERVE CONTROL RM RTN AIR FAN 1B (A) VH415 Auto Start.	Operator presses the CONT RM SPLY FAN BVH403 START PB.	* #		
		Operator observes the CONT RM SPLY FAN BVH403 START light illuminates.			
		Operator observes the CONTROL RM RTN AIR FAN 1BVH415 START light illuminates.			

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.9. C	PRESS CONT EQ RM SPLY FAN B (A) VH407 START PB. VERIFY START comes on.	Operator presses the CONT EQ RM SPLY FAN BVH407 START PB.	*		
		Operator observes the CONT EQ RM SPLY FAN BVH407 START light illuminates.			
5.4.9. D	To start Chiller 1B(A)K400 from CONT RM, PERFORM the following:	N/A			
5.4.9. D.1	IF CH W CPRSR B (A) REMOTE is on, PRESS REMOTE PB. VERIFY REMOTE goes off.	Operator observes the CH W CPRSR B REMOTE light is extinguished.			
5.4.9. D.2	PRESS CH W CPRSR B (A) ON/AUTO PB. VERIFY ON/AUTO comes on.	Operator presses the CH W CPRSR B ON/AUTO PB. Examiner Note: The CH W CPRSR B ON/AUTO PB light is already on.			
		Operator observes the CH W CPRSR B ON/AUTO light is illuminated.			

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.4.9. D.3	WHEN CH W CPRSR B (A) SAFETY CKT COMPLETE is on, PRESS CH W CPRSR MOT B (A) K400 START PB. VERIFY B (A) K400 START comes on.	Operator observes the CH W CPRSR B SAFETY CKT COMPLETE.			
		Operator presses the CH W CPRSR MOT BK400 START PB.	* #		
5.4.9. D.4	PERFORM the following:	N/A			
5.4.9. D.4.a	VERIFY CH W CPRSR B (A) TIMER ON is on.	Operator observes the CH W CPRSR B PROGRAM TIMER ON light is illuminated.			
5.4.9. D.4.b	After approximately 51 seconds, VERIFY Compressor starts by observing CPRSR B(A) AI 6362B(A) MOTOR AMPS indicates approximately 48 to 50 amps AND B(A)K400 START is illuminated OR CH W CPRSR B (A) LOAD RECYCLE is ON.	After approximately 51 seconds, Operator observes the CPRSR B AI-6362B MOTOR AMPS indicates approximately 48 to 50 amps.			

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator observes the BK400 START light illuminates.			
5.4.9. D.4.c	VERIFY CH W CPRSR B (A) TIMER ON goes off.	Operator observes the CH W CPRSR B PROGRAM TIMER ON extinguishes.			
5.4.9. D.4.d	VERIFY CH W CPRSR B (A) MOTOR RESTART DELAY comes on, AND THEN extinguishes (approx. 10 sec).	Operator observes the CH W CPRSR B MOTOR RESTART DELAY light illuminates and then extinguishes.			
CUE	REPORT as Yard Operator that there is a large fire north of the HC Million Gallon Fuel Oil Storage Tank and smoke is headed towards the power block.	N/A			
CUE	Light smoke is coming out of the Control Room ventilation supply ductwork into the Main Control Room. Take any required actions.	N/A			

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	HC.OP-AB.HVAC-0002				
		Operator reviews HC.OP-AB.HVAC-0002 CONTROL ROOM ENVIRONMENT. EXAMINER NOTE: The same actions are contained within SO-GK-0001. The operator may not go to AB.HVAC-0002.			
Cond I.	Smoke OR Toxic Gases are ENTERING the Control Room from an Outside source.	Operator determines Retainment Override Condition I. applies.			
I.a	PRESS the ISOLATE PB for the I/S Control Room Ventilation Train.	Operator presses the ISOLATE PB for the B Control Room Ventilation Train.	*		
		Operator observes the HD9598B ISOLATE PB for the B Control Room Ventilation Train illuminates.			
		Operator observes the BV400 START PB illuminates.			

JPM: GK002

Rev: 00

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Area Ventilation System

TASK: Isolate the Control Room HVAC System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
I.b	PRESS the RECIRC PB for the I/S CREF Unit.	Operator presses the RECIRC MODE PB for the B CREF Unit.	*		
		Operator observes the RECIRC PB for the B CREF Unit illuminates.			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: GK002

TASK: Isolate the Control Room HVAC System

TASK NUMBER: 4880060101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. "A" Control Room Ventilation train is in service.
3. The Aux Building Operator has been briefed and is standing by on location.

INITIATING CUE:

You are the Plant Operator.
Swap Control Room Ventilation to "B" Train IAW HC.OP-SO.GK-0001.

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	ENSURE B and D SACS Pumps in service supplying TACS and in AUTO.
	SWAP TSC HVAC to place B train in service.
	ENSURE C SACS Pump in service and in AUTO.
	ENSURE A SACS Pump stopped and in AUTO.

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

Initial	Description
	ENSURE a copy of HC.OP-SO.GK-0001 is available.
	ENSURE a copy of HC.OP-AB.HVAC-0001 is available.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

Initial	ET #	Description
		EVENT ACTION: COMMAND: PURPOSE:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

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

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Redundant Reactivity Control

TASK: Defeat ARI Interlocks

TASK NUMBER: 2000720504

JPM NUMBER: 305H-JPM.SA001

REV #: 10

SAP BET: NOH05JPSA01E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☒

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 4/20/10

REVIEWED BY:

Operations Representative

DATE: 6/30/2010

APPROVED BY:

Training Department

DATE: 7/1/10

STATION: Hope Creek**JPM NUMBER:** SA001**REV:** 10**SYSTEM:** Redundant Reactivity Control**TASK NUMBER:** 2000720504**TASK:** Defeat ARI Interlocks**ALTERNATE PATH:** ☐**K/A NUMBER:** 295037 EA1.03**IMPORTANCE FACTOR:** 4.1 4.1**APPLICABILITY:**EO ☒ RO ☒ STA ☐ SRO ☒**RO SRO****EVALUATION SETTING/METHOD:** In Plant/Simulate**REFERENCES:** HC.OP-EO.ZZ-0320 Rev 4**TOOLS, EQUIPMENT AND PROCEDURES:**

EOP-320 Implementation Kit specified in Section 4.0 of HC.OP-EO.ZZ-0320

ESTIMATED COMPLETION TIME: 9 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

SYSTEM: Redundant Reactivity Control**TASK:** Defeat ARI Interlocks**TASK NUMBER:** 2000720504**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. RPV level is being maintained at -50 inches.
4. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being executed.
5. Draining the SDV and attempting a manual scram is required.
6. HC.OP-EO.ZZ-0302 has NOT been implemented.

INITIATING CUE:

Defeat the ARI interlocks IAW HC.OP-EO.ZZ-0320.

JPM: SA001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Redundant Reactivity Control

TASK: Defeat ARI Interlocks

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-EO.ZZ-0320.			
	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.	N/A			

JPM: SA001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Redundant Reactivity Control

TASK: Defeat ARI Interlocks

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.0	<u>EQUIPMENT REQUIRED</u>	Examiner Note: After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location.			
4.1	EOP-320 Implementation kit (OS office EOP drawer) Contents: 1 set of fuse pullers 1 flashlight 1 plastic bag for ARI fuses 4 banana plug jumpers <u>OR</u>	Operator obtains the following required equipment: EOP-320 Implementation kit from SM Office Clerk Area EOP drawer. <u>OR</u>			
4.2	Key #9 for EOP Locker in OSC (obtain from OS office or break red key holder glass in OSC). <u>AND</u> EOP-320 Implementation kit (EOP Locker in OSC) Contents: 1 set of fuse pullers 1 flashlight 1 plastic bag for ARI fuses 4 banana plug jumpers	Key #9 from SM 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.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1.1.			

JPM: SA001

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Redundant Reactivity Control**TASK: **Defeat ARI Interlocks**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1	<u>Defeating ARI Interlocks</u>	N/A			
NOTE	Execution of the following steps will defeat all automatic and manual RRCS ARI functions and cause all RRCS ARI valves to close and remain closed. ARI valve position indication will be retained.	N/A			
5.1.1	ENSURE that Prerequisites have been satisfied IAW Section 2.1.	Operator ensures that all prerequisites have been satisfied.			
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.	N/A			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: SA001

TASK: Defeat ARI Interlocks

TASK NUMBER: 2000720504

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. RPV level is being maintained at -50 inches.
4. HC.OP-EO.ZZ-0101A, ATWS-RPV Control, is being executed.
5. Draining the SDV and attempting a manual scram is required.
6. HC.OP-EO.ZZ-0302 has NOT been implemented.

INITIATING CUE:

Defeat the ARI interlocks IAW HC.OP-EO.ZZ-0320.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

TASK NUMBER: 2000530504

JPM NUMBER: 305H-JPM. BE002 **REV #:** 10

SAP BET: NOH05JPBE02E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☒

SRO

☒

DEVELOPED BY: Archie E. Faulkner
Instructor

DATE: 4/20/10

REVIEWED BY: 
Operations Representative

DATE: 6/30/2010

APPROVED BY: 
Training Department

DATE: 7/1/10

STATION: Hope Creek

JPM NUMBER: BE002

REV: 10

SYSTEM: Core Spray

TASK NUMBER: 2000530504

TASK: Perform Torus Makeup Via Core Spray System

ALTERNATE PATH: ☐

K/A NUMBER: 295030 EA1.06

IMPORTANCE FACTOR: 3.4 3.4

APPLICABILITY:

RO SRO

EO ☐ RO ☒ STA ☒ SRO ☒

EVALUATION SETTING/METHOD: Reactor Building/Simulate

REFERENCES: HC.OP-EO.ZZ-0315 (Q) Rev. 5

TOOLS, EQUIPMENT AND PROCEDURES: None

ESTIMATED COMPLETION TIME: 20 Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ DATE: _____

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

TASK NUMBER: 2000530504

INITIAL CONDITIONS:

1. A leak on the 'D' RHR Pump suction line has lowered suppression pool level to 73 inches.
2. The leak has been isolated and suppression pool level is stable.

INITIATING CUE:

Make-up to the Suppression Chamber from Core Spray Loop B IAW HC.OP-EO.ZZ-0315

JPM: BE002

Rev: 10

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains/locates procedure HC.OP-EO.ZZ-0315.	Operator obtains the correct procedure.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
CUE	Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.1.			

JPM: BE002

Rev: 10

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.0	<u>EQUIPMENT REQUIRED</u> 4.1 Key #9 for EOP Locker in OSC (obtain from OS office or break red key holder glass in OSC AND EOP-315 Implementation Kit (EOP Locker in OSC) Contents: 1 Wire Cutter	Operator obtains the following required equipment: 1. Key #9 for EOP locker in OSC (obtain from OS office or break red key holder glass in OSC) 2. EOP-315 implementation kit from EOP locker in OSC Examiner Note: After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location.			
5.1.1	ENSURE that all prerequisites have been satisfied IAW Section 2.1.	Operator ensures that all prerequisites have been satisfied.			
CUE	If excessive time is taken reviewing prerequisites, inform operator that all are satisfied.	N/A			

JPM: BE002

Rev: 10

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CAUT	The SM/CRS shall be aware of, and take into consideration, the environmental and radiological conditions that exist in areas requiring entry prior to dispatching personnel into the field. Adequate core cooling takes precedence over suppression pool make-up. See HC.OP-AB.ZZ-0155, Attachment 3 for direction on aligning Core Spray B to make-up to the RPV from the CST. Use of Core Spray with suction from the CST injecting to the RPV meets the intent of this procedure.	Operator reads CAUTION.			
5.1.2	UNLOCK AND OPEN 1-AP-V068 //Cond Stor & Xfr to Core Spray Pump B and D Suction Fill & Flush Isln Vlv//. (local, Room 4203 reactor building, elevation 77')	Operator locates 1-AP-V068, Cond Stor and Xfr to Core Spray Pump B & D Suction Fill & Flush Isln Valve on the 77 ft. elevation of the Reactor building.			
		Operator simulates UNLOCKING 1-AP-V068.	* #		

JPM: BE002

Rev: 10

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator simulates OPENING 1-AP-V068, by turning the hand-wheel in the counterclockwise direction until the hand-wheel reaches a hard stop.	*		
CUE	The valve you indicated is unlocked and open.	N/A			
5.1.3	ENSURE the following (PANEL C650) are OPEN: A. HV-F001B CS Pmp B Suct Isln MOV B. HV-F001D CS Pmp D Suct Isln MOV	Operator contacts Control Room and directs Control Room Operator to verify OPEN HV-F001B and HV-F001D.			
		Examiner Note: Operator may verify these valves OPEN before leaving the Control Room Area.			
CUE	Respond as the MCR, HV-F001B and HV-F001D are open.	N/A			

JPM: BE002

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 10

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.4	UNLOCK AND THROTTLE OPEN one <u>OR</u> both of the following valves to obtain the desired fill rate while monitoring CST and Torus levels (local, reactor building, elevation 54'):	Operator locates BE-V058 CS Pmps B & D Suct X-Tie Isln Vlv (Reactor building, elevation 54' B CS Pump Room) and/or BE-V059 CS Pmps B & D Suct X-Tie Isln Vlv (Reactor building, elevation 54' D CS Pump Room)			
	Examiner Note: It is critical to unlock and open at least one of the following two valves.	N/A			
	BE-V058 CS Pmps B & D Suct X-Tie Isln Vlv	Operator simulates UNLOCKING 1-BE-V058.	*		
		Operator throttles open BE-V058 by turning the hand-wheel counterclockwise until flow is heard.	*		
CUE	(As appropriate) The valve you indicated is throttled open. Flow can be heard past the valve(s).	N/A			

JPM: BE002

Rev: 10

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Core Spray

TASK: Perform Torus Makeup Via Core Spray System

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	BE-V059 CS Pmps B & D Suct X-Tie Isln Vlv	Operator simulates UNLOCKING 1-BE-V059.	*		
		Operator throttles open BE-V059 by turning the hand-wheel counterclockwise until flow is heard.	*		
CUE	(As appropriate) The valve you indicated is throttled open. Flow can be heard past the valve(s).	N/A			
		Operator informs Control Room that Suppression Chamber makeup is in progress.			
CUE	If operator informs Control Room, provide Terminating Cue.	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 RECORD</u> 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:				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: BE002

TASK: Perform Torus Makeup Via Core Spray System

TASK NUMBER: 2000530504

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. A leak on the 'D' RHR Pump suction line has lowered suppression pool level to 73 inches.
2. The leak has been isolated and suppression pool level is stable.

INITIATING CUE:

Make-up to the Suppression Chamber from Core Spray Loop B IAW HC.OP-EO.ZZ-0315

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Emergency Diesel Generators

TASK: Manual Emergency Start A DG from the Local Panel

TASK NUMBER: 2640180104

JPM NUMBER: 305H-JPM.KJ003

REV #: 14

SAP BET: NOH05JPKJ03E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☒

RO

☒

STA

☐

SRO

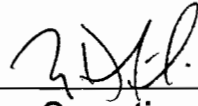
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DEVELOPED BY: Archie E. Faulkner

Instructor

DATE: 10/1/09

REVIEWED BY:



Operations Representative

DATE:

6/30/2010

APPROVED BY:



Training Department

DATE:

7/1/10

STATION: Hope Creek

JPM NUMBER: KJ003

REV: 14

SYSTEM: Emergency Diesel Generators

TASK NUMBER: 2640180104

TASK: Manual Emergency Start A DG from the Local Panel

ALTERNATE PATH: ☐

K/A NUMBER: 295003 A1.02

IMPORTANCE FACTOR: 4.2 4.3

APPLICABILITY:

EO ☒RO ☒STA ☐SRO ☒

RO

SRO

EVALUATION SETTING/METHOD: Plant/Simulate

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

TOOLS, EQUIPMENT AND PROCEDURES: HC.OP-SO.KJ-0001

ESTIMATED COMPLETION TIME: 12 Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____ DATE: _____

NAME: _____

DATE: _____

SYSTEM: Emergency Diesel Generators**TASK:** Manual Emergency Start A DG from the Local Panel**TASK NUMBER:** 2640180104**INITIAL CONDITIONS:**

1. A Loss of Offsite Power has occurred.
2. The Reactor is shutdown. All rods are full in.
3. HC.OP-AB.ZZ-0135 is being implemented.
4. 1AG400 Diesel Generator has failed to start, but all other EDGs have started and loaded onto their respective buses.

INITIATING CUE:

Start 1AG400 Diesel Generator from local panel 1AC421 (102' El.).

JPM: KJ003

Rev: 14

SYSTEM: Emergency Diesel Generators

TASK: Manual Emergency Start A DG from the Local Panel

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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-SO.KJ-0001.			
	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			
5.5	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.5.1.			

JPM: KJ003

Rev: 14

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Emergency Diesel Generators

TASK: Manual Emergency Start A DG from the Local Panel

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 at Local Engine Control Panel 1A(B,C,D)C-421 El. 102'.	Operator reads NOTE.			
5.5.1	ENSURE all prerequisites of Section 2.5 are satisfied.	Operator ensures that all prerequisites have been satisfied.			
CUE	IF excessive time is taken reviewing prerequisites, THEN INFORM operator that all are satisfied.	N/A			
5.5.2	OBTAIN key #51 – KIRK – Diesel Emg Takeover/Local Cont., from Work Control Center for the REM/LOC/MAINT CONTROL SELECT Switch at Panel 1A(B,C,D)-C421 El. 102'.	Operator obtains key #51 from Work Control Center.			
		Examiner Note: Once the trainee demonstrates where to obtain the required key, key use will be simulated.			

JPM: KJ003

Rev: 14

SYSTEM: Emergency Diesel Generators

TASK: Manual Emergency Start A DG from the Local Panel

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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	Manual operations performed from Local Engine Control Panel 1A(B,C,D)C-421 El. 102' are not taken-over by an auto-initiation signal.	Operator reviews NOTE.			
5.5.3	PLACE REM/LOC/MAINT CONTROL SELECT Switch in LOCAL.	Operator simulates inserting the key and placing A EDG REM/LOC/MAINT CONTROL SELECT Switch in LOCAL.	*		
CUE	The control you have indicated is in the position stated.	N/A			
5.5.4	PLACE LOCAL ENGINE CONTROL Switch in START.	Operator places LOCAL ENGINE CONTROL Switch in START.	*		
CUE	The control you have indicated is in the position stated. The Diesel engine is running.	N/A			
5.5.5	OBSERVE that DIESEL RUNNING NOT LOADED comes ON.	Operator identifies the DIESEL RUNNING NOT LOADED indicating light.			

JPM: KJ003

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 14

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Emergency Diesel Generators

TASK: Manual Emergency Start A DG from the Local Panel

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 indication you have identified is lit.	N/A			
5.5.6	INFORM Control Room that 1AG400 (1BG400, 1CG400, 1DG400) Diesel Generator is running.	Operator notifies the Main control Room that the A EDG is running.			
CUE	<p><u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN RECORD</u> the STOP TIME.</p> <p>REPEAT BACK any message from the operator on the status of the JPM, and then state</p> <p>"This JPM is complete".</p> <p>STOP TIME:</p>	N/A			

**OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION**

NAME: _____

DATE: _____

JPM Number: KJ003

TASK: Manual Emergency Start A DG from the Local Panel

TASK NUMBER: 2640180104

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. A Loss of Offsite Power has occurred.
2. The Reactor is shutdown. All rods are full in.
3. HC.OP-AB.ZZ-0135 is being implemented.
4. 1AG400 Diesel Generator has failed to start, but all other EDGs have started and loaded onto their respective buses.

INITIATING CUE:

Start 1AG400 Diesel Generator from local panel 1AC421 (102' El.).

SIMULATOR

EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC SCENARIO 1

SCENARIO NUMBER: ESG-NRC-S1

EFFECTIVE DATE: Effective when approved.

EXPECTED DURATION: 50-60 minutes

REVISION NUMBER: 00

PROGRAM: ☐ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER _____

REVISION SUMMARY:

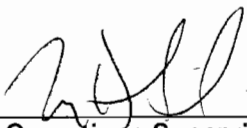
1.

PREPARED BY: Archie E. Faulkner
Instructor

7/1/10
DATE

APPROVED BY: 
LORT Group Lead or Designee

7/1/10
DATE

APPROVED BY: 
Shift Operations Supervisor or Designee

7/1/10
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. Raise Reactor Power with Control Rods
- B. Swapping In-Service SJAE's
- C. APRM D Failure Upscale
- D. Main Steam Line Pressure Transmitter N076D failure
- E. SJAE B Malfunction
- F. Loss of Main Condenser Vacuum
- G. LOP w/ EDG B failure
- H. EDG A Fails to Auto Start
- I. RCIC Overspeed

III. SCENARIO SUMMARY:

The scenario starts with the plant at approximately 90% power with HPCI tagged for preventive maintenance. The crew will withdraw Control Rods to 95% power. The crew will commence swapping SJAE's. During the rod withdrawal, D APRM will fail upscale. The crew will bypass the APRM and reset RPS. The CRS will enter the appropriate Tech Specs. After the reactivity manipulation, Main Steam Line Pressure transmitter N076D will fail high resulting in a Tech Spec entry. At the end of the SJAE swap, the oncoming SJAE will malfunction, combined with a loss of Main Condenser vacuum requiring the unit to be shutdown.

A LOP will occur after the Main Generator trips off-line. EDG A will fail to auto start, requiring manual action to initiate containment cooling. EDG B will fail completely. RCIC Turbine will trip on overspeed requiring manual operator action to restore high pressure injection. The scenario will be terminated when reactor level is controlled above -161 inches and Suppression Pool Cooling is in service.

IV. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to IC-02; 100% power, MOC.
	INSERT Group 9B control rods to 00 and lower core flow to reduce power to 90%.
	TOGGLE Cross Flow to NOT APPLIED.
	TAG HPCI as follows:
	1. CLOSE the HV-F002
	2. CLOSE the HV-F003
	3. ENSURE HPCI Turbine Inlet Pressure bleeds down to ≈ 0
	4. CLOSE the HV-F028
	5. CLOSE the HV-F029
	6. ACKNOWLEDGE alarms
	INITIAL HC.OP-IO-ZZ-0006 for current power level and power ascension.
	INITIAL HC.OP-SO.CG-0001 up to step 5.4.3.I for swapping SJAE from A to B.

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

Initial	Description
	PLACE red bezel covers on the following HPCI controls:
	• HV-F001
	• HV-F002
	• HV-F003
	• HV-F028
	• HV-F029
	• HV-F100
	• Flow Controller
	• Aux Oil Pump
	ENSURE Data Collection is trending the following parameters:
	• Reactor power
	• W/R Reactor Water Level
	• Fuel Zone RPV Level
	• W/R Reactor Pressure
	• Main Condenser pressure
	COMPLETE the Simulator Ready for Training/Examination Checklist.
	PRE-BRIEF the crew for the power change and SJAE swap.

EVENT TRIGGERS:

[illegible]

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	DG02B Diesel generator B failure	---	---	NONE	---	---
	DG07A Diesel generator emergency start failure	---	---	NONE	---	---
	NM21D APRM channel D fails high or low	---	---	ET-1	---	100
	MS09D Steam line header pressure transmitter N076D fails	---	---	ET-2	---	100
	MC01 Low pressure turbine exhaust bellows leak	---	---	ET-3	---	1
	RC01 RCIC turbine overspeed	---	---	ET-4	---	---
	EG12 Loss of all off site power	---	---	ET-5	---	---
	CD08A CRD suction filter AF201 clogging	---	---	ET-5	---	---
	CD08B CRD suction filter BF201 clogging	---	---	ET-5	---	---

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	HP09 HPCI Steam Supply Isolation Valve HV-F001	---	---	NONE	---	TAGGED
	ET011 GROUP 5A HV-F002 HPCI Steam Supply Isol	---	---	NONE	---	RACK CLOSE
	ET012 GROUP 5A HV-F100 HPCI Steam Supply Isol	---	---	NONE	---	RACK CLOSE
	ET013 GROUP 5A HV-F003 HPCI Steam Supply Isol	---	---	NONE	---	RACK CLOSE
	ET74 HPCI Aux Oil Pump	---	---	NONE	---	TAGGED
	PP04 OD-3 Crossflow Applied	---	---	ET-6	---	YES
	AN28 CROSSFLOW ALARM/TRBL	---	---	ET-6	---	NORM
	AN17 A4-F3 Off Gas Recomb Pnl 00C327	---	---	ET-8	---	NORM
	EP36 EOP-323, Bypass BC-HV-F015A isolation interlocks	11:00	---	ET-10	---	BYPASS
	EP37 EOP-323, Bypass BC-HV-F015B isolation interlocks	11:00	---	ET-10	---	BYPASS
	CD02 Pump B discharge valve V008 position (0-100%)	---	---	ET-11	---	0
	CD09 CRD FCV A	---	---	ET-12	---	ON

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	9S64 A OVDI HS-F0	---	---	NONE	---	OFF
	9S66 A OVDI HS-F0	---	---	NONE	---	OFF
	9DS85 B OVLO HV-F028 CLOSED	---	---	NONE	---	OFF
	9DS87 B OVLO HV-F029 CLOSED	---	---	NONE	---	OFF
	5A93 E OVLO RECOM TRAIN 1 OPEN	---	---	NONE	---	ON
	5A93 E OVDI RECOM TRAIN 1 OPEN	---	---	NONE	---	ON
	5A92 F OVDI HV-2016B CLOSE-STEAM SUPPLY-MAIN STEAM DIS	---	---	ET-7	---	ON
	5A92 E OVDI HV2016B EJECTOR B OPEN- STEAM SUPPLY-MAIN S	---	---	ET-7	---	OFF

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>Raise Reactor Power with Control Rods:</u> After the Crew assumes the watch.</p>	<ul style="list-style-type: none"> CRS directs the RO to raise Reactor power with Control Rods in accordance with RE guidance. RO withdraws Control Rods in accordance with HC.OP-SO.SF-0001 and CRS directions. <ul style="list-style-type: none"> ⇒ Selected rod PB comes ON (bright white). ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod position (10C650C). ⇒ The associated Full Core Display (white) numbered rod identification light comes ON (10C650C). At the ROD SELECT MODULE, press the WITHDRAW PB and observe the following: <ul style="list-style-type: none"> ⇒ The INSERT (white) light comes ON momentarily. ⇒ The WITHDRAW (white) light comes ON. ⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates control rod movement. ⇒ The WITHDRAW (white) light goes OUT. ⇒ The SETTLE (white) light comes ON for ≈ 6 seconds, then goes out. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>

NOTE: Operator may single notch withdraw the rods, as necessary, in which case the CONTINUOUS WITHDRAW PB is NOT used.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
'D' APRM Upscale After the 2nd control rod is withdrawn or at Lead Examiner's discretion, THEN TRIGGER ET-1.	⇒ CONTROL ROD POSITION FOUR ROD DISPLAY indicates the control rod has settled to the desired position.	
	<ul style="list-style-type: none"> RO indicates the completion of the movement on the Pull Listing. 	
	<ul style="list-style-type: none"> RO monitors Reactor power, pressure, and level and ensure plant conditions are stable. Ensures no scram setpoints have been exceeded. 	
	<ul style="list-style-type: none"> Crew recognizes RPS ½ scram by: <ul style="list-style-type: none"> ⇒ OHA C3-A5 "REACTOR SCRAM TRIP LOGIC B2" ⇒ OHA C5-A1 "NEUTRON MONITORING SYSTEM" ⇒ RPS Trip Logic B2 NORMAL/RESET status lights extinguished ⇒ Pilot Scram Valve Solenoid LOGIC B NORMAL status lights for all four groups extinguished. 	
	<ul style="list-style-type: none"> Crew recognizes 'D' APRM Upscale by: <ul style="list-style-type: none"> ⇒ OHA C3-C5 "APRM SYS B UPSCALE TRIP/INOP" ⇒ C3-D4 "APRM UPSCALE" ⇒ APRM D "UPSC TR OR INOP" status light ⇒ APRM D "UPSC ALARM" status light ⇒ APRM 'D' indicating 125% on 10C650 and CRIDS 	
	<ul style="list-style-type: none"> Crew terminates control rod withdrawal. 	Immediate Operator Action IAW AB.IC-0004.

HPI USED:
STAR ☐

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> RO observes normal indications on the other APRM's and reports that "D" APRM has failed upscale. RO refers to AR.ZZ-0009 alarm response procedure for OHA C3-C5 and the associated digital alarm point response procedure for D2444. CRS enters AB.IC-0004: ⇒ Condition B CRS references AB.IC-0003: ⇒ Condition B RO informs the CRS to ensure compliance with Tech Spec 3.3.1. CRS reviews Technical Specifications 3.3.1 for RPS Instrumentation, 3.3.6 for Rod Block Instrumentation AND 3.3.11.a OPRMS. CRS determines that the "D" APRM can be bypassed and only a tracking LCO is needed since the minimum number of APRMs per trip system remain operable for both the RPS, Rod Block, and OPRM functions. CRS directs the RO to bypass the "D" APRM. RO places APRM RPS TRIP CHANNEL A(B) MONITOR BYPASS joystick in "D" APRM position. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> RO resets the "B" channel ½ scram. RO resets alarms as applicable. RO reports that the "D" APRM is bypassed and that the ½ scram is reset. CRS contacts I&C OR Work Control to initiate corrective action to repair the "D" APRM. CRS directs the RO to continue with Group 9B control rod withdraw of the Reactor Engineering Pull Sheet. RO pulls the next two control rods from position 00 to position 08. The RO monitors control rod position and NI response during rod withdraws. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>
<p>Swap SJAE's: After the Crew assumes the watch.</p>	<ul style="list-style-type: none"> CRS directs the PO to swap the SJAE to "B" in accordance with HC.OP-SO.CG-0001 starting at 5.4.3.I PO commences swapping SJAE in accordance with CRS directions by: <ul style="list-style-type: none"> ⇒ AFTER 30 minutes, OPEN HV-1956B - AIR EJECTOR "B" JET SUCT 3RD STAGE. ⇒ MONITOR the following Air Ejector 3rd Stage parameters for appropriate response while bringing the SJAE on line. (10C650A): 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/></p>
IAW the Turnover Sheet, >30 minutes has elapsed.		

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
If requested, Operators have been briefed and are standing by.	<ul style="list-style-type: none"> ○ 3rd Stage Suction flow (rising) as indicated on FR-2021B - SJAE 3rd STAGE SUCTION FLOW. ○ 3rd Stage Suction pressure (lowering) as indicated on PI-1954B SJAE TRAIN "B" PRESSURES STG 3 SUCT. 	
	⇒ OPEN HV-1963B AIR EJECTOR "B" SECOND STAGE JET STM INLET.	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/>
	⇒ DIRECT a Qualified Operator, or Maintenance (I&C) personnel to adjust PIC-2018B SJAE "B" Main Stm Supply Pressure Control Valve, as necessary to control steam pressure 145 to 150 psig during warm-up.	
	⇒ OPEN HV-1962B-AIR EJECTOR "B" SECOND STAGE JET SUCT.	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/>
	⇒ OBSERVE SJAE 2nd Stage Suction pressure decreasing on PI-1966B SJAE TRAIN "B" PRESSURES STG 2 SUCT (10C650A).	
	⇒ OPEN HV-1967B - AIR EJECTOR "B" FIRST STAGE JET STM INLET.	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	⇒ OPEN HV-1968B1, B2, B3, AIR EJECTOR "B" FIRST STAGE JET SUCT.	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/>
	⇒ DIRECT a Qualified Operator, or Maintenance (I&C) personnel to adjust PIC-2018B SJAE "B" Main Stm Supply Pressure Control Valve, as necessary, to control steam pressure 145 to 150 psig during warm-up.	
	NOTE: Closing the following valves will isolate the "A" SJAE from the Main Condenser. IF Condenser vacuum begins dropping rapidly, they may be re-opened to restore flow.	
	⇒ CLOSE HV-1968 A1, A2, A3 AIR EJECTOR "A" FIRST STAGE JET SUCT.	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/>
	NOTE: Gaseous Radwaste System flow may be monitored using the following indications: • A3431 RECMB OFF-GAS FLOW TO HOLD PIPE • 1HAFI-5665 HOLD UP PIPE OUT FLOW • A9343 OFF-GAS TREATMENT DISCHARGE FLOW	
	⇒ ADJUST PIC-1964B AIR EJECTOR "B" EXH PRESS, as necessary to maintain SJAE 3rd Stage Outlet < 11 psig, AND flow through the Gaseous Radwaste System < 75 scfm (1900 #/hr).	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>PT-N076D Failure: After the Crew assumes the watch and at the discretion of the Lead Examiner, TRIGGER ET-2 ('D' NSSSS MSL Pressure Transmitter Fails High).</p>	<ul style="list-style-type: none"> Crew recognizes 'D' NSSSS instrument failure by: <ul style="list-style-type: none"> ⇒ OHA C8-B5 "NSSSS OUTBD ISLN SYS OUT OF SVCE" ⇒ Amber NSSSS CH D "TRIP UNIT IN CAL OR GROSS FAIL" light ⇒ CRIDS D2665 "MSIV INBD SYS OUT OF SVCE CH D" ⇒ CRIDS D2666 "NON-MSIV INBD SYS OUT OF SVCE CH D" 	
<p>Transmitter is located in TB Electrical Mezzanine. <u>IF</u> dispatched to transmitter, THEN REPORT there is no visible damage to transmitter.</p>	<ul style="list-style-type: none"> RO/PO reference ARP. Crew inspects 10C611 panel trip units and finds B21-N676D is failed upscale with a Gross Fail Trip in. 	<p>This will prevent the 'D' NSSSS Channel from generating an MSIV isolation signal on Low Main Steam Line pressure.</p>
<p>If requested, after an appropriate delay, support actions of placing trip units in tripped condition by changing MALF MS09D severity to 0.</p>	<ul style="list-style-type: none"> Crew contacts Maintenance to troubleshoot. CRS recognize the following T/S applies <ul style="list-style-type: none"> ⇒ Isolation Actuation Instrumentation 3.3.2 action b.1.c applies (24 hours to place in a tripped condition). Crew may implement HC.OP-GP.ZZ-0011 to place trip units into tripped condition. 	<p>T/S Table 3.3.2-1 Trip Function 3c.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>HV-2016B Failure Closed:</u> After the B SJAE is in service and at the discretion of the Lead Examiner, TRIGGER ET-3 (HV-2016B drives closed.) This renders B SJAE ineffective. Main condenser vacuum will slowly degrade.</p>	<ul style="list-style-type: none"> • Crew recognizes 'B SJAE malfunction by: ⇒ OHA A4-D2 "SJAE B 3RD STAGE STM FLOW LO" • CRS implements AB.BOP-0006: ⇒ Condition A ⇒ Condition B • PO implements AB.BOP-0006: ⇒ Condition A ⇒ Condition B ⇒ Recognizes HV-2016B closed ⇒ NOTIFY The Radwaste Operator ⇒ VERIFY Offgas is in-service. ⇒ PLACE the standby SJAE in-service IAW EITHER of the following: <ul style="list-style-type: none"> ▪ AB-0001 ▪ SO.CG-0001. • CRS directs PO to place standby SJAE in -service. • PO opens HV-1968 A1, A2, A3. 	<p>HPI USED: STAR <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>Loss of Vacuum:</u> After A SJAE is placed in service, <u>OR</u> at the Lead Examiners discretion, TRIGGER ET-7 (Main Condenser Exhaust Boot Leak).</p>	<ul style="list-style-type: none"> Crew recognizes elevated condenser in-leakage and degrading vacuum by: <ul style="list-style-type: none"> ⇒ Lowering Main Gen MWe ⇒ OHA A4-F3 "OFFGAS RECOMB PNL 00C327" ⇒ RM11 9AX343 Offgas Flow alarm ⇒ CRIDS A9343 "OFFGAS TREATMENT DISCHARGE FLOW" rising ⇒ Various Main Condenser vacuum indications degrading 	
<p><u>IF</u> dispatched to Off Gas, THEN TRIGGER ET-8 to ACKNOWLEDGE the alarm AND REPORT there is a "High Gas Flow to Holdup Pipe" alarm in on 00C327. Flows and d/p's throughout the system are abnormally high.</p>	<ul style="list-style-type: none"> CRS implements AB.BOP-0006: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition G Crew dispatches RWEO to Off Gas. 	
	<ul style="list-style-type: none"> RO reduces power as necessary to maintain the MAIN CONDENSER VACUUM LO alarms clear IAW SPRI. 	<p>Immediate Operator Action IAW AB.BOP-0006.</p> <p>HPI USED: STAR <input type="checkbox"/></p>
<p><u>IF</u> directed to check Condensate Drain Tank level controllers, THEN REPORT Condensate Drain Tank level controllers are working properly.</p>	<ul style="list-style-type: none"> Crew verifies Condensate Drain Tank levels controlling properly. (Condensate Drain Tank Level can be seen on CRIDS Page 19) 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
IF directed to check position of RC-V005, THEN REPORT it is aligned to CRW.	<ul style="list-style-type: none"> Crew directs RBEO to verify the RC-V005 is aligned to CRW. 	
IF directed to verify proper HWCI operation, THEN REPORT HWCI is operating properly.	<ul style="list-style-type: none"> Crew directs Chemistry to verify proper operation of HWCI. (HWCI flows can be seen on CRIDS Page 231). 	
IF directed to place a water seal on Vacuum Breakers and Condenser Neck Seals, THEN OBTAIN AB.BOP-0006 Att. 2 and REPORT actions after appropriate time delays.	<ul style="list-style-type: none"> Crew directs NEO to place water seal on Vacuum Breakers and Condenser Neck Seals. CRS determines condenser pressure cannot be maintained < 6.5" HgA and directs: <ul style="list-style-type: none"> ⇒ Reducing recirc pumps to minimum speed ⇒ Locking the Mode Switch in SHUTDOWN 	Retainment Override in AB.BOP-0006.
NOTE: Main condenser vacuum leak increases severity to 10% when the reactor is scrammed.	<ul style="list-style-type: none"> RO <ul style="list-style-type: none"> ⇒ Reduces recirc pumps to minimum speed ⇒ Locks the Mode Switch in SHUTDOWN RO performs scram actions IAW AB.ZZ-0001 Attachment 1. CRS implements EOP-101. 	HPI USED: STAR <input type="checkbox"/> HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>LOP with EDG Failures:</u> When the Main Generator output breakers are opened after the Main Turbine trip, <u>OR</u>, at the direction of the Lead Examiner, TRIGGER ET-5.</p>	<ul style="list-style-type: none"> Crew recognizes Loss of Offsite Power by: <ul style="list-style-type: none"> ⇒ OHA "STA SERVICE TRANSFORMER TROUBLE" for all transformers ⇒ TRIP indication for all 500 KV breakers ⇒ Flashing TRIP lights for all previously closed bus infeeds. ⇒ Numerous OVLD/PWR FAIL lights. Crew recognizes failure of the 'A' EDG to start and load by: <ul style="list-style-type: none"> ⇒ Engine STOP light ⇒ Output breaker TRIP light ⇒ OVLD/PWR lights on 'A' Channel components RO/PO start the 'A' EDG and ensure it loads. 	<p>Immediate Operator Action IAW AB.ZZ-0135.</p>
<p><u>IF</u> directed to locally start the 'A' EDG, <u>THEN DELETE</u> Malfunction DG07A.</p>	<p>* <i>Crew starts the 'A' EDG by <u>EITHER:</u></i> <i>Pressing the 'A' EDG START pushbutton in the Control Room,</i> <u>OR</u> <i>Directing an operator to locally start the 'A' EDG.</i></p> <ul style="list-style-type: none"> Crew recognizes failure of the 'B' EDG to start and load by: <ul style="list-style-type: none"> ⇒ Engine STOP light ⇒ Output breaker TRIP light ⇒ OVLD/PWR lights on 'B' Channel components 	<p>HPI USED: STAR <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
IF directed to locally start the 'B' EDG, THEN REPORT 'B' EDG has a large lube oil pipe break and oil is all over the engine room floor.	<ul style="list-style-type: none"> RO/PO attempt to start the 'B' EDG. 	<p>Immediate Operator Action IAW AB.ZZ-0135.</p> <p>HPI USED: STAR <input type="checkbox"/></p>
	<ul style="list-style-type: none"> PO maintains RPV water level as directed by CRS IAW AB.ZZ-0001 Attachment 14. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
NOTE: MSIVs will close on the LOP.	<ul style="list-style-type: none"> CRS directs maintaining reactor pressure below 1037 psig with SRVs. 	
	<ul style="list-style-type: none"> RO/PO control RPV pressure with SRVs as directed by CRS IAW AB.ZZ-0001 Att 13. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> CRS directs RPV water level control with RCIC. 	HPCI is unavailable.
RCIC Overspeed When RCIC initiates either automatically or manually, RCIC turbine speed will increase until tripping on overspeed.	<ul style="list-style-type: none"> PO manually initiates RCIC IAW AB.ZZ-0001 Att. 6. 	May have already initiated on RPV LVL 2 depending on power level at time of scram.
	<ul style="list-style-type: none"> Crew recognizes RCIC turbine trip by: <ul style="list-style-type: none"> ⇒ OHA B1-A1 "RCIC TURBINE TRIP" ⇒ OHA B1-E2 "RCIC PUMP DISCHARGE FLOW LO" ⇒ TURBINE TRIP SOLENOID ENGRZ status light ⇒ HV-4282 Valve position ⇒ CRIDS D2400 "RCIC TURBINE TRIP" ⇒ RCIC speed and flow indications 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to RCIC, <u>THEN REPORT</u> the overspeed trip linkage is tripped.</p>	<ul style="list-style-type: none"> • Crew dispatches NEO and Maintenance to RCIC. • CRS orders injection with 'A' SLC pump. • Crew starts 'A' SLC pump. 	
<p>Crew may request EOP-323 implementation. If so, TRIGGER ET-10.</p>	<ul style="list-style-type: none"> • <u>WHEN</u> RPV water level drops to -129", <u>THEN</u> the Crew inhibits ADS. 	
<p><u>IF</u> directed to align for two CRD pump injection, <u>THEN PERFORM</u> the following: REFER to SO.BF-0001 Sect 5.4. TRIGGER ET-11 (Suction filter). SET Remote Function for Stby CRD pump discharge valve to 0% (CD01/CD02). REPORT Stby CRD pump ready for start. <u>WHEN</u> Stby CRD is running, <u>THEN RAMP</u> discharge valve to 100% open. <u>IF</u> directed to manually open HV-F003, <u>THEN REPORT</u> you have opened the valve. (There is no function for this.) <u>AFTER</u> HV-F003 is open, <u>THEN TRIGGER ET-12.</u> <u>WHEN</u> two minutes have elapsed, <u>THEN MODIFY</u> Malfunctions CD09A/B to control injection. <u>IF</u> instrument air pressure is zero, <u>THEN REPORT</u> the FCVs do not seem to be responding.</p>	<ul style="list-style-type: none"> • CRS orders injection with two CRD pumps. • Crew aligns CRD for 2 pump injection. 	<p>CRD pumps will trip on low suction pressure due to suction filter clogging.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to reset the RCIC overspeed trip, AND after the Trip Throttle valve actuator has been closed,</p> <p><u>THEN</u> after RPV Level 1 is reached,</p> <ul style="list-style-type: none"> • DELETE Malfunction RC01 • TOGGLE Remote Function RC02 to RESET • REPORT the linkage has been re-latched. 	<ul style="list-style-type: none"> • Crew attempts to reset overspeed trip IAW SO.BD-0001 Section 5.7. <p>* <i>Before RPV water level reaches -185" Compensated RPV Level, and without Emergency Depressurization, Crew resets RCIC Overspeed trip and uses RCIC to inject to the reactor.</i></p>	
	<ul style="list-style-type: none"> • PO controls RPV water level with RCIC IAW AB.ZZ-0001 Att. 6. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p>
<p>As ESOC, REPORT it will take at least 10 hours to restore Offsite power to Artificial Island.</p>	<ul style="list-style-type: none"> • Crew contacts ESOC for estimated time to restoration of Offsite power. • CRS implements AB.ZZ-0135. • CRS enters EOP-102. • Crew places 'B' RHR in Suppression Pool cooling to support RCIC/SRV operation IAW HC.OP-AB.ZZ-0001 Attachment 3. • CRS directs restoring PCIG to SRVs and Rx Bldg to Torus Vac Bkrs. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARDCARD <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
-----------------------------	---------------------------------	----------

- RO/PO restore PCIG to SRVs and Rx Bldg to Torus Vac Bkrs IAW AB.ZZ-0001 Att. 9.

HPI USED:
 STAR ☐
 HARD CARD ☐
 PEER CHECK ☐

Termination Requirement:

The scenario may be terminated at the discretion of the Lead Examiner when:

- RPV level is being maintained above -161"
- Suppression Pool Cooling is in service

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. OP-AA-101-111-1003 Use of Procedures
- K. HU-AA-1081 Fundamentals Toolkit
- L. HU-AA-1211 Briefing
- M. OP-AA-101-111-1004 Operations Standards
- N. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- O. OP-AA-106-101-1001 Event Response Guidelines
- P. OP-AA-108-114 Post Transient Review
- Q. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- R. OP-HC-108-106-1001 Equipment Operational Control
- S. OP-AA-101-112-1002 On-Line Risk Assessment
- T. HC.OP-AB.BOP-0006 Main Condenser Vacuum
- U. HC.OP-AB.IC-0003 Reactor Protection System
- V. HC.OP-AB.IC-0004 Neutron Monitoring
- W. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- X. HC.OP-AB.ZZ-0135 Station Blackout //Loss Of Offsite Power// Diesel Generator Malfunction
- Y. HC.OP-EO.ZZ-0101 RPV Control
- Z. HC.OP-EO.ZZ-0102 Primary Containment Control
- AA. HC.OP-EO.ZZ-0323 RHR Shutdown Cooling Injection Valve Isolation Override
- BB. HC.OP-IO.ZZ-0003 Startup From Cold Shutdown to Rated Power
- CC. HC.OP-SO.CG-0001 Condenser Air Removal System Operation
- DD. HC.OP-SO.SF-0001 Reactor Manual Control

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S1 / 00

1.

- * ***Crew starts the 'A' EDG by EITHER:***
Pressing the 'A' EDG START pushbutton in the Control Room,
OR
Directing an operator to locally start the 'A' EDG.

K/A 2.0 Generic Knowledges and Abilities

2.1.8 Ability to coordinate personnel activities outside of the control room RO 3.8 SRO 3.6

K/A 295003 Partial or Complete Loss of A.C. Power

AA1 Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER

AA1.02 Emergency generators RO 4.2 SRO 4.3

AA1.03 Systems necessary to assure safe plant shutdown RO 4.4 SRO 4.4

The 'B' RHR pump is not available due to the failure of 'B' EDG. This leaves the 'A' RHR pump as the only immediately available means of removing decay heat from the containment. Initiation of RHR for decay heat removal is one of the operator actions important to preventing core damage in our PRA. Energization of the 10A401 bus makes the 'A' SLC pump available for injection which will prolong the time before adequate core cooling will be lost and Emergency Depressurization is required.

2.

- * ***Before RPV water level reaches -185" Compensated RPV Level, and without Emergency Depressurization, Crew resets RCIC Overspeed trip and uses RCIC to inject to the reactor.***

K/A 217000 Reactor Core Isolation Cooling System

A4 Ability to manually operate and monitor in the control room:

A4.02 Turbine Trip and Throttle valve reset RO 3.9 SRO 3.9

K/A 295031 Reactor Low Water Level

EA1. Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL:

EA1.05 Reactor Core Isolation Cooling System RO: 4.3 SRO 4.3

The RCIC Turbine has tripped on overspeed but is recoverable using the SOP and manual action from the control room. The loss of RPV water inventory is via SRVs cycling for pressure control. RCIC is the only High Pressure injection system that will be available with adequate capacity to maintain RPV water level. If RPV water level is allowed to drop below -185", the fuel will be uncovered and the fuel cladding will be challenged. This would escalate the event to a Site Area Emergency. HC.OP-SO.BD-0001 Section 5.7 has the necessary guidance to step the operator through resetting the RCIC Turbine with an Initiation Signal present. The rate of level drop in this scenario is very slow and provides more than adequate time to execute the guidance and restore RPV level with RCIC without Emergency Depressurization.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

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

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

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

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: 90%

MWe (May vary slightly): 1148

Work Week: A

Activities Completed Last Shift:

- Startup to 90% power
- HPCI tagged for scheduled maintenance

Major Activities Next 12 Hours:

- Continue with Startup by withdrawing Control Rods then Reactor Recirc to 100% power.
- Place B SJAE in service; remove A SJAE from service for scheduled maintenance.
 - OP-SO.CG-0001 completed up step 5.4.3.l.
 - A SJAE has been warming >30 minutes.
 - Operators have been briefed and are standing by in the field.

Protected Equipment:

SSW/SACS Loop A, SSW/SACS Loop B, 'B' EDG, RCIC

Tagged Equipment:

HPCI

Reactivity:

- RE guidance: Rod pull Group 9B rods to 08, then use Reactor Recirc to 100% power at <1% per minute.
- Continuous rod withdraw is allowed.

SIMULATOR

EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC SCENARIO 2

SCENARIO NUMBER: ESG-NRC-S2

EFFECTIVE DATE: Effective when approved.

EXPECTED DURATION: 50-60 minutes

REVISION NUMBER: 00

PROGRAM: ☐ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER _____

REVISION SUMMARY:

1.

PREPARED BY: Archie E. Faulkner
Instructor

7/1/10
DATE

APPROVED BY: 
LORT Group Lead or Designee

7/1/10
DATE

APPROVED BY: 
Shift Operations Supervisor or Designee

7/1/10
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. Turbine Bypass Valve Testing - Monthly
- B. RRCS Pressure Transmitter Failure - Low
- C. Loss Of Feedwater Heating
- D. Feedwater Level Sensor Failure - High
- E. Recirc Pump 'B' Dual Seal Failure
- F. Recirc Pump 'B' Discharge Valve Failure To Close
- G. Manual Scram With 2 Control Rods Not Full In
- H. High Drywell Pressure
- I. EHC Pressure Xmitter Fails

III. SCENARIO SUMMARY:

The scenario begins with the plant at 100% power. RCIC is tagged for scheduled maintenance. Turbine Bypass Valve Testing - Monthly HC.OP-ST.AC-0005 will be performed. The PT-N403A RRCS Pressure Transmitter will fail downscale. After Tech Specs for the failure are identified, the 6A feedwater heater will develop a tube rupture due to flow accelerated corrosion. The heater will require isolation and power reduction will be required. After the loss of FWH is addressed, The N004C DFCS level transmitter will fail high. DFCS will continue to operate in Three Element control on the remaining two transmitters. The SRO enter Tech Specs. After Tech Spec actions for the level sensor are identified, the 'B' Reactor Recirc pump will suffer a dual seal failure. When isolating the pump, the pump discharge valve will fail to close requiring a manual scram. When the plant is scrammed, 2 control rods will remain at their original positions, requiring EOP-101A entry. The unisolated recirc pump leakage will result in a high drywell pressure condition. After the main turbine trips, one EHC Pressure Xmitter will fail driving the crew to manually isolate the MSIVs for pressure control. The scenario ends when RPV water level is being maintained with HPCI, RPV pressure controlled with MSIVs closed, and all control rods inserted full in.

IV. INITIAL CONDITIONS:

I.C.

Initial

INITIALIZE the simulator to 100% power, MOL.

C/T RCIC as follows.

1. **CLOSE** the HV-4282
2. **CLOSE** the HV-F007
3. **CLOSE** the HV-F008
4. **ALLOW** RCIC supply pressure to decay to 0 psig
5. **CLOSE** the HV-F025
6. **CLOSE** the HV-F026

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

Initial

Description

PLACE red bezel covers on the following RCIC controls:

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

ENSURE Data Collection is trending the following parameters as a minimum:

- W/R Reactor Water Level
- W/R RPV Pressure
- Feedwater Temp to RPV: **c91a1744** and **c91a1746** or equivalent
- Core Thermal Power 5 Minute Average: **c91ctp5m** or equivalent

At a minimum review the Scenario Reference section and **CLEAN** the bolded EOPs, ABs and SOPs listed. (80091396 0270)

COMPLETE the Simulator Ready for Training/Examination Checklist.

EVENT TRIGGERS:

Initial	ET #	Description
		EVENT ACTION: COMMAND: PURPOSE:
		EVENT ACTION: COMMAND: PURPOSE:
	6	EVENT ACTION: msv13xxa(7) <= 0.95 // 6A FWH Extraction Steam Isolation COMMAND: dmf fw366a2 PURPOSE: Deletes failed shut dump valve to simulate sluggish operation
	7	EVENT ACTION: fwvhr6oa <= 0.25 // HV-1753A valve position COMMAND: PURPOSE: Triggers Cross Flow alarm trouble when 6A FWH valved out.
	9	EVENT ACTION: et_array(9) // Trigger ET-9 COMMAND: dmf CD032231 PURPOSE: Deletes stuck control Rod 22-31
	10	EVENT ACTION: et_array(10) // Trigger ET-10 COMMAND: dmf CD033843 PURPOSE: Deletes stuck control Rod 38-43

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	FW366A2 6A FWH Dump Valve Failed Shut	---	---	NONE	---	0%
	CD032231 Control Rod 22-31 stuck	---	---	NONE	---	---
	CD033843 Control Rod 38-43 stuck	---	---	NONE	---	---
	RZ02E RRCS Pressure Transmitter PT-N403E Fails	---	---	ET-1	---	0
	AN-D1E1 Cry Wolf OHA D1-D1 RRCS Trouble	---	---	ET-1	---	---
	FW12A 6A FWH Tube Leak	---	4:00	ET-2	0%	80%
	AN-B3F2 Cry Wolf Cross Flow Alarm Trouble	---	---	ET-7	---	---
	RR05B BP201 Recirc Pump Inbd Seal Failure	---	---	ET-8	---	100%
	RR06B BP201 Recirc Pump Outbd Seal Failure	1:00	1:00	ET-8	---	100%
	RR31B1 B Recirc Loop Leak	3:00	10:00	ET-8	0%	20%
	FW29C DFCS Level Xmtr N004C Failure	---	---	ET-3	---	100%
	TU16A DEHC Pressure Transmitter CHPT-1001A	---	---	ET-5	---	1050
	TC01-1 BPV #1 Failure	---	1:30	ET-5	0%	100%
	TC01-2 BPV #2 Failure	---	1:30	ET-5	0%	100%

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	ET015 GROUP 6A HV-F007 RCIC Steam Supply Isol	---	---	NONE	---	RACK CLOSE
	ET016 GROUP 6A HV-F076 RCIC Steam Supply Isol	---	---	NONE	---	RACK CLOSE
	ET017 GROUP 6A HV-F008 RCIC Steam Supply Isol	---	---	NONE	---	RACK CLOSE
	HV12 Steam tunnel unit cooler BVH216	---	---	NONE	---	RUN
	PP04 OD-3 Cross Flow Correction Factor Applied	---	---	ET-4	---	NO
	AN28 OHA B3-F2 Cross Flow Alarm/Trbl	00:05	---	ET-4	---	NORM
	EP09 EOP 320 ARI Fuses	4 min	---	ET-11	---	REMOVE
	EP10 EOP 320 ARI Fuses	4 min	---	ET-11	---	REMOVE
	EP11 EOP 320 RPS Div 1	6 min	---	ET-11	---	INSTALL
	EP13 EOP 320 RPS Div 3	6 min	---	ET-11	---	INSTALL
	EP12 EOP 320 RPS Div 2	12 min	---	ET-11	---	INSTALL
	EP14 EOP 320 RPS Div 4	12 min	---	ET-11	---	INSTALL
	EP35 EOP-322 HPCI Core Spray Valve	3 min	---	ET-12	---	FAIL CLOSE

I/O OVERRIDE SUMMARY:

<i>Initial</i>	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 C LO HV-F045 OPEN light	---	---	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
	3A43 F DI HV-F031B CLOSED-DISCHARGE VALVE	---	---	ET-8	---	OFF

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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Perform Turbine Bypass Valve Testing - Monthly:

- CRS directs Turbine Bypass Valve Testing - Monthly to be performed.
- PO performs Turbine Bypass Valve Testing - Monthly IAW HC.OP-ST.AC-0005 from the DEHC HMI screen as follows:
 - PO selects TESTS
 - PO selects BPV TEST
 - PO selects BYPASS VALVE #1
 - PO selects TEST ON
 - After the valve reaches full open, PO selects TEST OFF.
 - PO verifies plant parameters stabilize and return to normal.
- PO repeats test for each of 8 other TBV's.

NOTE: Only the first 2 valves need to be performed before moving on to the next event.

RRCS Pressure Transmitter Fails Low:

At the discretion of the Lead Examiner,
TRIGGER ET-1 (RRCS Pressure Transmitter PT-N403E Failure Low)

- Crew recognizes RRCS Failure by:
 - ⇒ OHA D1-E1 "RRCS TROUBLE"
 - ⇒ RRCS Channel A Logic B "RRCS LOGIC B TROUBLE" light

PT-N403E output can be seen on the SPDS Reactor Pressure Point Status display.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to RRCS, <u>THEN REPORT</u> there is an "ATM CAL/GROSS FAILURE" light lit on 10C601 and PT-N403E is reading 0 psig.</p> <p><u>IF</u> dispatched to RRCS to perform DL-26 Attach 1b Form 1, <u>THEN PROVIDE</u> DL-26 Attach 1b Form 1, filled out as provided on attached sheet.</p> <p><u>IF</u> dispatched to transmitter at instrument rack C005, <u>THEN REPORT</u> no visible problem at instrument rack.</p>	<ul style="list-style-type: none"> Crew dispatches ABEO and/or Maintenance to RRCS cabinets 10C601/602. 	
<p>6A FWH Tube Rupture: After the Crew completes Turbine Bypass Valve Testing - Monthly, <u>OR</u> at the discretion of the Lead Examiner, TRIGGER ET-2 (6A FWH Tube Rupture with Sluggish Dump Valve response).</p>	<ul style="list-style-type: none"> CRS/STA/IA recognize the following Tech Spec action applies: ⇒ ATWS Recirculation Pump Trip System Instrumentation 3.3.4.1 action b Crew recognizes trip of 6A FWH and loss of feedwater heating by: ⇒ OHA A7-E2 "FEEDWATER HEATER TRIP" ⇒ 6A FWH Flashing HTR TRIP light ⇒ CRIDS D2996 "Feedwater Heater AE106" ⇒ 6A FWH Extraction Steam valve HV-1365A closing ⇒ Lowering feed water line temperatures Crew announces trip of the 6A FWH on the plant page. 	<p>Place the inoperable channel in a tripped condition within one hour.</p> <p>The 6A FWH dump valve will not open until after the feedwater heater trip setpoint is reached.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Monitor Items:</p> <ul style="list-style-type: none"> FW Line Temp A c91a1744 FW Line Temp B c91a1746 	<ul style="list-style-type: none"> Crew recognizes leak in 6A FWH by: <ul style="list-style-type: none"> ⇒ RFPTs speed increasing ⇒ RFP discharge flows rising with lowering feed flow to reactor vessel ⇒ Total Condensate flow rising ⇒ 3/4/5A FWH drain flow rising ⇒ 6A FWH level rising RO reduces and maintains reactor power to establish less than 1185 MWe Main Turbine Load IAW the SPRI. 	<p>The tube leak will cause a small vessel level transient (≈ 2 inches).</p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/></p> <p>Immediate Operator Action IAW AB.BOP-0001.</p>
<p><u>IF</u> dispatched to AC102, <u>THEN REPORT:</u></p> <ul style="list-style-type: none"> 6A FWH level is high on all indicators There is a 100% air signal on the drain valve There is a 0% air signal on the dump valve 	<ul style="list-style-type: none"> * <i>Crew restores/maintains the Core Thermal Power 5 Minute Average to ≤ 3848 MWth.</i> Crew dispatched TBEO to AC102 panel. 	
	<ul style="list-style-type: none"> CRS implements AB.BOP-0001: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B Crew ensures automatic actions occur: <ul style="list-style-type: none"> ⇒ HV-1365A extraction steam isolation closes ⇒ HV-1366A/1367A/1359A drains open 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> PO performs the following: <ul style="list-style-type: none"> ⇒ Closes HV-1753A ⇒ Closes HV-1768A ⇒ Ensures extraction steam isolated to 6A FWH IAW SO.AF-0001 Section 5.6 <u>IF</u> feedwater temperature drops more than 10 degrees due to the Loss of Feedwater Heating, <u>THEN</u> CRS directs RO to reduce reactor power to 80% and maintain it there. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>
<u>IF</u> directed to monitor/control recirc MG oil temps, <u>THEN MONITOR:</u> <ul style="list-style-type: none"> • rrtoila(1) for 'A' MG • rrtoila(2) for 'B' MG 	<ul style="list-style-type: none"> <u>IF</u> directed, <u>THEN</u> RO reduces and maintains reactor power 80% IAW SPRI. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>
<u>IF</u> directed to set Cross Flow to NOT APPLIED, <u>THEN TRIGGER ET-4.</u>	<ul style="list-style-type: none"> CRS implements AB.RPV-0001: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B Crew contacts RE. <u>IF</u> reactor power was reduced by 15%, <u>THEN</u> CRS recognize the following actions apply: <ul style="list-style-type: none"> ⇒ T/S Table 4.4.5-1 Item 4(b) ⇒ ODCM Table 4.11.2.1.2-1 Items (c) & (f) 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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DFCS Level Transmitter

Failure:

After the Crew assumes the watch **TRIGGER ET-3** (DFCS Level Transmitter PDT-N004C Fails Upscale) at the discretion of the Lead Examiner.

- Crew recognizes N004A failure by:
 - ⇒ OHA B1-F5 "FEEDWATER 2/3 LOGIC SENSOR FAIL"
 - ⇒ OHA B3-F1 "DFCS ALARM/TRBL"
 - ⇒ DFCS "HIGH LVL TRIP C" status light
 - ⇒ CRIDS D2100 "RFPT C HIGH REACTOR LEVEL 8"
 - ⇒ CRIDS D5272 "A/B/C REACTOR LVL 8 SENSOR FAILURE"
 - ⇒ DFCS "REACTOR LEVEL C HIABS"
 - ⇒ DFCS "REACTOR LEVEL C IOBAD"
 - ⇒ DFCS "REACTOR LEVEL C HIDEV"
 - ⇒ LI-R608C indication on 10C650C.
- RO/PO validate current RPV level with redundant instruments.
- PO monitors DFCS and ensures it continues to control RPV water level.
- Crew dispatches RBEO to inspect the 'C' Instrument rack.
- Crew contacts Maintenance to troubleshoot.
- Crew contacts Operations Management.
- CRS recognize the following Tech Specs apply:
 - ⇒ Feedwater/Main Turbine Trip System Actuation Instrumentation 3.3.9 action b

As RBEO, **REPORT** there are no visible problems at the 'C' Instrument rack.

Must restore the N004C to OPERABLE within 7 days or be in at least STARTUP within the next 6 hours.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>Recirc Pump Dual Seal Failure:</u></p> <p>After the Crew addresses the DFCS Level Transmitter and at the discretion of the Lead Examiner, TRIGGER ET-8.</p>	<ul style="list-style-type: none"> Crew recognizes leak in the drywell by: <ul style="list-style-type: none"> ⇒ C1-F5 COMP PT IN ALARM ⇒ OHA C6-B1 "DLD SYSTEM ALARM/TRBL" ⇒ RM11 9AX314 DLD Floor Drain Flow alarm ⇒ Rising drywell pressure CRS implements AB.CONT-0006: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition C CRS implements AB.CONT-0001: <ul style="list-style-type: none"> ⇒ Condition A 	
<p>IF directed to report local seal pressures on the 'B' Recirc pump,</p> <p>THEN use the following Monitor Items:</p> <ul style="list-style-type: none"> 'B' Recirc #1 Seal rrpsl1(2) 'B' Recirc #2 Seal rrpsl2(2) 	<ul style="list-style-type: none"> RO/PO ensure drywell cooling is maximized. RO/PO check: <ul style="list-style-type: none"> ⇒ SRV temperatures ⇒ Recirc pump seals Crew recognizes 'B' Recirc pump dual seal failure by: <ul style="list-style-type: none"> ⇒ CRIDS D2925 "RECIRC PUMP B SEAL LKG FLOW HI" ⇒ Rising seal temperatures CRS references AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition E RO implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition E 	<p>In this case, this is accomplished by opening cooling coil valves.</p> <p>Due to the F031B failure to close, the recirc pump cannot be isolated.</p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>IF dispatched to the breaker for HV-F031B, <u>THEN REPORT</u> the breaker looks normal.</p>	<ul style="list-style-type: none"> RO determines F031B did not close and the B recirc pump is not isolated and informs the CRS. CRS determines drywell pressure cannot be maintained < 1.5 psig and directs: <ul style="list-style-type: none"> ⇒ Reducing recirc pumps to minimum speed ⇒ Locking the Mode Switch in SHUTDOWN RO <ul style="list-style-type: none"> ⇒ Reduces A recirc pump to minimum speed ⇒ Locks the Mode Switch in SHUTDOWN 	<p>Retainment Override in AB.CONT-0001.</p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>
<p><u>Manual Scram with 2 Rods Stuck:</u></p>	<ul style="list-style-type: none"> RO recognizes 2 control rods are stuck at position 48 and informs the CRS that the reactor is not shut down. RO performs scram actions IAW AB.ZZ-0001 Att. 1. CRS implements EOP-101A. PO stabilizes and maintains RPV level as directed by CRS. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>After scram actions are complete, TRIGGER ET-9 and ET-10 to delete Malfunctions CD032231 and CD033443 to allow manual insertion of control rods.</p>	<ul style="list-style-type: none"> CRS directs bypassing the RWM and commencing manual rod insertion. RO/PO bypass RWM and insert control rods IAW RE.AB.ZZ-0001 Att. 2. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>
<p>REFER to the appropriate EOP and SUPPORT Crew requests for EOPs IAW with the following:</p> <p>EOP-320: ET-11 EOP-322: ET-12</p>	<ul style="list-style-type: none"> CRS may direct performance of the following EOPs: <ul style="list-style-type: none"> ⇒ EO.ZZ-0320 "Defeating ARI and RPS Interlocks" ⇒ EO.ZZ-0322 "Core Spray Injection Valve Override" 	<p>The timing, order, and priority of the EOP performance may vary.</p>
<p>High Drywell Pressure: The high drywell pressure will occur approximately 7 minutes after the seal failure is initiated.</p>	<ul style="list-style-type: none"> Crew recognizes Drywell Pressure Above 1.68# EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA A7-D4 "DRYWELL PRESSURE HI/HI" ⇒ OHA C5-B5 "DRYWELL PRESSURE HI" ⇒ Various system initiations and isolations. CRS enters EOP-102, re-enters EOP-101A. RO/PO verify automatic actions. CRS directs ensuring isolations occur IAW either: <ul style="list-style-type: none"> ⇒ SO.SM-0001 <u>OR</u> ⇒ AB.CONT-0002 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>IF crew does not restore 1E breakers, THEN maintain Main Steam Tunnel Temps below 140F as necessary using Monitor Item mstunl.</p>	<ul style="list-style-type: none"> RO/PO ensure isolations occur IAW either: ⇒ SO.SM-0001 OR ⇒ AB.CONT-0002 CRS directs restoring 1E 480 VAC breakers. RO/PO restore 1E 480 VAC breakers IAW AB.ZZ-0001 Att. 12. CRS directs placing A & B RHR pumps in Suppression Pool Cooling & Suppression Chamber Spray. RO/PO place A & B RHR pumps in Suppression Pool Cooling and Suppression Chamber Spray IAW AB.ZZ-0001 Att. 3. 	
<p>Uncontrolled Lowering of RPV Pressure: 5 minutes after the manual scram, <u>OR</u>, at the Lead Examiners discretion, TRIGGER ET-5.</p>	<ul style="list-style-type: none"> Crew recognizes uncontrolled lowering of pressure by: ⇒ OHA D3-D5 "EHC UNIT PANEL 10C363" ⇒ OHA E1-F5 "COMPUTER PT IN ALARM" ⇒ OHA D3-D5 "EHC UNIT PANEL 10C363" ⇒ OHA C8-B3 "NSSSS ISLN SIG-MN STM PRESSURE LO" ⇒ Various reactor pressure indications ⇒ Bypass valves opening 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS implements AB.RPV-0005: ⇒ Retainment Override 2 PO maintains RPV water level as directed by CRS IAW AB.ZZ-0001 Attachment 14. <u>WHEN</u> reactor pressure lowers to 550 psig, <u>THEN</u> CRS directs closing the MSIVs, HV-F016, and HV-F019. RO/PO closes the MSIVs, HV-F016, and HV-F019. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p> <p>May cause RPV water level to shrink to LVL 2.</p>
	<p>* <i>Crew closes at least one MSIV in each steam line before reactor pressure drops below 382 psig.</i></p>	<p>RECORD the reactor pressure at which the steam lines were isolated.</p> <p>Pressure: _____</p>
	<ul style="list-style-type: none"> CRS directs RPV pressure control with HPCI and/or SRVs. RO/PO control RPV pressure as directed by CRS with: <ul style="list-style-type: none"> ⇒ HPCI IAW AB.ZZ-0001 Att 6 ⇒ SRVs IAW AB.ZZ-0001 Att 13 Crew restarts a CRD Pump and sets up CRD to drive rods. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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* *CREW fully inserts control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320 to place the reactor in a shutdown condition.*

- CRS directs restoring PCIG to SRVs and Torus to Rx Bldg Vacuum breakers.
- RO/PO restore PCIG to SRVs and Torus to Rx Bldg Vacuum breakers IAW AB.ZZ-0001 Att. 9.

Termination Requirement:

The scenario may be terminated at the discretion of the Lead Examiner when:

- RPV level is being maintained above -161"
- Suppression Pool Cooling is in service

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. OP-AA-106-101-1001 Event Response Guidelines
- U. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- V. HC.OP-ST.AC-0005 Turbine Bypass Valve Testing - Monthly
- W. HC.OP-SO.AF-0001 Extraction Steam, Heater Vents And Drains System Operation
- X. HC.OP-SO.SM-0001 Isolation Systems Operation
- Y. HC.OP-DL.ZZ-0026 Surveillance Log
- Z. HC.OP-IO.ZZ-0006 Power Changes During Operation
- AA. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- BB. HC.OP-AB.RPV-0001 Reactor Power
- CC. HC.OP-AB.RPV-0003 Recirculation System
- DD. HC.OP-AB.RPV-0004 Reactor Level Control
- EE. HC.OP-AB.BOP-0001 Feedwater Heating
- FF. HC.OP-AB.ZZ-000 Reactor Scram
- GG. HC.OP-EO.ZZ-0101 RPV Control
- HH. HC.OP-EO.ZZ-0101A ATWS
- II. HC.OP-EO.ZZ-0102 Primary Containment Control

1.

- * ***Crew restores/maintains the Core Thermal Power 5 Minute Average to \leq 3848 MWth.***

K/A 295001 Reactor Feedwater System

A2 Ability to (a) predict the impacts of the following on the Reactor Feedwater System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions of operations:

A2.04 Loss of Extraction Steam RO 3.3 SRO 3.4

K/A 2.2 Equipment Control

2.2.22 Knowledge of limiting conditions for operations and safety limits RO.4.0 SRO 4.7

The loss of feedwater heating due to the trip of the 6A FWH will drive reactor power to above the licensed limit. Peak power in this transient with no operator action is just over 102% power. This would constitute a violation of our Operating License. HC.OP-IO.ZZ-0006 defines a 5 minute average of 3848 MWth as exceeding the Licensed Power Limit. Taking the Immediate Operator Actions IAW either AB.BOP-0001 or AB.RPV-0001 will prevent this violation.

2.

- * ***Crew closes at least one MSIV in each steam line before reactor pressure drops below 382 psig.***

K/A 241000 Reactor/Turbine Pressure Regulating System

A2 Ability to (a) predict the impacts of the following on the REACTOR/TURBINE PRESSURE REGULATING SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

A2.03 Failed open/closed bypass valve(s) RO: 4.1 SRO: 4.2

K/A/ 239001 Main and Reheat Steam System

A4 Ability to manually operate and/or monitor in the control room:

A4.01 MSIVs RO:4.2 SRO: 4.0

Tech Spec 3.4.6.1, Reactor Coolant System Pressure/Temperature Limits, specifies a maximum allowable cooldown of 100 degF in any one hour period. HC.OP-AB.RPV-0005 Retainment Overrides require closing the MSIVs and HV-F016/F019 if reactor pressure reaches 550 psig during an uncontrolled depressurization with the reactor shutdown.

The scenario starts with reactor pressure at approximately 1004 psig. This equates to 1019 psia. This places saturation temperature between 544 (995 psia) and 548 (1028 psia) degF. The saturation pressure for 444 degF is 397 psia or 382 psig. Closing the MSIVs after pressure drops below 382 psig is certain to cause the Tech Spec cooldown limit to be violated.

The scenario is modeled such that it will take at least three minutes for pressure to drop from 785 psig to 382 psig. This provides ample time to implement the AB.RPV-0005 and close the MSIVs. Note that for purposes of satisfying the critical task, it is only necessary to close one valve in each flow path. Also, subsequent actions which may cause additional cooldown, such as overfeeding due to the pressure reduction, are not encompassed by this critical task. Other actions that may cause excessive cooldown should be evaluated under the various Crew and individual competencies.

3.

- * ***CREW fully inserts control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320 to place the reactor in a shutdown condition.***

K/A 295006 SCRAM

AA1.01 Reactor Protection System RO 4.6 SRO 4.6

AA1.07 Ability to operate and/or monitor the following as they apply to SCRAM: Control rod position RO 4.1 SRO 4.1

AA2.02 Ability to determine and/or interpret the following as they apply to SCRAM Control rod position RO 4.3 SRO 4.4

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.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

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

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

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

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: 100%

MWe (May vary slightly): 1295

Work Week: B

Activities Completed Last Shift:

Major Activities Next 12 Hours:

Perform HC.OP-ST.AC-0005 Turbine Bypass Valve Testing – Monthly.

Protected Equipment:

HPCI

Tagged Equipment:

RCIC

SIMULATOR

EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC SCENARIO 3

SCENARIO NUMBER: ESG-NRC-S3

EFFECTIVE DATE: Effective when approved.

EXPECTED DURATION: 50-60 minutes

REVISION NUMBER: 00

PROGRAM: ☒ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER _____

REVISION SUMMARY:

PREPARED BY: Archie E. Faulkner
Instructor

7/1/10
DATE

APPROVED BY: 
LORT Group Lead or Designee

7/1/10
DATE

APPROVED BY: 
Shift Operations Supervisor or Designee

7/1/10
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. Place H2/O2 Analyzer In Service
- B. Raise Reactor Power Using Recirc
- C. Stuck Open SRV
- D. A SACS Pump Trip With D Failure to Auto Start
- E. Spurious TACS Isolation
- F. TACS Valve Failure To Reopen
- G. HPCI Steam Line Leak In DW With Loss Of Feedwater
- H. RCIC Flow transmitter failure
- I. B RHR Pump Trip
- J. Downcomer Break With Emergency Depressurization

III. SCENARIO SUMMARY:

The scenario begins with the plant at 84.5% power, with the 'A' RFPT OOS. Power was reduced to 84.5% to remove the 'A' RFPT from service due to speed oscillations. Power ascension is ready to begin. The PO will place the "A" Containment H2/O2 Analyzer in service for surveillance. The RO will begin power ascension to 89.5% using Recirc. After 89.5% power is reached, the "L" SRV will stick open. After the SRV is closed and Tech Specs are addressed, A SACS pump will trip. D SACS Pump will fail to automatically start. TACS will require manual action to complete the swap. After swap actions are completed, one TACS Isolation valve closes and cannot be opened, forcing a manual scram. After the scram, the 1&2 FWHs will isolate due to level ringing, and the bypass around them will fail to open. RCIC Flow transmitter fails when RCIC is started but RCIC can be controlled manually. A leak will develop on the HPCI Steam line inside of the drywell. B RHR Pump trips when automatically started on high drywell pressure. The Drywell to Suppression Chamber Downcomer is broken, which will drive the crew into an Emergency Depressurization. The scenario ends when the reactor is depressurized.

IV. INITIAL CONDITIONS:

I.C.

Initial

INITIALIZE the simulator to 100% power, MOL, EPU.

REDUCE reactor power to 84.5%.

REMOVE the 'A' RFPT from service IAW SO.AE-0001 Section 5.10 up through the point of reducing lube oil temperature to 90 degF.

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

Initial

Description

INITIAL SO.AE-0001 Section 5.10 up through the point of reducing lube oil temperature to 90 degF.

PREPARE an SO.AE-0001 Attachment 3 for 'A' RFPT pump casing d/t.

PLACE an Operational Barrier on the 'A' RFPT RESET pushbutton.

INITIAL IO.ZZ-0006 for the power reduction.

At a minimum review the Scenario Reference section and **CLEAN** the bolded EOPs, ABs and SOPs listed. (80091396 0270)

ENSURE Data Collection is trending the following parameters:

- W/R RPV Pressure
- W/R Reactor Water Level
- Fuel Zone Reactor Water Level
- Drywell Pressure
- W/R Suppression Pool Level

COMPLETE the Simulator Ready for Training/Examination Checklist.

EVENT TRIGGERS:

Initial	ET #	Description
	5	EVENT ACTION: crqnmi <= 10 // Reactor power < 10% COMMAND: PURPOSE: Initiates loss of feedwater.
	6	EVENT ACTION: rcnt >= 1000 // triggers RCIC flow transmitter failure COMMAND: PURPOSE: Fails RCIC flow transmitter on pump startup
	7	EVENT ACTION: COMMAND: PURPOSE:
	8	EVENT ACTION: pcpdw >= 16.7 // Triggers on DW pressure >2.0 psig COMMAND: mmf hp07 10 PURPOSE: Trips B RHR Pump and increases drywell leak
	9	EVENT ACTION: rhv021(1) >= 0.01 // Drywell Spray Valve F021A opening COMMAND: PURPOSE: Triggers failure of Drywell Spray valve
	10	EVENT ACTION: rrprv <= 750 // Reactor Pressure in psia COMMAND: PURPOSE: Inserts downcomer break if Crew depressurizes to ensure PSP is reached.
	11	EVENT ACTION: COMMAND: PURPOSE:
	12	EVENT ACTION: zdads4(11) >= 1.0 // F013L control switches COMMAND: dmf ad02lo PURPOSE: Deletes stuck open SRV when control switch is cycled.
	13	EVENT ACTION: COMMAND: PURPOSE:

MALFUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	AD08L ADS/Relief valve F013L (MS LINE C) accoustic monitor failure	---	---	NONE	---	---
	AD02LO ADS/Relief valve F013L (MS LINE C) sticks open	---	---	ET-1	---	---
	CW15D DP210 SACS pump Auto-Start Failure	---	---	ET-2	---	---
	CW10A AP210 SACS Pump Trip	00:01	---	ET-2	---	---
	FW30A Heater 2A hi level switch failure	---	---	ET-5	---	---
	FW30B Heater 2B hi level switch failure	---	---	ET-5	---	---
	FW30C Heater 2C hi level switch failure	---	---	ET-5	---	---
	RC05 RCIC flow transmitter failure	---	---	ET-6	---	100
	HP07 HPCI steam line break inside the drywell	---	05:00	ET-7	---	0.5
	RH04B RHR pump BP202 trip	---	---	ET-8	---	---
	PC04 Downcomer break	---	---	ET-10	---	---

REMOTE/FIELD FUNCTION SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	PP04 OD-3 Crossflow Applied	---	---	NONE	---	NO
	AN28 CROSSFLOW ALARM/TRBL	---	---	NONE	---	NORM
	NM04 APRM A gain (Range: 0.800 - 1.500)	---	---	NONE	---	1.110
	NM06 APRM C gain (Range: 0.800 - 1.500)	---	---	NONE	---	1.128
	NM08 APRM E gain (Range: 0.800 - 1.500)	---	---	NONE	---	1.057
	NM05 APRM B gain (Range: 0.800 - 1.500)	---	---	NONE	---	1.086
	NM07 APRM D gain (Range: 0.800 - 1.500)	---	---	NONE	---	1.070
	NM09 APRM F gain (Range: 0.800 - 1.500)	---	---	NONE	---	1.095
	AN19 E1-B4 Isophase Bus Cooler Panel 10C116	---	---	ET-3	---	NORM
	RH20A Drywell Spray Valve HV-F021A	---	---	ET-9	---	RACK CLOSE

I/O OVERRIDE SUMMARY:

<i>Initial</i>	Description	Delay	Ramp	Trigger	Init Val	Final Val
	5A53 D DI HV-2522E OPEN-TACS ISLN VLVS	---	---	ET-4	---	OFF
	5A53 F DI HV-2522E FAST CLOSE-TACS ISLN VLVS	---	---	ET-4	---	ON
	5A159 C DI FWH 1&2 Bypass Valve OPEN Pb	---	---	ET-5	---	OFF
	5A159 D DI FWH 1&2 Bypass Valve RAISE Pb	---	---	ET-5	---	OFF

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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Place "A" H2/O2 Analyzer In Service:

Crew places H2/O2 Analyzer in service after assuming the watch.

- PO places "A" H2/O2 Analyzer in service IAW HC.OP-SO.GS-0002 Section 5.2.5 as follows:

- ⇒ OPEN one (1) of the following H2/O2 Analyzer 1AC200 suction valve combinations, RECORD component on Attachment 1 AND INITIAL:
- ⇒ HV-4959A AND HV-4965A H2/O2 ANLZR SUPP CHAMBER SUCT.
- ⇒ OPEN HV-4966A AND HV-5022A H2/O2 ANLZR RET AND INITIAL Attachment 1.
- ⇒ VERIFY HV-5741A H2/O2 ANLZR H2 SUP HDR is open AND INITIAL Attachment 1.
- ⇒ VERIFY the FUNCTION SELECTOR Switch for H2/O2 Analyzer 1AC200 is in SAMPLE AND INITIAL Attachment 1.
- ⇒ PLACE the MODE Switch for H2/O2 Analyzer 1AC200 to ANALYZE AND INITIAL Attachment 1.
- ⇒ ENSURE the CONTROL AT THIS PNL light is on. IF not, PRESS REMOTE SELECTOR PB.

HPI USED:
 STAR ☐
 PEER CHECK ☐
 FLAGGING ☐

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Power Ascension: Crew commences reactor power ascension after assuming the watch.</p>	<ul style="list-style-type: none"> CRS directs raising power to 89.5% using RE guidance and IO-0006. 	
<p>As RE PROVIDE the following guidance:</p> <ul style="list-style-type: none"> SPRI and Enhanced Stability Guidance are valid for the remainder of the maneuver Power has been steady for the last hour. Target rod line has been reached. Raise power to 89.5% with reactor recirculation and hold for thermal limit checks. 	<ul style="list-style-type: none"> RO monitors the following when changing Recirc Pump speed: <ul style="list-style-type: none"> ⇒ XR-R603A,B,C,D - C51 (NEUTRON MONITORING) APRM ⇒ B31-FR-R614 RECIRC LOOP A(B) FLOW ⇒ FR-R611A(B) RECIRC LOOP A(B) JET PUMP FLOW ⇒ PDR-R613/FR- FR-R613 CORE PLATE DIFF PRESS/JET PUMP FLOW RO raises Reactor Recirc Pump speed by intermittently pressing INCREASE pushbutton on SIC-R621A(B) PUMP A(B) SPD CONT. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>
<p>Stuck Open SRV: At the discretion of the Lead Examiner, TRIGGER ET-1 (PSV-F013L Inadvertent Opening).</p>	<ul style="list-style-type: none"> Crew recognizes SRV open by: <ul style="list-style-type: none"> ⇒ OHA C1-A3 "ADS/SAFETY RELIEF VALVE NOT CLOSED" ⇒ Flashing red alarm light on TRR-614 ⇒ Acoustic Monitor open indication for "L" SRV ⇒ Lowering MWe ⇒ Steam Flow to Feed Flow mismatch ⇒ RPV level swell 	<p>RECORD time SRV open.</p> <p>TIME: _____</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
Monitor Items: • PSV-F013L Position advpos(11)	<ul style="list-style-type: none"> PO may check Acoustic Monitor Indication on 10C605 panel behind control console. 	
	<ul style="list-style-type: none"> PO cycles SRV control switch in attempt to close the SRV. 	Immediate Operator Action IAW AB.RPV-0006. HPI USED: STAR <input type="checkbox"/>
	<p>* <i>Before more than two minutes has elapsed from SRV opening, CREW closes F013L by cycling F013L AUTO/OPEN control switches to OPEN and back to AUTO.</i></p>	RECORD elapsed time SRV was open: TIME: _____
	<ul style="list-style-type: none"> CRS implements AB.RPV-0006. Crew recognizes SRV is closed. Crew contacts Maintenance. CRS recognize the following Tech Spec action applies: <ul style="list-style-type: none"> ⇒ SRVs 3.4.2.1.b Tracking ⇒ 4.6.4.1.b Primary Containment Vacuum Breaker surveillance required. 	Must restore within 30 days or initiate actions IAW T/S 6.9.2 Must close valve within 2 minutes Must perform surv within 2 hours.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>Loss of AP210 SACS pump: At the discretion of the Lead Examiner, TRIGGER ET-2 (Trip of AP210 SACS pump w/Failure of DP210 to Auto-Start).</p>	<ul style="list-style-type: none"> Crew recognizes trip of AP210 SACS pump by: <ul style="list-style-type: none"> ⇒ OHA A1-E4 "SACS LOOP A TROUBLE" ⇒ CRIDS D4710 "SACS PUMP AP210 TRBL" ⇒ Flashing STOP light for AP210 	
	<ul style="list-style-type: none"> Crew recognizes loss of TACS by: <ul style="list-style-type: none"> ⇒ OHA A1-B4 "SACS/TACS LOOP PRESS LO" ⇒ Failure of DP210 to start ⇒ Status lights for HV-2522 and HV-2496 valves. ⇒ SACS loop flows 	The DP210 SACS pump will fail to automatically start.
	<ul style="list-style-type: none"> CRS directs ensuring TACS swaps to 'B' SACS loop IAW either: <ul style="list-style-type: none"> ⇒ AB.ZZ-0001 <u>OR</u> ⇒ AB.COOL-0002 	
	<ul style="list-style-type: none"> PO ensures TACS swaps to 'B' SACS loop IAW either: <ul style="list-style-type: none"> ⇒ AB.ZZ-0001 Att. 10 <u>OR</u> ⇒ AB.COOL-0002 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
<p><u>IF</u> dispatched to investigate Iso-Phase Bus Duct Cooling Pnl 10C116 alarm, THEN TRIGGER ET-3 to acknowledge the alarm <u>AND</u> REPORT alarm was LOW CLG WATER FLOW. (Local alarm will clear if TACS has been restored and still be in if TACS is NOT restored)</p>	<ul style="list-style-type: none"> CRS implements AB.COOL-0002: <ul style="list-style-type: none"> ⇒ Condition B 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> IF TACS is not restored, <u>THEN</u> CRS directs: <ul style="list-style-type: none"> ⇒ Reducing Recirc to minimum ⇒ Locking the Mode switch in SHUTDOWN * <i>The Crew either swaps TACS to the 'B' SACS loop IAW AB.ZZ-0001 Attachment 10 or AB.COOL-0002 Condition B or Scrams the reactor.</i> PO starts second SSW pump in 'B' SSW loop. 	<p>IF the Crew scrams, <u>THEN</u> the LOCA will automatically be inserted</p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
<p>IF dispatched to AP210 SACS pump, <u>THEN REPORT</u> the following:</p> <ul style="list-style-type: none"> The motor is hot to the touch There is charring around the motor vents There is an acrid odor There is no indication of fire 	<ul style="list-style-type: none"> Crew dispatches RBEO and/or Maintenance to investigate the loss of the AP210 SACS pump. 	
<p>IF dispatched to AP210 SACS pump breaker, <u>THEN REPORT</u> the 50A and 50B relays have target flags dropped.</p>	<ul style="list-style-type: none"> Crew dispatches ABEO and/or Maintenance to the breaker for the AP210 SACS pump (52-40104). Crew contacts maintenance to investigate the trip of the AP210 SACS pump <u>AND</u> the failure of the DP210 SACS pump to auto-start. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • <u>IF</u> TB Chillers are lost during TACS swap, <u>THEN</u> Crew recognizes loss by: <ul style="list-style-type: none"> ⇒ OHA E5-E1 "CHILLED WTR SYSTEM TROUBLE" ⇒ Rising drywell temperature and pressure ⇒ Rising steam tunnel temperature ⇒ Chilled water Supply/Return temperature on 10C651E 	
<u>IF</u> dispatched to the TB Chilled Water Panel 10C152, <u>THEN</u> REPORT the Chillers tripped on low evaporator water flow.	<ul style="list-style-type: none"> • <u>IF</u> TB Chillers are lost, <u>THEN</u> CRS implements AB.CONT-0001: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition E • RO/PO ensures drywell cooling is maximized. • Crew restores TB chillers to service. • CRS recognize the following Tech Spec applies: <ul style="list-style-type: none"> ⇒ Safety Auxiliaries Cooling 3.7.1.1 Action a.1.a <u>OR</u> 3.7.1.1 Action a.3.a 	<p>If chillers are not restored, drywell pressure will rise by about 0.5 psig.</p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p> <p>Given the relatively short assessment period that will be observed during the scenario, the Crew may or may not declare the DP210 INOPERABLE.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>TACS Isolation/ Manual Scram:</u></p> <p>At the discretion of the Lead Examiner, TRIGGER ET-4 (Closure of HV-2522E).</p>	<ul style="list-style-type: none"> Crew recognizes loss of TACS by: <ul style="list-style-type: none"> ⇒ OHA A1-B4 "SACS/TACS LOOP PRESS LO" ⇒ OHA A1-E5 "SACS LOOP B TROUBLE" ⇒ Status lights for HV-2522 and HV-2496 valves. ⇒ SACS loop flows PO attempts to re-open HV-2522E. CRS implements AB.COOL-0002: <ul style="list-style-type: none"> ⇒ Condition C ⇒ Retainment Override <u>WHEN</u> the Crew determines TACS cannot be restored, <u>THEN</u> CRS directs: <ul style="list-style-type: none"> ⇒ Reducing recirc pumps to minimum speed ⇒ Locking the Mode Switch in SHUTDOWN RO: <ul style="list-style-type: none"> ⇒ Reduces recirc pumps to minimum speed ⇒ Locks the Mode Switch in SHUTDOWN RO performs scram actions IAW AB.ZZ-0001 Att. 1 	
<p><u>IF</u> dispatched to open HV-2522E locally, <u>REPORT</u> the valve will not open.</p>		

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes RPV Level Below 12.5" EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA C5-A4 "RPV WATER LEVEL LO" ⇒ OHA A7-D5 "RPV LEVEL 3" ⇒ Various water level indicators 	
<p>Loss of Condensate: When the reactor is scrammed, the 1&2 FWHs will isolate. The bypass valve around the 1&2 FWHs is failed. ENSURE ET-5 activates.</p>	<ul style="list-style-type: none"> Crew recognizes 1&2 FWH trip by: <ul style="list-style-type: none"> ⇒ OHA A7-E2 "FEEDWATER HEATER TRIP" ⇒ Flashing HTR TRIP lights for FWH #2A/B/C ⇒ Condensate Inlet and Outlet valves stroking shut for FWH 1&2A/B/C 	
	<ul style="list-style-type: none"> RO/PO attempt to open bypass around 1&2 FWHs IAW AB.ZZ-0001 Attachment 14. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>
	<ul style="list-style-type: none"> RO/PO recognize HV-1625 will not open and inform CRS. 	
	<ul style="list-style-type: none"> CRS directs RPV water level control with RCIC and/or HPCI. 	
	<ul style="list-style-type: none"> RO/PO inject with RCIC and/or HPCI IAW AB.ZZ-0001 Attachment 6. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
<p>RCIC Flow Transmitter Failure: When the RCIC is initiated, flow indication will peg high, resulting in speed oscillations.</p>	<ul style="list-style-type: none"> RO/PO recognizes RCIC flow transmitter failure and takes manual control of RCIC Flow Controller. 	
	<ul style="list-style-type: none"> RO/PO places RCIC Flow controller in Manual. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>HPCI Steam Line Leak in Drywell:</u> 5 minutes after the manual scram, <u>OR</u>, at the discretion of the Lead Examiner, TRIGGER ET-7.</p>	<ul style="list-style-type: none"> RO/PO uses UP/DOWN arrow pushbuttons to control RCIC speed and flow to maintain RPV water level. 	
	<ul style="list-style-type: none"> Crew recognizes LOCA condition: <ul style="list-style-type: none"> ⇒ OHA C6-B1 "DLD SYSTEM ALARM/TRBL" ⇒ RM11 9AX314 DLD FLOOR DRN FLOW alarm ⇒ RM11 9AX317/318/320 DLD CCM alarms ⇒ OHA D3-C3 "DRYWELL SUMP LEVEL HI/LO" ⇒ OHA A4-F5 "COMPUTER PT IN ALARM" ⇒ OHA A7-E4 "DRYWELL PRESSURE HI/LO" ⇒ Rising Drywell Pressure on various indicators 	
	<ul style="list-style-type: none"> CRS implements AB.CONT-0006: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B ⇒ Condition C 	Based on the rate of drywell pressure rise (≈6 minutes to 1.68#), some or all of these Conditions may not be entered.
	<ul style="list-style-type: none"> CRS implements AB.CONT-0001: <ul style="list-style-type: none"> ⇒ Condition A 	
	<ul style="list-style-type: none"> RO/PO ensures drywell cooling maximized. Crew checks <ul style="list-style-type: none"> ⇒ Recirc pump seal parameters ⇒ SRV temperatures 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes Drywell Pressure Above 1.68# EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA A7-D4 "DRYWELL PRESSURE HI/HI" ⇒ Various drywell pressure indications. ⇒ Various system initiations and isolations. CRS enters EOP-102, re-enters EOP-101. RO/PO verify automatic actions. 	
B RHR Pump Trip: After the pump starts on High Drywell Pressure, ENSURE ET-8 activates.	<ul style="list-style-type: none"> RO/PO determines B RHR pump tripped after start. 	
<u>IF</u> dispatched to investigate trip of B RHR Pump, <u>THEN</u> as ABEO, REPORT the breaker overcurrent flags are tripped.	<ul style="list-style-type: none"> Crew dispatches NEO and/or Maintenance to breaker for B RHR pump (52-40206). 	
<u>IF</u> dispatched to investigate trip of B RHR Pump, <u>THEN</u> as RBEO, REPORT there is an acrid odor in the pump room, but NO fire.	<ul style="list-style-type: none"> Crew dispatches NEO and/or Maintenance to B RHR pump. CRS verifies isolations and monitors containment performance. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS directs placing AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray. 	
	<ul style="list-style-type: none"> RO/PO place AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray IAW AB.ZZ-0001 Att. 3. 	HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/>
	<ul style="list-style-type: none"> <u>WHEN</u> Suppression Chamber pressure exceeds 9.5 psig, <u>THEN</u> CRS directs initiating drywell spray. 	
	<ul style="list-style-type: none"> RO/PO place AP202 RHR pump in Drywell Spray IAW AB.ZZ-0001 Att. 2. 	HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/>
		BP202 is not available due to pump trip.
<u>Containment Spray Valve Failure:</u> After the HV-F021A Drywell Spray Valve open is attempted, ENSURE ET-9 activates.	<ul style="list-style-type: none"> Crew recognizes failure of HV-F021A by: <ul style="list-style-type: none"> ⇒ OHA A6-B1 "RHR LOOP A TROUBLE" ⇒ Flashing OVLD/PWR FAIL ⇒ Loss of position indication ⇒ No indication of drywell spray flow ⇒ CRIDS D4465 "RHR CONT SPY OUTBD HV-F021A OPF" 	
IF dispatched to investigate trip of HV-F021A breaker, <u>THEN REPORT</u> the breaker is tripped and will not reset.	<ul style="list-style-type: none"> Crew dispatches NEO and Maintenance to breaker for HV-F021A (52-451062). 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS recognizes containment not performing properly by: <ul style="list-style-type: none"> ⇒ Suppression Chamber pressure approaching Action Required area of PSP curve ⇒ Suppression Chamber airspace temperature significantly above water temperature ⇒ Drywell Pressure response 	
<p>IF necessary, THEN REDUCE the ramp time on malfunction HP07 to raise Supp Pool pressure.</p>	<ul style="list-style-type: none"> <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. 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. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<p>* <i>Crew actuates five SRVs before Suppression Chamber pressure has been in the Action Required region of the PSP curve for over three minutes.</i></p>	
	<p>NOTE: Preventing entry into the Action Required Region of the PSP curve satisfies this critical task.</p>	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by: <ul style="list-style-type: none"> ⇒ 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. CRS directs restoring PCIG to SRVs. RO/PO restore PCIG to SRVs IAW AB.ZZ-0001 Att. 9. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p>

Termination Requirement:

The scenario may be terminated at the discretion of the Lead Examiner when:

1. RPV level is being maintained above -129"
2. The reactor has been Emergency 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 Human Performance Tools and Verification Practices
- I. HU-AA-1081 Fundamentals Toolkit
- J. HU-AA-104-101 Procedure Use and Adherence
- K. HU-AA-1211 Briefing
- L. OP-AA-106-101-1001 Event Response Guidelines
- M. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- N. OP-AA-101-111-1004 Operations Standards
- O. OP-AA-108-114 Post Transient Review
- P. OP-HC-108-106-1001 Equipment Operational Control
- Q. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- R. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- S. **HC.OP-AB.CONT-0001 Drywell Pressure**
- T. **HC.OP-AB.CONT-0006 Drywell Leakage**
- U. **HC.OP-AB.COOL-0002 SACS Malfunction**
- V. **HC.OP-AB.RPV-0001 Reactor Power**
- W. **HC.OP-AB.RPV-0006 Safety Relief Valve**
- X. **HC.OP-AB.RPV-0004 Reactor Level Control**
- Y. **HC.OP-AB.COOL-0002 Safety/Turbine Auxiliaries Cooling System**
- Z. **HC.OP-AB.ZZ-000 Reactor Scram**
- AA. **HC.OP-DL.ZZ-0026 Surveillance Log**
- BB. **HC.OP-EO.ZZ-0101 RPV Control**
- CC. **HC.OP-EO.ZZ-0102 Primary Containment Control**
- DD. **HC.OP-EO.ZZ-0202 Emergency RPV Depressurization**
- EE. **HC.OP-IO.ZZ-0006 Power Changes During Operation**
- FF. **HC.OP-SO.GS-0002 Hydrogen/Oxygen Analyzer System Operation**
- GG. **HC.RE-IO.ZZ-0001 Core Operations Guidelines**

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S3 / 00

1.

- * ***Before more than two minutes has elapsed from SRV opening, CREW closes F013L by cycling F013L AUTO/OPEN control switches to OPEN and back to AUTO.***

K/A 239002 Safety Relief valves

A2. Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations:

A2.03 Stuck open SRV RO 4.1 SRO 4.2

A4 Ability to manually operate and/or monitor in the control room:

A4.01 SRV's RO 4.4 SRO 4.4

Immediate Operator Actions in AB.RPV-0006 direct cycling the SRV control switch in an attempt to close the SRV. Cycling the control switches cycles the SRV pilot valve, and may result in clearing debris or reseating the pilot valve such that the SRV closes. Failing to perform this action would result in the SRV remaining open for more than two minutes, which would require a manual scram IAW with Tech Specs. This would result in an unnecessary scram transient. Two minutes is adequate time to validate the SRV is open and cycle the appropriate control switch.

2.

- * ***The Crew either swaps TACS to the 'B' SACS loop IAW AB.ZZ-0001 Attachment 10 or AB.COOL-0002 Condition B***

OR

Scrams the reactor.

K/A 295018 Partial or Complete Loss of Component Cooling Water

AA1 Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER:

AA1.01 Backup systems RO 3.3 SRO 3.4

AA2 Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER:

AA2.03 Cause for partial or complete loss

TACS has failed to automatically transfer to the 'B' SACS loop. Both AB.ZZ-0001 Attachment 10 and AB.COOL-0002 Condition A provide guidance on how to complete a transfer of TACS to the Standby SACS loop. Failure to complete the transfer will ultimately result in loss Stator Water Cooling Turbine Runback and main turbine trip. If TACS is not restored, AB.COOL-0002 directs scrambling the plant. AB.BOP-0002 directs scrambling the reactor if stator water cooling cannot be restored in two minutes. Since it takes about eighteen minutes for stator water to reach the Runback setpoint, ample time is provided to either restore TACS or direct scram actions. If TACS is NOT restored, the Crew must manually scram.

3.

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

K/A 295024 High Drywell Pressure

EA2 Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE:

EA2.04 Suppression chamber pressure RO 3.9 SRO 3.9

K/A 223001 Primary Containment Systems 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 of operations:

A2.02 Steam bypass of the suppressions pool RO 3.9 SRO 4.1

If suppression chamber pressure cannot be maintained below the pressure suppression pressure (PSP), EOPs direct actions to emergency depressurize the reactor. A LOCA condition while in the action required region of the Pressure Suppression Pressure curve, could cause design containment limits to be exceeded. Three minutes is allowed to give the operator time to evaluate conditions and direct emergency depressurization actions. Preventing entry into the Action Required Region of the PSP curve satisfies this critical task.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

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

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

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

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: ~84.5%
MWe (May vary slightly): 1063 MWe

Activities Completed Last Shift:

Removed 'A' RFPT from service

Major Activities Next 12 Hours:

Complete troubleshooting activities on 'A' RFPT.

Raise power to 89.5% IAW IO-0006.

Place the "A" Containment H₂/O₂ Analyzer in service for weekly O₂ concentration surveillance.

Protected Equipment:

None

Tagged Equipment:

None

Reactivity:

Raise power to 89.5% using Reactor Recirc at $\leq 1\%$ per minute and hold for RE thermal limit checks.

SIMULATOR

EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC SCENARIO 4

SCENARIO NUMBER: ESG-NRC-S4

EFFECTIVE DATE: Effective when approved.

EXPECTED DURATION: 60-70 minutes

REVISION NUMBER: 00

PROGRAM: ☒ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER _____

REVISION SUMMARY:

1.

PREPARED BY: Archie E. Faulkner
Instructor

7/1/10
DATE

APPROVED BY: 
LORT Group Lead or Designee

7/1/10
DATE

APPROVED BY: 
Shift Operations Supervisor or Designee

7/1/10
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. Reduce Reactor Power With Reactor Recirc
- B. Remove “A” RFPT From Service
- C. Recirc Flow Unit Failure Downscale
- D. Primary Condensate Pump Trip With Partial Runback Failure
- E. Main Turbine Vibrations
- F. Main Turbine Trip With Half Core ATWS
- G. Start Up Level Control Valve Fails Closed
- H. “A” SLC Pump Trips after Start.
- I. MSIV Spurious Closure

III. SCENARIO SUMMARY:

The scenario begins with the plant at 90% power. After turnover, the power reduction from 90 to 84.5% will be accomplished using Recirc per RE instructions. “A” RFPT will be removed from service for planned maintenance on the oil system. The “C” Recirc Flow Unit will fail downscale resulting in rod blocks and ½ scram. After Tech Specs have been addressed, “B” Primary Condensate Pump trips with a failure of one Recirc Pump to runback. Once power has stabilized, Main Turbine vibrations will rise, requiring a reactor scram. The scram will result in a half-core ATWS. During the scram transient, the SULCV will fail closed, resulting in a loss of the ability to feed the reactor vessel with feedwater. “A” SLC Pump trips and is not recoverable. HPCI will be manually operated to maintain RPV level above –185”. The MSIVs will spuriously close while EOP-301 is being implemented, forcing pressure control with SRV's. The scenario ends when the reactor is shutdown either by manual rod insertion, or implementation of EOP-0320.

IV. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 100% power, MOL.
	REDUCE Reactor Power to 90.0% with Recirc Pumps.

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

<i>Initial</i>	Description
	INITIAL IO-6 for the power reduction.
	At a minimum review the Scenario Reference section and CLEAN the <u>bolded</u> EOPs, ABs and SOPs listed. (80091396 0270)
	ENSURE Data Collection is trending the following parameters as a minimum:
	<ul style="list-style-type: none">• W/R Reactor Water Level
	<ul style="list-style-type: none">• W/R RPV Pressure
	<ul style="list-style-type: none">• Fuel Zone Reactor Water Level
	<ul style="list-style-type: none">• Suppression Pool temperature
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

Initial	ET #	Description
	5	EVENT ACTION: slnmpa >= 0.50 // SLC Pump 'A' Start COMMAND: PURPOSE: Triggers Failure of AP208 SLC pump
	6	EVENT ACTION: crqnmi <= 5 // Reactor Power <5% COMMAND: PURPOSE: Closes MSIVs when Rx power <5%
	7	EVENT ACTION: COMMAND: PURPOSE:
	8	EVENT ACTION: COMMAND: PURPOSE:
	9	EVENT ACTION: COMMAND: PURPOSE:
	10	EVENT ACTION: COMMAND: PURPOSE:

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	FW10A 'A' RFPT Control Signal Failure	---	---	NONE	---	---
	RP07 Half-core ATWS - right side	---	---	NONE	---	---
	SL04B BP208 SLC Pump Failure to Auto Start	---	---	NONE	---	---
	RR30B Failure of Intrm Runback	---	---	NONE	---	---
	NM12C Recirc Flow Summer failure	---	---	ET-1	---	0%
	FW01B Condensate pump BP102 trip	---	---	ET-2	---	---
	TU1508 Turbine bearing #8 vibration high	---	15:00	ET-4	6	21
	TU1208 Turbine bearing #8 high temperature	---	15:00	ET-4	---	100
	SL01A AP208 SLC Pump Failure	00:30	---	ET-5	---	---
	MS15 Spurious group I isolation	---	---	ET-6	---	---
	FW11 Feedwater Bypass Level control valve	---	---	ET-14	0	0

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	PP04 OD-3 Crossflow Applied	---	---	NONE	---	NO
	AN28 CROSSFLOW ALARM/TRBL	---	---	NONE	---	NORM
	TU03 Main Turbine Lube Oil Temperature	---	---	NONE	115	AS DIRECTED
	CW15 TACS clg valve, AE-126, to recirc M/G set A (0-100%)	---	---	ET-3	48	25
	CW16 TACS clg valve, BE-126, to recirc M/G set B (0-100%)	---	---	ET-3	48	25
	EP01 EOP-301 MSIV LVL 1 Isolation	6 min	---	ET-12	---	BYPASS
	EP02 EOP-311 Restoring PCIG to MSIVs	8 min	---	ET-8	---	BYPASS
	EP38 EOP-319 Restoring Inst Air	3 min	---	ET-9	---	EMERG
	EP09 EOP 320 ARI Fuses	4 min	---	ET-10	---	REMOVE
	EP10 EOP 320 ARI Fuses	4 min	---	ET-10	---	REMOVE
	EP11 EOP 320 RPS Div 1	6 min	---	ET-10	---	INSTALL
	EP13 EOP 320 RPS Div 3	6 min	---	ET-10	---	INSTALL
	EP12 EOP 320 RPS Div 2	12 min	---	ET-10	---	INSTALL
	EP14 EOP 320 RPS Div 4	12 min	---	ET-10	---	INSTALL
	EP35 EOP-322 HPCI Core Spray Valve	3 min	---	ET-11	---	FAIL CLOSE

I/O OVERRIDE SUMMARY:

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

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>Power Reduction:</u></p> <p>Crew continues reactor power reduction after assuming the watch.</p> <p>As RE PROVIDE the following guidance:</p> <ul style="list-style-type: none"> • SPRI and Enhanced Stability Guidance are valid for the remainder of the maneuver • Power has been steady for the last hour • Lower power to 84.5% with Recirc. 	<ul style="list-style-type: none"> • CRS directs reduction of Reactor power in accordance with HC.OP-IO.ZZ-0006. • CRS directs continuing the power reduction to 84.5% using RE guidance. • RO reduces power with Recirc using provided RE guidance. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>
<p><u>Remove "A" RFPT From Service:</u></p> <p>After the Crew assumes the watch.</p>	<ul style="list-style-type: none"> • CRS directs removal of "A" RFPT from service using HC.OP-SO.AE-0001. • Crew removes "A" RFPT from service using HC.OP-SO.AE-0001 section 5.10. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>
<p><u>RECIRC LOOP FLOW SUMMER 'C' FAILURE:</u></p> <p>At the discretion of the lead Examiner,</p> <p>TRIGGER ET-1 (RECIRC LOOP FLOW SUMMER FAILURE to 0 percent).</p>	<ul style="list-style-type: none"> • Crew monitors Reactor power, pressure, and level and ensure plant conditions are stable. Ensures no scram setpoints have been exceeded. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • Crew recognizes RPS ½ scram by: <ul style="list-style-type: none"> ⇒ 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: <ul style="list-style-type: none"> ⇒ 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" • Crew recognizes 'C' RECIRC LOOP FLOW SUMMER FAILURE Downscale by: <ul style="list-style-type: none"> ⇒ 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" 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>IF directed to place the Flow Unit C MODE Switch in the unlabeled position, <u>THEN</u> CHANGE Malfunction NM12C Final value to 100%.</p>	<ul style="list-style-type: none"> CRS implements AB.IC-0004: ⇒ Condition F 	
	<ul style="list-style-type: none"> CRS references AB.IC-0003: ⇒ Condition B 	
	<ul style="list-style-type: none"> RO bypasses 'C' Flow Unit. 	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
	<ul style="list-style-type: none"> CRS refers to DD.ZZ-0020 for a failed PPC Sensor. 	
	<ul style="list-style-type: none"> CRS directs Reactor Engineering to evaluate the flow unit failure on the PPC. 	
	<ul style="list-style-type: none"> RO directs I&C to place the MODE Switch, on the applicable flow unit, to the "UNLABELED" position between STANDBY and ZERO. 	
	<ul style="list-style-type: none"> RO verifies RPS trip clear. 	
	<ul style="list-style-type: none"> 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 <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
	<ul style="list-style-type: none"> CRS determine no Tech Spec actions required. Enter Tracking Action statement for: ⇒ Table 3.3.6-1 Function 6 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>'B' PCP Trip: TRIGGER ET-2 after the Crew assumes the watch at the discretion of the Lead Examiner.</p>	<ul style="list-style-type: none"> Crew recognizes BP102 PCP trip by: <ul style="list-style-type: none"> ⇒ OHA A6-F2 "CONDENSATE TRAIN B TROUBLE" ⇒ Flashing PRI CNDS PUMPS PUMP B STOP light ⇒ OVLD/PWR FAIL light ⇒ CRIDS D2302 "PRI CNDS PUMP BP102 MOTOR MALF" PO monitors feedwater response to PCP trip. RO verifies reactor recirc pump intermediate runbacks. RO determines intermediate runback did not occur on "B" Recirc pump and runs back speed manually to 45% speed. Crew announces trip of 'B' PCP on the plant page. CRS implements AB.RPV-0004: <ul style="list-style-type: none"> ⇒ Condition D PO closes HV-1680B PCP discharge valve. RO resets Feedwater PCP Runback. CRS implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition B 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> RO monitors for power oscillations. CRS implements AB.RPV-0001: ⇒ Condition B CRS monitors: ⇒ Critical plant parameters ⇒ Location on Pwr/Flow map RO/PO ensure Main Generator MWe and MVAR are within limits. 	
<p><u>IF</u> directed to monitor/control recirc MG oil temps, <u>THEN TRIGGER ET-3</u> and MONITOR:</p> <ul style="list-style-type: none"> rrtoila(1) for 'A' MG rrtoila(2) for 'B' MG 	<ul style="list-style-type: none"> RO/PO direct TBEO to monitor/control reactor recirc MG oil temps. 	
<p><u>IF</u> dispatched to investigate the trip of BP102, <u>THEN REPORT:</u></p> <ul style="list-style-type: none"> The pump motor is hot to the touch The breaker (52-12005) has target flags up on 51A and 51B Time Overcurrent relays. 	<ul style="list-style-type: none"> Crew dispatches TBEO and Maintenance to investigate the trip of the BP102 PCP. 	
<p>As RE, REPORT:</p> <ul style="list-style-type: none"> Thermal Limits are SAT If rodline needs to be reduced, use CRAM rods. 	<ul style="list-style-type: none"> Crew contacts RE. CRS implements IO.ZZ-0006 for the power reduction. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew references Power Maneuvering Surveillance Requirements in OP-HC-108-115-1001. CRS notifies Shift Rad Pro and Shift Chem Tech to take samples IAW: <ul style="list-style-type: none"> ⇒ 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) 	
<u>Turbine High Vibrations:</u> At the discretion of the Lead Examiner, TRIGGER ET-4.	<ul style="list-style-type: none"> Crew recognizes Main Turbine High Vibration by: <ul style="list-style-type: none"> ⇒ OHA D3-C5 "TURBINE GENERATOR VIB HI" ⇒ CRIDS A2526 "MAIN TURB BRG 8 VIB X PROBE" ⇒ System 1 indication CRS implements AB.BOP-0002: <ul style="list-style-type: none"> ⇒ Condition B 	#8 Bearing will reach 11 mils in about 8.5 minutes.
SUPPORT requests to raise MTLO temperature using Remote Function TU03 . As System Operator, PROVIDE an acceptable band of 300-475 MVARs.	<ul style="list-style-type: none"> Crew directs TBEO to raise MTLO temperature (110 – 120°F) Crew co-ordinates with System Operator to adjust Main Generator MVAR loading. 	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
<u>IF</u> contacted as Engineering, THEN REPORT the vibration readings appear valid and the limitations in the abnormal should be followed.	<ul style="list-style-type: none"> Crew contacts Engineering for additional guidance. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
IF contacted as Operations Manager for concurrence to commence a controlled shutdown IAW IO-0004, THEN CONCUR with SM recommendation.	<ul style="list-style-type: none"> Crew contacts Operations Manager for concurrence to commence a controlled shutdown IAW IO-0004. 	
IF dispatched to check bearing drains, THEN wait until vibration reaches 15 mils and REPORT the floor was vibrating and it did not appear safe to approach the Main Turbine.	<ul style="list-style-type: none"> WHEN bearing #8 reaches 11 mils, THEN Crew: <ul style="list-style-type: none"> ⇒ Reduces recirc pump speed to minimum. ⇒ Locks the Mode Switch in SHUTDOWN. ⇒ Immediately trips the Main Turbine. 	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
ATWS >4%: The half core ATWS is already inserted on the right side of the core.	<ul style="list-style-type: none"> Crew recognizes Scram Condition and Reactor Power Above 4% EOP entry condition: <ul style="list-style-type: none"> ⇒ APRM indications ⇒ Absence of rod FULL IN lights on the right side of Full Core Display ⇒ Rod position indications RO performs scram actions IAW AB.ZZ-0001 Attachment 1. CRS implements EOP-101A. PO stabilizes and maintains RPV level as directed by CRS. CRS directs: <ul style="list-style-type: none"> ⇒ Initiating SLC ⇒ Verifying RWCU Isolates RO/PO initiate SLC and verify RWCU isolates. 	HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> * <i>Crew starts BP208 SLC pump before Suppression Pool temperature reaches 110 degrees.</i> 	<p>ENTER Supp Pool temp when BP208 SLC pump is started: Temp: _____</p>
<div style="border: 1px solid black; padding: 5px;"> <p>Trip of SLC Pump: The AP208 SLC pump will trip 30 seconds after starting.</p> </div>	<ul style="list-style-type: none"> Crew recognizes trip of AP208 SLC pump by: <ul style="list-style-type: none"> ⇒ OHA C1-B1 "SLC PUMP/VALVE O/PF" ⇒ OHA C1-F1 "SLC/RRCS INITIATION FAILURE" ⇒ CRIDS D3022 "SLC INJ PMP AP208 TROUBLE TRBL" ⇒ Flashing STOP light for AP208 	
<p><u>IF</u> dispatched to investigate trip of AP208, <u>THEN REPORT</u> the motor is hot to the touch and the breaker will not reset. (52-212063)</p>	<ul style="list-style-type: none"> Crew dispatches NEO and Maintenance to investigate trip of AP208 SLC pump. 	
	<ul style="list-style-type: none"> CRS directs: <ul style="list-style-type: none"> ⇒ Verifying Recirc runback to minimum ⇒ Tripping reactor recirc pumps 	
	<ul style="list-style-type: none"> RO/PO: <ul style="list-style-type: none"> ⇒ Verify Recirc runback to minimum ⇒ Tripping reactor recirc pumps 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> May already be tripped on EOC-RPT.</p>
	<ul style="list-style-type: none"> CRS directs inhibiting ADS. 	
	<ul style="list-style-type: none"> RO/PO inhibit ADS IAW AB.ZZ-0001 Att. 13. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<p>* <i>CREW prevents an uncontrolled depressurization during ATWS conditions by preventing ADS ACTUATION.</i></p>	<p>This Critical Task is not applicable if RPV level never reaches -129". See justification for failure criteria.</p>
<p>REFER to the appropriate EOP and SUPPORT Crew requests for EOPs IAW with the following. Validated execution time delays are built-in: EOP-311: ET-8 EOP-319: ET-9 EOP-320: ET-10 EOP-322: ET-11</p> <p><u>IF</u> EOP-301 is requested, <u>THEN</u> delay implementation until the MSIVs are closed and TRIGGER ET-12.</p>	<ul style="list-style-type: none"> CRS directs performance of the following EOPs: <ul style="list-style-type: none"> ⇒ 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" CRS directs terminating and preventing injection to the RPV with the exception of: <ul style="list-style-type: none"> ⇒ SLC ⇒ CRD ⇒ RCIC RO/PO terminate and prevent injection IAW AB.ZZ-0001: <ul style="list-style-type: none"> ⇒ Attachment 16 (10C651) ⇒ Attachment 17 (10C650) CRS directs maintaining RPV water level between -50" and -185". 	<p>The timing, order, and priority of the EOP performance may vary.</p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>Typically, the lower end of the level band is set above -129".</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> RO/PO control level as directed by CRS with: <ul style="list-style-type: none"> ⇒ Feedwater IAW AB.ZZ-0001 Att. 14 ⇒ RCIC IAW AB.ZZ-0001 Att. 6 ⇒ HPCI IAW EOP-322 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>If the turbine trips before the reactor is scrammed, an RRCS feedwater runback may occur.</p>
<div style="border: 1px solid black; padding: 5px;"> <p>SULCV Fails Closed: The SULCV will fail closed after the scram.</p> </div>	<ul style="list-style-type: none"> Crew recognizes SULCV will not re-open following "Terminate And Prevent" actions. 	
	<ul style="list-style-type: none"> RO/PO control level as directed by CRS with: <ul style="list-style-type: none"> ⇒ RCIC IAW AB.ZZ-0001 Att. 6 ⇒ HPCI IAW EOP-322 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>If the turbine trips before the reactor is scrammed, an RRCS feedwater runback may occur.</p>
	<p>* <i>Crew lowers RPV level to -50", and ensures adequate core cooling by maintaining or restoring RPV level above -185" without Emergency Depressurizing.</i></p>	
	<ul style="list-style-type: none"> CRS directs bypassing the RWM and commencing manual rod insertion. 	
	<ul style="list-style-type: none"> RO/PO align CRD for ATWS operation IAW AB.ZZ-0001 Attachment 18. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> RO/PO bypass RWM and insert control rods IAW RE-AB.ZZ-0001 Attachment. 1. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS directs stabilizing pressure 800 to 1000 psig with EHC IAW AB.ZZ-0001 Attachment 15. RO/PO control pressure as directed by CRS with: <ul style="list-style-type: none"> ⇒ EHC 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p>
<p><u>Spurious MSIV Closure:</u></p> <p>When power lowers to 5 percent, all MSIVs will close, forcing pressure control with SRVs. ENSURE ET-6 becomes active.</p>	<ul style="list-style-type: none"> Crew recognizes the MSIV Closure by: <ul style="list-style-type: none"> ⇒ OHA C8-A1 "NSSSS MSIV LOGIC A INITIATED" ⇒ OHA C8-A2 "NSSSS MSIV LOGIC C INITIATED" ⇒ OHA C8-A3 "NSSSS MSIV LOGIC B INITIATED" ⇒ OHA C8-A4 "NSSSS MSIV LOGIC D INITIATED" ⇒ MSIV valve position indicator lights CRS directs stabilizing pressure 800 to 1000 psig with: <ul style="list-style-type: none"> ⇒ SRVs RO/PO control pressure as directed by CRS with: <ul style="list-style-type: none"> ⇒ SRVs IAW AB.ZZ-0001 Att. 13 	<p>When pressure control swaps to SRVs, maintaining RPV water level between -50" and -129" will be challenging due to shrink and swell and changing reactor pressure.</p> <p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH" ⇒ Flashing 95 degree status light on 10C650C ⇒ RM11 9AX833/834 alarm ⇒ Various Suppression Pool temperature indicators CRS implements EOP-102. CRS directs placing RHR in Suppression Pool Cooling. RO/PO place RHR in Supp Pool Cooling IAW AB.ZZ-0001 Att. 3. <p><u>IF</u> Suppression Pool temperature is >110 degrees, <u>AND</u> Reactor power is >4%, <u>AND</u> SRVs are open or cycling, <u>THEN</u> Crew terminates and prevents injection to the RPV with the exception of SLC, CRD, and RCIC, <u>UNTIL</u> Reactor power is <4%, <u>OR</u> RPV level reaches -129", <u>OR</u> SRVs remain closed.</p> <p><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.</p> 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
<p><u>WHEN</u> the Crew has reset RPS, <u>THEN</u> DELETE Malfunction RP07 to allow full rod insertion on the next scram.</p>	<ul style="list-style-type: none"> <p><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.</p> 	<p>HPI USED: STAR <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
At the Lead Examiners discretion, MODIFY Monitor Item lclsdv to accelerate draining of the SDV.	<ul style="list-style-type: none"> • <u>WHEN</u> OHA C6-E4 clears, <u>THEN</u> the Crew initiates a manual scram IAW EOP-320 Section 5.3. * <i>CREW fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320.</i> • Crew recognizes the reactor is shutdown by: <ul style="list-style-type: none"> ⇒ SPDS ALL RODS IN ⇒ RWM Confirm Shutdown ⇒ CRIDS Rod positions • CRS directs terminating SLC injection. • RO/PO terminate SLC injection. 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/></p>
<div style="border: 1px solid black; padding: 5px;"> <p><u>Termination Requirement:</u> The scenario may be terminated at the discretion of the Lead Examiner when:</p> <ul style="list-style-type: none"> • RPV Level is being maintained above -185" <u>AND</u> • All rods are fully inserted </div>		
	<ul style="list-style-type: none"> • 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-101-111-1004 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.BB-0001 Reactor Recirculation System Operation**
- T. HC.OP-DD.ZZ-0020 Review of Core Performance Information
- U. **HC.OP-DL.ZZ-0026 Surveillance Log**
- V. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- W. **HC.OP-AB.RPV-0001 Reactor Power**
- X. **HC.OP-AB.RPV-0003 Recirculation System**
- Y. **HC.OP-AB.RPV-0004 Reactor Level Control**
- Z. **HC.OP-AB.BOP-0002 Main Turbine**
- AA. **HC.OP-AB.IC-0004 Neutron Monitoring**
- BB. **HC.OP-AB.ZZ-000 Reactor Scram**
- CC. **HC.OP-EO.ZZ-0101 RPV Control**
- DD. **HC.OP-EO.ZZ-0101A ATWS-RPV Control**
- EE. **HC.OP-EO.ZZ-0102 Primary Containment Control**
- FF. HC.RE-RA.BB-0002 Core Flow Determination
- GG. **HC.RE-AB.ZZ-0001 Transient Plant Conditions**
- HH. **HC.RE-AB.ZZ-0001 Insertion of Control Rods in Response to an ATWS**
- II. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- JJ. **HC.OP-IO.ZZ-0004 Power Changes During Operation**
- KK. **HC.OP-IO.ZZ-0006 Shutdown From Rated Power To Cold Shutdown**

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S4 / 00

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 to less than 700 psig.

2.

- * ***Crew starts BP208 SLC pump before Suppression Pool temperature reaches 110 degrees.***

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:

EA1.04 SBLC RO 4.5 SRO 4.5

EA2 Ability to determine and/or interpret the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA2.04 Suppression Pool Temperature RO 4.0 SRO 4.1

The Boron Initiation Injection Temperature above about 9% power is 110°F. The post scram power level in this scenario is greater than 9%. The MSIVs spuriously close resulting in rejection of all heat to containment. The AP208 SLC pump fails trips on start, and the BP208 SLC pump fails to auto start. Crew action is required to commence SLC injection before the BIIT is reached.

3.

- * ***Crew lowers RPV level to -50", and ensures adequate core cooling by maintaining or restoring RPV level above -185" 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

Lowering RPV level during an ATWS with reactor power >4% is a key strategy for controlling reactor power. 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. 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.

4.

- * ***CREW fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320.***

K/A 295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown

EA1. Ability to operate and/or monitor the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown:

EA1.01 Reactor Protection System RO 4.6 SRO 4.6

EA1.07 RMCS RO 3.9 SRO 4.0

Manually inserting all control rods, OR, implementing HC.OP-EO.ZZ-0320, provides the only methods for control rod insertion and substantial negative reactivity addition. It is critical for the crew to implement one of these methods to insert control rods and shut the reactor down. Failure to initiate these actions may result in requiring RPV level to be lowered to or below TAF to reduce power to <4%. This represents a significant challenge to maintaining adequate core cooling.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

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

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

<u>Y/N</u>	<u>KEY EQUIPMENT</u>	<u>Y/N</u>	<u>KEY EQUIPMENT</u>
<input type="checkbox"/>	Hard Torus Vent	<input type="checkbox"/>	SLC
<input type="checkbox"/>	HPCI	<input type="checkbox"/>	CRD
<input type="checkbox"/>	1E 4.16KV Bus	<input type="checkbox"/>	1E 125VDC
<input type="checkbox"/>	SACS Hx/Pump		
<input type="checkbox"/>	EDG		<u>KEY SYSTEMS</u>
<input type="checkbox"/>	120VAC 481/482 Inverter	<input type="checkbox"/>	500KV AC Power
<input type="checkbox"/>	A/B RHR	<input type="checkbox"/>	SRVs
<input type="checkbox"/>	RCIC	<input type="checkbox"/>	Condensate/Feedwater
<input type="checkbox"/>	SSW Pump	<u>Y</u>	PCIG

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: 90%
Work Week: A
Risk Color: Green

Activities Completed Last Shift:

Entered AB.RPV-0004 Condition C due to control signal failure on "A" RFPT.
Reduced power to 90%.

Major Activities Next 12 Hours:

Continue power reduction to 84.5% with Recirc IAW R.E. SPRI guidance and IO-6
Remove "A" RFPT from service.
Troubleshoot 'A' RFPT control signal failure.

Protected Equipment:
None

Tagged Equipment:
None

SIMULATOR

EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC SCENARIO 5

SCENARIO NUMBER: ESG-NRC-S5 (Spare)

EFFECTIVE DATE: Effective when approved.

EXPECTED DURATION: 60-75 minutes

REVISION NUMBER: 00

PROGRAM: ☒ L.O. REQUAL
☒ INITIAL LICENSE
☐ OTHER _____

REVISION SUMMARY:

1.

PREPARED BY: Archie E. Faulkner
Instructor

7/1/10
DATE

APPROVED BY: 
LORT Group Lead or Designee

7/1/10
DATE

APPROVED BY: 
Shift Operations Supervisor or Designee

7/1/10
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. Power Reduction (Optional).
- B. Swap SSW Pumps
- C. SSW Pump Malfunction (TS SRO)
- D. Single Reactor Recirc Pump Runaway
- E. Reactor Recirc Pump Trip (TS SRO)
- F. Fuel Failure with Manual Scram
- G. Torus Leak / Emergency Depressurization

III. SCENARIO SUMMARY:

The scenario begins with the plant at 100% power. After turnover, the power reduction from 100 to 95% will be accomplished using Recirc per RE instructions (Optional). SSW Pumps will be swapped for planned maintenance. After pump swap, "D" SSW pump will malfunction requiring entering Tech Spec LCO. After Tech Specs have been addressed, the 'B' Reactor Recirculation pump will runaway to it's upper mechanical stops. Operator action will be necessary to reduce reactor power to less than or equal to original power level. After AB-RPV-0001/003 actions are taken and Tech Specs have been addressed, "B" Recirc Pump vibrations will climb into the Danger level. This will require a manual pump trip. Once power has stabilized, fuel damage symptoms will begin and increase in magnitude, requiring a reactor scram. After the MSIV's are closed, an unisolable leak will develop on the Torus requiring an Emergency Depressurization. The scenario ends when the reactor is depressurized by the SRVs, and reactor level stabilized between RPV Level 2 and 8.

IV. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	"B" EHC Pump tagged for scheduled Maintenance.
	ENSURE 'A' EHC pump is in service.
	C/T 'B' EHC pump as follows:
	1. INSERT Malfunction TC07B
	2. PLACE 'B' EHC pump in MAN
	1. START 'B' EHC pump and allow it to trip

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

Initial	Description
	PLACE red bezel cover on 'B' EHC pump.
	INITIAL IO-6 for the power reduction. (Optional)
	Prepare a REMA for the power reduction evolution. (Optional)
	At a minimum review the Scenario Reference section and CLEAN the <u>bolded</u> EOPs, ABs and SOPs listed. (80091396 0270)
	ENSURE Data Collection is trending the following parameters as a minimum:
	<ul style="list-style-type: none"> W/R Reactor Water Level W/R RPV Pressure Suppression Pool level Suppression Pool temperature
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT TRIGGERS:

Initial	ET #	Description
	5	EVENT ACTION: crqnm1 <= 25 // Reactor Power <25% COMMAND: mmf cr01 50 PURPOSE: Inserts Fuel Cladding failure if Crew scrams during Recirc Runaway
	6	EVENT ACTION: COMMAND: PURPOSE:
	7	EVENT ACTION: COMMAND: PURPOSE:

8	EVENT ACTION: COMMAND: PURPOSE:	msvf022(1) <= 0.0 msvf028(1) <= 0.0 // 'A' MSL isolated Detects 'A' MSL isolation
9	EVENT ACTION: COMMAND: PURPOSE:	msvf022(2) <= 0.0 msvf028(2) <= 0.0 // 'B' MSL isolated Detects 'B' MSL isolation
10	EVENT ACTION: COMMAND: PURPOSE:	msvf022(3) <= 0.0 msvf028(3) <= 0.0 // 'C' MSL isolated Detects 'C' MSL isolation
11	EVENT ACTION: COMMAND: PURPOSE:	msvf022(4) <= 0.0 msvf028(4) <= 0.0 // 'D' MSL isolated Detects 'D' MSL isolation
12	EVENT ACTION: COMMAND: PURPOSE:	msvfdrn1(1) <= 0.0 msvfdrn1(2) <= 0.0 // F016 or F019 shut Detects MSL drain isolation
13	EVENT ACTION: COMMAND: PURPOSE:	crqnmi <= 7 // Reactor Power <7% imf rm9509 118 180 Ramps MSL rad to 3xNFPB after reactor scrammed.**
14	EVENT ACTION: COMMAND: PURPOSE:	crqnmi <= 7 // Reactor Power <7% imf rm9510 1272 180 Ramps MSL rad to 3xNFPB after reactor scrammed.**
15	EVENT ACTION: COMMAND: PURPOSE:	crqnmi <= 7 // Reactor Power <7% imf rm9511 119 180 Ramps MSL rad to 3xNFPB after reactor scrammed.**
16	EVENT ACTION: COMMAND: PURPOSE:	crqnmi <= 7 // Reactor Power <7% imf rm9512 122 180 Ramps MSL rad to 3xNFPB after reactor scrammed.**
17	EVENT ACTION: COMMAND: PURPOSE:	et_array(8) >= 1.0 && et_array(12) >= 1.0 imf rm9509 19 60 Removes high radiation from 'A' MSL
18	EVENT ACTION: COMMAND: PURPOSE:	et_array(9) >= 1.0 && et_array(12) >= 1.0 imf rm9510 19 60 Removes high radiation from 'B' MSL
19	EVENT ACTION: COMMAND: PURPOSE:	et_array(10) >= 1.0 && et_array(12) >= 1.0 imf rm9511 15 60 Removes high radiation from 'C' MSL
20	EVENT ACTION: COMMAND: PURPOSE:	et_array(11) >= 1.0 && et_array(12) >= 1.0 imf rm9512 18 60 Removes high radiation from 'D' MSL
21	EVENT ACTION: COMMAND: PURPOSE:	Pclsp <= 119 // Indicated SP level dmf pc06 Removes torus leak at 25" to prevent reaching Simulator Limits

** Value to be 12 mr/hr above **current** 3xNFPB Hi-Hi Alarm setpoint for I.C.

MALFUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	TC07B EHC pump B trip	---	---	NONE	---	---
	CW11B Service water pump B marsh grass intrusion	---	---	ET-1	---	50
	RR08B Recirc system B speed controller fails high	---	---	ET-2	---	---
	RR26B2 Recirc pump BP201 elevated (added to calc) Pump Vib	---	00:05:00	ET-4	---	20
	CW05D SSW Pump D trip	---	---	ET-6	---	---
	PC06 Suppression pool break	---	---	ET-7	---	---
	RH09A 'A' RHR pump Room Flooded	00:02:10	---	ET-7	---	---
	CR01 Fuel Cladding Leak	---	00:05:00	ET-8	---	30%
	RM9509 MSL 'A' Radiation	---	00:05:00	ET-9	35.4*	113**
	RM9510 MSL 'B' Radiation	---	00:05:00	ET-9	38.5*	122**
	RM9511 MSL 'C' Radiation	---	00:05:00	ET-9	35.8*	112**
	RM9512 MSL 'D' Radiation	---	00:05:00	ET-9	36.8*	122**

* Initial Value to be **current** 100% power reading for I.C.

** Final Value to be 12 mr/hr above **current** 3xNFPB Hi-Hi Alarm setpoint for I.C.

REMOTE/FIELD FUNCTION SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val
	PP04 OD-3 Crossflow Applied	00:00:00	---	ET-3	---	NO
	AN28 CROSSFLOW ALARM/TRBL	00:00:05	---	ET-3	---	NORM

I/O OVERRIDE SUMMARY:

Initial	Description	Delay	Ramp	Trigger	Init Val	Final Val

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
Power Reduction (Optional): Call as System Operator for Hope Creek Station to perform an emergency load reduction to 1200 MWe as rapidly as possible without exceeding limits for grid stability.	<ul style="list-style-type: none"> CRS directs reduction of Reactor power in accordance with HC.OP-IO.ZZ-0006. 	
IF contacted as RE THEN PROVIDE the following guidance: <ul style="list-style-type: none"> Use SPRI for the maneuver 	<ul style="list-style-type: none"> CRS directs continuing the power reduction to 95% using RE guidance. RO reduces power with Recirc using provided RE guidance. 	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> OP BARRIERS <input type="checkbox"/>
Swap Service Water Pumps: After the Crew assumes the watch.	<ul style="list-style-type: none"> CRS directs removal of "B" SSW from service using HC.OP-SO.EA-0001. PO removes "B" SSW from service using HC.OP-SO.EA-0001.section 5.10. PO places "D" SSW in service using HC.OP-SO.EA-0001.section 5.10. 	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
SSW Pump "D" Malfunction: At the discretion of the lead Examiner, TRIGGER ET-1 (Service water pump D marsh grass intrusion to 50%).	<ul style="list-style-type: none"> Crew recognizes D SSW strainer Hi DP to the strainer by: <ul style="list-style-type: none"> ⇒ A1-C3 SSWS INTAKE D TROUBLE ⇒ D3974 SSW STRAINER D DIFF HI HI STRAINER PRESSURE D/P ⇒ D5526 SSW STRAINER D DRIVE OPF 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>WHEN</u> requested as Yard Operator, REPORT "D" SSW pump strainer is not rotating and the screen is covered with grass.</p> <p>The breaker for the strainer is tripped and will not reset.</p>	<ul style="list-style-type: none"> CRS implements AB.COOL-0001: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition D 	
<p><u>IF</u> the crew does not remove the "D" SSW pump from service, <u>THEN</u> TRIGGER ET-6 to trip the pump.</p>	<ul style="list-style-type: none"> Crew removes "D" SSW pump from service IAW: <ul style="list-style-type: none"> ⇒ AB.ZZ-0001 Att 19 Crew places "B" SSW pump in service IAW: <ul style="list-style-type: none"> ⇒ AB.ZZ-0001 Att 19 CRS recognize the following Tech Spec applies: <ul style="list-style-type: none"> ⇒ Station Service Water 3.7.1.2 Action a Crew contacts maintenance. 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/></p> <p>30 day LCO</p>
<p><u>"B" Reactor Recirc Pump runaway:</u></p> <p>TRIGGER ET-2, five minutes after Tech Specs have been addressed <u>OR</u> at the discretion of the Lead Examiner.</p>	<ul style="list-style-type: none"> Crew recognizes "B" Reactor Recirculation pump runaway by: <ul style="list-style-type: none"> ⇒ OHA C3-D5 "LPRM UPSCALE" ⇒ Reactor power >100% ⇒ CRIDS D2900 "RECIRC MG B SPEED CONTROL SIG FAIL" ⇒ CRIDS D2931 "RECIRC MG B DRIVE TUBE LOCK TRBL" ⇒ SIC-R621B SPEED DEMND and SPEED Upscale ⇒ 10C650C Recirc and Jet pump indications 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> RO performs the following: <ul style="list-style-type: none"> ⇒ Presses SCOOP TUBE TRIP for "B" Recirc Pump ⇒ Reduces "A" Recirc Pump speed to reduce power to pre-transient value * <i>Crew reduces power to ≤ 3840 MWt within two minutes of recirc pump runaway.</i> 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p> <p>Immediate Operator Action IAW AB.RPV-0001. (Recirc pumps are already in manual.)</p> <p>RECORD the time that power was above 3840 MWt.</p> <p>TIME: _____</p>
SUPPORT requests for local operation of 'B' Recirc MG scoop tube using Remote Function RR10 .	<ul style="list-style-type: none"> CRS implements AB.RPV-0001: <ul style="list-style-type: none"> ⇒ Condition F Crew checks Recirc Loop Flow mismatch IAW ST.BB-0001. 	
<p><u>IF</u> called as RE to determine maximum thermal power reached,</p> <p><u>THEN REPORT</u> thermal power peaked at 101.2% (3887 MWth).</p>	<ul style="list-style-type: none"> Crew determines peak thermal power during the transient. 	
	<ul style="list-style-type: none"> CRS recognize the following Tech Specs/actions apply: <ul style="list-style-type: none"> ⇒ 2.C(1) Maximum Power Level ⇒ 2.F Reporting 2.C Violations ⇒ 3.4.1.3 Action a. Recirculation Loop Flow 	<p>Must restore recirc loop flow mismatch within two hours or declare the B loop not in operation.</p>
<p><u>IF</u> directed to monitor/control recirc MG oil temps,</p> <p><u>THEN MONITOR:</u></p> <ul style="list-style-type: none"> • rrtoila(1) for 'A' MG • rrtoila(2) for 'B' MG 	<ul style="list-style-type: none"> RO/PO direct TBEO to monitor/control reactor recirc MG oil temps. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>As RE, REPORT:</p> <ul style="list-style-type: none"> Thermal Limits are SAT If rodline needs to be reduced, use CRAM rods. 	<ul style="list-style-type: none"> Crew contacts RE. CRS implements IO.ZZ-0006 for the power reduction. Crew references Power Maneuvering Surveillance Requirements in OP-HC-108-115-1001. CRS notifies Shift Rad Pro and Shift Chem Tech to take samples IAW: <ul style="list-style-type: none"> ⇒ 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) 	
<p>Reactor Recirculation Pump High Vibrations:</p> <p>At the discretion of the Lead Examiner, TRIGGER ET-4.</p>	<ul style="list-style-type: none"> Crew recognizes 'B' Recirc Pump high vibrations by: <ul style="list-style-type: none"> ⇒ OHA C1-E4 "REACTOR RECIRC PUMP VIB HI" ⇒ OHA C1-F5 "COMPUTER PT IN ALARM" ⇒ CRIDS D5352 "RECIRC PUMP B VIBRATION HI" ⇒ CRIDS D2921 "RECIRC PMP MOTOR B VIBRATION HI" ⇒ CRIDS A2603 "RECIRC PMP B SHAFT RADIAL" CRS implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition F Crew implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition F 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew evaluates the following Recirc Pump parameters for degradation of the pump(s) in ALARM to validate the condition. <ul style="list-style-type: none"> ⇒ Seal Parameters (Temperature, Pressure, Flow) ⇒ Pump Parameters (Temperature, Vibration) ⇒ Motor Parameters (Temperature, Vibration) Crew contacts Engineering Duty Manager to obtain and assess vibration data. 	
<p><u>IF</u> requested, as RE PROVIDE guidance to the CRS to reduce reactor power IAW the Standard Power Reduction Instructions (SPRI).</p> <p><u>IF</u> crew manually scrams, THEN TRIGGER ET-5 (Fuel cladding failure).</p>	<ul style="list-style-type: none"> Crew determines "B" Recirc Pump Vibration points cannot be maintained below the DANGER limit and performs the following to remove A(B) Recirc Pump from service: <ul style="list-style-type: none"> ⇒ Press PUMP B MOTOR BRKR TRIP push button PO verifies the Feedwater system is responding automatically and is restoring RPV level between level 4 and 7. CRS implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p>
<p>As TBEO, ADJUST temperature for the Recirc MG Sets as directed.</p>	<ul style="list-style-type: none"> Crew implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B CRS implements AB.RPV-0001: <ul style="list-style-type: none"> ⇒ Condition B 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew implements AB.RPV-0001: ⇒ Condition B RO/PO monitors and reports power, pressure and level parameters. CRS verifies core parameters are within the OPRM Enable Region of the Power to Flow Map. RO/PO closes HV-F031B Recirc pump discharge valve for 5 minutes and then re-opens. Crew directs the following TS requirements for >15% power change in 1 hour: ⇒ Chem Tech for T.S. 3.4.5.c.1 ⇒ Rad Pro Tech for ODCM 3.11.2.1. CRS directs the following TS requirements: ⇒ 3.4.1.1 Action a. within 4 hours of entering Single Loop Operations. CRS implements IO-0006 for the power reduction and Single Loop Operations. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>
When requested, remove Cross Flow from service, TRIGGER ET-3.	<ul style="list-style-type: none"> CRS directs the Cross Flow Correction Factor to "Not Applied". CRS directs implementation of DL.ZZ-0026 Att.3v. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew implements DL.ZZ-0026 Att.3v. 	
<p>As Chemistry REMOVE condensate demins from service as required. Notify the Crew prior to removing Beds from service. TRIGGER Remote Malfunction FW01-FW07 (A-G accordingly).</p> <p>When requested, as the RE REPORT that TS actions will be taken.</p> <p><u>IF</u> requested, as RE PROVIDE guidance to the CRS to reduce reactor power IAW the SPRI.</p>	<ul style="list-style-type: none"> CRS directs the RE to perform TS actions to <ul style="list-style-type: none"> ⇒ Raise the MCPR safety limit, ⇒ Reduce MAPLHGR limit ⇒ Reduce LHGR to the value specified in the COLR Operating Limits Report. 	
<p>Fuel Cladding Failure: 10 minutes after the Recirc Pump Trip, <u>OR</u>, at the Lead Examiners discretion, TRIGGER ET-5 (Fuel cladding failure).</p>	<ul style="list-style-type: none"> Crew recognizes fuel clad damage by: <ul style="list-style-type: none"> ⇒ RM11 9RX621/622 Offgas Pretreatment Alarms ⇒ OHA C6-A3 "MN STM LINE RADIATION HI" ⇒ RM11 9RX509/510/511/512 Alert alarms and readings ⇒ CRIDS Page 37 MSL Radiation readings CRS implements AB.RPV-0008: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B ⇒ Condition C RO reduces power IAW Standard Power Reduction Instructions. 	<p><u>IF</u> the Crew scrams during the Recirc Runaway, <u>THEN</u> the Fuel Failure will automatically be inserted.</p> <p>MSL Radiation levels will reach 3xNFPB approximately 4 minutes after the failure begins.</p> <p>If the plant is shutdown, Condition B actions are not applicable.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes HI-HI MSL Radiation levels by: <ul style="list-style-type: none"> ⇒ OHA C6-B2 "MN STM LINE RAD HI HI OR INOP" ⇒ RM11 9RX509/510/511/512 High alarms ⇒ CRIDS Page A037 MSL Radiation readings CRS directs: <ul style="list-style-type: none"> ⇒ Locking the Mode Switch in SHUTDOWN ⇒ Closing MSIVs, HV-F016 <u>and</u> HV-F019 steam line drains. RO locks the Mode Switch in SHUTDOWN. RO performs scram actions IAW AB.ZZ-0001 Attachment 1. PO controls level as directed by CRS with: <ul style="list-style-type: none"> ⇒ Feedwater IAW AB.ZZ-0001 Attachment 14 ⇒ HPCI/RCIC IAW AB.ZZ-0001 Attachment 6 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
ENSURE MSL Radiation Malfunctions RM9509-RM9512 ramp down to <20 when the Main Steam Lines <u>AND</u> drain lines are isolated.	<ul style="list-style-type: none"> RO/PO close MSIVs, HV-F016 <u>and</u> HV-F019 steam line drains. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> * <i>The Crew inserts a manual scram and closes at least one MSIV in each Main Steam Line and the HV-F016 or F019 drain valve before MSL radiation has been above the Hi-Hi setpoint for three minutes.</i> 	<p>The Critical Task is satisfied as long as all lines are isolated. For instance, closing the HV-F016, but <u>NOT</u> the HV-F019 satisfies isolation of the F016/F019 drain line.</p> <p>RECORD time (if any) between OHA C6-B2 and reactor scrammed with main steam and drain lines isolated:</p> <p>TIME: _____</p>
	<ul style="list-style-type: none"> • CRS implements AB.RPV-0003: ⇒ Condition G 	
	<ul style="list-style-type: none"> • <u>IF</u> directed by the CRS, <u>THEN</u> RO/PO place RHR in Suppression Pool Clg IAW AB.ZZ-0001 Att. 3. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p>
<p><u>Unisolable Torus Leak:</u></p> <p>The Torus Leak will begin three minutes after the MSIVs are isolated or at the Examiners discretion.</p>	<ul style="list-style-type: none"> • Crew recognizes torus leak by: <ul style="list-style-type: none"> ⇒ OHA D3-C2 "REACTOR BLDG SUMP LVL HI/LO" ⇒ OHA B1-C3 "SUPPRESSION POOL LEVEL HI/LO" ⇒ Various Suppression Pool level indicators lowering 	<p>It will take approximately 12.5 minutes for Supp Pool level to reach 38.5".</p>
<p><u>IF</u> dispatched to the Torus Room to look for a leak, <u>THEN REPORT</u> there is a large, unisolable leak at on the bottom of the torus at Az. 180. There is about one inch of water on the torus room floor.</p>	<ul style="list-style-type: none"> • Crew dispatches personnel to inspect Rx Bldg '54 and Torus Room for leak. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>IF asked, THEN REPORT both sump pumps are running in both the North and South RB Floor Drain sumps.</p>	<ul style="list-style-type: none"> Crew contacts RWE0 and informs them of leak. Crew recognizes Supp Pool Level Below 74.5 In EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA B1-C3 "SUPPRESSION POOL LEVEL HI/LO" ⇒ Various Suppression Pool level indicators CRS implements EOP-102. 	
<p>IF directed to implement EOP-315 then, WHEN torus level reaches 45", MODIFY Remote Functions CS01-CS04 to make-up as directed. Do NOT open more than two valves.</p>	<ul style="list-style-type: none"> CRS directs M/U to the torus IAW EOP-315. RO/PO coordinate implementation of EOP-315 with NEO. 	
<p>RHR Pump Room Flooded: The 'A' RHR Room flooded alarm will be received about 4 minutes after the Torus Leak starts.</p>	<ul style="list-style-type: none"> Crew recognizes Reactor Bldg Room Floor Level Above Max Normal Op EOP Entry Condition by: <ul style="list-style-type: none"> ⇒ OHA A6-A5 "RHR PUMP ROOM FLOODED" ⇒ CRIDS D2891 "RHR PMP ROOM 4113 LSH-4403A1" ⇒ CRIDS D2892 "RHR PMP ROOM 4113 LSH-4403A2" ⇒ SPDS RB LV/TE indication 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to 'A' RHR room, <u>THEN</u>, <u>AFTER</u> OHA A6-A5 "RHR ROOM FLOODED" is received, REPORT there is about two inches of water on the floor and it appears to be coming up through a floor drain.</p>	<ul style="list-style-type: none"> • CRS implements EOP-103. 	
	<ul style="list-style-type: none"> • <u>WHEN</u> it is determined that Supp Pool level cannot be maintained above 38.5", <u>THEN</u> CRS determines Emergency Depressurization is required. 	
	<ul style="list-style-type: none"> • CRS implements EOP-202. 	
	<ul style="list-style-type: none"> • RO/PO opens five ADS SRVs IAW AB.ZZ-0001 Att. 13. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p>
	<p>* <i>Crew determines that Suppression Pool water level cannot be maintained above 38.5" and initiates opening of five SRVs before Suppression Pool level reaches 30".</i></p>	<p>RECORD Supp Pool level at which ADS was initiated.</p> <p>LEVEL: _____</p>
	<ul style="list-style-type: none"> • RO/PO maintain RPV level as directed by CRS. 	
	<ul style="list-style-type: none"> • <u>IF</u> Supp Pool level drops to 30", <u>THEN</u> the Crew ensures HPCI is secured. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • <u>WHEN</u> Suppression Pool temperature reaches 95 degrees, <u>THEN</u> Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by: <ul style="list-style-type: none"> ⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH" ⇒ Flashing 95 degree status light on 10C650C ⇒ RM11 9AX833 alarm ⇒ Various Suppression Pool temperature indicators • <u>WHEN</u> Suppression Pool temperature reaches 95 degrees, <u>THEN</u> the CRS re-enters EOP-102. 	
<p><u>Termination Requirement:</u></p> <p>The scenario may be terminated at the discretion of the Lead Examiner when the RPV has been depressurized IAW EOP-202.</p>	<ul style="list-style-type: none"> • <u>WHEN</u> directed by the CRS, <u>THEN</u> RO/PO place RHR in Suppression Pool Clg IAW AB.ZZ-0001 Att. 3. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p>

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.BB-0001 Reactor Recirculation System Operation**
- S. HC.OP-DD.ZZ-0020 Review of Core Performance Information
- T. **HC.OP-DL.ZZ-0026 Surveillance Log**
- U. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- V. **HC.OP-AB.RPV-0001 Reactor Power**
- W. **HC.OP-AB.RPV-0003 Recirculation System**
- X. **HC.OP-AB.RPV-0008 Reactor Coolant Activity**
- Y. **HC.OP-AB.CONT-0004 Radioactive Gaseous Release**
- Z. **HC.OP-AB.ZZ-000 Reactor Scram**
- AA. **HC.OP-EO.ZZ-0101 RPV Control**
- BB. **HC.OP-EO.ZZ-0102 Primary Containment Control**
- CC. **HC.OP-EO.ZZ-0103 Reactor Building Control**
- DD. HC.RE-RA.BB-0002 Core Flow Determination
- EE. **HC.OP-IO.ZZ-0004 Power Changes During Operation**
- FF. **HC.OP-IO.ZZ-0006 Shutdown From Rated Power To Cold Shutdown**

VII. ESG CRITICAL TASK RATIONAL

ESG-NRC-S5 (Spare) / 00

1.

- * ***Crew reduces power to ≤ 3840 MWt within two minutes of recirc pump runaway.***

K/A 2.4.49 Conduct of Operations

Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. RO: 4.0 SRO: 4.0

K/A 202002 Recirculation Flow Control System

A4 Ability to manually operate and/or monitor in the control room:

A4.04 Reactor Power RO: 3.8 SRO: 3.8

K/A 295014 Inadvertent Reactivity Addition

AA1 Ability to operate and/or monitor the following as they apply to Inadvertent Reactivity Addition:

AA1.02 Recirculation Flow Control System RO: 3.8 SRO: 3.8

The 'A' Reactor Recirculation Pump runaway results in the reactor power exceeding the licensed limit. Without operator action, power will stabilize at or slightly above 100.5%. This exceeds the 100% power limitation of 3840 MWth specified in Technical Specification 2.C. Operator action is required to restore reactor power to within licensed limits. The transient will be immediately annunciated by the LPRM UPSCALE OHA. Two minutes is adequate time to recognize the condition and take the appropriate Immediate Operator Actions to reduce power to within licensed limits.

2.

- * ***The Crew inserts a manual scram and closes at least one MSIV in each Main Steam Line and the HV-F016 or F019 drain valve before MSL radiation has been above the Hi-Hi setpoint for three minutes.***

K/A 239001 Main Steam and Reheat Steam System

A2 Ability to (a) predict the impacts of the following on the MAIN AND REHEAT STEAM SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

A2.05 †Main steam line high radiation RO 3.9 SRO 4.2

Hope Creek was originally designed with an automatic reactor scram and MSIV isolation on Hi-Hi MSL Radiation levels. This was designed to limit the release to the public during a Control Rod Drop Accident. As part of an industry effort to reduce spurious MSIV isolations, the automatic scram and MSIV isolations were removed in Tech Spec Amendment 54. One of the three conditions for approval of this amendment was that we would have procedures to expeditiously control significant increases in MSL radioactivity to limit both occupational doses and environmental releases. To meet this requirement, AB.RPV-0008 directs scrambling the reactor and closing the MSIVs if a valid MSL Hi-Hi radiation condition exists. In this scenario, three minutes provides adequate time to initiate a manual scram and close the MSIVs and drains. This includes the valve stroking time. In order to accomplish isolation of the release, only one valve in each line need be closed. For instance, closing all valves but the F019 would meet the Critical Task. The failure to close this valve would be applied to the overall performance evaluation. Isolating the lines BEFORE receiving the Hi-Hi alarms is a conservative action that also satisfies this Critical Task. Scramming prior to the fuel cladding failure and subsequently closing the MSIVs IAW the above requirements also satisfies this Critical Task.

3.

- * ***Crew determines that Suppression Pool water level cannot be maintained above 38.5" and initiates opening of five SRVs before Suppression Pool level reaches 30".***

K/A 295030 Low Suppression Pool Water Level

EA2 Ability to determine and/or interpret the following as they apply to LOW SUPPRESSION POOL WATER LEVEL

EA2.01 Suppression Pool level RO 4.1 SRO 4.2

K/A 218000 Automatic Depressurization System

A.4 Ability to manually operate and/or monitor in the control room:

A4.01 ADS Valves RO 4.4 SRO 4.4

If Suppression Pool Level drops below 38.5", the downcomer pipes are uncovered and the Pressure Suppression function of the Primary Containment is lost. EOPs direct Emergency Depressurizing if Suppression Pool level cannot be maintained above 38.5". Requiring the Emergency Depressurization to be initiated before Supp Pool Level reaches 30" allows the Crew three minutes to implement this action in this scenario.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM**INITIATING EVENTS THAT LEAD TO CORE DAMAGE**

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

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

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

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

Rx Power: 100%
MWe (May vary slightly): 1295
Work Week: A
Risk Color: Green

Activities Completed Last Shift:
None

Major Activities Next 12 Hours:
Swap in service SSW pumps from "B" to "D".
The "D" SSW Traveling Screen has been run for >30 minutes.
SSW Chlorination has been removed from service.

Protected Equipment:
None

Tagged Equipment:
None