

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Radiation Control

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

TASK NUMBER: 2991660301

JPM NUMBER: 2013 NRC RO A-1

REV #: 02

SAP BET: NOH05JPZZ01E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6/10/13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek

JPM NUMBER: RO A-1

REV: 02

SYSTEM: Radiation Control

TASK NUMBER: 2991660301

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

ALTERNATE PATH: ☐

K/A NUMBER: 2.3.11

IMPORTANCE FACTOR: 3.8 4.3

APPLICABILITY:

RO

SRO

EO ☐RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: OP-HC-103-105 Rev 1

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 20 MinutesTIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Radiation Control**TASK:** Monitor, Log and Control the Drywell and Suppression Chamber Purge System Valves**TASK NUMBER:** 2991660301**INITIAL CONDITIONS:**

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

INITIATING CUE:

COMPLETE today's Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit and Log in accordance with OP-HC-103-105. The SM/CRS will perform step 4.4.6.

JPM: 2013 NRC RO A-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC RO A-1

OPERATOR TRAINING PROGRAM

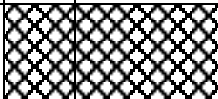
NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC RO A-1

OPERATOR TRAINING PROGRAM

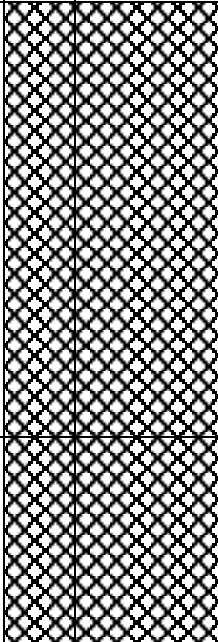
NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.4.7	On Form 1, ENTER the name of the SM/CRS closing out the valve permit and the number of hours the valves were open on this permit. The NCO entering this information should initial in the appropriate space.	On Form 1, the operator enters the name of the SM/CRS closing out the valve permit. On Form 1, the operator enters the number of hours the valves were open. (7.0 hrs THIS PERMIT/ 42.5 TOTAL) On Form 1, the operator initials entry.			
			*		
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state " This JPM is complete ". STOP TIME:	N/A			
	Task Standard: Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit and Log, OP-HC-103-105, completed in accordance with attached key				

JOB PERFORMANCE MEASURE
 OPERATOR TRAINING PROGRAM
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC RO A-1

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

TASK NUMBER: 2991660301

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

TRAINING ONLY
Examiner's Copy
FORM 1

OP-HC-103-105
Revision 1
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Page ____ of ____

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

DATE	HOURS PREV. YEAR (Note 1)	HOURS AUTH. THIS PERMIT	NAME OF SM/CRS AUTHORIZING THIS PERMIT	NCO INITIAL	HOURS USED THIS PERMIT	TOTAL HOURS PREVIOUS YEAR (Note 1)	NAME OF SM/CRS CLOSING THIS PERMIT	NCO INITIAL
3/3/13	22.5	24	H. Davidson	<i>SD</i>	5.5	28.0	A. West	<i>SD</i>
6/25/13	18.5	24	G. Washington	<i>TRW</i>	3.5	22.0	G. Clooney	<i>TRW</i>
8/1/13	22.0	24	O.W. Holmes	<i>R</i>	24.00	46.0	V. Price	<i>R</i>
8/12/13	46.0	24	B. Lee	<i>E</i>	2.5	48.5	V. Bono	<i>E</i>
Today	35.5	24	A. Jones	<i>JS</i>	7.0	42.5	SM/CRS Name	<i>INIT</i>

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

Examiner's Copy

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FORM 2

CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT

SECTION A

Date: Today **NOTE:** This permit is valid only until 2400 of this date

Gaseous Effluent Permit #: 020020001

SECTION B

HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)

Calculate Total Hours Open
During Previous Year (**Note 1**)

DATE NUMBER OF HOURS

3/3/13 5.5

6/25/13 3.5

8/1/13 24.0

8/12/13 2.5

(1) Max. allowed for 365 days (Admin Limit) **452 hrs**

(2) Total previous year (**NOTE 1**) (-) 35.5

Hours available this date (=) 416.5

(line 1 minus line 2)

Hours authorized this date
(24 hours or Line (3), whichever is less) **24**

NCO performing calculation

Date/Time

John Smith

Today/0100

SM/CRS verification and authorization

Date/Time

Andrew Jones

Today/0130

SECTION C

VALVE/LINE OPEN TIME (Note 2)

START TIME

Time at which valve/line was open or
Condition 1, 2, or 3 was entered with valve/line
open

0200

STOP TIME

Time at which valve/line was closed or
Condition 4 or 5 was entered with valve/line
opened

0836

TOTAL HOURS

Total number of hours valve/line
opened this cycle

(NOTE 3)

7.0

Total number of hours valves/line open this permit: _____

NCO performing calculations

Operator Signature

Date/Time

Date/Time

SM/CRS Closing permit

Examiner Signature

Date/Time

Date/Time

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

Note 2: Completed Form 2 should be filed in the AP-104 binder in the control room.

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

Hope Creek

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

Rev #	Date	Description	Validation Required?
2	7/1/13	Revised IAW current revision of OP-HC-103-105. Removed critical step (4.4.3). Added 'SM/CRS will perform step 4.4.6' to the cue sheet.	N

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC RO A-1

REV#: 2

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

Prior to each JPM use verify the revision of the procedure(s) referenced by the JPM

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

VALIDATED BY:

Qualification Level Required: RO

Ryan Kelly	RO	On file	6-25-13
Name	Qual	Signature	Date
Jim Southerton		On File	6-10-13
Name	Qual	Signature	Date

TRAINING ONLY
Operator's Copy
FORM 1

OP-HC-103-105
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CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT LOG

DATE	HOURS PREV. YEAR (Note 1)	HOURS AUTH. THIS PERMIT	NAME OF SM/CRS AUTHORIZING THIS PERMIT	NCO INITIAL	HOURS USED THIS PERMIT	TOTAL HOURS PREVIOUS YEAR (Note 1)	NAME OF SM/CRS CLOSING THIS PERMIT	NCO INITIAL
3/3/13	22.5	24	H. Davidson	<i>SD</i>	5.5	28.0	A. West	<i>SD</i>
6/25/13	18.5	24	G. Washington	<i>TRW</i>	3.5	22.0	G. Clooney	<i>TRW</i>
8/1/13	22.0	24	O.W. Holmes	<i>R</i>	24.00	46.0	V. Price	<i>R</i>
8/12/13	46.0	24	B. Lee	<i>E</i>	2.5	48.5	V. Bono	<i>E</i>
Today	35.5	24	A. Jones	<i>JS</i>				

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

Operator's Copy

OP-HC-103-105

Revision 1

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FORM 2

CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT

SECTION A

Date: Today **NOTE:** This permit is valid only until 2400 of this date

Gaseous Effluent Permit #: 020020001

SECTION B

HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)

Calculate Total Hours Open
During Previous Year (**Note 1**)

DATE NUMBER OF HOURS

3/3/13 5.5

6/25/13 3.5

8/1/13 24.0

8/12/13 2.5

(1) Max. allowed for 365 days (Admin Limit) **452 hrs**

(2) Total previous year (**NOTE 1**) (-) 35.5

Hours available this date (=) 24
(line 1 minus line 2)

Hours authorized this date **24**
(24 hours or Line (3), whichever is less)

NCO performing calculation Date/Time

John Smith Today/0100

SM/CRS verification and authorization Date/Time

Andrew Jones Today/0130

SECTION C

VALVE/LINE OPEN TIME (Note 2)

START TIME

Time at which valve/line was open or
Condition 1, 2, or 3 was entered with valve/line
open

0200

STOP TIME

Time at which valve/line was closed or
Condition 4 or 5 was entered with valve/line
opened

TOTAL HOURS

Total number of hours valve/line
opened this cycle

(NOTE 3)

Total number of hours valves/line open this permit: _____

NCO performing calculations _____ Date/Time _____

SM/CRS Closing permit _____ Date/Time _____

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

Note 2: Completed Form 2 should be filed in the AP-104 binder in the control room.

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

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

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

INITIATING CUE:

COMPLETE today's Containment Prepurge Cleanup, Inerting, Or Pressure Control Valve Permit and Log in accordance with OP-HC-103-105. The SM/CRS will perform step 4.4.6.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

TASK NUMBER: 2020160101

JPM NUMBER: 2013 NRC RO A-2

REV #: 2

SAP BET: NOH05JPZZ11E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☐

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-1-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek

JPM NUMBER: 2013 NRC RO A-2

REV: 2

SYSTEM: Reactor Recirculation

TASK NUMBER: 2020160101

TASK: Perform a Reactor Recirculation Pump Quick Restart

ALTERNATE PATH: ☐

K/A NUMBER: 2.2.40

IMPORTANCE FACTOR: 3.4 4.7

APPLICABILITY:

RO

SRO

EO ☐RO ☒STA ☐SRO ☐

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.RPV-0003 Rev 23

TOOLS, EQUIPMENT AND PROCEDURES:

Steam Tables/Calculator

ESTIMATED COMPLETION TIME: 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: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

TASK NUMBER: 2020160101

INITIAL CONDITIONS:

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

INITIATING CUE:

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

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

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

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
HC.OP-AB-RPV-0003 Attachment 2					
1.0	REACTOR VESSEL TO BOTTOM HEAD DRAIN LINE DIFFERENTIAL TEMPERATURE CRITERIA	NA			
1.1	Rx Pressure Vessel Steam Space Coolant Saturation Temperature. (Rx Pressure and Steam Tables) (Note 1)	Operator reads Note 1.			
		Operator determines RPV pressure 885 psig. (900 psia) (Psia = 14.7 + Psig)			
		Operator determines Steam space Coolant Saturation Temperature to be 900 psia = 532 degF (Steam Tables/ AB.RPV-0003 Attachment 2) $\pm 0.5F$	*		
		Operator records value in space provided on Attachment 1.			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
Note 1	Steam Table as part of this attachment may be utilized to determine temperature rounding the numbers in a conservative fashion. For a more accurate conversion from pressure to temperature a more detailed set of steam tables should be utilized.	NA			
1.2	Bottom Head Drain Coolant Temperature. (Note 2) (Computer Point A2942)	Operator accesses CRIDS terminal.			
Note 2	RWCU Flow required for accurate Bottom Head Drain Coolant Temperature indication.	Operator reads Note 2.			
		Operator determines RWCU is in service and the Bottom Head Drain Coolant Temperature is valid.			
		Operator obtains value of 491 degF ($\pm 0.5F$) from CRIDS point A2942.	*		

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1.3	< 145°F between Rx Pressure Vessel Steam Space Coolant AND Bottom Head Drain Line Coolant (A – B). [T/S 4.4.1.4]	Operator subtracts value of step 1.2 from value of step 1.1. and determines value of 41 degF ± 1F .	*		
		Operator records value in space provided.			
1.4	Time Readings taken: _____	Operator records current time in space provided.			
2.0	REACTOR VESSEL TO RECIRCULATION LOOP DIFFERENTIAL TEMPERATURE CRITERIA.	NA			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

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

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator determines Idle Recirc Loop Temp for A Loop is above 400 F. (~517 degF)			
2.2	Temperature of coolant in the Rx Pressure Vessel. (RX Pressure and Steam Tables) (Note 1)	Operator reads Note 1.			
		Operator determines RPV pressure is 885 psig. (900 psia) (Psia = 14.7 + Psig)	*		
		Operator determines Steam space Coolant Saturation Temperature to be: 900 psia = 532 degF (Steam Tables/ AB.RPV-0003 Attachment 2)			
		Operator records value in space provided on Attachment 1.			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

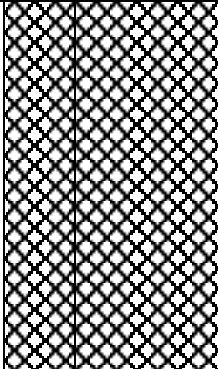
Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform a Reactor Recirculation Pump Quick Restart

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.3	< 50°F between the Rx Coolant within the loop not in operation AND the Coolant in the Rx Pressure Vessel (A-B). [T/S 4.4.1.4]	Operator determines differential temp is < 50 F. Examiner Note: Actual value is 15 degF ± 1F .	*		
2.4	Time Readings taken: _____	Operator records current time in space provided. (Pump must be started within 15mins of times in Steps 1.4 & 2.4)	*		
HC.OP-AB-RPV-0003					
G.12	ENSURE Differential Temperature requirements are met by completing Attachment 2. [T/S 4.4.1.4]	Operator initials step G.12.	*		
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			

JPM: 2013 NRC RO A-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	Task Standard: 'A' Reactor Recirc restart requirements of HC.OP-AB.RPV-0003 Attachment 2 completed per the attached key				

JOB PERFORMANCE MEASURE
 OPERATOR TRAINING PROGRAM
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC RO A-2

TASK: Perform a Reactor Recirculation Pump Quick Restart

TASK NUMBER: 2020160101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

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

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

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

EVENT FILE:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SCHEDULE:

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

REMOTE SCHEDULE:

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

OVERRIDE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert 9M13_R_AO to value necessary to ensure PI-3684A-1 (10C650B) indicates approximately 885 psig.	Ensure HPCI Steam Inlet Pressure indicates approximately 885 psig.

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
2	7-1-13	Moved cue sheet to last page. Minor grammatical changes. Changed CRIDS data points to match simulator. Clarified critical tasks and calculation values. Revised simulator setup.	Y

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC RO A-2**REV#:** 2**TASK:** Perform a Reactor Recirculation Pump Quick Restart**Prior to each JPM use verify the revision of the procedure(s) referenced by the JPM**

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

VALIDATED BY:Qualification Level Required: RO

<u>Ryan Kelly</u>	<u>RO</u>	<u>On file</u>	<u>6-25-13</u>
Name	Qual	Signature	Date
<u>Jim Southerton</u>	<u>SRO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE**INITIAL CONDITIONS:**

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Core Spray

TASK: Identify Core Spray Leak Isolations, Vent & Drain Paths

TASK NUMBER:

JPM NUMBER: 2013 NRC RO A-3

REV #: 02

SAP BET:

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☐

TASK STANDARD: Core Spray Isolations, Vent & Drain Paths Identified IAW Key.

DEVELOPED BY: _____
NRC
Instructor

DATE: 6/10/13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** NRC RO A-3**REV:** 02**SYSTEM:** Core Spray**TASK NUMBER:****TASK:** Identify Core Spray Leak Isolations, Vent & Drain Paths**ALTERNATE PATH:** ☐**K/A NUMBER:** 2.2.41**IMPORTANCE FACTOR:**

3.5	3.9
RO	SRO

APPLICABILITY:EO ☐RO ☒STA ☐SRO ☐**EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** M-52-1 Sht.1, E-0021 Sht.1
E-006 Sht.1, E-6022**TOOLS, EQUIPMENT AND PROCEDURES:****ESTIMATED COMPLETION TIME:** 30 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:** Identify Core Spray Leak Isolations and Vent & Drain Paths**TASK NUMBER:****INITIAL CONDITIONS:**

-100% Power

-Core Spray is in its normal standby lineup

-'B' RHR Pump is C/T for routine maintenance

- A pencil size leak has been reported by the Reactor Building Operator to the Shift manager on the Core Spray suction piping between the CSS Pump Suppression Pool Suction Valve (HV-F001A) and the AP206 Core Spray pump suction inlet.

INITIATING CUE:

The shift manager directs you to:

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

Successful Completion Criteria:

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

JPM: 2013 NRC RO A-3

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains appropriate drawings which include: M-52-1 Sh. 1 Core Spray P&ID and Electrical Core Spray prints E-6022, E-0021 Sht.1, E-006 Sht.1 (not all required) EXAMINER NOTE: Provide copies once prints are identified.	Operator obtains the correct drawings		
		START TIME: _____			
*		1. Applicant reviews P&IDs and identifies mechanical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump. (ITEMS BOLDED are CRITICAL)	Applicant identifies the following mechanical isolation valves: <ul style="list-style-type: none"> • HV-F001A SHUT • V-009 SHUT • V-027 SHUT • V-037 OPEN (check valve bypass) (NOT REQUIRED) • V-045 SHUT (normally closed) • V-049 SHUT (normally closed) 		

JPM: 2013 NRC RO A-3

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		2. Applicant reviews P&IDs and identifies electrical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump.	Applicant identifies the following electrical components required for isolation: <ul style="list-style-type: none"> MCC 10B212, breaker 012 (HV-F001A) 10A401, breaker 05 ('A' CSS Pump Motor) 		
*		3. Applicant reviews P&ID and identifies mechanical components required to VENT the isolated section of the Core Spray train. (Valves OPEN) NOTE: May OPEN one, two or all valves to vent	Applicant identifies the following mechanical VENT valves in the OPEN position: <ul style="list-style-type: none"> V-041 OPEN V-9975 and/or V-9974 		
*		4. Applicant reviews P&ID and identifies mechanical components required to DRAIN the isolated section of the Core Spray train. (Valves OPEN)	Applicant identifies the following mechanical DRAIN valves in the OPEN position: <ul style="list-style-type: none"> V-108 		
		5. STOP TIME: _____			
		Task Standard: Mechanical AND electrical components to <u>isolate</u> , <u>vent</u> , and <u>drain</u> the "A" CS pump are identified IAW P&IDs, E prints per the key.			

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

**OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION**

NAME: _____

DATE: _____

SYSTEM: Core Spray - Equipment Control

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

TASK NUMBER:

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

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

Rev #	Date	Description	Validation Required?
02	7/1/13	Revised IAW current revision of TQ-AA-106-0303 and for NRC exam. Added "Not Required" for V-037 Open	Y

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC RO A-3

REV#: 02

TASK: Identify Core Spray Leak Isolations, Vent & Drain Paths

Prior to each JPM use verify the revision of the procedure(s) referenced by the JPM

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

VALIDATED BY:

Qualification Level Required: RO

<u>Ryan Kelly</u>	<u>RO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date
<u>Jim Southerton</u>	<u>SRO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date

INITIAL CONDITIONS:

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

INITIATING CUE:

The shift manager directs you to:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Administrative

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

TASK NUMBER: 4000270401

JPM NUMBER: 2013 NRC RO A-4

REV #: 2

SAP BET: NOH05JPZZ19E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐ RO ☒ STA ☐ SRO ☐

DEVELOPED BY: _____ **DATE:** _____
NRC
Instructor

REVIEWED BY: _____ **DATE:** _____
Operations Representative

APPROVED BY: _____ **DATE:** _____
Training Department

STATION: Hope Creek

JPM NUMBER: 2013 NRC RO A-4

REV: 2

SYSTEM: Administrative

TASK NUMBER: 4000270401

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

ALTERNATE PATH: ☐

K/A NUMBER: 295938 EA1.01

IMPORTANCE FACTOR: 3.9 4.2

APPLICABILITY:

RO

SRO

EO ☐RO ☒STA ☐SRO ☐

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-AB.CONT-0004 Rev. 6

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

TOOLS, EQUIPMENT AND PROCEDURES: Calculator

ESTIMATED COMPLETION TIME: 10 Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

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

1. North Plant Vent (NPV) Stack radiation monitoring activity was rising on RM-11 point 9RX590.
2. SPDS is unavailable.
3. HC.OP-AB.CONT-0004 is being executed to determine and stop the release of activity.
4. NPV Exh Flow instrumentation channel 9AX300 is inoperable. Flow is being estimated in accordance with HC.OP-DL.ZZ-0026(Q), Attachment 3u (Provided).
5. Monitor Item 136 display is 001.

INITIATING CUE:

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

JPM: 2013 NRC RO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC RO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	IF the effluent (μCi/sec) channel on the RM-11 is NOT operating for a specific plant vent, <u>THEN</u> CALCULATE the Noble Gas release rate for that vent using the following:				
	$\frac{\text{μCi/cc (n.g.)}}{\text{Plant Vent Exh Flow in cfm}} \times 472 = \text{μCi/sec (n.g.)}$ <p>Where:</p> <p>μCi/sec (n.g.) - the calculated release rate from the specified plant vent (Noble Gas)</p> <p>μCi/cc (n.g.) - The concentration of Noble Gas obtained from the RM-11 (the operable channel will be highlighted in GREEN) <u>OR</u> from an actual sample of the plant vent</p> <p>472 - The conversion factor in units of cc/sec/cfm</p>				
		Operator manipulates the RM-11 terminal to obtain the value of NPV Noble Gas release from the 9RX602 Low Range detector and enters the value into the formula. 3.65E-5 uCi/cc.	*		
		Operator transfers the Plant Vent Exh Flow value from Attachment 3u of HC.OP-DL.ZZ-0026 (provided). 49613.9 CFM (49614 CFM acceptable)	*		

JPM: 2013 NRC RO A-4

OPERATOR TRAINING PROGRAM

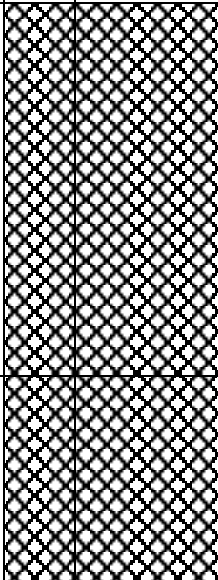
NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator calculates the NPV Noble Gas release rate. Calculated Value = $3.65\text{E-}5 \mu\text{Ci/cc} * 49613.9 \text{ CFM} * 472$ $= \underline{854.7 \mu\text{Ci/sec}} (\pm 0.5)$	*		
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			
	Task Standard: The Release Rate of NOBLE GAS from the NPV is determined in accordance with HC.OP-AB.CONT-0004, Action A.4. and key.				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC RO A-4

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

TASK NUMBER: 4000270401

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	
	INITIALIZE the simulator to 100% power, MOL.
	INSERT Malfunctions:
	<ul style="list-style-type: none"> • RM9590 @ 0.0E+00 • RM9602 @ 3.65E-5 • CC01 CRIDS Computer Failure
	Acknowledge alarms.
	Put Simulator in FREEZE.

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

<i>Initial</i>	Description
	ENSURE CRIDS Displays are not functioning.
	ENSURE MARKUP copy of HC.OP-DL.ZZ-0026 Attachment 3u available.
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT FILE:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert malfunction RM9590 to 0.00000	9RX590, NPV EFF - North Plant Vent Noble Gas Effluent
	None	None	Insert malfunction RM9602 to 3.65E-5	9RX602, NPV LOW - North Plant Vent Range Noble Gas
	None	None	Insert malfunction CC01	CRIDS Computer Failure

REMOTE SCHEDULE:

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

OVERRIDE SCHEDULE:

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

JOB PERFORMANCE MEASURE
REVISION HISTORY

JPM NUMBER: 2013 NRC RO A-4

Rev #	Date	Description	Validation Required?
2	7-1-13	Moved applicant handouts to end of JPM. Changes to cue sheet. NPV Noble Gas release (from the 9RX602 Low Range detector) value changed from 3.65E-7 to 3.65E-5, and updated simulator setup.	Y

JOB PERFORMANCE MEASURE

JPM NUMBER: 2013 NRC RO A-4**REV#:** 2**TASK:** Respond To An Abnormal Release Of Gaseous Radioactivity - Calculate Noble Gas Release Release Rates**Prior to each JPM use verify the revision of the procedure(s) referenced by the JPM**

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

VALIDATED BY:Qualification Level Required: RO

<u>Ryan Kelly</u>	<u>RO</u>	<u>On file</u>	<u>6-25-13</u>
Name	Qual	Signature	Date
<u>Jim Southerton</u>	<u>SRO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date

INITIAL CONDITIONS:

JOB PERFORMANCE MEASURE

1. North Plant Vent (NPV) Stack radiation monitoring activity was rising on RM-11 point 9RX590.
2. SPDS is unavailable.
3. HC.OP-AB.CONT-0004 is being executed to determine and stop the release of activity.
4. NPV Exh Flow instrumentation channel 9AX300 is inoperable. Flow is being estimated in accordance with HC.OP-DL.ZZ-0026(Q), Attachment 3u (Provided).
5. Monitor Item 136 display is 001.

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

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

ATTACHMENT 3u

Page 1 of 1

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

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

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

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

HCGS

DATE: Today's Date

Location Aux/Turb/Radwaste

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Radiation Control

TASK: Verify Compliance with Gaseous Release Permit

TASK NUMBER: 2990420302

JPM NUMBER: 2013 NRC SRO A-1

REV #: 02

SAP BET: NOH05JPZZ03E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☐

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-10-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek

JPM NUMBER: 2013 NRC SRO A-1

REV: 02

SYSTEM: Radiation Control

TASK NUMBER: 2990420302

TASK: Verify Compliance with Gaseous Release Permit

ALTERNATE PATH: ☐

K/A NUMBER: 2.3.6

IMPORTANCE FACTOR: 2.0 3.8

APPLICABILITY:

RO

SRO

EO ☐RO ☐STA ☐SRO ☒

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: OP-HC-103-105 Rev 1

TOOLS, EQUIPMENT AND PROCEDURES:

Prepared OP-HC-103-105 Forms 1 & 2, Calculator

ESTIMATED COMPLETION TIME: 15 MinutesTIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A Minutes

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Radiation Control**TASK:** Verify Compliance with Gaseous Release Permit**TASK NUMBER:** 2990420302**INITIAL CONDITIONS:**

1. A plant shutdown is in progress for a Refueling outage.
2. The Reactor is shutdown.
3. At 0200 today Purging of the Primary Containment commenced.
4. At 0436, the Purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation, due to a damper problem.
5. At 0800, Purging of Primary Containment re-commenced.
6. At 1252 today Operational Condition 4 was entered.
7. At 1548 today the purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation.

INITIATING CUE:

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

JPM: 2013 NRC SRO A-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Radiation Control**TASK: **Verify Compliance with Gaseous Release Permit**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue <u>AND</u> : <input type="checkbox"/> Prepared OP-HC-103-105 log Forms 1 & 2 (Attached) <input type="checkbox"/> Copy of OP-HC-103-105	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 4.4.6.			

JPM: 2013 NRC SRO A-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Radiation Control**TASK: **Verify Compliance with Gaseous Release Permit**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
4.4.6	The SM/CRS should verify the calculations, sign in the appropriate space for verification and close out and enter the time and date.	Operator reviews Forms 1 & 2.			
		IAW Step 4.4.3 of OP-HC-103-105 during calculation of valve open time the number must be rounded up. The Operator recognizes NCO incorrectly rounded down from 2.6 to 2.5 instead of rounding up to 3.0 in Section C of Form 2.	*		
		In Section C of Form 2, Operator recognizes NCO incorrectly used securing of purge lineup for end time of second purge period instead of using entry into OPCON 4 time IAW step 4.4.2. Total hours should be 5 vice 8 (1252 vice 1548).	*		

JPM: 2013 NRC SRO A-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Radiation Control**TASK: **Verify Compliance with Gaseous Release Permit**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<u>IF</u> the operator requests the NCO to make changes, <u>THEN</u> DIRECT the operator to make any required changes.	N/A			
4.4.6	The SM/CRS should verify the calculations, sign in the appropriate space for verification and close out and enter the time and date.	Operator makes corrections to Form 2 Stop times and Total Hours. Examiner Note: Refer to Examiners Copy for appropriate corrections.	*		
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state " This JPM is complete ". STOP TIME:	N/A			
	Task Standard: Containment Purge Cleanup, Inerting, Or Pressure Control Valve Permit reviewed with issues identified per the key				

JOB PERFORMANCE MEASURE

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC SRO A-1

TASK: Verify Compliance with Gaseous Release Permit

TASK NUMBER: 2990420302

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

FORM 2**CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT****SECTION A**Date: Today **NOTE:** This permit is valid only until 2400 of this dateGaseous Effluent Permit #: 020130003**SECTION B****HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)**Calculate Total Hours Open
During Previous Year (**Note 1**)

<u>DATE</u>	<u>NUMBER OF HOURS</u>
<u>4/3/13</u>	<u>5.5</u>
<u>6/25/13</u>	<u>3.5</u>
<u>8/1/13</u>	<u>24.0</u>
<u>8/12/13</u>	<u>2.5</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

(1) Max. allowed for 365 days (Admin Limit)

452 hrs(2) Total previous year (**NOTE 1**)

(-) 35.5

(3) Hours available this date
(line 1 minus line 2)

(=) 416.5

Hours authorized this date

(24 hours of line (3), whichever is less)

24

NCO performing calculation

Date/Time

John SmithToday/0100

SM/CRS verification and authorization

Date/Time

Andrew JonesToday/0130**SECTION C****VALVE/LINE OPEN TIME (Note 2)****START TIME**Time at which valve/line was open or Condition
1, 2, or 3 was entered with valve/line open**STOP TIME**Time at which valve/line was closed or
Condition 4 or 5 was entered with valve/line
opened**TOTAL HOURS**Total number of hours valve/line
opened this cycle

(NOTE 3)

020004362.5 3.008001548 12528.0 5.0Total number of hours valves/line open this permit: 10.5 8.0NCO performing calculations Andy GranatelliDate/Time Today/NowSM/CRS Closing permit Operator SignatureDate/Time Date/Time

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

Note 2: Completed Form 2 should be filed in the AP-104 binder in the control room.

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

JOB PERFORMANCE MEASURE
REVISION HISTORY

JPM NUMBER: 2013 NRC SRO A-1

Rev #	Date	Description	Validation Required?
2	7-1-13	Revised dates to coincide with NRC Exam. Revised Forms to current revision of procedure. Added clarifying comments to examiner guide.	Yes

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC SRO A-1**REV#:** 02**TASK:** Verify Compliance with Gaseous Release Permit**Prior to each JPM use verify the revision of the procedure referenced by the JPM**

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

VALIDATED BY:Qualification Level Required: SRO

Jim Southerton	SRO	On File	6-10-13
Name	Qual	Signature	Date
Laura Myers	SRO	On File	6-25-13
Name	Qual	Signature	Date

TRAINING ONLY OPERATOR COPY

FORM 1

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

Page 1 of 1

DATE	HOURS PREV. YEAR (Note 1)	HOURS AUTH. THIS PERMIT	NAME OF SM/CRS AUTHORIZING THIS PERMIT	NCO INITIAL	HOURS USED THIS PERMIT	TOTAL HOURS PREVIOUS YEAR (Note 1)	NAME OF SM/CRS CLOSING THIS PERMIT	NCO INITIAL
4/3/13	22.5	24	H. David	<i>SD</i>	5.5	28.0	S. West	<i>SD</i>
6/25/13	18.5	24	G. Williams	<i>TRW</i>	3.5	22.0	G. Cloon	<i>TRW</i>
8/1/13	22.0	24	W. Holmes	<i>R</i>	24.00	46.0	P. Price	<i>R</i>
8/12/13	46.0	24	B. Lee	<i>E</i>	2.5	48.5	V. Bonovan	<i>E</i>
Today	35.5	24	A. Jones	<i>JS</i>				

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

TRAINING ONLY OPERATOR COPY

OP-HC-103-105

Revision 1

Page 9 of 9

FORM 2

CONTAINMENT PREPURGE CLEANUP, INERTING, OR PRESSURE CONTROL VALVE PERMIT

SECTION A

Date: Today **NOTE:** This permit is valid only until 2400 of this date
Gaseous Effluent Permit #: 020130003

SECTION B

HOURS VALVES/LINES OPEN PREVIOUS YEAR (Note 1)

Calculate Total Hours Open
During Previous Year (**NOTE 1**)

DATE NUMBER OF HOURS

4/3/13 5.5

6/25/13 3.5

8/1/13 24.0

8/12/13 2.5

(1) Max. allowed for 365 days (Admin Limit) 452 hrs

(2) Total previous year (**NOTE 1**) (-) 35.5

(3) Hours available this date (=) 416.5
(line 1 minus line 2)

Hours authorized this date (max 24 hours)
(24 hours or Line (3), whichever is less) 24

NCO performing calculation Date/Time

John Smith Today/0100

SM/CRS verification and authorization Date/Time

Andrew Jones Today/0130

SECTION C

VALVE/LINE OPEN TIME (Note 2)

START TIME

Time at which valve/line was open or Condition
1, 2, or 3 was entered with valve/line open

0200

0800

STOP TIME

Time at which valve/line was closed or
Condition 4 or 5 was entered with valve/line
opened

0436

1548

TOTAL HOURS

Total number of hours valve/line
opened this cycle

2.5

8.0

(NOTE 3)

Total number of hours valves/line open this permit: 10.5

NCO performing calculations Andy Granatelli Date/Time Today/Now

SM/CRS Closing permit _____ Date/Time _____

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

Note 2: Completed Form 2 should be filed in the AP-104 binder in the control room.

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

INITIAL CONDITIONS:

1. A plant shutdown is in progress for a Refueling outage.
2. The Reactor is shutdown.
3. At 0200 today Purging of the Primary Containment commenced.
4. At 0436, the Purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation, due to a damper problem.
5. At 0800, Purging of Primary Containment re-commenced.
6. At 1252 today Operational Condition 4 was entered.
7. At 1548 today the purge lineup was secured in accordance with HC.OP-SO.GS-0001, Containment Atmosphere Control System Operation.

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Conduct of Operations

TASK: Initiate and Review System Lineup Sheets

TASK NUMBER: 2991110302

JPM NUMBER: 2013 NRC SRO A-2
(305H-JPM.ZZ031)

REV #: 02

SAP BET: NOH05JPZZ31E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☐

STA ☐

SRO ☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-10-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek

JPM NUMBER: ZZ031

REV: 2

SYSTEM: Conduct of Operations

TASK NUMBER: 2991110302

TASK: Initiate and Review System Lineup Sheets

ALTERNATE PATH: ☒

K/A NUMBER: 2.1.29

IMPORTANCE FACTOR: 3.4 3.3

APPLICABILITY:

EO ☐RO ☐STA ☐SRO ☒

RO

SRO

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-IO.ZZ-0003 Rev 84

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

Rev: 2

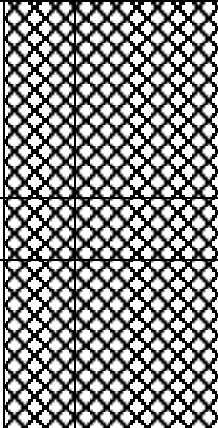
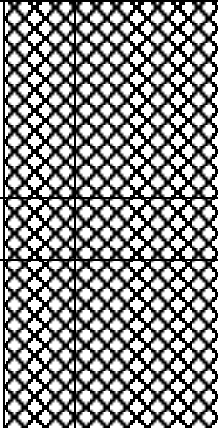
OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

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 (Labeled ' FIRST HANDOUT ')	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> 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: 2

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

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

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. • (Labeled 'SECOND HANDOUT') 	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.	*		

JPM: ZZ031

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

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>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			
	Task Standard: Off normal report reviewed with components listed in key identified				

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: SRO A-2

TASK: Initiate and Review System Lineup Sheets

TASK NUMBER: 2991110302

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE

REVISION HISTORY**JPM NUMBER:** ZZ031

Rev #	Date	Description	Validation Required?
1	11/9/08	Converted ZZ031 to new JPM format. Changed critical Off-Normal components to MSL Low Pressure transmitters, which are NOT required in OPCON 2, but ARE required in OPCON 1. Updated Off-Normal distractor items to more current dates. Added CUE that valves were re-positioned and a corrected Off-Normal to provide to the operator and allow completion of the task.	Y
2	7/2/2013	Off normal report updated	Y

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC SRO A-2**REV#:** 02**TASK:** Initiate and Review System Lineup Sheets**Prior to each JPM use verify the revision of the procedure referenced by the JPM**

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

VALIDATED BY:Qualification Level Required: SRO

<u>Jim Southerton</u>	<u>SRO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date
<u>Laura Myers</u>	<u>SRO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date

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.

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]**

<u>Joe Johnson</u>	<u>Today/Now</u>
SM/CRS	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

TRAINING USE ONLY

User: TRAIN20Off Normal ReportDate: TODAYPlant: NNUCMode 01Time: NOW

Technical Object	Description	Current	Normal	Location	Loc. Description	Status	ChangeDate	Remark
H0FA -0-FA-V366	"C" AUX BLR MAIN STEAM STOP VALVE	X	O	13102101C	HC BOILER C AREA	OffNormal	07/20/2007	CONTROLLED PER SOP, N#20330388
H0FA -0-FA-V423	FAFV-3457C BYPASS VALVE	O	X	13102101C	HC BOILER C AREA	OffNormal	04/11/2007	TVC NOT WORKING
H0GA -0-GA-V197	DOM WTR HTR 0BE503 HTG STM VLV	X	O	031023342A	HC HOT WATER HEATER ROOM A	OffNormal	08/26/2006	CONTROLLED PER SOP
H0GA -0-GA-V539	HTG STM LO PT DRN V 0-P-GA-01	X	O	031023342B	HC HOT WATER HEATER ROOM B	OffNormal	08/26/2006	CONTROLLED PER SOP
H0JA -0-JA-V051	FO SYS BLR A FO RECIRC ISLN VL	X	O	13102101A	HC BOILER A AREA	OffNormal	10/16/2006	ABANDONED EQUIPMENT
H0KD -0-KD-V450	EXTERIOR HYDRANT ISLN VLV	O	X	001020AQ	HC YARD-SOUTH OF POWER BLOCK	OffNormal	00/00/0000	
H0KD -0-KD-V452	SEW TREAT TRK W/DN EXTRN HYDRT	O	X	18102WWTF	HC WASTEWATER TREATMENT FACILITY	OffNormal	00/00/0000	
H0NQ -00L520-23	SPARE	X	O	13102103F	HC FRESH WATER SUPPLY PANEL AREA	OffNormal	00/00/0000	
H0QB -00-L-547-02	SPARE	X	O	0201	HC SWIS BLDG MCC AREA	OffNormal	08/07/2005	RETURNED TO NORMAL
H0ZZ -00L154-01	RECPT WEST WALL/CORRIDOR	O	X	021022000A	HC ADMIN FACILITY EL.102	OffNormal	08/15/2006	BKR NOW SPARED PER DCP
H0ZZ -00L154-03	RECPT RM #109/CORRIDOR	O	X	021022000A	HC ADMIN FACILITY EL.102	OffNormal	08/15/2006	BKR NOW SPARED PER DCP
H0ZZ -00L156-10	LTG,ADMIN RM 253	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-12	LTG,ADMIN RM 255&61	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-14	LTG,ADMIN RM 255	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-16	LTG,ADMIN RM 256	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-18	INTERLOCKED W/16	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L157-26	SPARE	X	O	021022000A	HC ADMIN FACILITY EL.102	OffNormal	02/15/2006	CHANGED FOR A DCP 80087126
H0ZZ -00L327-08	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-09	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -00L327-10	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-12	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/22/2005	PER ORDER # 60055303
H0ZZ -00L327-23	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -00L439-12	SPARE	X	O	021232000C	HC ADMIN FACILITY EL 123	OffNormal	05/11/2006	TP&L PER ORDER 60061688
H0ZZ -2RFSS06	SPARE BKR 200AMP SERVICE DISC	X	O	070897000A	HC HC/SALEM COMMON GDHSE EL.89'	OffNormal	07/03/2007	X FOR TEMP LIGHT/DCP WORK
H0ZZ -AC-2-15	SPARE	X	O	001020AX	HC FUTURE ASSIGNMENT	OffNormal	03/30/2006	CLOSED TILL 70051846 OP90 CONFIRMED
H1AB -1ABV9979-B	INST ISLN VLV FOR 1SMPT-N076A	X	LO	011201406A	HC ELECT EQUIP MEZZANINE A	OffNormal	11/13/2008	CLOSED FOR I&C
H1AB -1ABV9980-B	INST ISLN VLV FOR 1SMPT-N076C	X	LO	011201406A	HC ELECT EQUIP MEZZANINE A	OffNormal	11/13/2008	CLOSED FOR I&C
H1CD -1-CD-V021	TURB END H2 DETRNG SECT DRN	X	LX	011021302A	HC ELECTRICAL EQUIPMENT AREA A	OffNormal	07/03/2007	COULD NOT ACCESS TO PLACE LOCK.
H1KC -1-KC-V282	STRAINER B/D VLV	X	XC	050545106D	HC FUTURE CONTROLLED STOR AREA D	OffNormal	05/25/2005	20240203 NO THREADS TO PUT CAP ON

FIRST HANDOUT

SECOND HANDOUT

TRAINING USE ONLY

User: TRAIN20Off Normal ReportDate: TODAYPlant: NNUCMode 01Time: NOW

Technical Object	Description	Current	Normal	Location	Loc. Description	Status	ChangeDate	Remark
H0FA -0-FA-V366	"C" AUX BLR MAIN STEAM STOP VALVE	X	O	13102101C	HC BOILER C AREA	OffNormal	07/20/2007	CONTROLLED PER SOP, N#20330388
H0FA -0-FA-V423	FAFV-3457C BYPASS VALVE	O	X	13102101C	HC BOILER C AREA	OffNormal	04/11/2007	TVC NOT WORKING
H0GA -0-GA-V197	DOM WTR HTR 0BE503 HTG STM VLV	X	O	031023342A	HC HOT WATER HEATER ROOM A	OffNormal	08/26/2006	CONTROLLED PER SOP
H0GA -0-GA-V539	HTG STM LO PT DRN V 0-P-GA-01	X	O	031023342B	HC HOT WATER HEATER ROOM B	OffNormal	08/26/2006	CONTROLLED PER SOP
H0JA -0-JA-V051	FO SYS BLR A FO RECIRC ISLN VL	X	O	13102101A	HC BOILER A AREA	OffNormal	10/16/2006	ABANDONED EQUIPMENT
H0KD -0-KD-V450	EXTERIOR HYDRANT ISLN VLV	O	X	001020AQ	HC YARD-SOUTH OF POWER BLOCK	OffNormal	00/00/0000	
H0KD -0-KD-V452	SEW TREAT TRK W/DN EXTRN HYDRT	O	X	18102WWTF	HC WASTEWATER TREATMENT FACILITY	OffNormal	00/00/0000	
H0NQ -00L520-23	SPARE	X	O	13102103F	HC FRESH WATER SUPPLY PANEL AREA	OffNormal	00/00/0000	
H0QB -00-L-547-02	SPARE	X	O	0201	HC SWIS BLDG MCC AREA	OffNormal	08/07/2005	RETURNED TO NORMAL
H0ZZ -00L154-01	RECPT WEST WALL/CORRIDOR	O	X	021022000A	HC ADMIN FACILITY EL.102	OffNormal	08/15/2006	BKR NOW SPARED PER DCP
H0ZZ -00L154-03	RECPT RM #109/CORRIDOR	O	X	021022000A	HC ADMIN FACILITY EL.102	OffNormal	08/15/2006	BKR NOW SPARED PER DCP
H0ZZ -00L156-10	LTG,ADMIN RM 253	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-12	LTG,ADMIN RM 255&61	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-14	LTG,ADMIN RM 255	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-16	LTG,ADMIN RM 256	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L156-18	INTERLOCKED W/16	O	X	021202000B	HC ADMIN FACILITY EL 120	OffNormal	12/05/2005	BREAKER IS SPARED BY DCP
H0ZZ -00L157-26	SPARE	X	O	021022000A	HC ADMIN FACILITY EL.102	OffNormal	02/15/2006	CHANGED FOR A DCP 80087126
H0ZZ -00L327-08	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-09	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -00L327-10	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/28/2005	X PER ORDER # 60054720
H0ZZ -00L327-12	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/22/2005	PER ORDER # 60055303
H0ZZ -00L327-23	SPARE	X	O	031023305B	HC UNRESTRICTED MACHINE SHOP B	OffNormal	06/24/2005	X PER ORDER # 60053935
H0ZZ -00L439-12	SPARE	X	O	021232000C	HC ADMIN FACILITY EL 123	OffNormal	05/11/2006	TP&L PER ORDER 60061688
H0ZZ -2RFSS06	SPARE BKR 200AMP SERVICE DISC	X	O	070897000A	HC HC/SALEM COMMON GDHSE EL.89'	OffNormal	07/03/2007	X FOR TEMP LIGHT/DCP WORK
H0ZZ -AC-2-15	SPARE	X	O	001020AX	HC FUTURE ASSIGNMENT	OffNormal	03/30/2006	CLOSED TILL 70051846 OP90 CONFIRMED
H1CD -1-CD-V021	TURB END H2 DETRNG SECT DRN	X	LX	011021302A	HC ELECTRICAL EQUIPMENT AREA A	OffNormal	07/03/2007	COULD NOT ACCESS TO PLACE LOCK.
H1KC -1-KC-V282	STRAINER B/D VLV	X	XC	050545106D	HC FUTURE CONTROLLED STOR AREA D	OffNormal	05/25/2005	20240203 NO THREADS TO PUT CAP ON

SECOND HANDOUT

JOB PERFORMANCE MEASURE

TQ-AA-106-0303

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Core Spray

TASK: Identify Core Spray Leak Isolations, Vent & Drain Paths

TASK NUMBER:

JPM NUMBER: 2013 NRC SRO A-3

REV #: 02

SAP BET:

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐ RO ☐ STA ☐ SRO ☒

TASK STANDARD: Core Spray Isolations, Vent & Drain Paths Identified IAW Key.
Applicable TS identified

DEVELOPED BY: _____ **DATE:** 6/10/13
NRC
Instructor

REVIEWED BY: _____ **DATE:** _____
Operations Representative

APPROVED BY: _____ **DATE:** _____
Training Department

STATION: Hope Creek

JPM NUMBER: NRC SRO A-3

REV: 02

SYSTEM: Core Spray

TASK NUMBER:

TASK: Identify Core Spray Leak Isolations, Vent & Drain Paths

ALTERNATE PATH: ☐

K/A NUMBER: 2.2.41

IMPORTANCE FACTOR:

3.5	3.9
RO	SRO

APPLICABILITY:

EO ☐RO ☒STA ☐SRO ☐

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: M-52-1 Sht.1, E-0021 Sht.1
E-006 Sht.1

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 30 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:** Identify Core Spray Leak Isolations and Vent & Drain Paths**TASK NUMBER:****INITIAL CONDITIONS:**

-100% Power

-Core Spray is in its normal standby lineup

-'C' RHR Pump is C/T for routine maintenance

- A pencil size leak has been reported by the Reactor Building Operator to the Shift manager on the Core Spray suction piping between the CSS Pump Suppression Pool Suction Valve (HV-F001A) and the AP206 Core Spray pump suction inlet.

INITIATING CUE:

The shift manager directs you to:

- Identify mechanical AND electrical components to isolate, vent, and drain the pump using controlled station mechanical drawings.
- Identify the most limiting Tech Spec condition (if any) AFTER the leak has been isolated.

Successful Completion Criteria:

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

JPM: 2013 NRC SRO A-3

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Operator obtains M-52-1 Sh. 1 Core Spray P&ID and Electrical Core Spray P&ID for F001A AND CSS 'A' Pump Motor	Operator obtains the correct drawings		
		START TIME: _____			
*		1. Applicant reviews P&IDs and identifies mechanical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump. (ITEMS BOLDED are CRITICAL)	Applicant identifies the following mechanical isolation valves: <ul style="list-style-type: none"> • HV-F001A SHUT • V-009 SHUT • V-027 SHUT • V-037 OPEN (check valve bypass) (NOT REQUIRED) • V-045 SHUT (normally closed) • V-049 SHUT (normally closed) 		
		2. Applicant reviews P&IDs and identifies electrical components required to ISOLATE the leak on the suction of the AP206 Core Spray pump.	Applicant identifies the following electrical components required for isolation: <ul style="list-style-type: none"> • MCC 10B212, breaker 012 (HV-F001A) • 10A401, breaker 05 ('A' CSS Pump Motor) 		

JPM: 2013 NRC SRO A-3

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*		3. Applicant reviews P&ID and identifies mechanical components required to VENT the isolated section of the Core Spray train. (Valves OPEN) NOTE: May OPEN one, two or all valves to vent	Applicant identifies the following mechanical VENT valves in the OPEN position: <ul style="list-style-type: none"> • V-041 OPEN • V-9975 and/or V-9974 		
*		4. Applicant reviews P&IDs and identifies mechanical components required to DRAIN the isolated section of the Core Spray train. (Valves OPEN)	Applicant identifies the following mechanical DRAIN valves in the OPEN position: <ul style="list-style-type: none"> • V-108 		
		5. Applicant reviews Tech Specs and identifies the most limiting Tech Spec action statement AFTER leak isolation.	Applicant identified the following as the most limiting Tech Spec Action Statement: <ul style="list-style-type: none"> • 3.5.1.a.1 Restore within 7 days of be in Hot S/D within 12hrs and Cold S/D within 24hrs 		
		6. STOP TIME: _____			
		Task Standard: Core Spray Leak Isolations, Vent & Drain Paths identified IAW the key.			

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

**OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION**

NAME: _____

DATE: _____

SYSTEM: Equipment Control

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

TASK NUMBER: _____

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

QUESTION: _____

RESPONSE: _____

RESULT: ☐ - SAT ☐ - UNSAT

REVISION HISTORY**JPM NUMBER:** 2013 NRC SRO A-3

Rev #	Date	Description	Validation Required?
02	7/1/13	Revised IAW current revision of TQ-AA-106-0303 and for NRC exam. Removed unnecessary drawing from reference list (E-6022). Added "Not Required" for identification of V-037 in examiner guide. Changed 'B' RHR pump C/T out to 'C' RHR pump C/T out. This is necessary to ensure proper Tech Spec application.	Y

VALIDATION CHECKLIST

JPM NUMBER: 2013 NRC SRO A-3

REV#: 02

TASK: Identify Core Spray Leak Isolations, Vent & Drain Paths

Prior to each JPM use verify the revision of the procedure(s) referenced by the JPM

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

VALIDATED BY:

Qualification Level Required: SRO

<u>Jim Southerton</u>	<u>SRO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date
<u>Laura Myers</u>	<u>SRO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date

INITIAL CONDITIONS:

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

INITIATING CUE:

The shift manager directs you to:

- Identify mechanical AND electrical components to isolate, vent, and drain the pump using controlled station mechanical drawings.
- Identify the most limiting Tech Spec condition (if any) AFTER the leak has been isolated.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Equipment Control

TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)

TASK NUMBER: 2990010101

JPM NUMBER: 2013 NRC SRO A-4

REV #: 2

SAP BET: NOH05JPZZ36E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

TASK STANDARD: Completes HC.OP-DL.ZZ-0026 Attachment 1a ITEM 47 Day Shift reading for the RMS Cooling Tower Blowdown Weir Flow Rate Monitor IAW JPM Key

DEVELOPED BY: _____
NRC
Instructor

DATE: 6/10/13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek

JPM NUMBER: 2013 NRC SRO A-4

REV: 2

SYSTEM: Equipment Control

TASK NUMBER: 2990010101

TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)

ALTERNATE PATH: ☐

K/A NUMBER: 2.2.23

IMPORTANCE FACTOR:	3.1	4.6
	RO	SRO

APPLICABILITY:

EO ☐RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Classroom/Perform

REFERENCES: HC.OP-DL.ZZ-0026 Rev 136

TOOLS, EQUIPMENT AND PROCEDURES:

Blank HC.OP-DL.ZZ-0026

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:** Perform the Watchstanding Duties of the Nuclear Control Room Operator
(Determine Liquid Radwaste Radiation Monitoring System Cooling Tower
Blowdown Weir Flow)**TASK NUMBER:** 2990010101**INITIAL CONDITIONS:**

1. The plant is at 100% power.
2. B Circ Water Pump is tagged for motor replacement.
3. A, C, and D Circ Water Pumps are in service.
4. 3 Service Water Pumps are in service
5. Cooling Tower Blowdown Weir Flow Rate Monitor OSP-RI4861 is reading blank and is INOPERABLE. TSAS # 2012-001 entered.
6. RM-11 point 9AX327 historical data is NOT available.
7. SSW Loop Flow CRIDS Point values as follows:
 - A2440 SERVICE WATER FLOW RATE DIV A = 13,560 gpm
 - A2441 SERVICE WATER FLOW RATE DIV B = 21,345 gpm

INITIATING CUE:

You are the Control Room Supervisor.

The Reactor Operator has asked you to review a completed HC.OP-DL.ZZ-0026 Attachment 1a ITEM 47 Day Shift reading and Att. 3y for the inoperable RMS Cooling Tower Blowdown Weir Flow Rate Monitor.

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring****TASK: System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue <u>AND</u> : <ul style="list-style-type: none"> The completed copy of HC.OP-DL.ZZ-0026 (both pages). 	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue: START TIME:	N/A			
	HC.OP-DL.ZZ-0026 Attachment 1a	N/A			
ITEM 47	CHANNEL CHECK: COOLING TOWER BLOWDOWN WEIR FLOW RATE MONITOR	Operator reads ITEM 47.			
	OPER COND AT ALL TIMES	Operator determines the ITEM is applicable is the current Op Condition			
	ACCEPTABLE LIMITS MIN NORM MAX ITEM 002 < 40K 70K	Operator reads the limits.			
	INSTRUMENT (PANEL) OSP-RI4861 (10C604) ITEM 029 RM-11 (9AX327) (NOTE 45)	Operator reads NOTE 45 and determines that data is not available from the Initial Conditions.			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

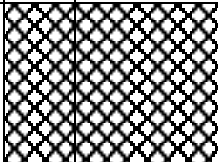
NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring****TASK: System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE 33		Operator reads NOTE 33 and determines that data is not available from the Initial Conditions.			
NOTE 35		Operator reads NOTE 35 and determines that data is not available from the Initial Conditions.			
NOTE 46	IF INSTRUMENT IS INOP, USE ATTACHMENT 3Y TO ESTIMATE WEIR FLOW. THIS IS REQUIRED REGARDLESS OF WHETHER A RADIOACTIVE LIQUID RELEASE IS IN PROGRESS.	Operator reads NOTE 46 and determines that Attachment 3Y is applicable.	*		
		Operator locates Attachment 3Y.			
	Examiner Note: Refer to steps below and Examiner Copy of Attachment 3Y for Standards associated with this step.				

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring**TASK: **System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	HC.OP-DL.ZZ-0026 Attachment 3Y				
	DATE	Operator verifies current date on Attachment 3Y. (Note: "TODAY" is acceptable)			
	METHOD 1	Operator determines data for Method 1 completion is not available and continues to METHOD 2.			
	TIME	Operator verifies current time on Attachment 3Y under Method 2 (Note: "Now" is acceptable for current time.)			
	SSW LOOP A FLOW #	Operator reads # Footnote			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring**TASK: **System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	# READ FROM FIT-2218A/B OR FR-2218-1/2 OR CRIDS A2440/A2441 . (B SSW LOOP FLOW (FIT-2218B) IS OBTAINED LOCALLY AT PANAMETRICS MONITOR. FLOW VALUE IS THE AVERAGE VOLUMETRIC FLOW RATE WHICH IS DISPLAYED AS "AVG VOLUMETRIC GAL/MIN" ON THE MONITOR DISPLAY.	Operator determines A SSW Loop Flow is 13,560 gpm from CRIDS point A2440 in the Initial Conditions and that it is recorded correctly on ATT 3Y under 'SSW LOOP A FLOW #'.			
	SSW LOOP B FLOW #	Operator reads # Footnote			
	# READ FROM FIT-2218A/B OR FR-2218-1/2 OR CRIDS A2440/A2441 . (B SSW LOOP FLOW (FIT-2218B) IS OBTAINED LOCALLY AT PANAMETRICS MONITOR. FLOW VALUE IS THE AVERAGE VOLUMETRIC FLOW RATE WHICH IS DISPLAYED AS "AVG VOLUMETRIC GAL/MIN" ON THE MONITOR DISPLAY.	Operator determines B SSW Loop Flow is 21,345 gpm from CRIDS point A2441 in the Initial Conditions and that it is recorded correctly on ATT 3Y under 'SSW LOOP B FLOW #'.			
	TOTAL SSW FLOW	Operator verifies calculation of Total SSW Flow at 34,905 gpm by summing Loop A and Loop B flows.			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring**TASK: **System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	EVAPORATIVE LOSSES*.	Operator reads * Footnote			
	* REFERENCE PRINT 10855-M15-181-1 FOR EVAPORATIVE LOSS ESTIMATES. USE 16,700 GPM FOR DEFAULT VALUE(MIN. DILUTION FLOW), FOR EVAPORATIVE LOSS ESTIMATES IF 4 CIRCULATING WATER PUMPS ARE IN SERVICE, OR 12,500 GPM IF ONLY 3 CIRCULATING WATER PUMPS ARE IN SERVICE . THIS BLOCK IS N/A IF THE COOLING TOWER IS OUT OF SERVICE.	Operator determines Evaporative Losses from * Footnote at bottom of page for 3 Circ Water Pump operation is INCORRECTLY recorded as 16,700gpm. Examiner Note: If applicant asks, inform applicant that he/she is to correct any identified incorrect values.			
		Operator determines correct value of Evaporative Losses to be 12,500gpm (3 CW pumps in service) and enters the value 12,500 under EVAPORATIVE LOSSES* on ATT 3Y.	*		

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring**TASK: **System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	TOTAL WEIR FLOW	Operator determines that recorded TOTAL WEIR FLOW of 18,205 gpm is incorrect. Operator determines that recorded TOTAL WEIR FLOW should be 22,405gpm by subtracting Evaporative Losses (12,500 gpm) from Total SSW Loop Flow (34,905 gpm).			
		Operator enters the correct value of 22,405 under TOTAL WEIR FLOW on ATT 3Y.	*		
	HC.OP-DL.ZZ-0026 Attachment 1a	N/A			
ITEM 47	CHANNEL CHECK: COOLING TOWER BLOWDOWN WEIR FLOW RATE MONITOR	Operator reads ITEM 47.			
	DAY	Operator verifies DAY reading of F/I logged on ATTACHMENT 1a for ITEM 47.			
	INST TRIPPED	Operator verifies F/I logged on ATTACHMENT 1a for ITEM 47 INST TRIPPED.			

JPM: 2013 NRC SRO A-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Equipment Control****Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring**TASK: **System Cooling Tower Blowdown Weir Flow)**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
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			
	<p>Task Standard: Completed HC.OP-DL.ZZ-0026 Attachment 1a ITEM 47 Day Shift reading and Att. 3y for the inoperable RMS Cooling Tower Blowdown Weir Flow Rate Monitor reviewed with issues identified per the key.</p>				

JOB PERFORMANCE MEASURE
REVISION HISTORY

JPM NUMBER: 2013 NRC SRO A-4

Rev #	Date	Description	Validation Required?
01	6/10/13	Revise IAW latest revision of HC.OP-DL.ZZ-0026 for use on NRC exam	Y
02	7/3/13	Revised JPM to make SRO level (review completed form vice completing form from scratch).	Y

JOB PERFORMANCE MEASURE

JPM NUMBER: 2013 NRC SRO A-4**REV#:** 02**TASK:** Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)**Prior to each JPM use verify the revision of the procedure(s) referenced by the JPM**

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

VALIDATED BY:Qualification Level Required: SRO

<u>Jim Southerton</u>	<u>SRO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date
<u>Laura Myers</u>	<u>SRO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC SRO A-4

TASK: Perform the Watchstanding Duties of the Nuclear Control Room Operator (Determine Liquid Radwaste Radiation Monitoring System Cooling Tower Blowdown Weir Flow)

TASK NUMBER: 2990010101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

TRAINING USE ONLY

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

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ATTACHMENT 1a
Surveillance Log - Control RoomDate **TODAY**

Operational Condition		1		Surveillance Log - Control Room			Date		TODAY	
ITEM	SURVEILLANCE	OPER COND	ACCEPTABLE LIMITS MIN NORM MAX			INSTRUMENT (PANEL)	DAY	EVE	MID	COMMENTS
47	CHANNEL CHECK: COOLING TOWER BLOWDOWN WEIR FLOW RATE MONITOR	AT ALL TIMES	ITEM 002	< 40K	70K	OSP-RI4861 (10C804) ITEM 029 RM-11 (9AX327) (NOTE 45)	F/I			TSAS 2012-001 See Attachment 3Y (NOTE 33., 35., 46., 47.)
			---	NO	---	INST TRIPPED	F/I			
48	CHANNEL CHECK: COOLING TOWER BLOWDOWN RADIATION MONITOR	AT ALL TIMES	---	---	ITEM 009	SP-RI8817 (10C804)	N/A	N/A		(NOTE 30., 41.)
	SAMPLE FLOW		1.0	---	14.0	SP-RI8817 ITEM 029 (10C804)	N/A	N/A		(NOTE 35.)
	SAMPLE LOW FLOW ALARM		1.0	---	1.0	SP-RI8817 ITEM 002 (10C804)	N/A	N/A		(NOTE 33.)
			---	0000	---	SP-RI8817 ITEM 044 (10C804)	N/A	N/A		(NOTE 40.)
	ANY OF ITEM 48		---	NO	---	INST TRIPPED	N/A	N/A		
49	CHANNEL CHECK: TBCW RADIATION MONITOR	AT ALL TIMES	---	---	1.5E ⁻⁶	SP-RI4557 OR CRIDS (R9505) / RM-11 (9RX505)	1.1E-6	N/A	N/A	(NOTE 30.)
50	CHANNEL CHECK: RACS RADIATION MONITOR	AT ALL TIMES	---	---	9E ⁻⁶	SP-RI2534 OR CRIDS (R9500) / RM-11 (9RX500)	7.7E-7			(NOTE 30.)
51	CHANNEL CHECK: SACS LOOP A RADIATION MONITOR	AT ALL TIMES	---	---	6E ⁻⁶	SP-RI4850A1 OR CRIDS (R9501) / RM-11 (9RX501) (1EC267)	3.2E-7			(NOTE 30.)
52	CHANNEL CHECK: SACS LOOP B RADIATION MONITOR	AT ALL TIMES	---	---	6E ⁻⁶	SP-RI4850B1 OR CRIDS (R9503) / RM-11 (9RX503) (1HC267)	6.1E-7			(NOTE 30.)

NOTES: 30. IF NORMAL INSTRUMENT IS INOP AND CRIDS IS USED (FOLLOWING EQUIVALENCY REVIEW), THEN ONLY OBTAIN CRIDS VALUE FROM PAGE DISPLAY. CRIDS POINT SUMMARY DOES NOT PROVIDE AN ADEQUATE VALUE. [70037325]

33. TO OBTAIN VALUES 006 OR 002, PRESS MON PB, KEY IN 006 OR 002, THEN ITEM PB.

35. TO OBTAIN VALUES 028, 029, OR 073, PRESS MON PB, KEY IN 028, 029, OR 073, THEN ITEM PB.

40. TO OBTAIN VALUE 044, PRESS MON PB, KEY IN 044, THEN ITEM PB. IF VALUE IS NOT AT 0000 HAVE I&C/RAD PRO INVESTIGATE OPERABILITY.

41. TO OBTAIN VALUE 009, PRESS LIQ PB, KEY IN 009, THEN ITEM PB.

45. CHANNEL CHECK SHALL CONSIST OF VERIFYING INDICATION OF FLOW DURING PERIODS OF RELEASE. CHANNEL CHECK SHALL BE MADE AT LEAST ONCE PER 24 HOURS ON DAYS ON WHICH CONTINUOUS, PERIODIC, OR BATCH RELEASES ARE MADE. WHEN THREE SWS PUMPS ARE IN-SERVICE, AND, THE RM-11 IS AVAILABLE, RECORD THE LOWEST OF THE LAST 12 (HOURLY) AVERAGES FOR 9AX327 (CTB FLOW) AS FOLLOWS: FROM THE TOP LEVEL MENU THAT CAN BE ARRIVED AT BY DEPRESSING THE "ESC" KEY, CLICK THE "LOGS/REPORTS" BUTTON, THEN THE "DAILY LOG SETUP" BUTTON, (F2) OR TYPE "ARCHIVE" IN THE YELLOW FUNCTION FIELD; CHANGE DATE AND TIME UNDER "ENTER START TIME" TO AT LEAST 12 HOURS AGO (ONLY THE BACKSPACE KEY FUNCTIONS TO ERASE EXISTING TEXT); IN THE FIELD UNDER "OR ENTER PIDS (COMMA DELIMITED):" ENTER "TR604861-4". THIS IS THE 60 MINUTE AVERAGE TREND FOR THE DESIRED POINT; SELECT F3 OR CLICK THE "F3=VIEW PID" BUTTON AT THE SCREEN BOTTOM TO DISPLAY THE DATA. [70026506]

46. IF INSTRUMENT IS INOP, USE ATTACHMENT 3Y TO ESTIMATE WEIR FLOW. THIS IS REQUIRED REGARDLESS OF WHETHER A RADIOACTIVE LIQUID RELEASE IS IN PROGRESS.

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

JOB PERFORMANCE MEASURE
TRAINING USE ONLY

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

ATTACHMENT 3y

Page 1 of 1

Radioactive Liquid Effluent Monitoring Instrumentation
T/S 6.8.4.g ODCM Table 3.3.7.10-1 Item 3b, ACTION 112

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

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

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

DATE **TODAY**

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

METHOD 1 DIRECT READING OF WEIR FLOW (USE ANY ONE OF THE FOLLOWING)		ENTER TIME OF EACH READING IN THE T= 0, T + 3 HRS, T + 6 HRS....., BLOCKS							
		TIME	T = 0	T + 3 HRS	T + 6 HRS	T + 9 HRS	T + 12 HRS	T + 15 HRS	T + 18 HRS
A) - CRIDS POINT A9327 (CTB BLOWDOWN DISCH FLOW)									
B) - RM-11, 9RX599 (PROCESS FLOW N)									
C) - 10C604 PANEL, LIQUID R/W OSP-RI4861 (CTB FLOW P.B.)									

METHOD 2 <u>CALCULATED</u> WEIR FLOW									
TIME	SSW LOOP A FLOW #	+	SSW LOOP B FLOW #	=	TOTAL SSW FLOW	-	EVAPORATIVE LOSSES *	=	TOTAL WEIR FLOW
Now	13560	+	21345	=	34905	-	16700	=	18205
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
METHOD 3 <u>ESTIMATED</u> WEIR FLOW (VTD 322848 SHOULD BE USED FOR PUMP PERFORMANCE CURVE TO SUPPORT USE OF METHOD 3) [70042554]									
DATE/TIME	A & C SSW PUMP FLOW	+	B & D SSW PUMP FLOW	=	TOTAL SSW FLOW	-	EVAPORATIVE LOSSES *	=	TOTAL WEIR FLOW
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	
		+		=		-		=	

* REFERENCE PRINT 10855-M15-181-1 FOR EVAPORATIVE LOSS ESTIMATES. USE 16,700 GPM FOR DEFAULT VALUE(MIN. DILUTION FLOW). FOR EVAPORATIVE LOSS ESTIMATES IF 4 CIRCULATING WATER PUMPS ARE IN SERVICE, OR 12,500 GPM IF ONLY 3 CIRCULATING WATER PUMPS ARE IN SERVICE. THIS BLOCK IS N/A IF THE COOLING TOWER IS OUT OF SERVICE.

READ FROM FIT-2218A/B OR FR-2218-1/2 OR CRIDS A2440/A2441. (B SSW LOOP FLOW (FIT-2218B) IS OBTAINED LOCALLY AT PANAMETRICS MONITOR. FLOW VALUE IS THE AVERAGE VOLUMETRIC FLOW RATE WHICH IS DISPLAYED AS "AVG VOLUMETRIC GAL/MIN" ON THE MONITOR DISPLAY.

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant is at 100% power.
2. B Circ Water Pump is tagged for motor replacement.
3. A, C, and D Circ Water Pumps are in service.
4. 3 Service Water Pumps are in service.
5. Cooling Tower Blowdown Weir Flow Rate Monitor 0SP-RI4861 is reading blank and is INOPERABLE. TSAS # 2012-001 entered.
6. RM-11 point 9AX327 historical data is NOT available.
7. SSW Loop Flow CRIDS Point values as follows:
 - A2440 SERVICE WATER FLOW RATE DIV A = 13,560 gpm
 - A2441 SERVICE WATER FLOW RATE DIV B = 21,345 gpm

INITIATING CUE:

You are the Control Room Supervisor.

The Reactor Operator has asked you to review a completed HC.OP-DL.ZZ-0026 Attachment 1a ITEM 47 Day Shift reading and Att. 3y for the inoperable RMS Cooling Tower Blowdown Weir Flow Rate Monitor.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Administrative Duties/Reporting Requirements

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

TASK NUMBER: 2000500302/2000020505

JPM NUMBER: 2013 NRC SRO A-5

REV #: 02

SAP BET: NOH05JPCL05E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☐

STA ☒

SRO ☒

TASK STANDARD: Event correctly classified within the time critical limits.

DEVELOPED BY: _____ **DATE:** 6/10/13
NRC
Instructor

REVIEWED BY: _____ **DATE:** _____
Operations Representative

APPROVED BY: _____ **DATE:** _____
Training Department

STATION: Hope Creek

JPM NUMBER: 2013 NRC SRO A-5

SYSTEM: Administrative Duties/Reporting Requirements

TASK NUMBER: 2000500302/2000020505

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

ALTERNATE PATH: ☐

K/A NUMBER: 2.4.38

IMPORTANCE FACTOR: 2.2 4.0

APPLICABILITY:

RO

SRO

EO ☐RO ☐STA ☒SRO ☒

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

REFERENCES: Hope Creek Event Classification Guide, TOC Rev 0

TOOLS, EQUIPMENT AND PROCEDURES:

ESTIMATED COMPLETION TIME: 13 MinutesTIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: 15/13 Minutes

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: _____ / _____ Minutes

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

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

1. The plant was at 100% power with the AD483 inverter isolated to it's backup AC supply.
2. Then, a Loss of Offsite Power occurred.
3. All Emergency Diesel Generators have failed to start and all vital buses are de-energized.
4. Due to a loss of rod position indication, the Control Room was unable to verify the reactor shutdown, and EOP-101A is being implemented.
5. The following conditions exist:
 - A, C, and E APRMs are de-energized
 - B, D, and F APRMS are reading 0% power.
 - RCIC is injecting.
 - RPV Level is -80", rising after reaching a minimum value of -90".
 - RPV pressure is 900# being controlled with SRVs.
6. Efforts to energize the Vital buses have been unsuccessful; maintenance has reported that they should be able to restore the 'B' EDG to service in one hour.
7. The current 33 ft. elevation wind direction is from 332° at 21 mph.
8. Plant Effluents: 1.10 E+01μCi/Sec Noble Gas & 1.30 E-01 μCi/Sec I-131

INITIATING CUE:

Based on this information, classify this event and make the initial notifications.

This is a Time Critical Task.

Time zero for this event is now.

EXAMINER NOTE: HAND APPROPRIATE ATTACHMENT TO THE APPLICANT WHEN ASKED (DO NOT HAVE APPLICANT WRITE IN REFERENCE BOOKS)

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME AFTER OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains Hope Creek Event Classification Guide.			
ECG Section 8.4	The primary tools for determining the emergency classification level are the EAL flowcharts or EAL wallcharts. The user of the EAL flowcharts or wallcharts may (but is not required to) consult the EAL Technical Basis in order to obtain additional information concerning the EALs under classification consideration. To use the EAL flowcharts or wallcharts, follow this sequence:				
ECG Section 8.4.1	ASSESS the event and/or plant conditions and DETERMINE which ECG-EAL Group/Section is most appropriate.	Operator assesses the initial conditions, and determines that S1, Loss Of AC Power, and S3, ATWS/Criticality are appropriate ECG sections.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

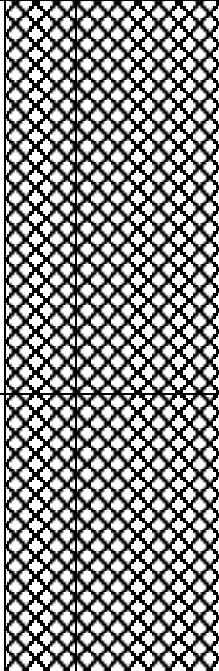
NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.2	REVIEW EAL categories and subcategories on the appropriate flowcharts/wallcharts.	Operator refers to Flowchart Diagrams and/or Wallcharts and identifies that the Initial Conditions for EALs SS1.1, SG1.1, and SA3.1 are related to the event that has occurred.			
ECG Section 8.4.3	If using the ECG – EAL flowcharts, for each applicable subcategory, REVIEW EALs in the subcategory beginning with the lowest emergency classification level to the highest classification level (left to right). ENSURE all pages of a particular subcategory being considered are reviewed.				
ECG Section 8.4.4	If using the ECG – EAL Wallcharts, for each applicable subcategory, REVIEW EALs in the subcategory beginning with the highest emergency classification level to the lowest classification level (left to right).				

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.5	If in OPGON 1, 2 or 3, also REVIEW the Fission Product Barrier (FPB) Table:	N/A			
ECG Section 8.4.5.a	EXAMINE the FPB categories in the left column of the table.	Operator refers to FPB Table and identifies that the Initial Conditions do not meet any FPB Table thresholds.			
ECG Section 8.4.5.b	SELECT the category that most likely coincides with event conditions.	N/A			
ECG Section 8.4.5.c	REVIEW all thresholds in this category for each fission product barrier.	N/A			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)																			
ECG Section 8.4.5.d	<p>For each threshold that is exceeded, IDENTIFY its point value and DETERMINE the classification level in accordance with the instructions on the Fission Product Barrier Table (or in EAL Technical Bases, Attachment 1).</p> <table><tr><td>If sum is:</td><td>Classify as:</td><td>Emergency Action Levels (EALs)</td><td>Refer to ECG ATT#</td></tr><tr><td>2,3</td><td>UNUSUAL EVENT (NOTE 1)</td><td>ANY loss or ANY potential loss of Containment</td><td>1</td></tr><tr><td>4,5</td><td>ALERT</td><td>ANY loss or ANY potential loss of either Fuel Clad or RCS</td><td>2</td></tr><tr><td>6-11</td><td>SEVERE EMERGENCY</td><td>Loss or potential loss of ANY two barriers</td><td>3</td></tr><tr><td>12,13</td><td>GENERAL EMERGENCY</td><td>Loss of ANY two barriers AND Loss or potential loss of the third barrier</td><td>4</td></tr></table>	If sum is:	Classify as:	Emergency Action Levels (EALs)	Refer to ECG ATT#	2,3	UNUSUAL EVENT (NOTE 1)	ANY loss or ANY potential loss of Containment	1	4,5	ALERT	ANY loss or ANY potential loss of either Fuel Clad or RCS	2	6-11	SEVERE EMERGENCY	Loss or potential loss of ANY two barriers	3	12,13	GENERAL EMERGENCY	Loss of ANY two barriers AND Loss or potential loss of the third barrier	4	N/A		
If sum is:	Classify as:	Emergency Action Levels (EALs)	Refer to ECG ATT#																					
2,3	UNUSUAL EVENT (NOTE 1)	ANY loss or ANY potential loss of Containment	1																					
4,5	ALERT	ANY loss or ANY potential loss of either Fuel Clad or RCS	2																					
6-11	SEVERE EMERGENCY	Loss or potential loss of ANY two barriers	3																					
12,13	GENERAL EMERGENCY	Loss of ANY two barriers AND Loss or potential loss of the third barrier	4																					

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
FPB Table NOTE 1	The Primary Containment Barrier should not be declared lost or potentially lost based on exceeding Technical Specification action statement criteria, unless there is an event in progress requiring mitigation by the Primary Containment barrier. When no event is in progress (Loss or Potential Loss of either Fuel Clad and/or RCS barrier) the Primary Containment Barrier status is addressed by Technical Specifications.	Operator reads NOTE.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.6	<p>REVIEW the associated EALs as compared to the event and SELECT the <u>highest</u> appropriate emergency. If identification of an EAL is questionable refer to paragraph 8.1 above.</p> <p>If there is any doubt with regard to assessment of a particular EAL, the <u>ECG EAL Technical Bases Document</u> should be reviewed. Words contained in an EAL that appear in uppercase and bold print (e.g., VALID) are defined at the end of the bases for the particular EAL or in ECG – EAL Technical Basis Document, Attachment 3, EP-HC-111-232, EAL Definitions. Words or numbers contained in an EAL that are in bold print but not uppercase are EAL threshold values (e.g., ≥ 15 minutes).</p>	<p>Operator reviews the EALs in section S, and determines that EAL # SS1.1 is the highest emergency action level met or exceeded (SITE AREA EMERGENCY).</p> <p>Time Declared _____.</p>			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Section 8.4.7	If an EAL has been exceeded, equal level EALs or lower level EALs are not required to be separately reported as long as the applicable information is communicated to the NRC using ECG Attachment 5, EP-HC-111-F5, NRC Data Sheet & Completion Reference.	Examiner Note: Filling out the NRC Data Sheet is beyond the scope of this JPM.			
ECG Section 8.4.8	When the Shift Manager (SM) is the Emergency Coordinator, the Shift Technical Advisor (STA) is responsible to perform an independent verification of the EAL classification. The STA verification does not alleviate the requirement of the SM to make a timely classification. Should the SM fill the STA role, independent verification of the EAL classification will be delegated to another on-shift SRO, the Independent Assessor.	<u>IF</u> time permits, <u>THEN</u> Operator requests STA/IA verification of classification. Examiner Note: Due to time spent assessing and/or nature of JPM administration, Operator may not request a verification.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

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	<u>IF</u> the Operator requests the STA/IA to independently verify the EAL Classification, <u>THEN</u> INFORM the Operator the STA/IA is not available.	N/A			
ECG Section 8.4.9	IDENTIFY and IMPLEMENT the referenced ECG form based on the Emergency Classification Level. <ul style="list-style-type: none"> • Unusual Event Implement EP-HC-111-F1 • Alert Implement EP-HC-111-F2 • Site Area Emergency Implement EP-HC-111-F3 • General Emergency Implement EP-HC-111-F4 • Unusual Event (Common Site) Implement EP-HC-111-F24 	Operator identifies and implements EP-HC-111-F3 Attachment 3 Site Area Emergency.			
ECG Att. 3	<u>I. EMERGENCY COORDINATOR (EC) LOG SHEET</u>				
ECG Att. 3. A	CLASSIFICATION				
ECG Att. 3 1.	CALL communicators to the Control Room.	Operator calls communicators to the Control Room.			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	After 2 minutes, report as the communicators and give your name as CM1 and CM2.	N/A			
ECG Att. 3 2.	If a security event is in progress, THEN, IMPLEMENT the prompt actions of NC.EP-EP.ZZ-0102, EC Response, Attachment 10, prior to classification.	Operator determines this step is not applicable.			
ECG Att. 3 3.	As time allows, OBTAIN Classification Independent Verification (ensure verifier understands the EAL assessment clock is running); <ul style="list-style-type: none"> STA or designee performs Independent Verification for SM SM or designee performs Independent Verification for EDO EDO or designee performs Independent Verification for ERM 	<u>IF</u> time permits, <u>THEN</u> Operator requests STA/IA verification of classification. Examiner Note: Due to time spent assessing and/or nature of JPM administration, Operator may not request a verification.			

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JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 3 B.	NOTIFICATIONS				
ECG Att. 3 B.1.	ACTIVATE "ERO Emergency Callout" per posted instructions titled: "Emergency Callout Activation" (EP96-003)	Operator activates the ERO per posted instructions titled Training Use Emergency Callout Activation. Examiner Note: <u>ENSURE</u> the operator is using the <u>Simulator Training</u> Activation instructions.			
ECG Att. 3 B.2.	COMPLETE the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment).	Operator Completes the ICMF. Examiners Note: See the attached ICMF for an example of what the form should look like when filled out properly. Note that the exact words do not have to be in the "DESCRIPTION OF EVENT", but the description must convey the sense of the Initiating Condition for EAL SS1.1. The operator may place the Examiner's name as the Communicator or tell the Examiner to place his/her name as the Communicator.	*		

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 3 B.3.	IF time allows, OBTAIN an accuracy peer check of the completed ICMF.	Operator requests a Peer Check of the completed ICMF.			
CUE	<u>IF</u> the Operator requests a Peer Check, <u>THEN INFORM</u> the Operator a Peer Check has been performed as requested.	N/A			
ECG Att. 3 B.4.	PROVIDE the ICMF to the Primary Communicator (CM1) and DIRECT the Communicator to implement ECG Attachment 6 .	Operator provides the ICMF to CM1 and directs implementation of Att.6.	*		
CUE	LOG the time the ICMF is provided to CM1. LOG TIME: _____ Role-play as CM1 and repeat back the direction as given.	Examiners Note: The difference between the "DECLARED AT" TIME and this LOG TIME is the second critical time (13 min.)			

JPM: 2013 NRC SRO A-5

OPERATOR TRAINING PROGRAM

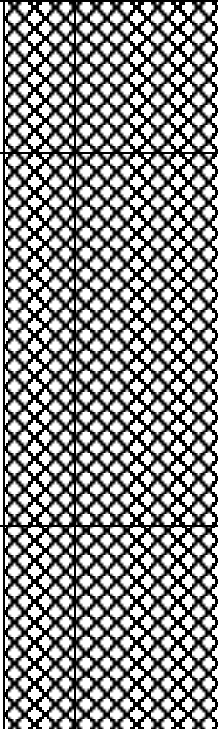
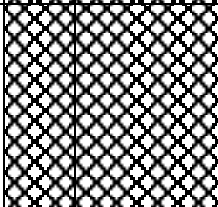
NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
ECG Att. 3 B.6.	DIRECT the Secondary Communicator (CM2) to implement ECG Attachment 8 for a SITE AREA EMERGENCY.	Operator directs CM2 to implement Att. 8 for a SITE AREA EMERGENCY.	*		
CUE	ROLE-PLAY as CM2 and REPEAT BACK the direction as given.	N/A			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP time. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete" . STOP TIME:	N/A			
N/A	TASK STANDARD:	Operator declares a Site Area Emergency IAW ECG SS1.1 , and makes notifications within identified Critical Times.			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC SRO A-5

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

TASK NUMBER: 2000500302/2000020505

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

ECG
ATT 3
Pg. 2 of 2

INITIAL CONTACT MESSAGE FORM

- I. THIS IS Not Required, COMMUNICATOR IN THE ☒ CONTROL ROOM
(NAME) ☐ TSC
☐ EOF
- AT THE **HOPE CREEK** NUCLEAR GENERATING STATION.

- II. ☒ THIS IS NOTIFICATION OF A **SITE AREA EMERGENCY** WHICH WAS
DECLARED AT Today's Time ON Today's Date,
(TIME - 24 HOUR CLOCK) (DATE)
EAL #(s) SS1.1,
DESCRIPTION OF EVENT: Loss of Power to All Vital Buses

III.

NOTE:

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

- ☒ 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**): 332 WIND SPEED: 21
(From MET Computer /SPDS) (DEGREES) (MPH)

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

Initials

EC Initials

(Approval to Transmit ICMF)

JOB PERFORMANCE MEASURE

REVISION HISTORY**JPM NUMBER:** 2013 NRC SRO A-5

Rev #	Date	Description	Validation Required?
1	6/10/13	Revise Initiating conditions for use on NRC exam	Y
2	7/1/13	Removed 'and has two time critical tasks' from cue sheet and added clarifying examiner note.	N

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC SRO A-5**REV#:** 02**TASK:** Utilize The ECG To Determine The Emergency Classification And/Or Reportability Of An Event And/Or Plant Condition**Prior to each JPM use verify the revision of the procedure(s) referenced by the JPM**

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

VALIDATED BY:Qualification Level Required: SRO

<u>Jim Sotherton</u>	<u>SRO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date
<u>Laura Myers</u>	<u>SRO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The plant was at 100% power with the AD483 inverter isolated to it's backup AC supply.
2. Then, a Loss of Offsite Power occurred.
3. All Emergency Diesel Generators have failed to start and all vital buses are de-energized.
4. Due to a loss of rod position indication, the Control Room was unable to verify the reactor shutdown, and EOP-101A is being implemented.
5. The following conditions exist:
 - A, C, and E APRMs are de-energized
 - B, D, and F APRMS are reading 0% power.
 - RCIC is injecting.
 - RPV Level is -80", rising after reaching a minimum value of -90"
 - RPV pressure is 900# being controlled with SRVs.
6. Efforts to energize the Vital buses have been unsuccessful; maintenance has reported that they should be able to restore the 'B' EDG to service in one hour.
7. The current 33 ft. elevation wind direction is from 332° at 21 mph.
8. Plant Effluents: 1.10 E+01 μ Ci/Sec Noble Gas & 1.30 E-01 μ Ci/Sec I-

INITIATING CUE:

Based on this information, classify this event and make the initial notifications.

This is a Time Critical Task.

Time zero for this event is now.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

TASK NUMBER: 2000490504

JPM NUMBER: 2013 NRC P-1

REV #: 02

SAP BET: NOH05JPBC07E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-10-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** 2013 NRC P-1**REV:** 02**SYSTEM:** Residual Heat Removal**TASK NUMBER:** 2000490504**TASK:** Align Fire Water System For Alternate RPV Injection**ALTERNATE PATH:** ☐**K/A NUMBER:** 295031 A1.08**IMPORTANCE FACTOR:** 3.8 3.9**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Plant/Simulate**REFERENCES:** HC.OP-EO.ZZ-0310 Rev. 7**TOOLS, EQUIPMENT AND PROCEDURES:** HC.OP-EO.ZZ-0310

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

ESTIMATED COMPLETION TIME: 20 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____**DATE:** _____

NAME: _____

DATE: _____

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

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

INITIATING CUE:

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

JPM: 2013 NRC P-1

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
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-EO.ZZ-0310			
	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 5.1.1.			

JPM: 2013 NRC P-1

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	<u>EQUIPMENT REQUIRED</u> Key # (G1) for EOP Locker on El. 102' diesel bldg. From either: <ul style="list-style-type: none"> ○ SM office <u>or</u> ○ From EOP Locker in OSC (Use Key #9 obtained from SM office or by breaking red key holder glass in OSC). <u>AND</u> Equipment located in EOP locker on El.102' diesel bldg. Contents: 1- 2.5" hose to flange adapter 1- 1.5" hose to flange adapter 150' of 2.5" Fire Hose 50' of 1.5" Fire Hose (for Fire Hose Station) 2- 1-1/16" Box Wrenches 2- Fire Hose Wrenches 1- Hydrant Wrench	Operator obtains the following required equipment: Key #(G1) for EOP Locker on El.102' diesel bldg. From either: <ul style="list-style-type: none"> ○ SM office <u>or</u> ○ From EOP Locker in OSC (use key #9 obtained from SM office or by breaking red key holder glass in OSC) Equipment located in EOP locker on El 102' diesel bldg. Examiner Note: After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location.			
5.1.1	ENSURE all prerequisites of Section 2.1 are satisfied.	Operator ensures that all prerequisites have been satisfied.			

JPM: 2013 NRC P-1

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

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

JPM: 2013 NRC P-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

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

JPM: 2013 NRC P-1

Rev: 2

OPERATOR TRAINING PROGRAM

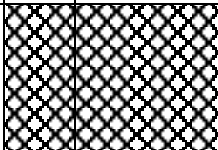
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

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

JPM: 2013 NRC P-1

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

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

JPM: 2013 NRC P-1

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Align Fire Water System For Alternate RPV Injection

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

JPM: 2013 NRC P-1

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
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			
N/A	TASK STANDARD:	Operator lines up for alternate injection using Fire Water IAW HC.OP-EO.ZZ-0310 using the local fire hose station isolation valve as the supply of Fire Water.			

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC P-1

TASK: Align Fire Water System For Alternate RPV Injection

TASK NUMBER: 2000490504

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

Simulator setup instructions: (if required):

JPM NUMBER: 2013 NRC P-1

REV#: 2

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	

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

<i>Initial</i>	Description

EVENT TRIGGERS:

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

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

Rev #	Date	Description	Validation Required?
2	7/1/2013	Changed Rev number for consistency with rest of exam. No changes between Rev 1 and Rev 2.	N

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC P-1**REV#:** 2**TASK:** Align Fire Water System For Alternate RPV Injection

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

VALIDATED BY:Qualification Level Required: RO

<u>Steve Loper</u>	<u>RO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date
<u>Mike Oeullette</u>	<u>RO</u>	<u>On File</u>	<u>6-26-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Emergency Diesel Generator

TASK: Manual Emergency Start of EDG from the Remote Panel

TASK NUMBER: 2640170404

JPM NUMBER: 2013 NRC P-2

REV #: 3

SAP BET:

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-10-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE:**STATION:** Hope Creek**JPM NUMBER:** 2013 NRC P-2**REV:** 02**SYSTEM:** Emergency Diesel Generator**TASK NUMBER:** 2640170404**TASK:** Manual Emergency Start of EDG from the Remote Panel**ALTERNATE PATH:** ☐**K/A NUMBER:** 264000 A2.09**IMPORTANCE FACTOR:** 3.7 4.1**APPLICABILITY:****RO****SRO**EO ☐RO ☒STA ☐SRO ☒**EVALUATION SETTING/METHOD:** Plant/Simulate**REFERENCES:** HC.OP-AB.ZZ-0135 Rev. 38**TOOLS, EQUIPMENT AND PROCEDURES:**

HC.OP-AB.ZZ-0135 Rev. 38

Key #51 – KIRK – (work control)

ESTIMATED COMPLETION TIME: 20 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____**DATE:** _____

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE:

NAME: _____

DATE: _____

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

1. An earthquake and Loss of Coolant Accident have occurred.
2. The Aux Bldg Operator has been called to the Control Room to perform Communicator duties.
3. The Reactor is shutdown. All rods are full in.
4. Emergency Diesel Generator AG400 has failed to automatically start and will not start from the Control Room.
5. HC.OP-AB.ZZ-0135 is being implemented.

INITIATING CUE:

You are an extra Operator.

Start & Load to bus the 'A' Emergency Diesel Generator AG400 from the Remote Panel 1A-C423 (El. 130') IAW AB.ZZ-0135 Att.6.

Successful Completion Criteria:

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

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		START TIME: _____ Operator obtains procedure HC.OP-AB-ZZ-0135. ATT.6	Operator obtains the correct procedure.		
		<u>EQUIPMENT REQUIRED</u> Key #51 – KIRK – Diesel Eng Takeover/Local Cont. (Work Control)	Operator obtains Key #51 – KIRK – Diesel Eng Takeover/Local Cont. (Work Control) After operator has demonstrated ability to obtain required equipment, ensure that the equipment is returned to its appropriate storage location.		
		Operator reviews Note and Caution	Note and caution reviewed		
	1.0	OBSERVE that READY FOR AUTO START is ON (Panel 1A(B,C,D)-C423 El. 130').	Operator observes the READY FOR AUTO START is on. Examiner Cue: The light identified is illuminated. The operator then initials the appropriate procedure step.		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		<ul style="list-style-type: none"> DIESEL RUNNING – NOT LOADED is ON. 	DIESEL RUNNING - NOT LOADED is on. Examiner Cue: The light identified is illuminated. The operator then annotates the appropriate procedure step.		

JPM: 2013 NRC P-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 03

JOB PERFORMANCE MEASURE

DATE: _____

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

* #	STEP NO.	STEP (*Denotes a Critical Step) (#Denotes a Sequential Step)	STANDARD	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
* #	6.0	<ul style="list-style-type: none"> ENSURE that the respective bus infeed breakers are OPEN, THEN PLACE Generator Breaker Control Switch, at Panel(s) 1A(B,C,D)-C422 to CLOSE. _____ EDG INFEED BREAKERS A 52-40101 / 52-40108 B 52-40201 / 52-40208 C 52-40301 / 52-40308 D 52-40401 / 52-40408 STOP TIME: _____	ENSURE that bus infeed breakers A 52-40101 / 52-40108 are OPEN, THEN PLACES Generator Breaker Control Switch, at Panel(s) 1AC422 to CLOSE. <u>Examiner Cue for observing indications for infeed breakers open</u> "The green light is on, the red light is extinguished." <u>Examiner Cue for observing Generator Breaker Control Switch to CLOSE:</u> "The control switch you identified has been re-positioned." "The breaker Red light is lit and the Green light is extinguished"		
		TASK STANDARD:	Operator starts and loads to bus the 'A' Emergency Diesel Generator AG400 from the Remote Panel 1A-C423 (El. 130') in accordance with HC.OP-AB.ZZ-0135 Att.6.		

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

JOB PERFORMANCE MEASURE

OPERATOR TRAINING PROGRAM
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

SYSTEM: Emergency Diesel Generator

TASK: 2013 NRC P-2 Manual Emergency Start of A Diesel Generator From The Remote Panel

TASK NUMBER: 2640170404

QUESTION: _____

RESPONSE: _____

RESULT:

☐

SAT

☐

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

☐

SAT

☐

UNSAT

JOB PERFORMANCE MEASURE

Simulator Setup Instructions (if required): N/A

JPM NUMBER: 2013 NRC P-2

REV#: 2

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

<i>Initial</i>	

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

<i>Initial</i>	Description

EVENT TRIGGERS:

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

JOB PERFORMANCE MEASURE

REVISION HISTORY**JPM NUMBER:** 2013 NRC P-2

Rev #	Date	Description	Validation Required?
1	6-10-13	Formatting, Initiating Cue Changes – use on NRC exam	Y
2	7-1-13	Clarified examiner cue in Step 6.	N
3	7-6-13	Editorial verbage in cue	N

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC P-2**REV#:** 3**TASK:** Manual Emergency Start of EDG from Remote Panel

- _____ 1. Task description and number, JPM description and number are identified.
 _____ 2. Knowledge and Abilities (K/A) is identified, and is ≥ 3.0 (LOR) or ≥ 2.5 (ILT) or justification is provided.
- _____ 3. License level identified. (SRO,RO,STA,NLO)
- _____ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- _____ 5. Initial setup conditions are identified.
- _____ 6. Initiating and terminating cues are properly identified.
- _____ 7. Task standards for successful completion are identified.
 _____ 8. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). Sequence
 _____ 9. Critical Steps are identified with a pound sign (#).
- _____ 10. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.
 _____ 11. Procedure(s) referenced by this JPM match the most current revision of that procedure.
- _____ 12. Cues both verbal and visual are complete and correct.
 _____ 13. Performance standards are specific in exact control and indication nomenclature (switch position, meter reading) even if these criteria are not specified in the procedural step.
- _____ 14. Statements describing important actions or observations that should be made by the operator are included (if required.)
- _____ 15. Validation time is included.
- _____ 16. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

VALIDATED BY:Qualification Level Required: RO

<u>Steve Loper</u>	<u>RO</u>	<u>On File</u>	<u>6-10-13</u>
Name	Qual	Signature	Date
<u>Mike Oeullette</u>	<u>RO</u>	<u>On File</u>	<u>6-26-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE**INITIAL CONDITIONS:**

1. An earthquake and Loss of Coolant Accident have occurred.
2. The Aux Bldg Operator has been called to the Control Room to perform Communicator duties.
3. The Reactor is shutdown. All rods are full in.
4. Emergency Diesel Generator AG400 has failed to automatically start and will not start from the Control Room.
5. HC.OP-AB.ZZ-0135 is being implemented.

INITIATING CUE:

You are an extra Operator.

Start & Load to bus the 'A' Emergency Diesel Generator AG400 from the Remote Panel 1A-C423 (EI. 130') IAW AB.ZZ-0135 Att.6.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

TASK NUMBER: 2000430504

JPM NUMBER: 2013 NRC P-3

REV #: 2

SAP BET: NOH05JPBF04E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-10-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek

JPM NUMBER: 2013 NRC P-3

REV: 2

SYSTEM: Control Rod Drive Hydraulics

TASK NUMBER: 2000430504

TASK: Manually Vent SCRAM Air Header

ALTERNATE PATH: ☐

K/A NUMBER: 295037 A1.05

IMPORTANCE FACTOR: 3.9 4.0

APPLICABILITY:

RO

SRO

EO ☒RO ☒STA ☐SRO ☒

EVALUATION SETTING/METHOD: Plant/Simulate

REFERENCES: HC.OP-EO.ZZ-0306 Rev. 5

TOOLS, EQUIPMENT AND PROCEDURES: HC.OP-EO.ZZ-0306, Pipe wrench

ESTIMATED COMPLETION TIME: 10 Minutes

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

JPM PERFORMED BY: _____

GRADE: ☐ SAT ☐ UNSAT

ACTUAL COMPLETION TIME: _____ Minutes

ACTUAL TIME CRITICAL COMPLETION TIME: N/A Minutes

REASON, IF JPM UNSATISFACTORY:

EVALUATOR'S SIGNATURE: _____

DATE: _____

NAME: _____

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

TASK NUMBER: 2000430504

INITIAL CONDITIONS:

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

INITIATING CUE:

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

JPM: 2013 NRC P-3

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	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-EO.ZZ-0306.			
	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			
CUE	IF excessive time is taken reviewing prerequisites, THEN INFORM operator that all are satisfied.	N/A			

JPM: 2013 NRC P-3

Rev: 2

OPERATOR TRAINING PROGRAM

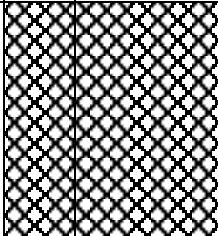
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

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

JPM: 2013 NRC P-3

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

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

JPM: 2013 NRC P-3

Rev: 2

OPERATOR TRAINING PROGRAM

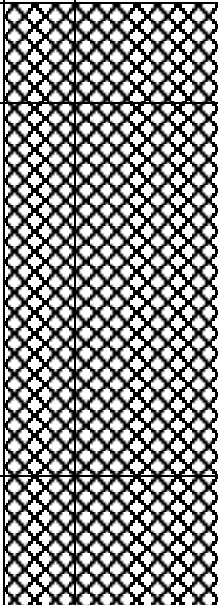
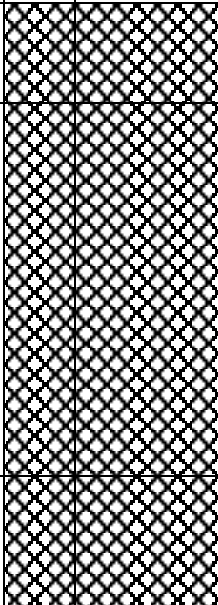
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Control Rod Drive Hydraulics

TASK: Manually Vent SCRAM Air Header

STEP NO.	(• Denotes a Critical Element of a Critical Step) ELEMENT	(*Denotes a Critical Step) STANDARD	* •	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	The valve you indicated is in the position stated. Air can be heard flowing from the drain opening.	N/A			
5.1.3	OBSERVE PI-R013 SCRAM AIR HEADER PRESSURE (10-C-264 panel at the CRD flow control panel) to verify the air header fully depressurizes.	Operator observes pressure reading on PI-R013 on panel 10C264.			
CUE	The gauge you have indicated is reading zero.				
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state " This JPM is complete ". STOP TIME:	N/A			
N/A	TASK STANDARD:	Operator manually vents the Scram Air Header in accordance with HC.OP-EO.ZZ-0306.			

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC P-3

TASK: Manually Vent SCRAM Air Header

TASK NUMBER: 2000430504

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

JPM NUMBER: 2013 NRC P-3

REV#: 2

I. INITIAL CONDITIONS:

I.C.

<i>Initial</i>	

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

<i>Initial</i>	Description

EVENT TRIGGERS:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

JPM NUMBER: 2013 NRC P-3

REV#: 2

MALFUNCTION SUMMARY:

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

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
2	7-1-13	Minor grammatical change to cue sheets	N

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC P-3**REV#:** 2**TASK:** Manually Vent SCRAM Air Header

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

VALIDATED BY:Qualification Level Required: RO

Steve Loper	RO	On File	6-10-13
Name	Qual	Signature	Date
Mike Oeullette	RO	On File	6-26-13
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

TASK NUMBER: 2020080101

JPM NUMBER: 2013 NRC S-1

REV #: 2

SAP BET: NOH05JPBB03E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 7/1/13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** 2013 NRC S-1**REV:** 2**SYSTEM:** Reactor Recirculation**TASK NUMBER:** 2020080101**TASK:** Perform Scoop Tube Positioner Lock-up Operation**ALTERNATE PATH:** ☒**K/A NUMBER:** 202002 A2.05**IMPORTANCE FACTOR:** 3.1 3.1**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.RPV-0001, Rev 12

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

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

NAME: _____

DATE: _____

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

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

INITIATING CUE:

Reset the Scoop Tube lockup on the 'A' Reactor Recirc pump IAW HC.OP-SO.BB-0002.

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> OPERATOR REPEATS BACK INITIATING CUE: START TIME:				
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations.			
	Examiner Cue: If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.				
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be HC.OP-SO.BB-0002. Step 5.9.1			
5.9.1	ENSURE all prerequisites have been satisfied IAW Section 2.9.	Operator ensures prerequisites are satisfied.			

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

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

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Reactor Recirculation**TASK: **Perform Scoop Tube Positioner Lock-up Operation**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
1	PRESS the SCOOP TUBE TRIP Pushbutton for the affected Recirc Pump Controller.	Operator presses the Pump A SCOOP TUBE TRIP pushbutton. Examiner Note: The Scoop Tube may have already tripped due to control signal failure high. If the Scoop Tube is already tripped, it is not critical to push the SCOOP TUBE TRIP pushbutton.	* #		
2	REDUCE the <u>NON</u> -affected Reactor Recirc Pump Speed to Reduce Power to Pre-Transient value.	Operator presses the SIC-R621B LOOP B SPD DECR pb until reactor power is $\leq 80\%$.	* #		
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>(It is not necessary to observe the operator take actions for the resulting Recirc Pump vibration alarms, take local control of the scoop tube, or evaluate Tech Specs.)</p> <p>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>				

JPM: 2013 NRC S-1

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Reactor Recirculation

TASK: Perform Scoop Tube Positioner Lock-up Operation

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
N/A	TASK STANDARD:	Operator responds to a Single Recirculation Pump Runaway in accordance with HC.OP-AB.RPV-0001.			

JOB PERFORMANCE MEASURE
 OPERATOR TRAINING PROGRAM
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC S-1

TASK: Perform Scoop Tube Positioner Lock-up Operation

TASK NUMBER: 2020080101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

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

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

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

EVENT TRIGGERS:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SUMMARY:

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

REMOTE/FIELD FUNCTION SUMMARY:

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

I/O OVERRIDE SUMMARY:

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

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
2	7/1/2013	Added procedure number to cue sheet. Moved applicant copy of cue sheet to end of JPM. Made minor changes to examiner script.	N

JOB PERFORMANCE MEASURE**INITIAL CONDITIONS:**

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

INITIATING CUE:

Reset the Scoop Tube lockup on the 'A' Reactor Recirc pump IAW HC.OP-SO.BB-0002.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

TASK NUMBER: 2050120101

JPM NUMBER: 2013 NRC S-4

REV #: 2

SAP BET: NOH05JPBC15E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-25-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** 2013 NRC S-4**REV:** 2**SYSTEM:** Residual Heat Removal**TASK NUMBER:** 2050120101**TASK:** Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop**ALTERNATE PATH:** ☒**K/A NUMBER:** 205000 A4.03**IMPORTANCE FACTOR:** 3.6 3.5**APPLICABILITY:****RO****SRO**EO ☐RO ☒STA ☐SRO ☒**EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-SO.BC-0002 Rev. 29**TOOLS, EQUIPMENT AND PROCEDURES:** None.**ESTIMATED COMPLETION TIME:** _____ Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** 15 Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

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

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

INITIATING CUE:

You are an extra NCO.

Transfer RHR Shutdown Cooling to the 'A' RHR loop.

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

The required shutdown cooling flow for the 'A' RHR pump is between 9,500 -10,000 gpm.

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

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

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Residual Heat Removal**TASK: **Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop**

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

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Residual Heat Removal**TASK: **Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop**

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

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.3.5. D	CLOSE BC-HV-F006B(A) RHR PMP B(A) SUCT FROM RECIRC AND INITIAL Attachment 1.	Operator presses the BC-HV-F006B RHR PMP B(A) SUCT FROM RECIRC CLSD pb.			
		Operator observes the BC-HV-F006B RHR PMP B(A) SUCT FROM RECIRC CLSD light illuminated and OPEN is extinguished.			
5.3.6.	ENSURE SACS is in service to the RHR Heat Exchanger for the RHR loop to be placed in service IAW HC.OP-SO.EG-0001(Q).	Operator observes the HV-2512A OPEN light illuminated and CLSD light extinguished.			
		Operator observes RHR A HX SACS Flow approximately 10,000 gpm.			

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

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

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Residual Heat Removal

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

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

JPM: 2013 NRC S-4

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: **Residual Heat Removal**TASK: **Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop**

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

JOB PERFORMANCE MEASURE
 OPERATOR TRAINING PROGRAM
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC S-4

TASK: Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

TASK NUMBER: 2050120101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

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

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

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

REMOTE SCHEDULE:

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

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
2	7-1-13	Grammatical changes to tear cue sheet. Updated Rev number of reference procedure. Added validation time. Updated RHR flow in step 5.3.6 to update sim conditions.	Y

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC S-4**REV#:** 2**TASK:** Transfer Shutdown Cooling to the Standby Shutdown Cooling Loop

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

VALIDATED BY:Qualification Level Required: RO

<u>Ryan Kelly</u>	<u>RO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date
<u>Steve Loper</u>	<u>RO</u>	<u>On File</u>	<u>6-26-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

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

INITIATING CUE:

You are an extra NCO.

Transfer RHR Shutdown Cooling to the 'A' RHR loop.

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

The required shutdown cooling flow for the 'A' RHR pump is between 9,500 -10,000 gpm.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Main Generator

TASK: Synchronize And Load The Main Generator

TASK NUMBER: 3450030101

JPM NUMBER: 2013 NRC S-6

REV #: 02

SAP BET: NOH05JPM02E

ALTERNATE PATH: ☒

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-22-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek

JPM NUMBER: 2013 NRC S-6

SYSTEM: Main Generator

TASK NUMBER: 3450030101

TASK: Synchronize And Load The Main Generator

ALTERNATE PATH: ☒

K/A NUMBER: 262001 A4.04

IMPORTANCE FACTOR: 3.6 3.7

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

RO

SRO

EVALUATION SETTING/METHOD: Simulator/Perform

REFERENCES: HC.OP-SO.MA-0001 Rev 57
HC.OP-AB.BOP-0002 Rev 13

TOOLS, EQUIPMENT AND PROCEDURES: None

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 UNSATISFACTORY:

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

NAME: _____

DATE: _____

SYSTEM: Main Generator**TASK:** Synchronize And Load The Main Generator**TASK NUMBER:** 3450030101**INITIAL CONDITIONS:**

1. A plant startup from a forced outage is in progress.
2. The Main Generator and Transformer have been placed in standby.
3. Main Turbine is operating at 1800 rpm.
4. Unit Protection Lockout Relays (5)86UR and (5)86UB have been reset.
5. Load Dispatcher/System Operator has been notified of impending loading.
6. The Fire Water System is in-service.
7. The Switchyard has been aligned IAW Section 5.4. of HC.OP-SO.MA-0001.
8. 1EGTIC-2625 is in AUTO with setpoint at 95°F.
9. HC.OP-SO.MA-0001 is complete up to and including step 5.2.15
10. TBEO and YDEO have been briefed and are standing by to support synchronization.

INITIATING CUE:

You are an extra NCO.

Synchronize and load the Main Generator IAW HC.OP-SO.MA-0001.

Perform the initial synchronization using the 500KV BS6-5 breaker.

Maintain Load Set at 30% to support four hour soak for required testing.

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

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-SO.MA-0001.			
	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 5.2.16			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	<p>Rapidly changing main generator armature currents may cause the following DEHC diagnostic alarms shortly after synchronizing the main generator to the grid:</p> <p>S1_P240 <R> SLOT 17 VGEN DIAGNOSTIC ALARM S1\XVGENR0S17_A DIAG</p> <p>S1_P241 <R> SLOT 18 VGEN DIAGNOSTIC ALARM S1\XVGENR0S18_A DIAG</p> <p>S1_P242 <S> SLOT 17 VGEN DIAGNOSTIC ALARM S1\XVGENS0S17_A DIAG</p> <p>S1_P243 <S> SLOT 18 VGEN DIAGNOSTIC ALARM S1\XVGENS0S18_A DIAG</p> <p>S1_P244 <T> SLOT 17 VGEN DIAGNOSTIC ALARM S1\XVGENT0S17_A DIAG</p> <p>S1_P245 <T> SLOT 18 VGEN DIAGNOSTIC ALARM S1\XVGENT0S18_A DIAG</p>	Operator reads NOTE.			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
C A U T I O N	After synchronization and closing a Generator Breaker, Load Setpoint should be increased to 30% IMMEDIATELY. If the following steps are not completed or expected indications received, the CRS should consider tripping the Main Turbine and ensuring the Generator is isolated from the 500 Kv System and the Turbine is coasting down.	Operator reads CAUTION.			
5.2.16	PERFORM the following to synchronize the Main Generator using Manual Load Control:				
	SELECT <input type="text" value="Control"/> , <input type="text" value="Speed-Load"/>	On DEHC HMI, operator selects <input type="text" value="Control"/> , <input type="text" value="Speed-Load"/> .	* #		

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
NOTE	Ramp Rate will indicate 20 %/min until breaker is closed. Upon breaker closure, ramp rate will be 60%/min for 2 seconds (2 % load) Ramp Rate will then go to setpoint entered.	Operator reads NOTE.			
5.2.16. B	SELECT Load Set, <u>Ramp Rate</u> AND ENTER 10 %/min	On DEHC HMI, operator selects Load Set, <u>Ramp Rate</u> and enters 10 %/min.	* #		
NOTE	1-XIL-6741D SYNCH WINDOW green light turns on when SYNCHROSCOPE point passes thru the 12 o'clock position AND line/bus voltage is within the normal operating range AND synchroscope rotation is < 3 RPM.	Operator reads NOTE.			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.16. C	SELECT Load Set, Manual Adj.: <u>Raise</u> OR <u>Lower</u> until pointer on SYNCHROSCOPE is moving slowly in the FAST direction. (10C651D)	On DEHC HMI, operator selects Load Set, Manual Adj. and presses: <u>Raise</u> OR <u>Lower</u> until the pointer on the UNIT SYNCHRONIZING SYNCHROSCOPE is moving slowly in the FAST direction.	* #		
5.2.16. D	IF the SYNCH WINDOW green light does NOT turn on as described in the note above, THEN REQUEST permission from SM/CRS to bypass the synch check relay AND GO TO Step 5.2.17.	Operator observes SYNCH WINDOW green light turns on.			
5.2.16. E	PERFORM the following (with Steps 5.2.16.E.1 thru 5.2.16.E.3 being performed in rapid succession):	N/A			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.16. E.1	WHEN the SYNCHROSCOPE Pointer is at 2 minutes before 12 O'clock position, AND the SYNCH WINDOW green light is illuminated, THEN CLOSE BS 6-5 (BS 2-6) Breaker.	Operator presses the BS 6-5 CLOSE pushbutton WHEN the SYNCHROSCOPE Pointer is at 2 minutes before 12 O'clock position, AND the SYNCH WINDOW green light is illuminated.	* #		
		Operator observes the 500 KV BUS BS 6-5 red BS6-5 CLOSE light illuminates and green TRIP light extinguishes.			
5.2.16. E.2	Immediately SELECT Load Set, : <u>Setpoint</u> AND ENTER 30 %.	On the DEHC HMI, operator selects Load Set, : <u>Setpoint</u> and enters 30 % .	* #		
	WHEN LOAD SET is raised TRIGGER ET-1.	N/A			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.16. E.3	IMMEDIATELY OBSERVE the following:				
	<ul style="list-style-type: none"> Bypass Valves close as Generator loads to 30 % Load Set 	On the DEHC HMI, operator observes bypass valves sequentially close.			
	<ul style="list-style-type: none"> Generator phase current increases 	Operator observes Main Generator phase current increases.			
	<ul style="list-style-type: none"> MW load and MVAR load increases 	Operator observes MW load and MVAR load increases.			
	<ul style="list-style-type: none"> Synchroscope pointer steady at 12 o'clock position 	Operator observes UNIT SYNCHRONIZING SYNCHROSCOPE pointer steady at 12 o'clock position.			
OHA D3-B5 TURBINE GENERATOR VIB HI					
	OHA D3-B5 TURBINE GENERATOR VIB HI received.	Operator informs CRS of Main Turbine high vibration condition.			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	Acknowledge any RO alarm reports.	N/A			
CUE	Take any required actions.	N/A			
1.	DETERMINE bearing(s) in alarm CRIDS points A2519 - A2530. IF unable to determine on CRIDS OR Main Control Room System 1 computer, THEN DISPATCH an operator to Panel 10C366 to monitor vibration IAW Attachment C5-1.	Operator reviews Alarm Response Procedure.			
		Operator determines bearing #10 vibration in alarm CRIDS points A2528.			
		Operator dispatches an operator to the #10 bearing.			
CUE	As Turbine Building Operator, REPORT "strong vibrations felt at the bearing."	N/A			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
2.	ENTER HC.OP-AB.BOP-0002(Q), Main Turbine.	Operator notifies CRS to enter HC.OP- AB.BOP-0002.			
CUE	As CRS acknowledge operator notification to enter BOP-0002.	N/A			
3.	IF a valid Journal Vibration exceeds the following, immediately PRESS Main Turbine TRIP PBs.	RO determines Bearing #10 vibration has reached 12 mils.	*		
		RO trips Main Turbine using the 2 MAIN TURBINE TRIP pbs on 10C651D within 45 seconds of reaching 12mils.	*		

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
HC.OP-AB.BOP-0002 Main Turbine					
	<p>RETAINMENT OVERRIDE CONDITION</p> <p>II. Bearing 1–10 Vibration \geq 11 mils @ 1800 RPM *</p> <p>ACTION</p> <p>II.A IF Reactor Power is \geq24% THEN PERFORM the following:</p> <p>a. REDUCE Recirc. Pump speed to MINIMUM.</p> <p>b. LOCK the Mode Switch in SHUTDOWN.</p> <p>II.B IMMEDIATELY TRIP the Main Turbine.</p>	<p><u>Examiners Note:</u></p> <p>Since reactor power is <24% the reactor SHOULD NOT be scrammed.</p> <p>RO's are directed to carry out RETAINMENT OVERRIDE ACTIONS.</p> <p>Operator trips Main Turbine using the 2 MAIN TURBINE TRIP pbs on 10C651D within 45 seconds of reaching 12mils.</p>			

2013 NRC S-6, Rev 2

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Main Generator**TASK: **Synchronize And Load The Main Generator**

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			
N/A	TASK STANDARD:	Operator responds to Main Turbine High Vibration in accordance with HC.OP-AB.BOP-0002.			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: MA002

TASK: Synchronize And Load The Main Generator

TASK NUMBER: 3450030101

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to an IC with the Main Turbine rolling at 1800 rpm, ready to synchronize the Main Generator.
	ENSURE on DEHC HMI, Turbine Load Set Ramp Rate is set at 5%.
	ENSURE on DEHC HMI that any screen <u>OTHER THAN</u> Control , Speed-Load is selected.

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

Initial	Description
	ENSURE the simulator is reset.

EVENT FILE:

Initial	ET #	
	1	Event code: Description:
	2	Event code: Description:
		Event code: Description:

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert malfunction TU1510 to 0 in 60 on event 1	Turbine bearing #10 vibration high
	None	None	Insert malfunction TU1509 to 5.50000 in 120 on event 1	Turbine bearing #9 vibration high
	None	None	Insert malfunction TU1511 to 5.00000 in 120 on event 1	Turbine bearing #11 vibration high

REMOTE SCHEDULE:

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

OVERRIDE SCHEDULE:

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

JOB PERFORMANCE MEASURE

REVISION HISTORY**JPM NUMBER:** MA002

Rev #	Date	Description	Validation Required?
00	5/27/13	New JPM.	Y
02	7/1/13	Added 'within 45 seconds of reaching 12mils' to critical task. Deleted redundant steps in examiner guide. Moved applicant cue sheet to last page.	Y

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** MA002**REV#:** 02**TASK:** Synchronize And Load The Main Generator

- _____ 1. Task description and number, JPM description and number are identified.
 _____ 2. Knowledge and Abilities (K/A) is identified, and is ≥ 3.0 (LOR) or ≥ 2.5 (ILT) or justification is provided.
- _____ 3. License level identified. (SRO,RO,STA,NLO)
- _____ 4. Performance location specified (in-plant, control room, simulator, or classroom).
- _____ 5. Initial setup conditions are identified.
- _____ 6. Initiating and terminating cues are properly identified.
- _____ 7. Task standards for successful completion are identified.
 _____ 8. Critical steps meet the criteria for critical steps and are identified with an asterisk (*). Sequence
 _____ 9. Critical Steps are identified with a pound sign (#).
- _____ 10. JPM has multiple Critical Tasks, or justification of the basis for a single critical task.
- _____ 11. Procedure(s) referenced by this JPM match the most current revision of that procedure.
- _____ 12. Cues both verbal and visual are complete and correct.
 _____ 13. Performance standards are specific in exact control and indication nomenclature (switch
 _____ 14. position, meter reading) even if these criteria are not specified in the procedural step.
 _____ 15. Statements describing important actions or observations that should be made by the operator
 _____ 16. are included (if required.)
- _____ 17. Validation time is included.
- _____ 18. JPM is identified as Time Critical Y/N and includes Critical Time (if required).

VALIDATED BY:Qualification Level Required: RO

<u>Ryan Kelly</u>	<u>RO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date
 <u>Dave Hardin</u>	 <u>RO</u>	 <u>On File</u>	 <u>6-24-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. A plant startup from a forced outage is in progress.
2. The Main Generator and Transformer have been placed in standby.
3. Main Turbine is operating at 1800 rpm.
4. Unit Protection Lockout Relays (5)86UR and (5)86UB have been reset.
5. Load Dispatcher/System Operator has been notified of impending loading.
6. The Fire Water System is in-service.
7. The Switchyard has been aligned IAW Section 5.4. of HC.OP-SO.MA-0001.
8. 1EGTIC-2625 is in AUTO with setpoint at 95°F.
9. HC.OP-SO.MA-0001 is complete up to and including step 5.2.15
10. TBEO and YDEO have been briefed and are standing by to support synchronization.

INITIATING CUE:

You are an extra NCO.

Synchronize and load the Main Generator IAW HC.OP-SO.MA-0001.

Perform the initial synchronization using the 500KV BS6-5 breaker.

Maintain Load Set at 30% to support four hour soak for required testing.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Core Spray

TASK: Manually Start the Core Spray System

TASK NUMBER: 2090030101

JPM NUMBER: 2013 NRC S-2

REV #: 2

SAP BET: NOH05JPBE05E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-25-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** 2013 NRC S-2**REV:** 2**SYSTEM:** Core Spray**TASK NUMBER:** 2090030101**TASK:** Manually Start the Core Spray System**ALTERNATE PATH:** ☒**K/A NUMBER:** 209001 A4.01**IMPORTANCE FACTOR:** 3.8 3.7**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.ZZ-0001 Attachment 5 Rev. 25**TOOLS, EQUIPMENT AND PROCEDURES:** None**ESTIMATED COMPLETION TIME:** 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: Core Spray**TASK:** Manually Start the Core Spray System**TASK NUMBER:** 2090030101**INITIAL CONDITIONS:**

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

INITIATING CUE:

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

JPM: 2013 NRC S-2

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

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

JPM: 2013 NRC S-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC S-2

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

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

JPM: 2013 NRC S-2

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC S-2

Rev: 2

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) 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	TASK STANDARD:	Operator restores reactor level to RPV Level 2 to Level 8 band with B Core Spray Loop (-38" to +54").			

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____
DATE: _____

JPM Number: 2013 NRC S-2

TASK: Manually Start the Core Spray System

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

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

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

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

EVENT FILE:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SCHEDULE:

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

REMOTE SCHEDULE:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

OVERRIDE SCHEDULE:

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

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
2	7-1-13	Added critical step (Depress HV-F031B CLOSE Pb). Updated validation time. Moved applicant cue sheet to final page of JPM. Added clarifying comments in examiner script.	Y

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC S-2**REV#:** 02**TASK:** Manually Start the Core Spray System

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

VALIDATED BY:Qualification Level Required: RO

<u>Dave Hardin</u>	<u>RO</u>	<u>On File</u>	<u>6-25-15</u>
Name	Qual	Signature	Date
<u>Steve Loper</u>	<u></u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE**INITIAL CONDITIONS:**

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

2013 NRC S-7

STATION: Hope Creek

SYSTEM: Reactor Protection System

TASK: Defeat RPS Interlocks

TASK NUMBER: 2001040501

JPM NUMBER: 2013 NRC S-7

REV #: 2

SAP BET: NOH05JPSB12E

ALTERNATE PATH: ☐

APPLICABILITY:

EO ☐

RO ☒

STA ☐

SRO ☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-22-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** 2013 NRC S-7**REV:** 2**SYSTEM:** Reactor Protection System**TASK NUMBER:** 2001040501**TASK:** Defeat RPS Interlocks**ALTERNATE PATH:** ☐**K/A NUMBER:** 295037 EA1.01**IMPORTANCE FACTOR:** 4.6 4.6**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-EO.ZZ-0320, Rev 6**TOOLS, EQUIPMENT AND PROCEDURES:** EOP-320 Implementation kit**ESTIMATED COMPLETION TIME:** 25 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

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

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

INITIATING CUE:

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

JPM: SB012

Rev: 05

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Reactor Protection System

TASK: Defeat RPS 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 <u>AFTER</u> OPERATOR REPEATS BACK INITIATING CUE: START TIME:	N/A			
	Operator obtains procedure	Operator obtains procedure HC.OP-EO.ZZ-0320.			
	Operator reviews precautions and limitations.	Operator reviews precautions and limitations. Note: If applicant checks RPS Xfer switch lights on back panels IAW prerequisites step 2.2.2, inform applicant that they are lit.			
CUE	If excessive time is taken reviewing precautions and limitations, inform operator that all are satisfied.	N/A			

JPM: SB012

Rev: 05

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: **Reactor Protection System**TASK: **Defeat RPS 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> EOP-320 Implementation Kit (NSS office EOP Drawer) contents: 1 set of fuse pullers 1 flashlight 1 plastic bag for ARI fuses 4 banana plug jumpers <u>OR</u> Key #9 for EOP Locker in OSC (obtain from SNSS office or break red key holder glass in OSC) <u>AND</u> EOP-320 Implementation kit (EOP Locker in OSC) contents: 1 set of fuse pullers 1 flashlight 1 plastic bag for ARI fuses 4 banana plug jumpers	Operator obtains the following required equipment: EOP-320 Implementation kit from SM Office Clerk Area EOP drawer. <u>OR</u> Key #9 from OSC office or key from break glass key holder in OSC for OSC EOP locker. <u>AND</u> EOP-320 Implementation kit from EOP locker in OSC.			
CUE	Supply operator with EOP-320 implementation kit.	N/A			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 5.2.1.			

JPM: SB012

Rev: 05

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Reactor Protection System

TASK: Defeat RPS Interlocks

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.1	ENSURE that Prerequisites have been satisfied IAW Section 2.2.	Operator ensures Prerequisites are satisfied.			
CUE	If excessive time is taken reviewing Prerequisites, inform operator that all are satisfied.	N/A			
5.2.2	On H11-P609, front, Division 1, left test box, INSERT a jumper between test point C71A-K10A-2A (first column-first row, red jack) and test point C71A-K12E-2B (fourth column-second row, black jack).	Operator installs jumper at H11-P609 between test points C71A-K10A-2A and C71A-K12E-2B.	*		
CUE	<u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.	N/A			

JPM: SB012

Rev: 05

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Reactor Protection System

TASK: Defeat RPS Interlocks

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.3	On H11-P609, front, Division 3, left test box, INSERT a jumper between test point C71A-K10C-2A (third column-fourth row, red jack) and test point C71A-K12G-2B (fourth column-third row, black jack).	Operator installs jumper at H11-P609 between test points C71A-K10C-2A and C71A-K12G-2B.	*		
CUE	<u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.	N/A			
5.2.4	On H11-P611, front, Division 2, left test box, INSERT a jumper between test point C71A-K10B-2A (fourth column-fourth row, red jack) and test point C71A-K12F-2B (first column-second row, black jack).	Operator installs jumper at H11-P611 between test points C71A-K10B-2A and C71A-K12F-2B.	*		
CUE	<u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.	N/A			

JPM: SB012

Rev: 05

OPERATOR TRAINING PROGRAM

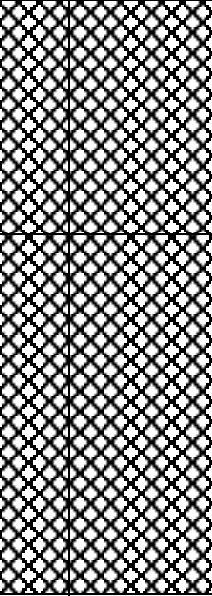
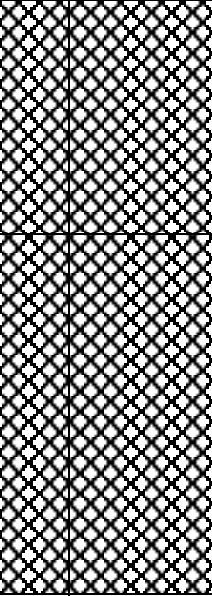
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Reactor Protection System

TASK: Defeat RPS Interlocks

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.5	On H11-P611, front, Division 4, left test box, INSERT a jumper between test point C71A-K10D-2A (third column-third row, red jack) and test point C71A-K12H-2B (fourth column-second row, black jack).	Operator installs jumper at H11-P611 between test points C71A-K10D-2A and C71A-K12H-2B.	*		
CUE	<u>IF</u> the JPM is being simulated in the Control Room, <u>THEN</u> inform the Operator that a jumper has been placed between the test jacks you indicated.	N/A			
	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP time. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete". STOP TIME:	N/A			
N/A	TASK STANDARD:	Operator defeats RPS interlock IAW HC.OP-EO.ZZ-0320.			

JOB PERFORMANCE MEASURE

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: SB012

TASK: Defeat RPS Interlocks

TASK NUMBER: 2001040501

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

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UNSAT

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QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

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

<i>Initial</i>	
	INITIALIZE the simulator to 100% power, MOL.
	INSERT malfunction RP06 .
	LOCK Reactor Mode Switch in SHUTDOWN.
	IMPLEMENT EOP 101A and stabilize RPV level -50 to -100 inches.
	AFTER conditions stabilize, ACKNOWLEDGE all overhead and RM11 alarms.
	ENSURE associated Schedule file open and running.
	ENSURE associated Events file open.

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

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

EVENT FILE:

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

JOB PERFORMANCE MEASURE

MALFUNCTION SCHEDULE:

<i>Initial</i>	@Time	Event	Action	Description
	None	None	Insert malfunction RP06	RPS half core ATWS – Left Side

REMOTE SCHEDULE:

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

OVERRIDE SCHEDULE:

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

JOB PERFORMANCE MEASURE

REVISION HISTORY**JPM NUMBER:** SB012

Rev #	Date	Description	Validation Required?
01	3/26/13	Converted SB012 to new JPM format. Since Critical JPM actions are now uniquely identified by the format, all statements identifying critical portion of action were redundant and deleted. This change is editorial. Updated Reference procedure revision number. Modified Malfunction, Remote, Override, and Event list sections for TREX event syntax. Added Task Standard to JPM. Added procedure step numbers. Updated Validation Checklist to current form from TQ-AA-106-0304. Editorial change only. JPM validation times needed.	Y
02	7/1/2013	Added Note to examiner guide. Minor grammatical changes. Added validation time.	N

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

TASK NUMBER: 2060180201

JPM NUMBER: 2013 NRC S-3

REV #: 2

SAP BET: NOH05JPBJ06E

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY:

NRC

DATE:

7-1-13

Instructor

REVIEWED BY:

DATE:

Operations Representative

APPROVED BY:

DATE:

Training Department

STATION: Hope Creek**JPM NUMBER:** 2013 NRC S-3**REV:** 2**SYSTEM:** High Pressure Coolant Injection**TASK NUMBER:** 2060180201**TASK:** Place HPCI In Full Flow Recirc**ALTERNATE PATH:** ☐**K/A NUMBER:** 206000 A4.06**IMPORTANCE FACTOR:** 4.3 4.3**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-AB.ZZ-0001 Rev 25**TOOLS, EQUIPMENT AND PROCEDURES:****ESTIMATED COMPLETION TIME:** 12 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF JPM UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____**DATE:** _____

NAME: _____

DATE: _____

SYSTEM: High Pressure Coolant Injection

TASK: Place HPCI In Full Flow Recirc

TASK NUMBER: 2060180201

INITIAL CONDITIONS:

1. The Reactor has 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 and initiate a plant cooldown with a target pressure band of 500 to 700 psig.

JPM: 2013 NRC S-3

Rev: 2

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)
CUE	PROVIDE the operator the initiating cue.	Operator repeats back initiating cue.			
CUE	ENTER START TIME <u>AFTER</u> Operator repeats back the Initiating Cue: START TIME:	N/A			
	Operator obtains the correct procedure.	Operator obtains procedure HC.OP-AB.ZZ-0001 Attachment 6.			
	Operator determines beginning step of the procedure.	Operator determines correct beginning step to be 1.0.			
1.0	IF HPCI is NOT in the Injection mode of operation PERFORM the following:	N/A			
1.0.A	ENSURE OP216 VAC TK VACUUM PUMP is RUNNING.	Operator presses the OP216 START pb.			STAR Y N
		Operator observes the red RUNNING light illuminates.			

JPM: 2013 NRC S-3

Rev: 2

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.B	ENSURE HV-F059 is OPEN.	Operator presses the HV-F059 OPEN pb.	* #		STAR Y N
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			
1.0.C	ENSURE HPCI AND RCIC Suctions are lined up to the CST.	Operator observes the HPCI HV-F004 OPEN light is illuminated and green CLSD light is extinguished.			
		Operator observes the RCIC HV-F010 OPEN light is illuminated and green CLSD light is extinguished.			
1.0.D	PRESS HV-F008 INCR PB for \approx 20 seconds.	Operator presses HV-F008 INCR pb for approximately 20 seconds.	* #		STAR Y N
		Operator observes the HV-F008 OPEN light illuminates.			

JPM: 2013 NRC S-3

Rev: 2

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: 2013 NRC S-3

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 2

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.G	IMMEDIATELY OPEN AP-HV-F011.	Operator presses the AP-HV-F011 OPEN pb.	* #		
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			
1.0.H	WHEN Discharge Pressure turns ADJUST FIC-R600 setpoint to 3000 gpm.	Operator observes HPCI Pump Discharge Pressure on PI-R601-E41 (red) indicator rises and lowers.			STAR Y N
		Operator presses the RAISE SETPOINT or LOWER SETPOINT pbs as necessary to obtain a flow setpoint of 3000 gpm. (~50%)	*		

JPM: 2013 NRC S-3

OPERATOR TRAINING PROGRAM

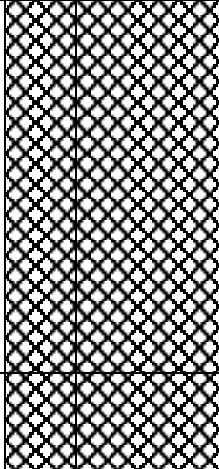
NAME: _____

Rev: 2

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)
1.0.1	THROTTLE HV-F008 AND ADJUST FIC-R600 setpoint, as necessary, up to and including full flow rate, to control HPCI pump parameters/reactor pressure.	Operator presses the HV-F008 INCR or DECR pbs and/or RAISE SETPOINT or LOWER SETPOINT pbs as necessary to adjust pump parameters.			STAR Y N
		Operator observes reactor pressure lowering.			
CUE	<u>WHEN</u> operator informs you the task is complete, <u>OR</u> the JPM has been terminated for other reasons, <u>THEN</u> RECORD the STOP TIME. REPEAT BACK any message from the operator on the status of the JPM, and then state "This JPM is complete" . STOP TIME:	EXAMINER NOTE: When pressure turns and begins lowering, examiner may terminate the JPM.			
N/A	TASK STANDARD:	Operator places HPCI in Full Flow Test at approximately rated flow.			

JOB PERFORMANCE MEASURE
OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: BJ006

TASK: Place HPCI In Full Flow Recirc

TASK NUMBER: 2060180201

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

UNSAT

JOB PERFORMANCE MEASURE SIMULATOR SETUP INSTRUCTIONS (OPTIONAL)

I. INITIAL CONDITIONS:

I.C.

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

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

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

EVENT FILE:

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

JOB PERFORMANCE MEASURE
SIMULATOR SETUP INSTRUCTIONS
(OPTIONAL)

MALFUNCTION SCHEDULE:

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

REMOTE SCHEDULE:

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

I/O OVERRIDE SCHEDULE:

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

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
2	7-1-2013	Minor grammatical and editorial changes to examiner script. Moved applicant cue sheet to final page.	N

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

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

INITIATING CUE:

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

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Primary Containment

TASK: Suppression Chamber Makeup From Service Water Loop B

TASK NUMBER:

JPM NUMBER: 2013 NRC S-5

REV #: 2

SAP BET:

ALTERNATE PATH: ☐

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 6-25-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** 2013 NRC S-5**REV:** 02**SYSTEM:** Primary Containment**TASK NUMBER:****TASK:** Suppression Chamber Makeup From Service Water Loop B**ALTERNATE PATH:** ☐**K/A NUMBER:** 223001 A2.11**IMPORTANCE FACTOR:** 3.6 3.8**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-EO.ZZ-0314 Rev. 05**TOOLS, EQUIPMENT AND PROCEDURES:** HC.OP-EO.ZZ-0314**ESTIMATED COMPLETION TIME:** 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

TASK: Suppression Chamber Makeup From Service Water Loop B

TASK NUMBER:

INITIAL CONDITIONS:

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

INITIATING CUE:

Restore suppression chamber level to 74"-78" using Suppression Chamber Make-up from Service Water Loop B IAW HC.OP-EO.ZZ-0314.

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC S-5

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

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

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC S-5

Rev: 02

OPERATOR TRAINING PROGRAM

JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.2.9	THROTTLE OPEN BC-HV-F024B //RHR LOOP B TEST RET MOV// to control suppression chamber fill rate	Operator depresses the open pushbutton for BC-HV-F024B.	* #		
5.2.10	MONITOR Service Water Pump BP502 and/or DP502 Motor Amps and Vibration for indications of pump run-out due to increased system flow	Operator monitors motor amps and vibration.			
5.2.11	WHEN suppression chamber level returns to the desired band, RESTORE the RHR and Service Water systems to normal using Attachment 2	Operator determines that suppression chamber level is in the 74"-78" target band. NOTE: JPM may be terminated when level increase is observed.	* #		
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			

JPM: 2013 NRC S-5

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 02

JOB PERFORMANCE MEASURE

DATE: _____

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

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

OPERATOR TRAINING PROGRAM
EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC S-5

TASK: Suppression Chamber Makeup From Service Water Loop B

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JPM NUMBER: 2013 NRC S-5

REV#: 02

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

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

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

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

EVENT FILE:

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

MALFUNCTION SCHEDULE:

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

REMOTE SCHEDULE:

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

OVERRIDE SCHEDULE:

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

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
01	12/11/12	New JPM for NRC exam.	Y
2	7/1/13	Numerous enhancements to examiner guide. Enhancements to cue sheet.	Y

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC S-5**REV#:** 2**TASK:** Suppression Chamber Makeup from Service Water Loop B

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

VALIDATED BY:Qualification Level Required: RO

<u>Ryan Kelly</u>	<u>RO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date
<u>Steve Loper</u>	<u>RO</u>	<u>On File</u>	<u>6-26-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE**INITIAL CONDITIONS:**

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

INITIATING CUE:

Restore suppression chamber level to 74"-78" using Suppression Chamber Make-up from Service Water Loop B IAW HC.OP-EO.ZZ-0314.

JOB PERFORMANCE MEASURE

STATION: Hope Creek

SYSTEM: Containment Atmosphere Control

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

TASK NUMBER: 2000950501

JPM NUMBER: 2013 NRC S-8

REV #: 2

SAP BET: NOH05JPGS05E

ALTERNATE PATH: ☒

APPLICABILITY:

EO

☐

RO

☒

STA

☐

SRO

☒

DEVELOPED BY: _____
NRC
Instructor

DATE: 5-22-13

REVIEWED BY: _____
Operations Representative

DATE: _____

APPROVED BY: _____
Training Department

DATE: _____

STATION: Hope Creek**JPM NUMBER:** 2013 NRC S-8**REV:** 2**SYSTEM:** Containment Atmosphere Control**TASK NUMBER:** 2000950501**TASK:** Vent to Control Containment Pressure With Suppression Pool Level
Less Than 180 inches**ALTERNATE PATH:** ☒**K/A NUMBER:** 295024 EA1.19**IMPORTANCE FACTOR:** 3.3 3.4**APPLICABILITY:**EO ☐RO ☒STA ☐SRO ☒**RO****SRO****EVALUATION SETTING/METHOD:** Simulator/Perform**REFERENCES:** HC.OP-EO.ZZ-0318(Q) Rev. 7**TOOLS, EQUIPMENT AND PROCEDURES:** None**ESTIMATED COMPLETION TIME:** 25 Minutes**TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:** N/A Minutes**JPM PERFORMED BY:** _____**GRADE:** ☐ SAT ☐ UNSAT**ACTUAL COMPLETION TIME:** _____ Minutes**ACTUAL TIME CRITICAL COMPLETION TIME:** N/A Minutes**REASON, IF UNSATISFACTORY:****EVALUATOR'S SIGNATURE:** _____ **DATE:** _____

NAME: _____

DATE: _____

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

1. The 'B' RHR pump suction was isolated due to a leak.
2. The Plant experienced a large break LOCA.
3. HC.OP-EO.ZZ-0102, Primary Containment Control has been implemented.
4. Drywell pressure is approximately 60 psig and rising AND Suppression Chamber pressure is approximately 59 psig and rising.
5. Suppression Pool Level indicates approximately 90 inches.
6. The Emergency Instrument Air Compressor has been restored IAW HC.OP-EO.ZZ-0319.
7. The Control Room Emergency Filtration System is operating in the Isolate/Recirculation Mode in accordance with HC.OP-SO.GK-0001(Q).
8. FRVS is in operation in accordance with HC.OP-SO.GU-0001(Q).
9. The Emergency Duty Officer/Emergency Response Manager has been informed that containment venting will be performed.
10. Salem Operations has been notified that containment venting will be performed.
11. The Aux. Bldg. EO is standing by at panel 1Y-F404.
12. The Reactor Building is inaccessible and has been evacuated.

INITIATING CUE:

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

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

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.4	F. When GS-HV-4964 SUPP CHMBR TO CPCS DMP is full open, then DEPRESS ISLN OVRD and OPEN GS-HV-4963 SUPP CHMBR N ₂ M/U EXH.	Operator observes red HV4964 OPEN light is illuminated and green CLSD light is extinguished.			
		Operator presses ISLN OVRD for the HV4963.	* #		
		Operator observes the amber OVER-RIDDEN light illuminates.			
		Operator presses the HV4963 OPEN pushbutton.	* #		
		Operator observes the red OPEN light illuminates and green CLSD light extinguishes.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

SYSTEM: Containment Atmosphere Control

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
5.1.4	G. When drywell pressure can be maintained below 60 psig, then CLOSE GS-HV-4963 SUPP CHMBR N ₂ M/U EXH and GS-HV-4964 SUPP CHMBR TO CPCS DMP.	Operator informs CRS that drywell venting has commenced and monitors drywell pressure. Examiner Note: If drywell pressure drifts below 60psig during performance of JPM, direct applicant to continue with venting.			
CUE	IF the operator cannot see the pressure reduction on the 10C650E indicators, THEN inform the operator Drywell pressure reduction is observable on SPDS.	Examiner Note: The rate of drywell pressure reduction through this path alone is slow and will not be readily visible on the 10C650E indicators due to the absence of a tenth digit. The response IS readily observable on SPDS. The operator may not be satisfied with the initial response and may elect to open an additional vent path.			

JPM: 2013 NRC S-8

OPERATOR TRAINING PROGRAM

NAME: _____

Rev: 01

JOB PERFORMANCE MEASURE

DATE: _____

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

STEP NO.	ELEMENT	(*Denotes a Critical Step) (#Denotes a Sequential Step) STANDARD	* #	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
CUE	<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	TASK STANDARD:	Operator vents primary containment through alternate vent path.			

JOB PERFORMANCE MEASURE
 OPERATOR TRAINING PROGRAM
 EVALUATOR FOLLOWUP QUESTION DOCUMENTATION

NAME: _____

DATE: _____

JPM Number: 2013 NRC S-8

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

TASK NUMBER: 2000950501

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

QUESTION: _____

RESPONSE: _____

RESULT:

SAT

☐

UNSAT

☐

JOB PERFORMANCE MEASURE

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

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

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

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

EVENT FILE:

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

JOB PERFORMANCE MEASURE

MALFUNCTION SCHEDULE:

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

REMOTE SCHEDULE:

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

OVERRIDE SCHEDULE:

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

JOB PERFORMANCE MEASURE

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

Rev #	Date	Description	Validation Required?
2	6/25/13	Updated validation time. Moved cue sheet to last page. Updated cue sheet sup pool level to reflect simulator conditions. Added examiner note.	Y

JOB PERFORMANCE MEASURE

VALIDATION CHECKLIST**JPM NUMBER:** 2013 NRC S-8**REV#:** 02**TASK:** Vent to Control Containment Pressure With Suppression Pool Level
Less Than 180 inches

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

VALIDATED BY:Qualification Level Required: RO

<u>Jeff Koskey</u>	<u>RO</u>	<u>On File</u>	<u>5-22-13</u>
Name	Qual	Signature	Date
<u>Ryan Kelly</u>	<u>SRO</u>	<u>On File</u>	<u>6-25-13</u>
Name	Qual	Signature	Date

JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

1. The 'B' RHR pump suction was isolated due to a leak.
2. The Plant experienced a large break LOCA.
3. HC.OP-EO.ZZ-0102, Primary Containment Control has been implemented.
4. Drywell pressure is approximately 60 psig and rising AND Suppression Chamber pressure is approximately 59 psig and rising.
5. Suppression Pool Level indicates approximately 90 inches.
6. The Emergency Instrument Air Compressor has been restored IAW HC.OP-EO.ZZ-0319.
7. The Control Room Emergency Filtration System is operating in the Isolate/Recirculation Mode in accordance with HC.OP-SO.GK-0001(Q).
8. FRVS is in operation in accordance with HC.OP-SO.GU-0001(Q).
9. The Emergency Duty Officer/Emergency Response Manager has been informed that containment venting will be performed.
10. Salem Operations has been notified that containment venting will be performed.
11. The Aux. Bldg. EO is standing by at panel 1Y-F404.
12. The Reactor Building is inaccessible and has been evacuated.

INITIATING CUE:

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

SIMULATOR

EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: Loss of RBVS, Loss of 10A120, Recirc Vibes, FW Break

SCENARIO NUMBER: NRC 2013 Scenario #1 (ESG 029)

EFFECTIVE DATE:

EXPECTED DURATION: 1 hour

REVISION NUMBER: 4

PROGRAM: ☐ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER _____

REVISION SUMMARY:

1. Deleted Critical Task related to 124" Torus level. Not possible in a one hour scenario.
2. Updated ESG to current standards and format. Editorial changes.
3. Deleted partial Recirc Seal failure.
4. Deleted Power Oscillations.
5. Added RHR pump trip at onset of LOCA.
6. Added A and B RHR auto initiation failures.
7. Added Drywell Spray valve failure.
8. Added Reactivity manipulation with Recirc.
9. Reorganized Event triggers to match scenario.

PREPARED BY: _____
NRC
Instructor

7/22/13

DATE

APPROVED BY: _____
LORT Group Lead or Designee

DATE

APPROVED BY: _____
Shift Operations Supervisor or Designee

DATE

I. OBJECTIVE(S):

Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CREW CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Crew critical tasks within this examination scenario guide are identified with an “*.”)

II. MAJOR EVENTS:

- A. Alternate RACS pumps (Optional)
- B. Loss of RBVS
- C. Loss of 10A120
- D. Recirc Pump high Vibrations
- E. Feedwater Line Break Inside Containment

III. SCENARIO SUMMARY:

The scenario begins with the plant at approximately 100% power with RCIC C/T for a leak on the steam line drain pot. At the Lead Examiners discretion, RACS pumps may be swapped to support an oil change on the 'B' RACS pump. The RO will commence power reduction from 100% to 90% with reactor recirc. RBVS Exhaust isolation damper GU-HD-9414A fails shut, causing a loss of RBVS and requiring FRVS to be placed in service. After FRVS is in service, the 10A120 bus is lost resulting in Single Loop operations in Region 1 of the Power to Flow Map. Shortly after the 10A120 bus loss, the remaining Reactor Recirc pump develops high vibrations, which require removing the pump from service. This necessitates a reactor scram. During the scram, the alpha feedwater line breaks inside containment upstream of the inboard check valve. This results in a High Drywell Pressure, a slow lowering of RPV level due to leakage past the check valve and an increase in Suppression Pool pressure. The line break also prevents stabilizing level with feedwater or HPCI. The A RHR pump will trip after manual start. The B RHR pump can be successfully started but the corresponding drywell spray valve fails to open. Emergency Depressurization will be required due to a violation of the PSP curve due to a failure of the RHR Pump and Drywell spray valve (**Critical Task #1**). When Emergency Depressurization is initiated, one ADS SRV will not open due to faulted solenoids. An additional SRV will need to be opened by the Crew (**Critical Task #2**).

IV. INITIAL CONDITIONS:

I.C.

Initial

INITIALIZE the simulator to 100% power.

C/T RCIC as follows.

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

ENSURE 'B' and 'C' RACS pumps are in service.

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

Initial

Description

PLACE red bezel covers on the following RCIC controls:

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

ENSURE MOL CRAM Rod Listing is placed in Pull Sheet Book.

INITIAL IO-6 for power reduction.

INITIAL HC.OP-SO.ED-0001 through step 5.3.5

UPDATE LCO Status book for RCIC outage: T/S 3.7.4 14 days

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

EVENT FILE:

<i>Initial</i>	ET #		
	6	Event code:	zcrprun <= 0.0 // Mode Switch NOT in RUN
		Description:	Triggers Feedwater Line Break and LOCA on scram.
	7	Event code:	Pcpdw > 17.0 // DW pressure above 2 psig
		Description:	Trips A RHR Pump after start
	10	Event code:	ad_k40b(2) >= 1.0 // SRV F013B 'B' Channel solenoid energized
		Description:	Triggers blowing of fuses when valve opened to ED.
	11	Event code:	ad_k40d(2) >= 1.0 // SRV F013B 'D' Channel solenoid energized
		Description:	Triggers blowing of fuses when valve opened to ED.
		Event code:	
		Description:	
		Event code:	
		Description:	
		Event code:	
		Description:	
		Event code:	
		Description:	

MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description
	None	None	Insert malfunction RC02	RCIC auto start failure
	None	None	Insert malfunction AD01	Failure of ADS valves to open
	None	None	Insert malfunction TC01-10	All turbine bypass valves fail closed
	None	None	Insert malfunction RH08A	RHR System A auto injection failed to energized
	None	None	Insert malfunction RH08B	RHR System B auto injection failed to energized
	None	None	Insert malfunction ED04 on event 4	Loss of 7.2 KV bus F 10A120
	None	None	Insert malfunction RR26A2 to 10.00000 in 300 on event 5	Recirc pump AP201 elevated (added to calc) Pump Vib
	None	None	Insert malfunction FW32 to 10.00000 on event 6	Feedwater line break inside containment
	None	None	Insert malfunction FW26A on event 6	Feedwater pump turbine AS105 trip
	None	None	Insert malfunction FW26B on event 6	Feedwater pump turbine BS105 trip
	None	None	Insert malfunction FW26C on event 6	Feedwater pump turbine CS105 trip
	None	None	Insert malfunction QQ20 to SHORT after 3 on event 7	RHR pump AP202 Malfunctions
	None	None	Insert malfunction CD09A after 90 to 75.00000 on event 15	Drive water flow control valve F002A failure
	None	None	Insert malfunction CD09B to 0 on event 15	Drive water flow control valve F002B failure
	None	None	Insert malfunction PC04 on event 6	Downcomer failure

REMOTE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert remote RC03 to RACK_CLOSE	RC03 GROUP 6A HV-F007 RCIC Steam Supply Isol
	None	None	Insert remote RC04 to RACK_CLOSE	RC04 GROUP 6A HV-F076 RCIC Steam Supply Isol
	None	None	Insert remote RC05 to RACK_CLOSE	RC05 GROUP 6A HV-F008 RCIC Steam Supply Isol
	None	None	Insert remote AN24 after 5 to NORM on event 2	AN24 E6-C5 RBVS & Wing Area HVAC Pnl 10C382
	None	None	Insert remote HV01 to STOP on event 2	HV01 RBVS Exhaust fan A
	None	None	Insert remote HV02 to STOP on event 2	HV02 RBVS Exhaust fan B
	None	None	Insert remote HV03 to STOP on event 2	HV03 RBVS Exhaust fan C
	None	None	Insert remote HV04 to STOP on event 2	HV04 RBVS Supply fan A
	None	None	Insert remote HV05 to STOP on event 2	HV05 RBVS Supply fan B
	None	None	Insert remote HV06 to STOP on event 2	HV06 RBVS Supply fan C
	None	None	Insert malfunction QQ20 to SHORT after 3 on event 7	RHR pump AP202 Malfunctions
	None	None	Insert remote AD01B-B to REMOVED on event 10	AD01 ADS/Relief valve F013B channel B fuse
	None	None	Insert remote AD01B-D to REMOVED on event 11	AD01 ADS/Relief valve F013B channel D fuse
	None	None	Insert remote CD04 to OPEN on event 14	CD04 CRD suction filter isolation valve V030
	None	None	Insert remote CD06 to 100.00000 in 60 on event 15	CD06 Drive water press cont bypass valve V062 (0-100%)
	None	None	Insert remote CD10 after 120 to ON on event 15	CD10 CRD FCV B

OVERRIDE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert override 9S9_A_LO to On	HV-F045 OVLD/PWR FAIL (LO)
	None	None	Insert override 9S10_A_DI to Off	HV-F045 OPEN (DI)
	None	None	Insert override 9S10_B_LO to Off	HV-F045 CLOSED (LO)
	None	None	Insert override 9S8_A_DI to Off	HV-F025 OPEN (DI)
	None	None	Insert override 9DS26_B_LO to Off	HV-F025 CLOSED (LO)
	None	None	Insert override 9S16_A_DI to Off	HS-F026 (DI)
	None	None	Insert override 9DS27_B_LO to Off	HV-F026 CLOSED (LO)
	None	None	Insert override 9S45_A_DI to Off	RCIC MAN INIT-DA (DI)
	None	None	Insert override 4A1_F_DI to Off	HV-F032A CLOSE-FW SUPPLY LINE A (DI)
	None	None	Insert override 1A159_F_DI to On on event 1	HD-9414A CLOSE-INBD EXH-REACTOR BUILDING (DI)
	None	None	Insert override 1A159_E_DI to On on event 1	HD-9414A OPEN-INBD EXH-REACTOR BUILDING (DI)
	None	None	Insert override 10S192_A_DI to Off on event 6	HV-F016B OPEN (DI)
	None	None	Insert override 10DS40_A_LO after 3 to On on event 7	PUMP MOTOR OVER CURRENT-RHR A-LOOP A (LO)

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>Swapping RACS pumps:</u> Crew places AP209 RACS pump in service and secures BP209 RACS pump after assuming the watch.</p>	<ul style="list-style-type: none"> CRS directs PO to place AP209 RACS pump in service and secure BP209 RACS pump. 	
<p><u>IF</u> dispatched to AP209, <u>THEN REPORT</u> the AP209 RACS pump is ready for a start.</p>	<ul style="list-style-type: none"> PO dispatches RBEO to perform pre-start checks and locally observe start of AP209 RACS pump IAW OP-HC-108-106-1001. 	
<p><u>AFTER</u> AP209 is in service, <u>THEN REPORT</u> AP209 is running SAT. Monitor Items:</p> <ul style="list-style-type: none"> Normalized AP209 speed cwnra209 	<ul style="list-style-type: none"> PO starts AP209 and secures BP209 IAW SO.ED-0001 Section 5.3.6 (Marked up through 5.3.5) 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>
<p><u>Power reduction with Recirc:</u> After assuming the watch.</p>	<ul style="list-style-type: none"> CRS directs RO to reduce reactor power to 90% IAW Reactor Engineering guidance and HC.OP-IO.ZZ-0006. 	
<p><u>SUPPORT</u> crews actions to TOGGLE Crossflow.</p>	<ul style="list-style-type: none"> RO to reduce reactor power to 90% IAW Reactor Engineering guidance OP-AB-300-1003. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p> <p>FLAGGING <input type="checkbox"/></p> <p>OP BARRIERS <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>Loss of RBVS:</u> After the Crew lowers reactor power, <u>OR</u> at the discretion of the Lead Examiner, TRIGGER ET-1 (RBVS Exhaust Damper HD-9414A Fails shut).</p>	<ul style="list-style-type: none"> • Crew recognizes Loss of RBVS by: <ul style="list-style-type: none"> ⇒ OHA E1-F5 "COMPUTER PT IN ALARM" ⇒ CRIDS B7164 "REACTOR BLDG DIFF PRESS" ⇒ OHA E6-C5 "RBVS & WING AREA HVAC PNL 10C382" (delayed) ⇒ CRIDS D3960 "RBVS EXH RMT PNL C382 TRBL" ⇒ CRIDS D3961 "RBVS SUPPLY RMT PNL C382 TRBL" ⇒ RB D/P indication on 10C650E ⇒ SPDS RB PARAMETERS D/P indication. • CRS implements AB.CONT-003: <ul style="list-style-type: none"> ⇒ Condition A 	
<p><u>IF</u> dispatched to 10C382, <u>THEN REPORT</u> Low Flow Trip alarms on all Reactor Bldg Supply and exhaust fans.</p>	<ul style="list-style-type: none"> • Crew dispatches RBEO to 10C382 to investigate. • RO/PO recognize HD-9414A failed shut by 10C651E indication and inform CRS. 	
<p><u>IF</u> directed to secure RBVS, <u>THEN TRIGGER ET-2.</u></p>	<ul style="list-style-type: none"> • RO/PO place FRVS in service IAW SO.GU-0001 -or- hardcard. 	<p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>
<p><u>IF</u> dispatched to HD-9414A, <u>THEN REPORT</u> there is no obvious reason for the closure.</p>	<ul style="list-style-type: none"> • Crew dispatches NEO and Maintenance to investigate closure of HD-9414A. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS recognize the following Tech Specs apply: <ul style="list-style-type: none"> ⇒ Secondary Containment Integrity 3.6.5.1 ⇒ Secondary Containment Automatic Isolation Dampers 3.6.5.2 action a or b or c 	
<u>Loss of 10A120 Bus:</u> 15 minutes after the Loss of RBVS, <u>OR,</u> at the discretion of the Lead Examiner, TRIGGER ET-4.	<ul style="list-style-type: none"> Crew recognizes: <ul style="list-style-type: none"> ⇒ Reactor power lowering ⇒ Reactor level swell Crew monitors Reactor power, pressure, and level until plant conditions are stable. PO ensures feedwater restores and maintains RPV level between LVL 4 and LVL 7. Crew recognizes Loss of 'B' Reactor Recirc pump by: <ul style="list-style-type: none"> ⇒ C1-D5 "REACTOR RECIRC B TROUBLE" ⇒ CRIDS D2918 "RECIRC MG DRIVE MOTOR B BRKR" ⇒ Flashing TRIP light for 'B' Recirc MG Drive Motor bkr ⇒ 'B' Reactor Recirc pump flow and d/p indications on 10C651C RO ensures at least one recirc pump still running. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes trip of 'B' PCP and 'B' SCP by: <ul style="list-style-type: none"> ⇒ OVLD/PWR FAIL lights ⇒ STOP lights lit ⇒ Motor amps zero Crew validates automatic actions: <ul style="list-style-type: none"> ⇒ Feedwater PCP Speed Limiter on ⇒ Recirc pump Int Runback Crew recognizes entry into the OPRM Enable Region by: <ul style="list-style-type: none"> ⇒ C3-F1 "OPRM TRIP ENABLE" 	<p>The trips of 'B' PCP and 'B' SCP are silent and may not be immediately recognized by the Crew.</p>
	<ul style="list-style-type: none"> Crew recognizes loss of BK111 TB chiller by: <ul style="list-style-type: none"> ⇒ OVLD/PWR FAIL light ⇒ STOP light lit ⇒ Motor amps zero 	<p>The trip of BK111 is silent and may not be immediately recognized by the Crew.</p>
	<ul style="list-style-type: none"> Crew recognizes loss of 10A120 bus from: <ul style="list-style-type: none"> ⇒ OHA E3-E1 7.2 KV SYS INCOMING BRKR MALF ⇒ Solid OVLD/PWR FAIL lights on loads lost ⇒ Flashing TRIP light for infeed bkr 52-12008 ⇒ CRIDS D3682 "SWGR BUS A120 DIFF LOCKOUT" ⇒ CRIDS D3684 "SWGR BUS A120 UNDERVOLTAGE" Crew announces loss of 10A120 on the plant page. 	

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-0003: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B 	The pace of the scenario will not allow the Crew to fully address single loop requirements.
<u>IF</u> the Crew manually scrams, <u>THEN</u> the Feedwater Line Break and LOCA will be automatically inserted.	<ul style="list-style-type: none"> <u>IF</u> in Region 1 of the Pwr/Flow map, <u>THEN</u> RO inserts rods IAW ESG guidance as necessary to exit Region 1. RO/PO close HV-F031B Recirc pump discharge valve for 5 minutes, then re-open. RO/PO implement DL.ZZ-0026 Att. 3v. CRS implements AB.RPV-0001: <ul style="list-style-type: none"> ⇒ Condition B CRS implements AB.RPV-0004: <ul style="list-style-type: none"> ⇒ Condition D ⇒ Condition G PO closes HV-1680B PCP discharge valve. PO closes HV-1651B SCP discharge valve. 	<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"/> FLAGGING <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p> <p>HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/> FLAGGING <input type="checkbox"/> OP BARRIERS <input type="checkbox"/></p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>WHEN</u> dispatched, <u>THEN REPORT</u> the 10A120 Bus Differential Overcurrent Relays are tripped. There is no visible indication of damage to the bus.</p> <p>As RE, REPORT the Enhanced Stability guidance should be used to exit Region 1. The first 12 rods of the CRAM RODS list will also satisfy the 80% rod line sequence for single loop IAW AB.RPV-0003.</p>	<ul style="list-style-type: none"> PO bypasses Feedwater Runbacks. Crew dispatches TBEO and Maintenance to investigate loss of 10A120 bus. Crew contacts RE for guidance and to check thermal limits. Crew references Power Maneuvering Tech Specs in OP-HC-108-106-1001 Equipment Operational Control. CRS recognize the following actions apply: <ul style="list-style-type: none"> ⇒ Recirculation Loops 3.4.1.1 action a ⇒ Reactor Coolant System Specific Activity T/S Table 4.4.5-1 Item 4(b) ⇒ ODCM Table 4.11.2.1.2-1 Items (c) & (f) CRS notifies Shift Rad Pro and Shift Chem Tech to take samples IAW: <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) 	<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"> CRS recognize the following Tech Specs apply: <ul style="list-style-type: none"> ⇒ Recirculation Loops <ul style="list-style-type: none"> 3.4.1.1 action a 4.4.1.1.1 Crew contacts ESOC and Trading Floor, gives estimate of MWe output limitations and duration of limitation. CRS contacts Operations Management. 	
<p><u>'A' Recirc Pump High Vibration:</u> 15 minutes after the Loss of 10A120, <u>OR</u>, at the discretion of the Lead Examiner, TRIGGER ET-5.</p>	<ul style="list-style-type: none"> Crew recognizes rising vibrations on 'A' Reactor Recirc pump by: <ul style="list-style-type: none"> ⇒ CRIDS A2601 "RECIRC PMP A RADIAL VIB MON" ⇒ OHA C1-F5 "COMPUTER PT IN ALARM" ⇒ OHA C1-E4 "REACTOR RECIRC PUMP VIB HI" ⇒ CRIDS D2920 "RECIRC PUMP MOTOR A VIBRATION" ⇒ CRIDS D5351 "RECIRC PUMP AP201 VIBRATION" CRS implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition F ⇒ <u>WHEN</u> it is determined that 'A' Recirc Pump Vibration points cannot be maintained below the DANGER limits (16mils) <u>THEN</u> the CRS orders manual scram to support removing 'A' Reactor Recirc pump from service. 	<p>Vibration will jump 3 mils then rise at a rate of one mil per minute. C1-E4 and C1-F5 will alarm at 11 mils.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> RO locks the Mode Switch in SHUTDOWN and performs scram actions IAW AB.ZZ-0001 Att. 1. 	HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/>
	<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 	
Feedwater Line Break: The feedwater line break inside containment with leakage past the check valve will be automatically inserted when the Mode Switch is taken out of RUN.	<ul style="list-style-type: none"> Crew recognizes High Drywell Pressure EOP entry condition: <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 implements: <ul style="list-style-type: none"> ⇒ EOP-101 ⇒ EOP-102 PO attempts to maintain level as directed by CRS. CRS determines an Alert Classification is required IAW ECG Section RB2.L (Drywell pressure >1.68 psig due to RCS leakage). (May be done after scenario completion.) 	RECORD Drywell Pressure reached 1.68 psig for 15 min ECG Classification. Time: _____ HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/> The feedwater line break will prevent restoring level with HPCI or feedwater. RECORD time Alert declared. Time Declared: _____

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to open the breaker for the HPCI HV-8278 in an attempt to fail the valve shut, <u>THEN REPORT</u> the breaker handle on the cubicle door does not appear to be engaging the breaker paddle inside the cubicle. You cannot get the cubicle door open and have called the 12 Hour Maintenance Supervisor and asked for an Electrician to help. Do <u>NOT</u> fail the valve shut.</p>	<ul style="list-style-type: none"> • Crew recognizes 'A' feedwater line break by: <ul style="list-style-type: none"> ⇒ High Flow / Low Discharge Pressure on condensate ⇒ High Flow / Low Discharge Pressure on HPCI ⇒ Ability to vary HPCI flow with Setpoint ⇒ Absence of OHA B1-E5 "HPCI PUMP DISCHARGE FLOW LO" ⇒ Rapidly rising torus level ⇒ Lowering hotwell level ⇒ RPV Pressure trend not consistent with a LOCA greater than the capacity of HPCI/Condensate 	
<p><u>IF</u> directed to close the F032A, <u>THEN REPORT</u> the actuator appears to be broken. The valve will not stroke from the bucket or locally with the manual handwheel.</p>	<ul style="list-style-type: none"> • Crew may attempt to isolate the 'A' Feedwater line if they successfully diagnose a FW line break. • 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. 	<p>HPI USED: STAR <input type="checkbox"/></p> <p>The HV-F032A will not close from the Control Room.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • <u>IF</u> feedwater and condensate remained aligned to feed the reactor vessel, <u>THEN</u> Crew recognizes low main condenser hotwell levels by: <ul style="list-style-type: none"> ⇒ OHA A6-F1 "CONDENSATE TRAIN A TROUBLE" ⇒ OHA A6-F2 "CONDENSATE TRAIN B TROUBLE" ⇒ OHA A6-F3 "CONDENSATE TRAIN C TROUBLE" ⇒ CRIDS D2943 "CONDENSER AE108 LEVEL" ⇒ CRIDS D2945 "CONDENSER BE108 LEVEL" ⇒ CRIDS D2947 "CONDENSER CE108 LEVEL" ⇒ 10C651A Hotwell Level indication • CRS directs injection with: <ul style="list-style-type: none"> ⇒ SLC ⇒ Two CRD pumps (If RPV level continues to lower) • RO/PO initiate SLC. 	<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>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-14 (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>AFTER</u> HV-F003 is open, <u>THEN TRIGGER ET-15</u>. <u>WHEN</u> two minutes have elapsed, <u>THEN MODIFY</u> Malfunctions CD09A/B to control injection.</p>	<ul style="list-style-type: none"> RO/PO align CRD for Emergency Two CRD Pump Injection IAW SO.BF-0001 Section 5.4. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
<p><u>Bypass Valves Fail Shut:</u> The Bypass Valves will Fail shut three minutes after the EHC pump trips.</p>	<ul style="list-style-type: none"> Crew recognizes bypass valves will not open by: <ul style="list-style-type: none"> ⇒ OHA E1-F4 "COMPUTER POINT RETURNED TO NORMAL" ⇒ OHA D3-D5 "EHC UNIT PANEL 10C363" ⇒ Bypass valve indication ⇒ BPV Positioning Error alarms ⇒ Reactor pressure rising above Pressure Setpoint CRS directs pressure control IAW EOP-101 using Steam Line Drains and/or RFPTs. RO/PO control pressure as directed by CRS IAW AB.ZZ-0001 Attachment 15. 	<p>OHA E1-F4 will not be received if no bypass valves were open at the time of the failure. OHA D3-D5 will not be received until there is an open demand to the bypass valves.</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><u>RHR Pump A and B Fail to Auto Start, A Trips & HV-F016B fails to open:</u></p> <p>The 'A' RHR pump immediately trips after being manually started</p> <p>AND</p> <p>HV-F016B Drywell Spray Valve fails to open.</p>	<ul style="list-style-type: none"> Crew recognizes "A" and "B" RHR pumps fail to auto-start on LOCA signal by: <ul style="list-style-type: none"> ⇒ Pump STOP, amp and flow indications Crew manually starts "A" and "B" RHR pumps. Crew recognizes 'A' RHR pump trip by: <ul style="list-style-type: none"> ⇒ OHA RHR LOGIC OUT OF SERVICE ⇒ OUT OF SERVICE status light ⇒ PUMP MOTOR OVERCURRENT status light ⇒ Pump STOP, amp and flow indications 	
<p><u>IF</u> dispatched to investigate the trip of the 'A' RHR pump, <u>THEN REPORT:</u></p> <ul style="list-style-type: none"> The breaker has target flags dropped on the 51A and 51B Time Overcurrent relays (401/402 bkr 06) The pump motor is hot to the touch and bearing oil levels are normal 	<ul style="list-style-type: none"> Crew dispatches operator and Maintenance to the tripped RHR pump and breaker. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • <u>IF</u> the CRS determines 'B' RHR pump is NOT required to assure adequate core cooling by operating in LPCI mode, <u>THEN</u> CRS directs placing: 'B' RHR pump in Suppression Chamber Cooling/Spray or Drywell spray (if >9.5psig in the suppression chamber). • RO/PO places 'B' RHR pump in Suppression Chamber Cooling/Spray or Drywell Spray IAW AB.ZZ-0001 Att. 3. • Crew recognizes the failure of HV-F016B to open (Drywell Spray Valve) • Crew 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 • <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. 	<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>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>For non-ATWS emergency depressurizations, the Control Room Supervisor should establish and maintain an RPV level band between -38" to +54" on Wide Range indication. This transient level band will prevent adverse hydraulic effects caused by high outside shroud reactor level while maintaining adequate core submergence based on Fuel Zone indication. Following the emergency depressurization, level will be restored and maintained to the preferred EOP reactor level band by using a suggested Wide Range compensated level band of +12.5" to +54" if possible using Condensate and Startup Level Control or the Control Room Supervisor can maintain an RPV level band of -38" to +54" if still batch feeding with low pressure ECCS to maintain RPV level.</p>	<ul style="list-style-type: none"> 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>*Crew actuates five SRVs when the Action Required Region of the PSP curve is entered OR when it is determined that Suppression Chamber pressure cannot be maintained below the Action Required Region of the PSP curve.</p> <p>NOTE: Preventing entry into the Action Required Region of the PSP curve satisfies this critical task.</p>	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p>INPO Fundamentals: CONTROL <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 failure of PSV-F013B to remain open by: <ul style="list-style-type: none"> ⇒ Acoustic Monitor position indication on 10C650C ⇒ Tailpipe temperature on TR-R614 	
	<p>* <i>WHEN Emergency Depressurization is initiated and the PSV-F013B fails to remain open, THEN before RPV pressure drops below 50psig, the Crew places the Control Switch for an additional SRV to OPEN to achieve five open SRVs.</i></p>	
	<ul style="list-style-type: none"> RO/PO opens additional SRV IAW AB.ZZ-0001 Att. 13, informs CRS of PSV-F013B failure. 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<ul style="list-style-type: none"> CRS directs restoring RPV level to -38" to 54" with Low Pressure ECCS. 	
	<ul style="list-style-type: none"> RO/PO restore RPV level as directed by CRS IAW AB.ZZ-0001: <ul style="list-style-type: none"> ⇒ Att. 4 for RHR ⇒ Att. 5 for Core Spray 	<p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p> <p><u>IF</u> RPV water level drops below -311", <u>THEN</u> the CRS may implement EOP-206.</p>
	<ul style="list-style-type: none"> <u>WHEN</u> adequate core cooling is assured, <u>THEN</u> CRS directs placing: <ul style="list-style-type: none"> ⇒ One loop of RHR in Drywell Spray 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

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

- RO/PO align RHR IAW
AB.ZZ-0001:
⇒ Att 2 Drywell Spray

HPI USED:
STAR ☐
HARD CARD ☐

Termination Requirement:

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

- RPV level has been restored above -129" and containment parameters are improving
OR
- EOP-202 is being implemented and RPV pressure is being maintained 50 psig above Suppression Chamber pressure with five SRVs open.

VI. SCENARIO REFERENCES:

- A. NUREG 1021 Examiner Standards
- B. JTA Listing
- C. Probabilistic Risk Assessment
- D. Technical Specifications
- E. Emergency Plan (ECG)
- F. Alarm Response Procedures (Various)
- G. HU-AA-101 Performance Tools and Verification Practices
- H. OP-AA-101-111-1004 Operations Standards
- I. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- J. OP-AA-106-101-1001 Event Response Guidelines
- K. OP-AA-108-114 Post Transient Review
- L. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- M. OP-HC-108-106-1001 Equipment Operational Control
- N. HC.OP-SO.AE-0001 Feedwater System Operation
- O. HC.OP-SO.BF-0001 CRD Hydraulic System Operation
- P. HC.OP-SO.ED-0001 Reactor Auxiliaries Cooling Water System Operation
- Q. HC.OP-SO.GU-0001 Filtration, Recirculation, and Ventilation System Operation
- R. HC.OP-AB.ZZ-0001 Transient Plant Conditions
- S. HC.OP-AB.RPV-0001 Reactor Power
- T. HC.OP-AB.RPV-0003 Recirculation System / Reactor Power Oscillations
- U. HC.OP-AB.RPV-0004 Reactor Level Control
- V. HC.OP-AB.CONT-0003 Reactor Building
- W. HC.OP-AB.ZZ-0000 Reactor Scram
- X. HC.OP-EO.ZZ-0101 RPV Control
- Y. HC.OP-EO.ZZ-0102 Primary Containment Control
- Z. HC.OP-EO.ZZ-0202 Emergency RPV Depressurization
- AA. HC.OP-EO.ZZ-0206 RPV Flooding
- BB. NOTF 20149832 Feedwater Piping Wall Thickness

VII. ESG CRITICAL TASK RATIONAL

2013 NRC Scenario #1, Rev. 04

1.

- * ***Crew actuates five SRVs when the Action Required Region of the PSP curve is entered OR when it is determined that Suppression Chamber pressure cannot be maintained below the Action Required Region of the PSP curve.***

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

2.

- * ***WHEN Emergency Depressurization is initiated and the PSV-F013B fails to remain open, THEN before RPV pressure drops below 50 psig, the Crew places the Control Switch for an additional SRV to OPEN to achieve five open SRVs.***

K/A 295031 Reactor Low Water Level

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

EA1.07 Safety/Relief Valves RO 3.7 SRO 3.7

The Minimum Number of SRVs required for Emergency Depressurization (MNSRED) is five. The MNSRED is utilized to assure the RPV will depressurize and remain depressurized when Emergency Depressurization is required. When the fuses for the PSV-F013B fail, the Crew needs to ensure an additional SRV control switch is in the OPEN position to achieve five SRVs for Emergency Depressurization. This is directed by both EOP-202 and AB.ZZ-0001. SRV's are designed to open with a minimum differential pressure of 50 psid between the reactor vessel and the suppression chamber. Below this d/p, they may not open. If the Crew does not attempt to open the fifth SRV before this minimum d/p is lost, they cannot validate it's operation. This would prevent them from detecting the failure and pursuing the use of the Alternate Depressurization Systems in EOP-202.

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

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

**COMPONENT/TRAIN/SYSTEM UNAVAILABILITY
THAT INCREASES CORE DAMAGE FREQUENCY**

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

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

ONLINE RISK: GREEN

WORK WEEK CHANNEL: B

PROTECTED EQUIPMENT

HPCI/250VDC
'A' Channel EDG, SWGR, 1E Logic Panels,

REACTIVITY / Plant Status

100% Power
Power reduction to 90% IAW HC.OP-IO.ZZ-0006 and REMA.

ESF/SAFETY SYSTEMS

RCIC C/T for scheduled drain pot steam leak repair.

COOLING WATER

Place 'A' RACS pump I/S and secure B RACS pump for oil change. No maintenance has been performed on 'B' RACS pump.

BOP

None

ELECTRICAL

None

ADVERSE CONDITION MONITORING

None

IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

Note: The following criteria list scenario traits that are numerical in nature for a single scenario.

ESG: Scenario #1

SELF-CHECK

- _____ 1. Total malfunctions inserted: 5-8
- _____ 2. Malfunctions that occur after EOP entry: 1-4
- _____ 3. Abnormal Events: 1-2
- _____ 4. Major Transients: 1-2
- _____ 5. EOPs used beyond primary scram response EOP: 1-3
- _____ 6. EOP Contingency Procedures used: 0-3
- _____ 7. Approximate scenario run time: 45-60 minutes (one scenario may approach 90 minutes)
- _____ 8. EOP run time: 40-70% of scenario run time
- _____ 9. Crew Critical Tasks: 2-5
- _____ 10. Technical Specifications are exercised during the test: ≥ 1

Comments:

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

Crew Validation **Rev:** 4 **Date Validated:** 7/23/13
Validated with one crew of 3 Shift. Validation time 60 minutes.

Validation Comments

Disposition

////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____
_____	_____
_____	_____

Crew Validation **Rev:** **Date Validated:**

Validation Comments

Disposition

////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____
_____	_____

SIMULATOR

EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: Recirc Pump Seal Failure, ATWS with BPV Failure

SCENARIO NUMBER: NRC 2013 Exam Scenario #2

EFFECTIVE DATE: Effective when approved.

EXPECTED DURATION: 60 minutes

REVISION NUMBER: 4

PROGRAM: ☐ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER _____

REVISION SUMMARY:

1. Changes ATWS from electrical to hydraulic full core.
2. Deletes trip of A SBLC pump.
3. Deletes CR HVAC failure to auto-start.
4. Deletes APRM Flow Summer Failure.
5. Extends EHC pump trip time delay by 2 minutes.
6. Remove Power Oscillation malfunction after scram.

PREPARED BY: _____
NRC
Instructor

7/23/13
DATE

APPROVED BY: _____
LORT Group Lead or Designee

DATE

APPROVED BY: _____
Shift Operations Supervisor or Designee

DATE

I. OBJECTIVE(S):

Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CREW CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Crew critical tasks within this examination scenario guide are identified with an “*.”)

II. MAJOR EVENTS:

- A. Loss of 1CD481 Inverter
- B. Recirc Pump Seal Failure
- C. Power Oscillations
- D. ATWS with ARI failure, RWCU and SLC Failure
- E. EHC Pump Failure
- F. RHR Torus Cooling Valve Fails To Open

III. SCENARIO SUMMARY:

The scenario begins with the plant at 100% power; with 'A' EHC Pump OOS. N2 makeup to the Primary Containment is required. After establishing N2 makeup, the crew will be directed to lower power to 90% using Recirc pump flow to prepare for a rod pattern adjustment. After reactivity change is completed, the 1CD481 inverter will fail. After the inverter failure, the 'A' Recirc pump will experience a seal failure and the crew will have to reduce power and the pump will be tripped & isolated. After single loop operation is established, power oscillations will occur, necessitating a reactor SCRAM. The SCRAM will not be successful and will result in a full core ATWS with an initial power level of about 40%. ARI will fail to operate. RWCU will fail to isolate and B SLC pump will trip when started. The crew will attempt to drive individual rods manually. Additional SCRAM attempts will not be successful. Pressure will be initially controlled with the BPVs, but the BPVs will gradually fail close subsequent to the EHC pump trip, requiring the crew to establish pressure control with the SRVs. When Torus cooling is placed into service, the RHR torus cooling valve fails to open. Once torus cooling is placed in service and pressure and level are being maintained, SCRAM attempts will be successful and the scenario may be terminated.

IV. INITIAL CONDITIONS:

I.C.

Initial

INITIALIZE the simulator to 100% power, 3840 MWth, MOL.

IF N2 makeup to containment will be performed,
THEN **REDUCE** drywell and suppression chamber pressure to approximately 0.30 psig.

ENSURE 'D' SACS pump is in service.

ENSURE 'B' CRD pump is in service.

ENSURE 'B' FPCC pump is in service.

ENSURE 'B' Control Room Vent Train is in service.

ENSURE BOTH Steam Tunnel unit Coolers are in service.

ENSURE 'B' EHC pump is in service.

ENSURE 'B' PCIG Compressor is in AUTO LEAD.

ENSURE associated Schedule file open and running.

ENSURE associated Events file open.

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

Initial

Description

INITIAL IO.ZZ-006 for the power reduction.

IF performing N2 Makeup,
THEN **INITIAL** HC.OP-SO.GS-0001 up to the and including increasing vaporizer temperature to 100 degF (Step 5.2.9 of Rev 33).

Protect "B" EHC Pump

ENSURE Data Collection is trending the following parameters:

- W/R Reactor Water Level
- Fuel Zone Reactor Water Level
- W/R Reactor Pressure

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

COMPLETE the "Simulator Ready for Training/Examination" Checklist.

EVENT FILE:

<i>Initial</i>	ET #	
	5	Event code: rr_52(1) < 1.0 // 'A' Recirc pump breaker Description: A RRP stopped initiates power oscillations.
	7	Event code: crqnmi <= 30 Reactor Power less than 30% Description: Trips SBLC Pumps after MS placed in SD.
	8	Event code: zcrprun <= 0.0 // Mode Switch NOT in RUN Description: Initiates hydraulic full core ATWS
	16	Event code: rhf24(1) > 300 // 'A' RHR in Chamber Cooling Description: Trips BC-HV-F024A when placed in Chamber Cooling
	17	Event code: rhf24(2) > 300 // 'B' RHR in Chamber Cooling Description: Trips BC-HV-F024B when placed in Chamber Cooling
	18	Event code: et_array(16) // Description: Detects BC-HV-F024A tripped to remove B malfunction
	19	Event code: et_array(17) // Description: Detects BC-HV-F024B tripped to remove A malfunction
	30	Event code: ZLSLPMAS Description: SBLC PUMP A started

MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description
	None	None	Insert malfunction TC07A	EHC pump A trip
	None	None	Insert malfunction CU11A	RWCU isolation valve F001 failure to auto close
	None	None	Insert malfunction CU11B	RWCU isolation valve F004 failure to auto close
	None	None	Insert malfunction ED09C1 on event 2	Loss of 120 VAC class 1E inst bus 1CD481
	None	None	Insert malfunction RR05A to 100.00000 in 60 on event 3	Recirc pump A inboard seal failure
	None	None	Insert malfunction RR06A after 180 from 12.00000 to 100.00000 in 360	Recirc pump A outboard seal failure
	None	None	Insert malfunction CR02A after 60 to 80.00000 in 300 on event 5	Reactor Core Instabilities (LPRMs)
	None	None	Insert malfunction AN-C3F2 after 300 on event 5	CRYWOLF ANN C3F2 OPRM ALARM
	None	None	Insert malfunction SL01B after 120 on event 7	SBLC injection pump BP208 failure
	None	None	Insert malfunction TC07B after 360 on event 7	EHC pump B trip
	None	None	Insert malfunction RP06 after 2 on event 8	Half-core ATWS - left side
	None	None	Insert malfunction RP07 after 2 on event 8	Half-core ATWS - right side
	None	None	Insert malfunction CR02A after 1 to 0.00000 on event 8	Reactor Core Instabilities (LPRMs)
	None	None	Insert malfunction CW15B on event 2	Prevents auto-start of SACS Pump B
	None	None	Insert malfunction SL01B after 240 on event 30	Trips SBLC Pump B

REMOTE SCHEDULE:

Initial	@Time	Event	Action	Description
	None	None	Insert remote HV12 to RUN	HV12 Steam tunnel unit cooler BVH216
	None	None	Insert remote EP01 after 360 to BYPASS on event 11	EP01 EOP-301, Bypass MSIV (-129") & High Temp Isolations
	None	None	Insert remote EP02 after 480 to BYPASS on event 12	EP02 EOP-311, Bypass PCIG (-129") Isolation
	None	None	Insert remote EP38 after 180 to BYPASS on event 13	EP05 EOP-319, LOCA level 2 interlock for 10K100
	None	None	Insert remote EP09 after 240 to REMOVED on event 14	EP09 EOP-320 (step 5.1.2), ARI valve fuses F6A/F5A
	None	None	Insert remote EP10 after 240 to REMOVED on event 14	EP10 EOP-320 (step 5.1.4), ARI valve fuses F6B/F5B
	None	None	Insert remote EP11 to INSTALLED after 360 to INSTALLED on event 14	EP11 EOP-320 (step 5.2.2), RPS division 1 jumper
	None	None	Insert remote EP13 to INSTALLED after 360 to INSTALLED on event 14	EP13 EOP-320 (step 5.2.3), RPS division 3 jumper
	None	None	Insert remote EP12 after 720 to INSTALLED on event 14	EP12 EOP-320 (step 5.2.4), RPS division 2 jumper
	None	None	Insert remote EP14 after 720 to INSTALLED on event 14	EP14 EOP-320 (step 5.2.5), RPS division 4 jumper
	None	None	Insert remote EP35 after 180 to FAIL_CLOSE on event 15	EP35 EOP-322 HV-F006 HPCI to CS
	None	None	Insert remote RH25A to RACK_OUT on event 16	RH25 GROUP 3A HV-F024A RHR Supp. Pool Clg
	None	None	Insert remote RH25B to RACK_OUT on event 17	RH25 GROUP 3A HV-F024B RHR Supp. Pool Clg
	None	19	Remove remote RH25A to NORMAL	RH25 GROUP 3A HV-F024A RHR Supp. Pool Clg
	None	18	Remove remote RH25B to NORMAL	RH25 GROUP 3A HV-F024B RHR Supp. Pool Clg
	None	None	Insert remote AN24 after 5 to NORM on event 20	AN24 E6-C5 RBVS & Wing Area HVAC Pnl 10C382
	None	None	Insert remote HV01 to STOP on event 20	HV01 RBVS Exhaust fan A
	None	None	Insert remote HV02 to STOP on event 20	HV02 RBVS Exhaust fan B
	None	None	Insert remote HV03 to STOP on event 20	HV03 RBVS Exhaust fan C
	None	None	Insert remote HV04 to STOP on event 20	HV04 RBVS Supply fan A
	None	None	Insert remote HV05 to STOP on event 20	HV05 RBVS Supply fan B
	None	None	Insert remote HV06 to STOP on event 20	HV06 RBVS Supply fan C

OVERRIDE SCHEDULE:

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

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>N2 M/U to the Primary Containment:</u></p> <p>Refer to SO.GS-0001 Section 5.2 and SUPPORT requests for field manipulations with appropriate reports. (The simulator does not model any of these functions. The N2 vaporizer is always lined up for make-up).</p>	<ul style="list-style-type: none"> CRS directs N2 Makeup to the Primary Containment. PO conducts N2 makeup to the Primary Containment IAW SO.GS-0001 Section 5.2 and 5.3. 	
<p><u>Power Reduction:</u></p> <p>Crew lowers power to 90% RTP using recirculation pumps.</p>	<ul style="list-style-type: none"> CRS directs RO to reduce reactor power to 90% IAW Reactor Engineering guidance and 5.2 of HC.OP-IO.ZZ-0006. RO reduces and maintains RO to reduce reactor power to 90% IAW Reactor Engineering guidance and 5.2 of HC.OP-IO.ZZ-0006. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p>
<p><u>Loss of CD481:</u></p> <p>After the Crew assumes the watch and at the discretion of the Lead Examiner, TRIGGER ET-2 (Loss of CD481 120AC 1E Inverter).</p>	<ul style="list-style-type: none"> Crew recognizes loss of CD481 by: <ul style="list-style-type: none"> ⇒ OHA D3-E3 "120VAC UPS TROUBLE" ⇒ OHA C6-A1 "RSP/RSS TAKEOVER" ⇒ Downscale indications for 'A' Channel DC systems and CD481 on 10C650D ⇒ 'C' Channel ECCS "TRIP UNIT OUT OF FILE OR PWR FAIL" lights ⇒ CRIDS page 167 indications 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to 10C382, <u>THEN REPORT</u> Low Flow Trip alarms on all Reactor Bldg Supply and Exhaust fans.</p> <p><u>IF</u> directed to secure RBVS, <u>THEN TRIGGER ET-20.</u></p>	<ul style="list-style-type: none"> • Crew recognizes loss of Reactor Building Ventilation by: <ul style="list-style-type: none"> ⇒ Supply/Exhaust Dampers HD-9370A AND HD-9414A closure ⇒ Fans trip • CRS implements AB.ZZ-0136. • Crew verifies that 'B' Control Room vent train automatically starts. • Crew recognizes that TACS loops failed to automatically swap • CRS directs manually swapping TACS IAW HC.OP-AB.ZZ-0001, Att 10. • Crew recognizes various other effects of CD481 loss: <ul style="list-style-type: none"> ⇒ AP210 SACS pump running ⇒ 'C' Channel LOCA LVL 2 load shed breakers open on 10C650E ⇒ PCIG valve isolations including common suction line isolation ⇒ HPCI suction swap to torus 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to CD481 inverter , <u>THEN REPORT:</u></p> <ul style="list-style-type: none"> The Inverter Output breaker CB10 is tripped. The AC Reg Output breaker CB302 is tripped There is an acrid odor coming from the static switch section 	<ul style="list-style-type: none"> Crew dispatches ABEO and Maintenance to CD481 inverter. 	
	<ul style="list-style-type: none"> CRS implements AB.CONT-0002: ⇒ Condition B 	
	<ul style="list-style-type: none"> CRS recognize the following Tech Spec actions apply: ⇒ Distribution - Operating 3.8.3.1 action a 	Must restore CD481 within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours.
	<ul style="list-style-type: none"> CRS contacts Operations Management. 	
<p><u>Recirc Pump Seal Failure:</u> After loss of Inverter actions are complete, <u>AND</u> at the discretion of the Lead Examiner, TRIGGER ET-3 ('A' Recirc Pump Dual Seal Failure).</p>	<ul style="list-style-type: none"> Crew recognizes second stage seal failure on 'A' Recirc pump by: <ul style="list-style-type: none"> ⇒ OHA C1-F5 "COMPUTER PT IN ALARM" ⇒ CRIDS D2924 "RECIRC PUMP A SEAL LKG FLOW HI" ⇒ CRIDS D2926 "RECIRC PUMP A SEAL STAGE FLOW HILO" ⇒ Lowering second stage seal pressure 	First stage seal failure will occur three minutes after the second stage.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to report local seal pressures on 77' Rx Bldg, THEN REPORT readings consistent with CRIDS (Page 85), <u>OR</u> the following Monitor Items: (Monitor Items are psia)</p> <ul style="list-style-type: none"> 'A' Recirc Inbd (#1) Seal rrpsl1(1) – 15 = psig 'A' Recirc Outbd (#2) Seal rrpsl2(1) – 15 = psig 	<ul style="list-style-type: none"> CRS implements AB.RPV-0003: <ul style="list-style-type: none"> ⇒ Condition D ⇒ Condition E 	
	<ul style="list-style-type: none"> Crew recognizes 'A' Recirc pump dual seal failure by: <ul style="list-style-type: none"> ⇒ OHA C1-F5 "COMPUTER PT IN ALARM" reflash ⇒ Changing seal pressures ⇒ Rising seal temperatures ⇒ OHA C6-B1 "DLD SYSTEM ALARM/TRBL" ⇒ RM11 9AX317/318/320 DLD CCM alarms ⇒ RM11 9AX314 DLD Floor Drain Flow alarm ⇒ Rising drywell pressure 	<p>RECORD time dual recirc pump seal failure is recognized <u>OR</u> OHA C6-B1 is received (whichever is first) for ECG Classification.</p> <p>Time: _____</p>
	<ul style="list-style-type: none"> CRS implements AB.CONT-001: <ul style="list-style-type: none"> ⇒ Condition A 	
	<ul style="list-style-type: none"> RO/PO ensure drywell cooling is maximized. 	<p>HPI USED: STAR <input type="checkbox"/></p>
<p>Monitor Items:</p> <ul style="list-style-type: none"> HV-F023A rrvf23(1) HV-F100 cuvf100 HV-F031A rrvf31(1) 	<ul style="list-style-type: none"> * <i>CREW trips and isolates the 'A' RR pump before DRWL pressure reaches 1.68 psig by closing the:</i> <i>HV-F023A</i> <i>HV-F100</i> <i>HV-F031A</i> CRS implements AB.RPV-0006: <ul style="list-style-type: none"> ⇒ Condition B ⇒ Condition C 	<p>RECORD drywell pressure when 'A' Reactor Recirc pump is isolated:</p> <p>Drywell Pressure: _____</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> the Crew scrams during the seal failure, <u>THEN</u> proceed to the ATWS. Power Oscillations <u>NOT</u> observed.</p>	<ul style="list-style-type: none"> Crew validates successful recirc isolation by: <ul style="list-style-type: none"> ⇒ Seal pressures and temperatures ⇒ Trending DLD flows ⇒ Trending drywell pressure and temperature Crew monitors plant response to the transient. 	
<p><u>Power Oscillations</u> <u>ENSURE</u> Trigger ET-5, Power Oscillations, is activated when Recirc Pump A is tripped.</p>	<ul style="list-style-type: none"> Crew recognizes power oscillation and locks the mode switch in Shutdown IAW AB.RPV-0003 Immediate Operator Actions RO performs scram actions IAW AB.ZZ-0001 Attachment 1. 	
<p><u>ATWS >4%:</u> Full core hydraulic ATWS w/ failure of ARI.</p>	<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 Full Core Display ⇒ Rod position indications 	<p>RECORD time of Mode Switch to SHUTDOWN or Turbine Trip (whichever was first) for 15 min ECG Classification.</p> <p>Time: _____</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>Reactor Scram Reports</p> <p>Following a Reactor scram, the NCO should make an initial scram report by announcing reactor status IAW HC.OP-AB.ZZ-0001. Crew personnel should hold all other non-essential communications until after the initial scram report is complete. The Control Room Supervisor should silence alarms during the scram report and the SM/CRS is not required to make a statement directing the NCO to check the overhead alarms, since these actions are already expected immediately following the scram. During the scram report, the NCO should report reactor level and pressure and their trends to the Control Room staff IAW HC.OPAB.ZZ-0001.</p>	<ul style="list-style-type: none">• RO performs ATWS actions IAW AB.ZZ-0001 Attachment 1.	<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
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <ul style="list-style-type: none"> • Prioritize the Power Leg to establish SLC injection as soon as possible. • Terminating and Preventing HPCI in a timely manner is critical in order to reduce reactor power by establishing and maintaining a - 50" to -100" RPV level band. • Maximize steam loads IAW with the post scram pressure control hard card actions when reactor power exceeds bypass valve capability. • Although Abnormal Operating Procedure HC.OPAB. BOP-0002 guidance for tripping the turbine should still be followed, the impact of tripping the turbine on RPV pressure control should be evaluated and actions taken ahead of time to minimize the impact of the loss of the turbine (e.g., all other steam demands are maximized, turbine parameters are closely monitored to provide the longest time possible for other reactor shutdown actions to be implemented prior to tripping the turbine). If reactor power is within the capability of the turbine bypass valves, the turbine should be tripped without any additional delay. • After Terminating and Preventing low pressure ECCS, place RHR in suppression pool cooling in order to mitigate reaching 110 degrees F in the Torus with SRVs cycling. • With limited injection sources, if RPV level stabilizes below -185", the decision on whether reactor level can be restored above -185" will be based on the time required to insert sufficient negative reactivity to allow reactor level to stabilize above -185". • As control rods are inserted, reduce injection flow to maintain reactor level low in the assigned band to reduce reactor power. 	<ul style="list-style-type: none"> • CRS implements EOP-101A. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>For ATWS conditions where reactor power remains >4% RTP, the CRS should direct the PO to remain at feedwater to stabilize RPV level. Under these conditions, the Recirc pumps are already tripped and RWCU has already isolated and the PO should be assigned the action to initiate SLC. The RO, following completion of the post scram hard card ATWS mitigation actions (manual scram and ARI initiation), should be directed to Terminate and Prevent HPCI injection prior to implementing any other EOP-101A actions such as inhibiting ADS or inserting control rods. The basis for this direction is; 1) to facilitate PO control of RPV level; 2) mitigate the reactor power excursion due to the cold water HPCI injection inside the shroud; and 3) ensure that the main turbine remains available to facilitate RPV pressure control.</p>	<ul style="list-style-type: none"> PO stabilizes and maintains RPV level as directed by CRS. 	
	<ul style="list-style-type: none"> CRS directs: <ul style="list-style-type: none"> ⇒ Initiating SLC ⇒ Verifying RWCU Isolates 	
	<ul style="list-style-type: none"> RO/PO initiate SLC and verify RWCU isolates. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>PEER CHECK <input type="checkbox"/></p>
<p><u>RWCU Failure to Auto Isolate</u></p>	<ul style="list-style-type: none"> Crew recognizes failure of RWCU to isolate by: <ul style="list-style-type: none"> ⇒ BG-HV-F001 open ⇒ BG-HV-F004 open 	
<p>InSight Items:</p> <ul style="list-style-type: none"> HV-F001 cuvf001 HV-F004 cuvf004 	<ul style="list-style-type: none"> RO/PO close RWCU HV-F001 and HV-F004. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>Immediate Operator action IAW AB.CONT-0002.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew initiates closure of RWCU HV-F001 OR HV-F004 after SBLC Pumps started. 	<p>RECORD time between starting SBLC pump and valve closure. Time: _____</p>
<p><u>Trip of SLC Pumps:</u></p> <ul style="list-style-type: none"> BP208 failure inserted 120 seconds after reactor power is less than 30% AP208 trips 240 seconds after start. 	<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 D3023 "SLC INJ PMP AP208 TROUBLE TRBL" ⇒ Flashing STOP light for AP208 	
<p><u>IF</u> dispatched to investigate trip of A(B)P208, <u>THEN REPORT</u> that the motor is hot to the touch and the breaker will not reset. (52-212063/52-222101)</p>	<ul style="list-style-type: none"> Crew dispatches NEO and Maintenance to investigate trip of A(B)P208 SLC pump. 	
	<ul style="list-style-type: none"> CRS determines a SAE Classification is required IAW ECG Section SS3.1 (An automatic scram failed to shutdown the reactor as indicated by reactor power > 4% AND Manual scram actions taken at the reactor control console (mode switch, manual scram pushbuttons, manual ARI actuation) DO NOT shutdown the reactor as indicated by reactor power > 4%). 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS declares SAE IAW ECG Section SS3.1. <p>(Note: Declaration may be completed after scenario termination at lead evaluators discretion)</p> <ul style="list-style-type: none"> CRS directs inhibiting ADS. RO/PO inhibit ADS IAW AB.ZZ-0001 Att. 13. 	<p>RECORD time SAE declared.</p> <p>Time Declared: _____</p> <p>HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/></p>
	<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>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>REFER to the appropriate EOP and SUPPORT Crew requests for EOPs IAW with the following. Validated execution time delays are built-in: EOP-301: ET-11 EOP-311: ET-12 EOP-319: ET-13 EOP-320: ET-14 EOP-322: ET-15</p> <p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>Promptly initiate actions IAW the 300 series EOPs to shutdown the reactor. Timely actions will reduce the potential continued challenges to containment. In addition, once the post scram hard card actions have been completed and RPV level has stabilized in the required band, an NCO should be assigned the responsibility to insert control rods IAW the post ATWS CRD operation hard card and CRAM move sheets. When control room portions of EOP-320 have been completed and the NCO is ready to re-insert a manual scram, the NCO should perform a crew update and utilize the post scram hard card to implement the applicable post scram actions following the manual scram attempt.</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) 	<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>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS directs maintaining RPV water level between -50" and -185". (CRS may direct level band of -185" to -129" if level drops low enough) 	Typically, the lower end of the level band is set above -129".
	<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>
	<p>* <i>CREW maintains or restores adequate core cooling by restoring/maintaining Reactor water level to >-185" IAW HC.OP-EO.ZZ-0101A 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
<p>Total Loss of EHC: ~6 min after the plant is tripped, OR at the discretion of the Lead Examiner, ENSURE/TRIGGER ET-7 (Trip of the 'B' EHC pump). <u>Note:</u> the BPVs will fail close ~3 min after total loss of EHC.</p>	<ul style="list-style-type: none"> Crew recognizes trip of the 'B' EHC pump by: <ul style="list-style-type: none"> ⇒ OHA D3-F5 "TURB HYDR PUMP TROUBLE" Crew recognizes turbine bypass valves failing shut by: <ul style="list-style-type: none"> ⇒ OHA D3-D5 "EHC UNIT PANEL 10C363" ⇒ DEHC Bypass Valve Positioning Error alarms ⇒ Reactor pressure rising above Pressure Setpoint 	
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION Pressure Leg Direct initial pressure control as Stabilize pressure 800 psig to 1000 psig. The lower limit of 800 psig will not complicate RPV level maintenance and will prevent an unwanted cooldown. The upper limit of 1000 psig is a round number below 1047 psig.</p>	<ul style="list-style-type: none"> CRS directs stabilizing pressure below 1037 psig with: <ul style="list-style-type: none"> ⇒ Main Steam Line Drains ⇒ SRVs ⇒ RPFT RO/PO control pressure as directed by CRS with: <ul style="list-style-type: none"> ⇒ Main Steam Line Drains IAW AB.ZZ-0001 Att. 15 ⇒ SRVs IAW AB.ZZ-0001 Att. 13 ⇒ RFPTs 	<p>When pressure control swaps to SRVs, maintaining RPV water level between -50" and -129" will be very challenging due to shrink and swell and changing reactor pressure with the RFPTs in MAN.</p> <p>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"> 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 	
<p>Strategies For Successful Transient Mitigation</p> <p>Torus Temperature Leg</p> <p>Start all available Torus cooling as soon as possible to remove heat from containment.</p>	<ul style="list-style-type: none"> CRS implements EOP-102. CRS directs placing AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray (as required). RO/PO place AP202 RHR pump in Suppression Pool Cooling and Suppression Chamber Spray (as required) IAW AB.ZZ-0001 Att. 3. 	<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
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STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION

EOP-102 Primary Containment Control.

Primary Containment Pressure Leg
When controlling Primary Containment Pressure and it becomes apparent that the PSP curve is going to be exceeded and Torus level is in the normal band, the Control Room Supervisor should pick 15 psig Torus Pressure to determine if the pressure can be maintained below the PSP limit. The 15 psig limit is below the PSP limit and will allow sufficient time to evaluate further actions needed such as EOP-202 RPV blowdown. If no systems are available to restore and maintain Torus Pressure, it is expected that you would enter EOP-202 and blowdown prior to exceeding PSP.

HPI USED:

STAR ☐

HARD CARD ☐

BP202 is not available due to 10D420 failure.

Failure of RHR Torus Cooling Valve to Open

NOTE: The first loop of RHR placed in Suppression Pool Cooling will have its F024 valve trip its breaker. Response shown for A Loop.

- Crew recognizes failure of HV-F024A by:
 - ⇒ OHA A6-B1 "RHR LOOP A TROUBLE"
 - ⇒ Flashing OVLD/PWR FAIL
 - ⇒ Loss of position indication
 - ⇒ No indication of SP cooling flow
 - ⇒ CRIDS D4439 "RHR PMP A TEST HV-F024A OPF"

IF dispatched to investigate trip of HV-F024A breaker, THEN REPORT the breaker is tripped and will not reset.

- Crew dispatches NEO and Maintenance to breaker for HV-F024A (52-212192).

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> CRS directs B Loop of RHR placed in Suppression Pool Cooling. 	
	<ul style="list-style-type: none"> RO/PO places B RHR Loop in Suppression Pool Cooling IAW AB.ZZ-0001 Att. 3. 	HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/>
	<ul style="list-style-type: none"> <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. 	
	<ul style="list-style-type: none"> <u>IF</u> RPV level reaches -129", <u>THEN</u> RO/PO terminate and prevents injection from Core Spray IAW AB.ZZ-0001 Attachment 16. 	HPI USED: STAR <input type="checkbox"/> HARD CARD <input type="checkbox"/>
<u>WHEN</u> the Crew has reset RPS, <u>THEN</u> DELETE Malfunctions RP06 and RP07 to allow full rod insertion on the next scram.	<ul style="list-style-type: none"> <u>WHEN</u> EOP-320 Section 5.1 and 5.2 are complete, <u>THEN</u> the Crew implements EOP-320 Section 5.3 and reset RPS. 	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
At the Lead Examiners discretion, MODIFY InSight 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. 	HPI USED: STAR <input type="checkbox"/> PEER CHECK <input type="checkbox"/>
	* CREW fully inserts all control rods via RMCS and/or manual scram(s) IAW HC.OP-EO.ZZ-0320.	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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- Crew recognizes the reactor is shutdown by:
 - ⇒ SPDS ALL RODS IN
 - ⇒ RWM Confirm Shutdown
 - ⇒ CRIDS Rod positions

Termination Requirement:

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

- RPV Level is being maintained above –185”
AND
- All rods are fully inserted

- CRS exits EOP-101A, enters EOP-101.

VI. SCENARIO REFERENCES:

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. **Emergency Plan (ECG)**
- G. **Alarm Response Procedures (Various)**
- H. HU-AA-101 Performance Tools and Verification Practices
- I. HU-AA-104-101 Procedure Use and Adherence
- J. HU-AA-1081 Fundamentals Toolkit
- K. HU-AA-1211 Briefing
- L. OP-AA-101-111-1003 Use of Procedures
- M. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- N. OP-AA-101-111-1004 Operations Standards
- O. OP-AA-101-112-1002 On-Line Risk Assessment
- P. OP-AA-106-101-1001 Event Response Guidelines
- Q. OP-HC-108-106-1001 Equipment Operational Control
- R. OP-AA-108-114 Post Transient Review
- S. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- T. **HC.OP-SO.AE-0001 Feedwater System Operation**
- U. **HC.OP-SO.EC-0001 Fuel Pool Cooling and Cleanup System**
- V. **HC.OP-SO.SF-0003 Rod Worth Minimizer Operation**
- W. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- X. **HC.OP-AB.CONT-0001 Drywell Pressure**
- Y. **HC.OP-AB.CONT-0001 Drywell Leakage**
- Z. **HC.OP-AB.COOL-0003 Reactor Auxiliary Cooling**
- AA. **HC.OP-EO.ZZ-0311 Bypassing Primary Containment Instrument Gas Isolation Interlocks**
- BB. **HC.OP-EO.ZZ-0319 Restoring Instrument Air in an Emergency**
- CC. **HC.OP-EO.ZZ-0320 Defeating ARI and RPS Interlocks**
- DD. **HC.OP-EO.ZZ-0322 Core Spray Injection Valve Override**
- EE. **HC.OP-EO.ZZ-0306 Venting the Scram Air Header**
- FF. **HC.OP-EO.ZZ-0101 RPV Control**
- GG. **HC.OP-EO.ZZ-0101A ATWS-RPV Control**
- HH. **HC.OP-EO.ZZ-0102 Primary Containment Control**

VII. ESG CRITICAL TASK RATIONAL

2013 NRC Scenario #2, Rev 04

1.

- * ***CREW prevents an uncontrolled depressurization during ATWS conditions by preventing ADS ACTUATION.***

K/A 218000 Automatic Depressurization System

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

A4.04 ADS inhibit RO 4.1 SRO 4.1

Given the current ATWS conditions of this scenario, preventing ADS automatic operation and potential uncontrolled reactor level flood up prevents a significant transient and subsequent positive reactivity addition to the reactor. EOPs direct this action under the current conditions. This critical task is only applicable if RPV water level goes below -129". Failure to satisfactorily complete the task is demonstrated by an automatic ACTUATION of ADS such that the ADS SRVs open and reduce reactor pressure by 300 psig.

2.

- * ***CREW maintains or restores adequate core cooling by restoring/maintaining Reactor water level to >-185" IAW HC.OP-EO.ZZ-0101A without Emergency Depressurizing.***

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

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

EA2.02 Reactor water level RO 4.1 SRO 4.2

Maintaining adequate Core cooling under ATWS conditions is accomplished by maintaining/restoring level above -185". HPCI and RCIC are capable of maintaining level under the current conditions. AB.ZZ-0001 provides directions on manual initiation of HPCI which will mitigate the automatic initiation failure. An Emergency Depressurization is not warranted and would result in a large injection of cold water and the potential displacement of boron from the core.

3.

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

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

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

EA1.01 Reactor Protection System RO 4.6 SRO 4.6

EA1.07 RMCS RO 3.9 SRO 4.0

Inserting all control rods provides a substantial negative reactivity addition. It is critical for the crew to implement a method to insert control rods and shut the reactor down. Failure to complete this action may result in requiring RPV level to be lowered to or below TAF to reduce power to <4%. This represents a significant challenge to maintaining adequate core cooling.

HOPE CREEK ESG - PRA RELATIONSHIPS EVALUATION FORM

INITIATING EVENTS THAT LEAD TO CORE DAMAGE

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

COMPONENT/TRAIN/SYSTEM UNAVAILABILITY THAT INCREASES CORE DAMAGE FREQUENCY

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

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

ONLINE RISK: GREEN

WORK WEEK CHANNEL: A

PROTECTED EQUIPMENT

"B" EHC Pump

REACTIVITY / Plant Status

100% Power
Reduce power to 90% IAW RE Guidance and HC.OP-IO.ZZ-0006.

ESF/SAFETY SYSTEMS

Initiate N2 makeup to the primary containment to test the flow recorder (a calibration was just performed).
HC.OP-SO.GS-0001 completed through step 5.2.8.

COOLING WATER

None

BOP

'A' EHC Pump tagged for planned maintenance

ELECTRICAL

None

ADVERSE CONDITION MONITORING

None

IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

Note: The following criteria list scenario traits that are numerical in nature for a single scenario.

ESG: Scenario 2

SELF-CHECK

- ☐ 1. Total malfunctions inserted: 5-8
- ☐ 2. Malfunctions that occur after EOP entry: 1-4
- ☐ 3. Abnormal Events: 1-2
- ☐ 4. Major Transients: 1-2
- ☐ 5. EOPs used beyond primary scram response EOP: 1-3
- ☐ 6. EOP Contingency Procedures used: 0-3
- ☐ 7. Approximate scenario run time: 45-60 minutes (one scenario may approach 90 minutes)
- ☐ 8. EOP run time: 40-70% of scenario run time
- ☐ 9. Crew Critical Tasks: 2-5
- ☐ 10. Technical Specifications are exercised during the test: ≥ 1

Comments:

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

Crew Validation **Rev:** 04 **Date Validated:** 7/23/13
One Hour

Validation Comments	Disposition
////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____

Crew Validation **Rev:** **Date Validated:**

Validation Comments	Disposition
////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____

Crew Validation **Rev:** **Date Validated:**

Validation Comments	Disposition
////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

SIMULATOR
***EXAMINATION* SCENARIO GUIDE**

SCENARIO TITLE: APRM Upscale, Single Rod Scram, Loss of Drywell Clg, Loss of 10B430, HPCI Steam Leak, ED

SCENARIO NUMBER: Scenario #3 2013 NRC Exam

EFFECTIVE DATE: Effective when approved.

EXPECTED DURATION: 60 minutes

REVISION NUMBER: 4

PROGRAM: ☐ L.O. REQUAL

☒ INITIAL LICENSE

☐ OTHER _____

REVISION SUMMARY:

1. 2013 Initial NRC Exam.
2. Deletes FRVS Vent Fan trip.
3. Deletes both EHC pump trips.
4. Deletes TBV failure to open.
5. Deletes D SRV stuck open.
6. Adds Malf RP04, RZ03B, and RZ03C for RPS failure with ARI works.
7. Adds 1&2 FWHTR condensate valves fail closed during scram.

PREPARED BY: On File 5/27/13
NRC Examiner **DATE**

5/27/13
DATE

Reviewed BY: On File DATE
Chief Examiner

DATE _____

APPROVED BY: On File DATE
OLB Branch Chief

DATE _____

APPROVED BY: _____

LORT Group Lead or Designee

DATE _____

APPROVED BY: _____

Shift Operations Supervisor or Designee

DATE _____

I. OBJECTIVE(S):

Enabling Objectives

- A. The crew must demonstrate the ability to operate effectively as a team while completing a series of CRITICAL TASKS, which measure the crew's ability to safely operate the plant during normal, abnormal, and emergency plant conditions. (Critical tasks within this examination scenario guide are identified with an “*.”)

II. MAJOR EVENTS:

- A. APRM channel C Upscale w/Single Rod Scram
- B. Loss of TB Chilled water
- C. Loss of 10B430
- D. HPCI Steam Leak w/Failure to Isolate
- E. RPS manual and auto failure (ARI successful)
- F. RCIC Pump Room High Temperature

III. SCENARIO SUMMARY:

The scenario begins with the plant at 75% power and TACS on the 'B' SACS loop. The DK111 Turbine Chiller is C/T for a Freon leak and CP161 is C/T for a bearing oil leak. The turnover directed the crew to raise power using recirc flow. After the power maneuver, C APRM fails upscale causing a half scram. Due to a mispositioned SRI Test Toggle switch, a single rod will scram in when the RPS half scram occurs. After Tech Specs have been referenced, the AP161 will trip due to a bearing problem. The BP161 goes into runout and trips shortly thereafter. This results in a loss of TB Chilled water, which will require the Crew to align RACS to cool the drywell and vent the drywell to restore pressure back below 0.75 psig. After the Loss of Drywell Cooling has been addressed, the 10B430 1E 480 VAC Unit Substation will be lost due to a transformer failure. This will result in a loss of the operating CRD pump and the CP228 ECCS jockey pump. HPCI will then inadvertently initiate, requiring the crew to take action to prevent unwarranted injection. After these failures are addressed, a steam leak develops in the HPCI room. The inboard steam isolation valve is not available due to the loss of the 10B430 Substation, and the outboard steam isolation valve binds and will not close. The leak will impact the RCIC room, due to the door between HPCI and RCIC not being properly dogged shut. When HPCI room temperature reaches 200 degrees, the door will pop open, admitting steam to the RCIC room. The unisolable leak will require the Crew to scram. RPS and the mode switch will fail to SCRAM the unit, requiring ARI for successful shutdown. The 1 & 2 FWHTR condensate valves will fail closed after the scram complicating level control. The rising temperatures in the HPCI and RCIC rooms will ultimately require Emergency Depressurization.

IV. INITIAL CONDITIONS:

I.C.

Initial	
	INITIALIZE the simulator to 100% power, MOL.
	REDUCE reactor power to 75% using recirc.
	REMOVE and BLOCK Crossflow BEFORE going to RUN.
	ENSURE BOTH Steam Tunnel unit Coolers are in service.
	ENSURE the 'A' CRD pump is in service.
	ENSURE the 'A' EHC pump is in service.
	ENSURE TACS is being supplied by the 'B' SACS loop.
	ENSURE the 'B' Control Room Vent Train is in service.
	ENSURE the 'C' SSW pump is in standby.
	ENSURE the 'C' SACS pump is in standby.
	C/T CP161 TB Chilled water circ pump as follows:
	<ul style="list-style-type: none"> • ENSURE CP161 is not in service.
	<ul style="list-style-type: none"> • PLACE CP161 in MAN.
	C/T DK111 as follows:
	<ul style="list-style-type: none"> • ENSURE DK111 is not in service
	<ul style="list-style-type: none"> • PRESS DK111 STOP pushbutton
	<ul style="list-style-type: none"> • ENSURE HV-9503D is CLOSED
	ENSURE associated Schedule files open and running.
	ENSURE associated Events file open.

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

Initial	Description
	PLACE red bezel cover on DK111.
	PLACE red bezel cover on HV-9503D.
	PLACE red bezel cover on CP161.
	PREPARE a Fire Alarm for FA015 Fire Zone 4109.
	At a minimum review the Scenario Reference section and CLEAN the bolded EOPs, ABs and SOPs listed. (80091396 0270)
	TREND plant parameters needed for Critical Task determination:
	<ul style="list-style-type: none"> ○ HPCI Room Temperature
	<ul style="list-style-type: none"> ○ RCIC Room Temperature
	<ul style="list-style-type: none"> ○ Reactor Pressure
	<ul style="list-style-type: none"> ○ Wide Range RPV Level
	COMPLETE "Simulator Ready-for-Training/Examination Checklist".

EVENT FILE:

Initial	ET #	
	6	Event code: hvvv(1) <= 0.90 // HPCI HV-F003 valve position Description: Trips breaker for HPCI HV-F003 when closure is attempted from the Control Room.
	7	Event code: hvt4111 > 160 // HPCI Room Temp Description: Triggers RCIC Steam leak to allow raising RCIC Room temp.
	8	Event code: crqnm1 <= 15 // Reactor Power Description: Inserts HPCI Steam Leak at 40% on reactor scram.
	9	Event code: rrprv < 650 // Reactor Pressure in psia Description: Raises severity of HPCI leak if Crew depressurizes
	10	Event code: hvt4111 > 200 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	11	Event code: hvt4111 > 210 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	12	Event code: hvt4111 > 220 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	13	Event code: hvt4111 > 230 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	14	Event code: hvt4111 > 240 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	15	Event code: hvt4111 > 250 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	16	Event code: hvt4111 > 255 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	17	Event code: hvt4111 > 260 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	18	Event code: hvt4111 > 265 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	19	Event code: hvt4111 > 270 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	20	Event code: hvt4111 > 271 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	21	Event code: hvt4111 > 272 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	22	Event code: hvt4111 > 273 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	23	Event code: hvt4111 > 274 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	24	Event code: hvt4111 > 275 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	25	Event code: hvt4111 > 276 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	26	Event code: hvt4111 > 277 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
	27	Event code: hvt4111 > 278 // HPCI Room Temp Description: Raises RCIC Room Temperature as HPCI Room Temperature rises.
		Event code: Description:

MALFUNCTION SCHEDULE:

Initial	@Time	Event	Action	Description
	None	None	Insert malfunction AN-E5F1	CRYWOLF ANN E5F1 CHILLED WTR SYSTEM TROUBLE
	None	None	Insert malfunction HP10	HPCI steam isolation valves F002 & F003 failure to auto close
	None	None	Insert malfunction RP04 on event 6	Failure of RPS to SCRAM (ATWS)
	None	None	Insert malfunction RZ03B	RRCS Channel A - Logic B Failure to Auto Initiate
	None	None	Insert malfunction RZ03C	RRCS Channel B - Logic A Failure to Auto Initiate
	None	None	Insert malfunction NM21C to 100 on event 1	APRM C failure
	None	None	Insert malfunction CD060227 on event 1	Control Rod 02-27 SCRAM
	None	None	Insert malfunction CW18A on event 2	Chilled water circ pump AP161 trip
	None	None	Insert malfunction CW18B after 5 on event 2	Chilled water circ pump BP161 trip
	None	None	Insert malfunction ED13C1 on event 3	Loss of 480 VAC essential bus C 10B430
	None	None	Insert malfunction HP09 from 5.00000 to 40.00000 in 60 on event 5	HPCI steam line break inside HPCI Room 4111
	None	None	Insert malfunction AN-A2A5 on event 5	CRYWOLF ANN A2A5-FIRE PROT PANEL 10C671
	None	None	Insert malfunction RC09 to 1.00000 on event 7	RCIC steam line break inside the RCIC ROOM 4110
	None	None	Insert malfunction FW30A on event 8	Heater 2A hi level switch failure
	None	None	Insert malfunction FW30B on event 8	Heater 2B hi level switch failure
	None	None	Insert malfunction FW30C on event 8	Heater 2C hi level switch failure
	None	None	Insert malfunction CD030227 on event 28	Control Rod 02-27 stuck

MALFUNCTION SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	4	Set hp_k90 = true	1020 HPCI MAN INIT
	None	5	Set hvtr4111 = 135	
	None	7	Set hvtr4110 = 135	
	None	8	Insert malfunction HP09 after 1 from 40.00000 to 40.00000	HPCI steam line break inside HPCI Room 4111
	None	9	Insert malfunction HP09 after 1 from 60.00000 to 60.00000	HPCI steam line break inside HPCI Room 4111
	None	10	Set hvtr4110 = 150	
	None	11	Set hvtr4110 = 170	
	None	12	Set hvtr4110 = 180	
	None	13	Set hvtr4110 = 190	
	None	14	Set hvtr4110 = 200	
	None	15	Set hvtr4110 = 210	
	None	16	Set hvtr4110 = 220	
	None	17	Set hvtr4110 = 230	
	None	18	Set hvtr4110 = 240	
	None	19	Set hvtr4110 = 245	
	None	20	Set hvtr4110 = 246	
	None	21	Set hvtr4110 = 247	
	None	22	Set hvtr4110 = 248	
	None	23	Set hvtr4110 = 249	
	None	24	Set hvtr4110 = 250	
	None	25	Set hvtr4110 = 251	
	None	26	Set hvtr4110 = 252	
	None	27	Set hvtr4110 = 253	

REMOTE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert remote CW33B to 50	CW33 Turbine Bldg chiller CK111 Winterization
	None	None	Insert remote HP04 to FAIL_OPEN	HP04 GROUP 5A HV-F002 HPCI Steam Supply Isol
	None	None	Insert remote HP06 to RACK_OUT on event 6	HP06 GROUP 5A HV-F003 HPCI Steam Supply Isol
	None	None	Insert remote HV06 to STOP on event 29	HV06 RBVS Supply fan C
	None	None	Insert remote HV05 after 1 to STOP on event 29	HV05 RBVS Supply fan B
	None	None	Insert remote HV04 after 1 to STOP on event 29	HV04 RBVS Supply fan A
	None	None	Insert remote HV03 after 2 to STOP on event 29	HV03 RBVS Exhaust fan C
	None	None	Insert remote HV02 after 3 to STOP on event 29	HV02 RBVS Exhaust fan B
	None	None	Insert remote HV01 after 3 to STOP on event 29	HV01 RBVS Exhaust fan A
	None	None	Insert remote CX11 after 120 to OPEN on event 30	CX11 CX valve AP-V041 to Core Spray header A
	None	None	Insert remote CX15 to OPEN on event 30	CX15 CX valve AP-V044 to RHR header A
	None	None	Insert remote CX17 after 60 to OPEN on event 30	CX17 CX valve AP-V047 to RHR header C

OVERRIDE SCHEDULE:

<i>Initial</i>	<i>@Time</i>	<i>Event</i>	<i>Action</i>	<i>Description</i>
	None	None	Insert override 1A181_A2_LO to On	INOP-CHILLED WATER CPRSR DC111-CPRSR MOT (LO)
	None	None	Insert override 1A181_D_DI to Off	DK111 START-CHILLED WATER CPRSR DC111-CPRSR MOT (DI)
	None	None	Insert override 1A181_E1_DI to Off	SAFETY CKT COMPLETE/ON-CHILLED WATER CPRSR DK111 (DI)
	None	None	Insert override 1A181_F_LO to Off	STOP-CHILLED WATER CPRSR DC111-CPRSR MOT (LO)
	None	None	Insert override 1A182_E_DI to Off	HV-9503D OPEN-CH W DISCH SHUTOFF V (DI)
	None	None	Insert override 1A182_F_LO to Off	HV-9503D CLOSE-CH W DISCH SHUTOFF V (LO)
	None	None	Insert override 1A136_A2_LO to On	INOP-CH W CIRC PUMP CP161 (LO)
	None	None	Insert override 1A136_D_DI to Off	AUTO-CH W CIRC PUMP CP161 (DI)
	None	None	Insert override 1A136_E_DI to Off	START-CH W CIRC PUMP CP161 (DI)
	None	None	Insert override 1A136_F_LO to Off	STOP-CH W CIRC PUMP CP161 (LO)

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>Raise Power Using Recirc Flow:</u></p> <p>After the crew assumes the watch they will raise power per maneuvering sheet.</p>	<ul style="list-style-type: none"> CRS directs ATC to raise power 5% using Recirc Flow. <p>ATC adjusts Recirc flow and monitors Reactor power, pressure, and level and ensure plant conditions are stable.</p>	
<p><u>APRM C Upscale w/Single Rod Scram:</u></p> <p>After the Crew raises power, OR, at the discretion of the Lead Examiner, TRIGGER ET-1.</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 Crew recognizes RPS ½ scram by: <ul style="list-style-type: none"> ⇒ OHA C3-A3 "REACTOR SCRAM TRIP LOGIC A2" ⇒ RPS Trip Logic A2 NORMAL/RESET status lights extinguished ⇒ Pilot Scram Valve Solenoid LOGIC A NORMAL status lights for all four groups extinguished. ⇒ CRIDS D2132 "REACTOR SCRAM Y TRIP" 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

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

-
- Crew recognizes APRM C
Upscale by:
 - ⇒ C5-A1 NEUTRON MONITORING SYSTEM
 - ⇒ C3-C4 APRM SYS A TRIP/INOP
 - ⇒ C3-D4 APRM UPSCALE
 - ⇒ D2143 APRM CHANNEL C UPSCALE TRIP
 - ⇒ D4306 APRM CH C UPSCALE THERMAL TRIP
 - ⇒ C023 APRM INOPERATIVE

 - Crew recognizes single rod
scram by:
 - ⇒ OHA C6-E3 "ROD DRIFT"
 - ⇒ Rod 02-27 "DRIFT", "SCRAM", and "FULL IN" lights on Full Core display
 - ⇒ RWM "DR 02-27" indication
 - ⇒ CRIDS C078 "ROD DRIFT ALARM ALM"

 - Crew ensures only one rod is drifting.

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>WHEN</u> requested, <u>THEN</u> as RE, REPORT:</p> <ul style="list-style-type: none"> • Thermal Limits are SAT. • All other control rods are at target their position. • There is no immediate problem with leaving 02-27 inserted. • You will develop a recovery plan to withdraw 02-27. 	<ul style="list-style-type: none"> • CRS implements AB.IC-0001 Condition C 	
<p><u>IF</u> dispatched to troubleshoot rod 02-27 scram, <u>THEN</u> REPORT you found the 'B' S.R.I. test toggle on the 02-27 HCU out of "Normal". There are workers decontaminating the HCU bank, and one of them remembers bumping something. (02-27 is in the North HCU bank by HPCI pipechase. See EOP-303 map.)</p>	<p>Crew dispatches RBEO to 02-27 HCU.</p> <ul style="list-style-type: none"> • Crew contacts Rad Pro to survey scram discharge volume due to change in radiological conditions. • RO resets the Rod Drift alarm IAW HC.OP-AR.ZZ-0020. 	
<p>REMOVE Malfunction CD060227 when RPS is reset.</p>	<ul style="list-style-type: none"> • RO bypasses APRM C. • RO resets RPS half scram. • Crew contacts Maintenance to troubleshoot APRM C failure. • SM contacts Operations Management 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> directed to electrically disarm rod 02-27, THEN TRIGGER ET-28 to INSERT Malfunction cd030227 (stuck rod).</p>	<ul style="list-style-type: none"> CRS determine Tech Spec actions required. Enter Action statement for: <ul style="list-style-type: none"> ⇒ Reactor Protection System Instrumentation 3.3.1 ⇒ Control Rod Block Instrumentation 3.3.6 (Crew may declare rod 02-27 inoperable until cause of scram is determined and enter T/S 3.1.3.1). 	<p>For both T/S, still meet the Minimum Operable Channels per Trip Function. Tracking Action statement only.</p>
<p><u>Loss of Drywell Cooling:</u> After TS call has been addressed or at the discretion of the Lead Examiner, TRIGGER ET-2 (Loss of TB Chilled Water/Drywell Cooling).</p>	<ul style="list-style-type: none"> Loss of Drywell Cooling by: <ul style="list-style-type: none"> ⇒ OHA E5-E1 "CHILLED WTR PANEL 10C152" ⇒ OHA E5-F1 "CHILLED WTR SYSTEM TROUBLE" ⇒ Flashing "OVLD/PWR FAIL", "HI/LOW FLOW", and "STOP" lights on AP161 and BP161 TB Chilled Water Circ pumps ⇒ Loss of "START" lights on AK111/BK111 TB Chillers ⇒ CRIDS D5608 "CHW PUMP AP161 MALFUNCTION" ⇒ CRIDS D5609 "CHW PUMP BP161 MALFUNCTION" ⇒ CRIDS D4053 "WTR CHILLER AK111 REMOTE PANEL TRBL" ⇒ CRIDS D4054 "WTR CHILLER BK111 REMOTE PANEL TRBL" ⇒ Rising drywell temperature ⇒ Rising drywell pressure CRS implements AB.CONT-001: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition B 	<p>Drywell pressure will peak at less than 1.2 psig; however, <u>IF</u> the Crew manually scrams during the Loss of Drywell Cooling, <u>THEN</u> the HPCI Steam Leak will be automatically inserted.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew announces loss of Turbine Building Chilled Water on the plant page. RO/PO ensure drywell cooling is maximized. 	
<p><u>IF</u> dispatched to investigate loss of TB Chilled Water, <u>THEN REPORT:</u></p> <ul style="list-style-type: none"> AK111 and BK111 have Evaporator Low Water Flow alarms in AP161 and BP161 have Discharge Flow Hi/Low alarms in Both AP161 and BP161 motors are hot to the touch AP161 inboard pump bearing is hot to the touch 	<ul style="list-style-type: none"> Crew dispatches TBEO and Maintenance to investigate. RO/PO align RACS to supply drywell cooling IAW AB.CONT-0001 Condition B. 	<p>Drywell pressure will begin to drop as soon as the RACS and Chilled Water valves start to swap. The 9532-1/2 are not in the RACS flowpath.</p>
<p><u>IF</u> directed to prepare a release permit, <u>THEN REPORT</u> it will take about 30 minutes and REQUEST the Crew to record start and stop times for the release.</p>	<ul style="list-style-type: none"> <u>IF</u> Drywell Pressure is not restored below 0.75 psig, <u>THEN</u> CRS implements AB.CONT-0001: ⇒ Condition C <u>IF</u> directed, <u>THEN</u> PO Vents the drywell IAW AB.CONT-001 Condition C. 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<u>Loss of 10B430 Unit Sub:</u> After the Crew aligns RACS to cool the drywell, <u>OR</u> , at the discretion of the Lead Examiner, TRIGGER ET-3.	<ul style="list-style-type: none"> CRS contacts Operations Management to initiate a Prompt Investigation and ERT callout. 	
	<ul style="list-style-type: none"> Crew monitors Reactor power, pressure, and level and ensures plant conditions are stable. 	
	<ul style="list-style-type: none"> Crew recognizes loss of AP207 CRD pump by: <ul style="list-style-type: none"> ⇒ OHA C6-F2 "CRD SYSTEM TROUBLE" ⇒ AP207 "OVLD/PWR FAIL" light ⇒ AP207 flashing "STOP" light ⇒ CRIDS D2244 "CRD WATER PUMP A MOTOR TRBL" 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • Crew recognizes loss of CP228 ECCS Jockey pump by: <ul style="list-style-type: none"> ⇒ OHA A6-C3 "ECCS JOCKEY PUMP 1CP228 TROUBLE" ⇒ Jockey pump indications on 10C650A ⇒ OHA A6-B1 "RHR LOOP A TROUBLE" ⇒ OHA A6-B2 "RHR LOOP C TROUBLE" ⇒ OHA B3-C1 "CORE SPRAY LOOP A TROUBLE" ⇒ CRIDS D4434 "ECCS JOCKEY PMP CP228 OPF" ⇒ CRIDS D4373 "RHR PUMP A DISCHARGE PRESSURE HILO" ⇒ CRIDS D4397 "RHR PUMP C DISCHARGE PRESSURE HILO" ⇒ CRIDS D3157 "CS LOOP A INJECTION LINE PRESSURE HILO" 	<p>RHR and Core Spray Low Pressure alarms will not be received if Condensate Transfer is lined up before discharge header pressures decay to alarm setpoints. (≈11 minutes)</p>
	<ul style="list-style-type: none"> • Crew recognizes loss of AK202 PCIG compressor by: <ul style="list-style-type: none"> ⇒ OHA A1-A1 "INST GAS SYSTEM A TROUBLE" ⇒ OHA A1-A3 "INST GAS RECEIVER A PRESSURE LO" ⇒ OHA A1-A5 "INST GAS PANEL A/B C213" ⇒ Loss of "START" and "STOP" indication for AK202 	<p>Instrument gas pressure is not actually low. The alarm is the result of a loss of power to the AC213 panel.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes loss of 10B430 Unit Substation by: <ul style="list-style-type: none"> ⇒ OHA E3-E3 "USS FEEDER BRKR TRBL" ⇒ OHA E3-F2 "4.16KV FDR TO USS XFMR BRKR MALF" ⇒ CRIDS D4565 "4.16KV BUS A403 FDR CKT BRKR TRBL" ⇒ CRIDS D4611 "UNIT SUBSTA 10B430 FDR CKT BRK TRBL" ⇒ Flashing TRIP light on 40310 breaker ⇒ Various OVLD/PWR FAIL lights on 'C' Channel equipment Crew announces loss of the 10B430 bus on the plant page. 	
<p><u>IF</u> dispatched to 10B430, <u>THEN REPORT</u>:</p> <ul style="list-style-type: none"> 52-40310 has 51B and 51C Time overcurrent trip flags dropped CX400 xfmr is very warm with acrid odor and telltale in the red zone 	<ul style="list-style-type: none"> Crew dispatches ABEO and Maintenance to investigate the loss of the 10B430 bus. 	
	<ul style="list-style-type: none"> CRS implements AB.ZZ-0172. 	
<p>SUPPORT any requests for BP207 discharge valve manipulations with Remote Function CD02.</p>	<ul style="list-style-type: none"> Crew places BP207 CRD pump in service IAW either: <ul style="list-style-type: none"> ⇒ SO.BF-0001 Sect 5.2 <u>OR</u> ⇒ HC.OP-AB.22-0001 Hardcard <u>OR</u> ⇒ ARP for CRIDS D2244 	<p>Accumulator trouble alarms will begin to come in after about 14 minutes with no CRD pump in service.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>AVERAGE</u> HCU accumulator pressure can be read with InSight Item lcpac.</p> <p><u>INDIVIDUAL</u> HCU accumulator pressures can be read with InSight Item lcpaccx(n). See Sim Op Manual under Reactor Building Operator for “n” value.</p>	<ul style="list-style-type: none"> CRS directs aligning Condensate Transfer keepfill to ‘A’ Core Spray loop and A/C RHR loops. 	
	<ul style="list-style-type: none"> <u>IF</u> any HCU accumulators become inoperable with no CRD pump I/S, <u>THEN</u> CRS implements AB.IC-0001: ⇒ Condition A 	
<p><u>IF</u> dispatched to align AP to ‘A’ Core Spray and A & C RHR <u>THEN</u>:</p> <ul style="list-style-type: none"> REFER to SO.BC-0001 Section 5.9 TRIGGER ET-30 to open AP-V044/V047/V041 	<ul style="list-style-type: none"> RO/PO coordinate with RBEO to align Condensate Transfer IAW SO.BC-0001 for removal of CP228 from service. 	
	<ul style="list-style-type: none"> Crew places BK202 PCIG compressor in AULD. 	
	<ul style="list-style-type: none"> CRS/STA recognize the following Tech Spec applies: ⇒ Distribution – Operating 3.8.3.1 action a 	<p>Must re-energize 10B430 within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.</p> <p>May cascade to T/S 3.8.2.1.a due to loss of CD444 battery charger (2 hour LCO)</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • <u>IF</u> any HCU accumulators become inoperable with no CRD pump I/S, <u>THEN</u> CRS recognize the following Tech Spec applies: ⇒ Control Rod Scram Accumulators 3.1.3.5 action a.2.a 	Within 20 minutes of discovery, restore charging water pressure ≥ 940 psig or place Mode switch in SHUTDOWN.
<p><u>IF</u> directed to perform fill and vent. <u>THEN REPORT</u> no air found.</p>	<ul style="list-style-type: none"> • CRS refer to OP-HC-108-115-1001 for loss of CP228 ECCS jockey pump <u>AND</u> for SSW to RACS isolation valves. • CRS contacts Operations Management to initiate an ERT callout. 	Actions required for jockey pump are dependent on whether discharge header low pressure alarms were received for Core Spray and RHR loops.
<div style="border: 1px solid black; padding: 5px;"> <p><u>Inadvertent HPCI Initiation:</u> After loss of 10B430 actions are complete <u>OR</u> At the discretion of the lead evaluator, TRIGGER ET-4 Inadvertent HPCI Initiation</p> </div>	<ul style="list-style-type: none"> • Crew recognizes inadvertent HPCI initiation by: ⇒ OHA B3-B5 "CORE SPRAY LINE BREAK" ⇒ OHA B1-E5 "HPCI PUMP DISCHARGE FLOW LO" ⇒ OHA A7-B5 "RPV LEVEL 7" • Crew implements HC.OP-AB.RPV-0001, Condition C • Crew verifies Reactor Level $> -38"$ <u>AND</u> Drywell Pressure $< 1.68\#$ • Crew terminates <u>AND</u> Prevents HPCI Injection IAW HC.OP-AB.ZZ-0001 Attachment 16 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew DEPRESSES the initiation Logic RESET PB <u>AND</u> VERIFIES HV-F006 is CLOSED (if required, override and close IAW Att 2) 	
<p><u>Steam Leak in HPCI Room:</u> After actions for inadvertent HPCI initiation are completion, <u>OR</u> at the discretion of the Lead Examiner, TRIGGER ET-5 AND PROVIDE Fire Computer indication of point FA015 (Fire Computer point may be provided by Examiner <u>or</u> by Fire Computer Simulation).</p>	<ul style="list-style-type: none"> Crew recognizes a steam line break in the HPCI room by: <ul style="list-style-type: none"> ⇒ OHA B1-A5 "HPCI STEAM LINE DIFF PRESSURE HI" ⇒ OHA A2-A5 "FIRE PROT PANEL 10C671" ⇒ Fire Comp Pt FA015 "RM 4111 HPCI PUMP AND TURBINE ROOM" ⇒ HPCI room temperature trending up (Rm 4111) ⇒ Lowering Main Gen MWe ⇒ Offsite release rate trending up ⇒ HPCI Turbine Inlet Pressure on PI-R602. ⇒ ISLN INIT status lights 	<p>B1-A5 and ISLN INIT status lights will be received when the leak severity reaches 23% (about 30 seconds)</p>
<p>InSight Items:</p> <ul style="list-style-type: none"> HPCI Room Temp hvtr4111 RCIC Room Temp hvtr4110 	<ul style="list-style-type: none"> Crew announces steam leak in HPCI room on plant page. 	
<p><u>IF</u> dispatched to HPCI Room, <u>THEN</u> REPORT the room is filled with steam.</p>	<ul style="list-style-type: none"> Crew recognizes failure of HPCI to isolate by: <ul style="list-style-type: none"> ⇒ HV-F002 power failure ⇒ F003 valve position ⇒ HPCI room temperature trending up (Rm 4111) PO attempts to close HV-F003 using Control Room keylock switch. 	<p>The HV-F002 is powered from the 10B430 bus.</p> <p>Immediate Operator Action IAW AB.CONT-0002</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes failure of HV-F003 to close by: <ul style="list-style-type: none"> ⇒ OHA B1-F3 "HPCI COMPONENT O/PF" ⇒ OVLD/PWR FAIL light ⇒ CRIDS D3513 "HPCI ST LINE ISLN HV-F003 OPF" ⇒ HPCI room temperature continuing to trending up (Rm 4111) ⇒ Main Gen MWe continuing to trend down ⇒ Offsite release rate continuing to trend up 	<p>RECORD time when switch for HV-F003 is in CLOSE <u>AND</u> OHA B1-A5 is in alarm for 15 min ECG Classification. Time: _____</p>
<p><u>IF</u> dispatched to reclose breaker 52-212053, <u>THEN REPORT</u> the breaker will not close.</p> <p><u>IF</u> dispatched to the HV-F003 valve, <u>THEN REPORT</u> the valve is bound and will not close.</p>	<ul style="list-style-type: none"> Crew dispatches RBEO and Maintenance to breaker for HV-F003 (52-212053) 	<p>ARP for D3513 gives breaker number.</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> • CRS determines an SAE Classification is required IAW ECG Section: <ul style="list-style-type: none"> ⇒ RB3.L VALID isolation signal exists with an UNISOLABLE Break outside primary containment (after isolation from the Control Room has or should have been attempted) in ANY of the following systems: HPCI steam line (5 pts.) ⇒ CB3.L UNISOLABLE leakage outside primary containment (after isolation from the Control Room has or should have been attempted) AND Direct downstream pathway to the environment exists. (3 pts.) OR ⇒ CB5.L UNISOLABLE primary system leakage outside primary containment (after isolation from the Control Room has or should have been attempted) as indicated by exceeding EITHER of the following: (3 pts.) <ul style="list-style-type: none"> • ANY EOP 103 Reactor Bldg room temp Table 1, Column 2 (Max Safe) • ANY Reactor Bldg rad level > 1000 times normal 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>EOP-103 Secondary Containment Control.</p> <ol style="list-style-type: none"> 1. It is impossible to predict all possible break points in a system and proceduralize all possible points of isolation. Therefore, for reasons of system isolation as directed by EOP-103, the operator does not need written guidance beyond EOP-103 direction to isolate faulted systems. 2. It is important to remember <i>it takes 2 or more areas (as defined in the EOP)</i> with max safe Rads or Temps or Levels AND a Primary system discharging into the Reactor Building to enter EOP-202 RPV Blowdown. 3. Verification of “discharging” can be by either of the following: <ol style="list-style-type: none"> a. Visual verification of a leak or break in an area. b. Rising temperatures and/or rising radiation levels in an area. 4. Post scram, if the main condenser and sufficient RPV feed sources are available, the Control Room Supervisor should consider depressurizing the reactor within the cooldown limits (to approximately 500-600 psig) to reduce the driving head of the leak. If EOP-202 implementation is anticipated, then the depressurization is allowed to exceed the cooldown rate. 	<ul style="list-style-type: none"> • <u>WHEN</u> HPCI Room temperature reaches 115 degrees, <u>THEN</u> CRS implements EOP-103. 	
	<ul style="list-style-type: none"> • CRS implements AB.CONT-004: <ul style="list-style-type: none"> ⇒ Condition A ⇒ Condition C 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p><u>IF</u> dispatched to secure Rx Bldg Ventilation, <u>THEN</u>:</p> <ul style="list-style-type: none"> • REFER to SO.GU-0001 Section 5.3 • TRIGGER ET-29 to secure fans 	<ul style="list-style-type: none"> • PO places FRVS in service IAW SO.GU-0001 Section 5.3. 	
<p>STRATEGIES FOR SUCESSFUL TRANSIENT MITIGATION</p> <p>Reactor Scram Reports</p> <p>Following a Reactor scram, the NCO should make an initial scram report by announcing reactor status IAW HC.OP-AB.ZZ-0001.</p> <p>Crew personnel should hold all other non-essential communications until after the initial scram report is complete.</p> <p>The Control Room Supervisor should silence alarms during the scram report and the SM/CRS is not required to make a statement directing the NCO to check the overhead alarms, since these actions are already expected immediately following the scram.</p> <p>During the scram report, the NCO should report reactor level and pressure and their trends to the Control Room staff IAW HC.OPAB.ZZ-0001.</p>	<ul style="list-style-type: none"> • <u>BEFORE</u> HPCI Room temperature reaches 250 degrees, <u>THEN</u> CRS directs reducing recirc pumps to minimum speed and locking the Mode Switch in SHUTDOWN • RO reduces recirc pumps to minimum speed and locks the Mode Switch in SHUTDOWN. 	
	<p>* <i>Before HPCI Room temperature exceeds 250 °F by Control Room indication, the Crew places the Mode Switch in SHUTDOWN.</i></p>	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<p>STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION</p> <p>Reactor Scram Reports</p> <p>Following a Reactor scram, the NCO should make an initial scram report by announcing reactor status IAW HC.OP-AB.ZZ-0001.</p> <p>Crew personnel should hold all other non-essential communications until after the initial scram report is complete.</p> <p>The Control Room Supervisor should silence alarms during the scram report and the SM/CRS is not required to make a statement directing the NCO to check the overhead alarms, since these actions are already expected immediately following the scram.</p> <p>During the scram report, the NCO should report reactor level and pressure and their trends to the Control Room staff IAW HC.OPAB.ZZ-0001.</p>	<ul style="list-style-type: none"> Crew recognizes Scram Condition and Reactor Power Above 4% EOP entry condition. 	<p>RECORD time of Mode Switch to SHUTDOWN OR RPV LVL 3 (whichever was first) for 15 min ECG Classification.</p> <p>Time: _____</p>
	<ul style="list-style-type: none"> RO performs scram actions IAW AB.ZZ-0001 Att. 1. 	<p>HPI USED:</p> <p>STAR <input type="checkbox"/></p> <p>HARD CARD <input type="checkbox"/></p> <p>The Mode Switch will not actuate RPS. ARI will not automatically initiate, but can be manually initiated.</p>
	<p>* <i>Before Reactor Water Level reaches LVL 1 (-129"), the Crew manually actuates ARI to shutdown the reactor.</i></p> <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 CRS implements EOP-101. 	<p>RECORD the RPV level at which ARI is actuated.</p> <p>RPV Level: _____</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
<u>FWHTR 1&2 Condensate Inlet valve closures:</u> After reactor power lowers to <15% following scram actions.	<ul style="list-style-type: none"> PO stabilizes and restores level IAW AB.ZZ-0001 Att. 14 as directed by CRS. 	
	<ul style="list-style-type: none"> Crew recognizes FWHTR 1&2 Condensate valve closures 	
	<ul style="list-style-type: none"> RO/PO opens FWHTR 1&2 Condensate Bypass valve HV-1625. 	
	<ul style="list-style-type: none"> Crew recognizes lowering reactor pressure by: <ul style="list-style-type: none"> ⇒ OHA C8-B3 "NSSSS ISLN SIG – MN STM PRESSURE LO" ⇒ Various reactor pressure indications 	
	<ul style="list-style-type: none"> <u>IF</u> reactor pressure lowers to 550 psig, <u>THEN</u> CRS enters AB.RPV-0005: ⇒ Retainment Override 	
	<ul style="list-style-type: none"> STA monitors AB.RPV-0005 implementation and Retainment Override applicability. 	
	<ul style="list-style-type: none"> CRS directs closing: <ul style="list-style-type: none"> ⇒ MSIVs ⇒ HV-F016 ⇒ HV-F019 RO/PO close: <ul style="list-style-type: none"> ⇒ MSIVs ⇒ HV-F016 ⇒ HV-F019 	

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
	<ul style="list-style-type: none"> Crew recognizes rising temperature in the RCIC pump room by: <ul style="list-style-type: none"> ⇒ OHA B1-A1 "RCIC TURBINE TRIP" ⇒ OHA B1-B2 "RCIC OUT OF SERVICE" ⇒ OHA D3-A2 "RCIC/RHR B AREA LEAK TEMP HI" ⇒ RCIC Logic B/D "ISLN INIT" lights ⇒ RCIC HV-F007/8 closing ⇒ SPDS Room temp indication 	
<p>HPCI Room temperature needs to be 275 degF before reactor pressure drops below 200 psig. <u>IF</u> necessary, <u>THEN</u> manually raise HPCI Room temperature using InSight Item hvt4111:</p> <ul style="list-style-type: none"> Raise to 270 degrees in 5 degree increments Raise from 270 to 277 degrees in 1 degree increments (RCIC Room temp will reach 250 when HPCI room temp reaches 275) 	<ul style="list-style-type: none"> <u>WHEN</u> HPCI AND RCIC room temperatures exceed 250 degrees (Max Safe Op), <u>THEN</u> CRS implements EOP-202 to Emergency Depressurize. RO/PO opens five SRVs IAW AB.ZZ-0001 Att. 13. * <i>Crew actuates five SRVs when RCIC room temperature exceeds 250 degrees by Control Room indication (SPDS/CRIDS). (2nd room above MAX SAFE)</i> 	<p>RECORD time from RCIC reaching 250 degrees to SRV actuation.</p> <p>TIME: _____</p>

V. SCENARIO GUIDE SEQUENCE AND EXPECTED RESPONSE

Event / Instructor Activity	Expected Plant/Student Response	Comments
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- Crew recognizes Supp Pool Temp Above 95°F EOP entry condition by:
 - ⇒ OHA C8-F1 "SUPPR POOL TEMP HIGH"
 - ⇒ Flashing 95 degree status light on 10C650C
 - ⇒ RM11 9AX833/834 alarm
 - ⇒ Various Suppression Pool temperature indicators
- CRS enters EOP-102.
- CRS directs placing all available RHR pumps in Suppression Pool Cooling.
- RO/PO place RHR in Supp Pool Cooling IAW AB.ZZ-0001 Att. 3.
- RO/PO align SACS to support second RHR Hx IAW SO.EG-0001 Section 5.9.

Termination Requirement:

The scenario may be terminated at the discretion of the Lead Examiner when the reactor has been depressurized.

VI. SCENARIO REFERENCES:

- A. TQ-AA-106-0304 Licensed Operator Requal Training Exam Development Job Aid
- B. NUREG 1021 Examiner Standards
- C. JTA Listing
- D. Probabilistic Risk Assessment
- E. Technical Specifications
- F. **Emergency Plan (ECG)**
- G. **Alarm Response Procedures (Various)**
- H. HU-AA-101 Performance Tools and Verification Practices
- I. HU-AA-104-101 Procedure Use and Adherence
- J. HU-AA-1081 Fundamentals Toolkit
- K. HU-AA-1211 Briefing
- L. OP-AA-101-111-1004 Operations Standards
- M. OP-AA-101-111 Roles and Responsibilities of On Shift Personnel
- N. OP-AA-106-101-1001 Event Response Guidelines
- O. OP-AA-108-114 Post Transient Review
- P. OP-HC-108-115-1001 Operability Assessment and Equipment Control Program
- Q. OP-HC-108-106-1001 Equipment Operational Control
- R. **HC.OP-SO.AE-0001 Feedwater System Operation**
- S. **HC.OP-SO.SF-0001 Reactor Manual Control**
- T. **HC.OP-SO.SF-0003 Rod Worth Minimizer Operation**
- U. **HC.OP-AB.ZZ-0001 Transient Plant Conditions**
- V. **HC.OP-AB.RPV-0005 Reactor Pressure**
- W. **HC.OP-AB.IC-0001 Control Rod**
- X. **HC.OP-AB.CONT-0001 Drywell Pressure**
- Y. **HC.OP-AB.CONT-0002 Primary Containment**
- Z. **HC.OP-AB.CONT-0004 Radioactive Gaseous Release**
- AA. **HC.OP-AB.ZZ-0172 Loss of 4.16 KV Bus 10A403 C Channel**
- BB. **HC.OP-AB.ZZ-000 Reactor Scram**
- CC. **HC.OP-EO.ZZ-0101 RPV Control**
- DD. **HC.OP-EO.ZZ-0102 Primary Containment Control**
- EE. **HC.OP-EO.ZZ-0103 Reactor Building Control**
- FF. **HC.OP-EO.ZZ-0202 Emergency RPV Depressurization**
- GG. **HC.RE-AB.ZZ-0001 Insertion of Control Rods in Response to an ATWS**
- HH. **HC.OP-IO.ZZ-0006 Power Changes During Operation**
- II. Strategies For Successful Transient Mitigation

VII. ESG CRITICAL TASK RATIONAL

2013 NRC Scenario #3, Rev. 4

1.

- * ***Before HPCI Room temperature exceeds 250 °F by Control Room indication, the Crew places the Mode Switch in SHUTDOWN.***

K/A 295032 High Secondary Containment Area Temperature

EK3 Knowledge of the reasons for the following responses as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EK3.02 Reactor SCRAM RO 3.6 SRO 3.8

EA2 Ability to determine and/or interpret the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EA2.01 Area temperature RO 3.8 SRO 3.8

The steam leak from HPCI cannot be isolated. Since isolation cannot be accomplished, the only remaining course of action is to remove the energy input to the RCS by scramming the reactor. 250°F is the Max Safe Op temperature for the HPCI Room (4111), and EOP-103 directs reducing recirc to minimum and initiating a manual scram. In this scenario, the rate of rise in room temperature provides ample time to implement the guidance in EOP-103. Reducing recirc to minimum is not critical to shutting down the reactor, and is not included as part of this critical task. The first action AB.ZZ-0001 directs for initiating a manual scram is to LOCK the Mode Switch in SHUTDOWN. For the purposes of shutting down the reactor, LOCKING the Mode Switch in SHUTDOWN is not required, only initiating a scram is critical.

2.

- * ***Before Reactor Water Level reaches LVL 1 (-129"), the Crew manually actuates ARI to shutdown the reactor.***

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

EA1.03 - Ability to operate and/or monitor the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN : ARI/RPT/ATWS: Plant-Specific 4.1/4.1

Given a failure of RPS the rods must be inserted using ARI. This will eliminate further actions in EOP-101A and allow use of EOP-101 and 102 for containment and RPV control without a required lowering of RPV level

3.

- * ***Crew actuates five SRVS when RCIC room temperature exceeds 250 degrees by Control Room indication (SPDS/CRIDS).***

K/A 295032 High Secondary Containment Area Temperature

EK3 Knowledge of the reasons for the following responses as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EK3.01 Emergency/normal depressurization RO 3.5 SRO 3.8

EA2 Ability to determine and/or interpret the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE

EA2.01 Area temperature RO 3.8 SRO 3.8

The steam leak in the HPCI room is now affecting a second area. The reactor must be depressurized to place it in its lowest energy state due to the potential for multiple inoperable safety systems, to reduce the driving head for the leak, and to reject decay heat to the suppression pool rather than the Reactor Building.

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

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

**COMPONENT/TRAIN/SYSTEM UNAVAILABILITY
THAT INCREASES CORE DAMAGE FREQUENCY**

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

OPERATOR ACTIONS IMPORTANT IN PREVENTING CORE DAMAGE

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

Complete this evaluation form for each ESG.

VIII. TURNOVER SHEET:

ONLINE RISK: GREEN

WORK WEEK CHANNEL: C

PROTECTED EQUIPMENT

None

REACTIVITY / Plant Status

75% Power. Plan is to raise power to 80% IAW HC.OP-IO.ZZ-0006 and REMA 003, and hold for evaluation.

ESF/SAFETY SYSTEMS

None

COOLING WATER

None

BOP

DK111 tagged for freon leak
CP161 tagged for bearing oil leak
Third RFP to be placed in service after engineering evaluation of RFP operations at 80% power (scheduled for next shift).

ELECTRICAL

None

ADVERSE CONDITION MONITORING

None

IX. SIMULATOR ESG REVIEW/VALIDATION CHECKLIST

EXAMINATION SCENARIO GUIDE (ESG) REVIEW/VALIDATION

Note: The following criteria list scenario traits that are numerical in nature for a single scenario.

ESG: Scenario 3

SELF-CHECK

- _____ 1. Total malfunctions inserted: 5-8
- _____ 2. Malfunctions that occur after EOP entry: 1-4
- _____ 3. Abnormal Events: 1-2
- _____ 4. Major Transients: 1-2
- _____ 5. EOPs used beyond primary scram response EOP: 1-3
- _____ 6. EOP Contingency Procedures used: 0-3
- _____ 7. Approximate scenario run time: 45-60 minutes (one scenario may approach 90 minutes)
- _____ 8. EOP run time: 40-70% of scenario run time
- _____ 9. Crew Critical Tasks: 2-5
- _____ 10. Technical Specifications are exercised during the test: ≥ 1

Comments:

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

Crew Validation Rev: 04 Date Validated: 7/22/13

Validation Comments	Disposition
////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____
_____	_____

Crew Validation Rev: Date Validated:

Validation Comments	Disposition
////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____

Crew Validation Rev: Date Validated:

Validation Comments	Disposition
////////////////////////////////////	////////////////////////////////////
_____	_____
_____	_____