ES-301

Administrative Topics Outline

Form ES-301-1

Facility: <u>South Te</u>	cility: <u>South Texas Project</u> Date of Examination: <u>7-13-20</u>					
Examination Level:	RO 🔳	SRO Operating Test Number: LOT 24 NRC				
Administrative Topic (see Note)	Type Code*	Describe activity to be performed				
Conduct of Operations A1 K/A Importance: 3.8	N,R	2.1.19 Ability to use computers to evaluate system and component status. Calculate Sub-Cooling Margin				
Conduct of Operations A2 K/A Importance: 3.9	N,R	2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc.Calculate Time to Boil on Loss of all RHR during Mid-Loop				
Equipment Control A3 K/A Importance: 4.1	M,R	2.2.13 Knowledge of Tagging and Clearance Procedures. Prepare ECO for Main Turbine Lube Oil Cooler				
Radiation Control A4 K/A Importance: 3.5	M,R	2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. Determine RWP Requirements for Work in RRA (SFP)				
Emergency Plan	N/A	N/A				
NOTE: All items (five total) are required for SROs. RO applicants require only four items unless they are retaking only the administrative topics (which would require all five items).						
*Type Codes and Criteria: (C)ontrol Room, (S)imulator, Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs and RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1, randomly selected)						

ES-301

Administrative Topics Outline

Form ES-301-1

Facility: <u>South Texas Project</u> Date of Examination: <u>7-13-2</u>				
Examination Level:	RO 🗆	SRO Operating Test Number: LOT 24 NRC		
Administrative Topic (see Note)	Type Code*	Describe activity to be performed		
Conduct of Operations		2.1.19 Ability to use computers to evaluate system and		
A5	N,R	component status.		
K/A Importance: 3.9		Calculate Sub-Cooling Margin and Apply TS		
Conduct of Operations		2.1.7 Ability to evaluate plant performance and make		
A6	D,R	operational judgments based on operating characteristics, reactor behavior and instrument interpretation.		
K/A Importance: 4.7		Review RCS Inventory and Determine TS Applicability		
Equipment Control		2.2.13 Knowledge of Tagging and Clearance Procedures.		
A7	M,R	Review Faulted ECO for Main Turbine Lube Oil Cooler		
K/A Importance: 4.3				
Radiation Control		2.3.4 Knowledge of radiation exposure limits under		
A8	M,R	normal or emergency conditions.		
K/A Importance: 3.7		Determine Personnel Exposure Limits (E-Plan)		
Emergency Plan		2.4.41 Knowledge of the emergency action level		
A9	M,R	thresholds and classifications.		
K/A Importance: 4.6		Determine EAL		
NOTE: All items (five total) are required for SROs. RO applicants require only four items unless they are retaking only the administrative topics (which would require all five items).				
*Type Codes and Criteria: (C)ontrol Room, (S)imulator, Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs and RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1, randomly selected)				

STP LOT-24 NRC Admin JPM Description

RO	
(A1)	Calculate Sub-Cooling Margin
	Demonstrate the ability to use QDPS data to manually calculate sub-cooling margin.
(A2)	<u>Calculate Time to Boil on Loss of all RHR During Mid-Loop</u> Demonstrate the ability, using a procedure graph, to calculate time to boil in the RCS during a loss of all RHR at mid-loop.
(A3)	<u>Prepare ECO for Main Turbine Lube Oil Cooler</u> Demonstrate the ability to prepare an ECO for equipment maintenance.
(A4)	<u>Determine RWP Requirements for Work in RRA (SFP)</u> Demonstrate the ability to extract necessary information from survey maps and RWP to perform work in the RRA.
SRO	
(A5)	<u>Calculate Sub-Cooling Margin and Apply TS</u> Demonstrate the ability to use QDPS data to manually calculate sub-cooling margin and apply TS for a failure of QDPS.
(A6)	<u>Review RCS Inventory and Determine TS Applicability</u> Demonstrate the ability to review a surveillance and apply Technical Specifications when it is determined that acceptance criteria of the surveillance is not met.
(A7)	Review faulted ECO for Main Turbine Lube Oil Cooler Demonstrate the ability perform a technical review of an ECO for equipment maintenance.
(A8)	Determine Personnel Exposure Limits (E-Plan) Demonstrate the ability to determine personnel exposure margins during an emergency and who authorizes them.
(A9)	<u>Determine Appropriate Emergency Plan Action Levels</u> Demonstrate the ability to correctly determine an Emergency Plan Action Level for a given condition requiring entry into the STPNOC Emergency Action Plan in accordance with 0ERP01-ZV-IN01, Emergency Classification.

	STPNOC			
Job Performance Measure				
CALCULATE SUBCOOLING MARGIN				
JPM Number: <u>NRC A1</u>				
Revision Number: <u>1</u>				
Date: <u>07/13/2020</u>				
Developed Bv [.]	N/A	N/A		
	Instructor (Print/Sign)	Date		
Approved By:	N/A	N/A		
	Training Supervisor (Print/Sign)	Date		
Approved By:	N/A	N/A		
,	Line Management (Print/Sign)	Date		

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. This is an Admin JPM.

JPM Administration:

1. A clean copy of Steam tables and a calculator will be needed to perform this task

INITIAL CONDITIONS

A Safety Injection was manually initiated due to indications of RCS leakage. The Crew is performing the actions of 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant, and is currently at step 15 to determine if SI flow should be terminated.

QDPS currently indicates "Bad Data" for RCS subcooling

INITIATING CUE

The Unit Supervisor directs you to calculate RCS subcooling using the same inputs used by QDPS on the given T/C QUAD TEMP screen.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

Subcooling margin is calculated to be 43°F +/- 1°F.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Provide with thi The ap A key i	e Student Handout of Initiating Cue s JPM pages 7 of 8 and 8 of 8.) plicant will need a clean copy of St s not supplied for this JPM. See a	<u>NOTE</u> e and Student Handout of QDPS So team Tables to perform this task. dditional information supplied in the	creen. e stand	(Provi dard be	ded elow.
*1	Calculate RCS subcooling using the same inputs used by QDPS.	Calculates RCS subcooling using the RCS pressure and the maximum average quadrant temperature given on the student handout.			
		NOTE: From Steam Tables, saturation temperature for 1765 psig (1780 psia) is 619.5°F. Subtracting 577°F (Maximum Quadrant TC average) from 619.5°F yields a subcooling margin of 42.5°F. QDPS would round up to 43°F. So Task Standard is 43°F + or - 1°F.			
CUE	This JPM is complete				

JPM Stop Time: _____

JI	PN	I S	UN	/M	ARY
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Operator's Name: J	ob Title: 🗌 RO 🛛 SRO
JPM Title: CALCULATE SUBCOOLING MARGIN	
JPM Number: A1 Revision N	lumber: <u>1</u>
Task Number and Title: <u>CRO-24850</u> , Respond to a	loss of QDPS.
K/A Number and Importance: <u>G2.1.19 3.9/3.8</u>	
Suggested Testing Environment: Simulator] Control Room In-Plant ⊠ Other
Alternate Path: ☐ Yes ⊠No	
Task Designed For: SRO Only RO/SRO [AO/RO/SRO
Time Critical: □Yes ⊠No	
Level of Difficulty: <u>3</u>	
Reference(s): Lesson LOT202.44, QDPS	
Actual Testing Environment: Simulator	ontrol Room 🛛 In-Plant 🗌 Other
Testing Method: 🗌 Simulate 🔲 Perform	
Estimated Time to Complete: <u>10</u> minutes Ad	ctual Time Used: minutes
Critical Steps (*) 1	
Evaluation Summary: Were all the Critical Steps performed satisfactorily?	□Yes □No
The operator's performance was evaluated against sta contained within this JPM and has been determined to	andards o be:
Comments:	
Evaluator's Name:(Print)	
(11111)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

A Safety Injection was manually initiated due to indications of RCS leakage. The Crew is performing the actions of 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant, and is currently at step 15 to determine if SI flow should be terminated.

QDPS currently indicates "Bad Data" for RCS subcooling

INITIATING CUE

The Unit Supervisor directs you to calculate RCS subcooling using the same inputs used by QDPS on the given T/C QUAD TEMP screen.

Student Handout

T/C QUAD TEMP

07/13/20 10:20:57



Job Performance Measure CALCULATE TIME TO BOIL IN THE RCS JPM Number: NRC A2 JPM Number: NRC A2 Revision Number: 1 Date: 07/13/2020 MA N/A Instructor (Print/Sign) Date Approved By: N/A Instructor (Print/Sign) Date
CALCULATE TIME TO BOIL IN THE RCS JPM Number: NRC A2 Devision Number: 1 Date: 07/13/2020 Developed By: N/A Instructor (Print/Sign) Date Approved By: N/A Training Supervisor (Print/Sign) Date
JPM Number: NRC A2 Revision Number: 1 Date: 07/13/2020 Developed By: N/A Instructor (Print/Sign) Date Approved By: N/A Training Supervisor (Print/Sign) Date
N/A N/A Developed By: N/A Date Approved By: N/A N/A Training Supervisor (Print/Sign) Date
Date: <u>07/13/2020</u> Developed By: <u>N/A</u> N/A Instructor (Print/Sign) Date Approved By: <u>N/A</u> N/A Training Supervisor (Print/Sign) Date
N/A N/A Instructor (Print/Sign) Date Approved By: N/A Training Supervisor (Print/Sign) Date
Instructor (Print/Sign) Date Approved By: N/A N/A Training Supervisor (Print/Sign) Date
Approved By: N/A N/A Training Supervisor (Print/Sign) Date
Training Supervisor (Print/Sign) Date
Approved By: N/A N/A
Line Management (Print/Sign) Date

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. This is an Admin JPM.

INITIAL CONDITIONS:

Unit 1 is in day 34 of a Refueling Outage.

- The Operating Crew is in 0POP03-ZG-0009, Mid-Loop Operation.
- Current RCS level is 33'.
- Current RCS temperature is 104°F.

INITIATING CUE:

Subsequently all RHR is lost.

The Unit Supervisor directs you to calculate the time it will take for saturated conditions to occur in the RCS per 0POP03-ZG-0009, Mid-Loop Operation.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

Using Addendum 4 of 0POP03-ZG-0009, Mid-Loop Operation, correctly calculates the time that saturated conditions would occur in the RCS is 37.6 to 39.6 minutes. (38.6 + or - 1 minute)

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	STANDARD		UNSAT	Comment Number
Provide When thegin thegin thegin thegin thegin the observation of the second s	e Initial Cue Sheet and Student HO he student has reviewed the Initial he JPM, then record the start time is provided showing the correct tim on.	NOTE of 0POP03-ZG-0009, Mid-Loop O Cue <u>and</u> they have indicated they for the JPM. ne on Addendum 4 of 0POP03-ZG-	peratio are rea 0009,	on. ady to Mid-Lo	оор
*1	With the given information from the Initiating Cue, the operator calculates the amount of time for the RCS to boil from a loss of all RHR using the chart in Addendum 4 of 0POP03-ZG- 0009, Mid-Loop Operation. (0POP03-ZG-0009, Add #4)	Calculates the amount of time for the RCS to boil on a loss of all RHR to be 38.6 minutes. NOTE: The Addendum 4 graph does not give an RCS initial temperature of 104°F. The Operator will need to interpolate. To allow for interpolate. To allow for interpolation of 104°F an answer of 37.6 to 39.6 minutes will be allowed.			
CUE	This JPM is completed	1			
JPM Sto	op Time:				

C I		
<u></u>	IIVIIV	
<u> </u>	, , , , , ,	

Operator's Name:	Job Title: 🗌 RO 🛛 SRO
JPM Title: CALCULATE TIME TO BOIL IN THE RC	<u>S</u>
JPM Number: NRC A2 Revision	Number: <u>1</u>
Task Number and Title: <u>32350, Monitor the RCS</u>	
K/A Number and Importance: 2.1.25 3.9/4.2	
Suggested Testing Environment:	\Box Control Room \Box In-Plant \boxtimes Other
Alternate Path: 🗌 Yes 🖾 No	
Task Designed For: SRO Only RO/SRO	AO/RO/SRO
Time Critical: 🗌 Yes 🖂 No	
Level of Difficulty: 3	
Reference(s): 0POP03-ZG-0009, Mid-Loop Operation	ion, Rev 68
Testing Method: □ Simulate □ Perform Estimated Time to Complete: 10 minutes 0 Critical Steps (*) 1 Evaluation Summary: Were all the Critical Steps performed satisfactorily? The operator's performance was evaluated against s contained within this JPM and has been determined	Actual Time Used: minutes
Comments:	
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS:

Unit 1 is in day 34 of a Refueling Outage.

- The Operating Crew is in 0POP03-ZG-0009, Mid-Loop Operation.
- Current RCS level is 33'.
- Current RCS temperature is 104°F.

INITIATING CUE:

Subsequently all RHR is lost.

• The Unit Supervisor directs you to calculate the time it will take for saturated conditions to occur in the RCS per 0POP03-ZG-0009, Mid-Loop Operation.

Provide Answer Below:

Calculated time in minutes = _____

	0POP03-ZG-0009	Rev. 68	Page 67 of 116		
Mid-Loop Operation					
Addendum 4	Reactor Vessel Time to Boil Following L During Mid-Loop Operation	Page 1 of 1			

Ref 2.20

REACTOR VESSEL TIME-TO-BOIL

FOLLOWING LOSS OF RHR COOLING DURING MID-LOOP OPERATION

Chart $\underline{\textbf{NOT}}$ Cycle Specific. Chart $\underline{\textbf{NOT}}$ applicable to vacuum fill conditions.



	STPNOC				
Job Performance Measure					
PREPARE AN ECO FOR A MAIN TURBINE LUBE OIL COOLER					
	JPM Number: <u>NRC A3</u>	<u>.</u>			
	Revision Number: <u>1</u>				
	Date: <u>07/13/2020</u>				
Developed By:	N/A Instructor (Print/Sign)	N/A Date			
Approved By:	N/A raining Supervisor (Print/Sign)	N/A Date			
Approved By:	N/A ne Management (Print/Sign)	N/A Date			
NOTE: N/A signature blocks if this JPM is being used on an NRC LOT Exam.					
-	-				

Revision Record (Summary)

- **Revision 0,** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

This is an Admin JPM – No simulator setup instructions required.

INITIAL CONDITIONS

Unit 1 is at 100% power.

Main Turbine Lube Oil Cooler #11 had indications of tube blockage and has been removed from service. Main Turbine Lube Oil Cooler #12 was placed in service.

INITIATING CUE

The Unit Supervisor directs you to prepare an ECO to control LO System Configuration and isolate Main Turbine Lube Oil Cooler #11 to perform initial venting and draining based on the ECO request received from Mechanical Maintenance.

NOTE:

- The Oracle ECO Database is unavailable.
- ECO Form 3, Pages 1 and 2 of 3, are already filled out.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Task Standard:

Correctly prepares an ECO which will isolate and drain the Open Loop ACW side of Main Turbine Lube Oil Cooler #11 AND control Lube Oil flow to Cooler #12 in accordance with 0PGP03-ZO-EC01A, Equipment Clearance Order Instructions.

In JPM Step #1 the following valves are correctly identified and positioned:

- LT-0049 (LO Cooler Transfer Valve) Position Cooler 12; Boundary No
- OC-0025 (Isolation Valve) Position Closed; Boundary Yes
- OC-0029 (Isolation Valve) Position Closed; Boundary Yes
- OC-0223 (Drain Valve) Position Open; Boundary No
- OC-0217 (Vent Valve) OR OC-0219 (Vent Valve) OR OC-0224 (Vent Valve) Position Open; Boundary – No

<u>NOTE:</u>

In addition;

All items should identify a "D" in the "Type" column, "Hang" in the "Action" column and "Y" in the "Verification Required" column.

Also see the KEY supplied with JPM.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		NOTE			
Provide	the following Student Handouts:				
 HO1 HO2 HO3 HO4 HO5 HO6 HO7 	 ECO request completed by mai Blank copy of 0PGP03-ZO-ECO Blank copy of 0POP02-LT-0001 Blank copy of 0POP02-OC-0000 Main Turbine Lube Oil P&ID Open Loop Aux Cooling Water ECO Form 3 with Pages 1 and 3 	ntenance D1A I 1 P&ID 2 filled out			
The stu for this	udent should also use Form 9, E JPM.	CO Preparation Checklist, but it	is not	requi	red

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	INSAT	Comment Number
*1	Completes Page 3 of Form 3	Identifies and enters the following: • LT-0049 (LO Cooler Transfer Valve) Position – Cooler 12 Boundary - No • OC-0025 (Isolation Valve) Position – Closed Boundary - Yes • OC-0029 (Isolation Valve) Position – Closed Boundary - Yes • OC-0223 (Drain Valve) Position – Open Boundary - No • OC-0217 (Vent Valve) OR OC-0219 (Vent Valve) OR OC-0224 (Vent Valve) Position – Open Boundary – No NOTE: All items should identify a "D" in the "Type" column, "Hang" in the "Action" column and "Y" in the "Verification Required" column.			
CUE	This JPM is complete				[

JPM Stop Time:

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Operator's Name:	Job Title: 🗌 RO 🛛 SRO
JPM Title: PREPARE AN ECO FOR A MAIN TUP	RBINE LUBE OIL COOLER
JPM Number: <u>A3</u> Revision	Number: <u>1</u>
Task Number and Title: <u>CRO-68950</u> , Prepare Eq	uipment Clearances
K/A Number and Importance: 2.2.13 4.1/4.3	
Suggested Testing Environment:	\Box Control Room \Box In-Plant \boxtimes Other
Alternate Path: 🗌 Yes 🛛 No	
Task Designed For: SRO Only RO/SRO	AO/RO/SRO
Time Critical: □Yes ⊠No	
Level of Difficulty: <u>4</u>	
Reference(s): 0PGP03-ZO-ECO1A, Equipment Cle 9F00033#1; 9F20010#1	earance Order Instructions, Rev. 31;
Actual Testing Environment: Simulator	Control Room 🛛 In-Plant 🗌 Other
Testing Method: 🗌 Simulate 🔲 Perform	
Estimated Time to Complete: 20 minutes	Actual Time Used: minutes
Critical Steps (*) 1	
Evaluation Summary: Were all the Critical Steps performed satisfactorily?	□Yes □No
The operator's performance was evaluated against s contained within this JPM and has been determined	standards to be:
Comments:	
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

Unit 1 is at 100% power.

Main Turbine Lube Oil Cooler #11 had indications of tube blockage and has been removed from service. Main Turbine Lube Oil Cooler #12 was placed in service.

INITIATING CUE

The Unit Supervisor directs you to prepare an ECO to control LO System Configuration and isolate Main Turbine Lube Oil Cooler #11 to perform initial venting and draining based on the ECO request received from Mechanical Maintenance.

NOTE:

- The Oracle ECO Database is unavailable.
- ECO Form 3, Pages 1 and 2 of 3, are already filled out.

	0PGP03-ZO-ECO1A Rev. 31							
Equipment Clearance Order Instructions								
Form 3 (Rev. 1) Equipment Clearance Order Form								
ECO Numbe	er: <u>1</u> Uni	- 2020 t Year	_ <u>11111</u> Number	_ Unit:	: (1) 2	Pa	nge <u>1</u> of <u>3</u>	
HAZARDOU	U SE ENER	GY?	🗆 Yes 🗵 No	Notify Fire Pro	otection	? □Ye	es 🗵 No	
Notify Securi	ity?	□ Yes	🗴 No					
What Is Bein	ng Tagged?	MTLC	<u>) Cooler #11</u>	TPN	S#	7 <u>T111MH</u>	<u>X002A</u>	
Work Descri	ption: <mark>Re</mark> r	nove MTL	O Cooler #11 end	l bell and clean tu	ibes			
Prepared By	:	Operator	Signs and Dates ≤	Operate for 'Pre	or shou pared l	ıld sign aı By:'	nd date ECO	
Signature However, this is NOT Critical							Critical	
Tech Review	By:		Signature		Da	te	Time	
Approved By	y:		Signature		Da	te	Time	
Notes:								
	Operator r valve prote	may mark in ection to Ha	this area that this i zardous Energy.	s an "EXCEPTIONAL	. ECO" d	ue to single	2	
	However,	this is NOT C	Critical.					

				0 P	GP03-ZO-E	CO1A	Rev. 31	Page 94 of 119	
	Equipment Clearance Order Instructions								
Form	3 (Rev. 2)		E	quipme	nt Clearance O	rder Form (Job Additions)		Page 2 of 3	
ECO Num	ber: <u>1</u> - 20 Unit	<mark>020 - 111</mark> Year Nu	11 Imber				Page <u>2</u>	_of <u>3</u>	
Job Number	Work Document WAN / CR / Procedure	Work Group	Jo Add Add	ob ition SRO	Ready for Work Group Acceptance	Work Group Sign ON (Print, Sign, Date Time)	Work Sign OFF() T	x Group Print, Sign, Date ime)	T S
	114260	MM							
(Work De	escription) Contro in prep	l LO Configu aration of end	ration an bell ren	id isolat noval ai	te MTLO Coole nd tube cleaning	er #11 to perform initial venting and og.	draining		
(Work De	escription)								
(Work De	escription)								
(Work De	escription)						I		
(Work De	(Work Description)								
(Work De	escription)	•							

THIS FORM, WHEN COMPLETE, SHALL BE RETAINED FOR A MINIMUM OF 5 YEARS.



NOTE

1-LT-0063, LO Cooler Interchange Valve, is a bypass valve around 1-LT-0049, LO Cooler Transfer Valve. The Operator may identify this valve as being needed for the ECO but it is NOT required.



	Т
NOTES 1. ALL PIPING, VALVES, INSTRUMENTS, AND LINE NUMBERS ON THIS DIAGRAM ARE SUPPLIED BY (B) UNLESS OTHERWISE NOTED.	
2. ALL INSTRUMENT TAG NUMBERS SHOWN ON THIS DIAGRAM ARE PREFIXED BY THE UNIT NUMBER 1 UNLESS OTHERWISE NOTED.	
SEE GENERAL NOTE D ON 9A310F00002. 3. LOW BEARING OIL TRIP SWITCHES MOUNTED IN TERMINAL BOX "A" ON THE GOV. PED. (REF. 3)	х.
 SWITCHES MOUNTED IN TERMINAL BOX "L" NEAR THE TURNING GEAR. ADJUSTABLE CHECK VALVE. 	
6. ALL INSTRUMENTS ON THIS P&ID HAVE SYSTEM DESIGNATOR LT. UNLESS OTHERWISE NOTED.	
 ALL LOBE OIL SUPPLY PIPING IS GUARDED BY THE LUBE OIL RETURN PIPING. 8. ALL INSTRUMENTS ON THIS P&ID HAVE SEPARATION GROUP N. 	
9. FOR LUBE OIL PURIFICATION SYSTEM SEE P&ID 7T179FØØØ51#1 (REF.4).	C
10. FOR PIPING,VALVES,INSTRUMENTS,EQUIPMENT, ETC.REFER TO DRAWINGS 9A310F00001 AND 9A310F00002 FOR IDENTIFICATION NUMBER DETAILS.	
 DELETED COMPUTER SOUNDS AUDIBLE ALARM AND PRINTS WHICH TEMPERATURE IS HIGH WHEN A TEMPERATURE 	
LIMIT IS REACHED. THE ALARM SHALL BE SUCH THAT THE ALARM MUST BE ACKNOWLEDGED. 13. FOR MORE DETAIL OF LOOP SEAL OIL TANK AND ASSOCIATED RIPING SEE DRAWING 7T@49E1@@@3	
14. EMERGENCY TRIP (C) DRAWING 4534D05, BECHTEL LOG NO. 400304-01322WT.	
 15. TURNING GEAR[®] DRAWING 886C415, BECHTEL LOG NO. 4ØØ3Ø8-Ø1141WT. 16. DELETED 	
17. ALL OM AND OS LINE NUMBERS ON THIS DRAWING HAVE A SUFFIX -XX7.	L
19> DENOTES RESTRICTION WITHIN PIPING FOR INSTRUMENT SENSING.	
20. ITEM IS NOT PHYSICALLY TAGGED BECAUSE OF LOCATION INSIDE RESERVOIR. GOVERNOR 21. THIS IS A DUAL THREE-WAY TRANSFER PLUG-TYPE	
VALVE SUPPLIED BY WESTINGHOUSE. OPERATOR MAY SELECT TRANSFER VALVE POSITION FOR DESIRED SERVICE COOLER. REFER TO THE FOLLOWING DOCUMENTS FOR DETAILS: TURBINE GENERATOR INSTRUCTION BOOK	
 ✓ 4ØØØ88-Ø1ØØ11ØWT, SECTION 1 AND MAIN TURBINE MANUAL 4ØØ319-Ø14Ø5WT, VOLUME #2, BOOK #2. 32 344 NDT ENTERDAGE ELTTING WITH DUST COVER CR-4ØØ 	
FOR MANUAL BEARING LUBRICATION DURING MAINTENANCE, TYPICAL FOR BEARINGS 3 THROUGH 8.	
REFERENCES	
1. W DWG. 743J616 E.H. FLUID SYSTEM & LUB. DIAG., SHT.3 (400305-00007WT).	
 2. W DWG. 749J85Ø PPG. OIL FLOW (4ØØ3Ø5-Ø128ØWT). 3. W DWG. 4646D72 LUB. OIL RES. OUTLINE 	
4.7T179FØØØ51#1LUBE OIL PURIFICATION AND TRANSFER. 5.FOR PIPING AND INSTRUMENTATION SYMBOLS SEE DRAWING	
9A310F00001 & 9A310F00002. 6. 🕲 DWG.4477D26 GENERATOR LOOP SEAL SYSTEM OUTLINE. (400305-00166WT).	
	C
	-
	Ш
	A
PIPING AND INSTRUMENTATION DIAGRAM LUBE OIL DIAGRAM	A
PIPING AND INSTRUMENTATION DIAGRAM LUBE OIL DIAGRAM SCALE DWG. NO. SHT. REV. NONE 7 T 119 F 2 01 01 101 #1 3 7	



	STPNOC						
	Job Performance Measure						
DETERMINE RW	DETERMINE RWP REQUIREMENTS FOR WORK IN RRA (SFP)						
	JPM Number: <u>NRC A4</u>						
	Revision Number: <u>1</u>						
	Date: <u>07/23/2020</u>						
Developed By:	Instructor (Print/Sign)	Date					
Approved By:	Training Supervisor (Print/Sign)	Date					
Approved By:	ine Management (Print/Sign)	Date					

Revision Record (Summary)

- **Revision 0,** Drafted JPM for use on LOT 24 NRC Exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

This is an Admin JPM – No simulator setup instructions required.
INITIAL CONDITIONS

You have been directed to move Fuel Assemblies from Region 1 to Region 2 per approved Fuel Transfer Forms.

INITIATING CUE

This activity will require you to work in a Radiological Restricted Area. Given a Radiological Work Permit (RWP) and Survey Map of the FHB, you are to determine the following:

- What are the MINIMUM dress requirements for performing this work per the RWP and Survey Map?
- How long will you be able to perform the task per the RWP and Survey Map?

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Taale Standard:

Task Standard:

Operator determines the following per the RWP and Survey Map:

• MINIMUM dress requirements are one full set of protective clothing and surgeons gloves to be used for the outer set of gloves when handling fuel handling machine tools.

AND

• The task can be performed for 5 hours and then the maximum setpoint (10 mrem) will be reached on the alarming dosimeter.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number		
Provide When t they are	<u>NOTE</u> Provide Student Handout of Initiating Cue and Student Handout of the RWP & Survey Map. When the student has reviewed the Initial Conditions & Initiating Cue <u>and</u> they have indicated they are ready to begin the JPM, then record the start time for the JPM.						
*1	 Reviews RWP and Survey Map to determine the following: MINIMUM dress requirements per the RWP and Survey Map. How long the task can be performed per the RWP and Survey Map. 	 Determines the following: MINIMUM dress requirements are one full set of protective clothing and surgeons gloves to be used for the outer set of gloves when handling fuel handling machine tools. AND The task can be performed for 5 hours and then the maximum setpoint (10 mrem) will be reached on the alarming dosimeter. Note: See TASK STANDARD and answer KEY provided. 					
CUE	This JPM is complete						

JPM Stop Time: _____

Operator's Name: Job Title:
JPM Title: <u>DETERMINE RWP REQUIREMENTS FOR WORK IN RRA (SFP)</u> JPM Number: <u>NRC A4</u> Revision Number: <u>1</u>
Task Number and Title: <u>T67500, Operate the Spent Fuel Handling Machine/Bridge Hoist.</u>
K/A Number and Importance: <u>G2.3.7 3.5/3.6</u>
Suggested Testing Environment:
Alternate Path: Yes No
Task Designed For: SRO Only 🔲; RO/SRO 🔀; AO/RO/SRO 🗌
Time Critical: Yes No
Level of Difficulty: <u>3</u>
Reference(s): Radiation Work Permit with Survey Map
Actual Testing Environment: Simulator Control Room In-Plant Other Testing Method: Simulate Perform Estimated Time to Complete: 10 minutes Actual Time Used: minutes Critical Steps (*) 1 Evaluation Summary: Yes No Were all the Critical Steps performed satisfactorily? Yes No The operator's performance was evaluated against standards contained within this JPM and has been determined to be: Satisfactory Unsatisfactory
Comments:
Evaluator's Name:(Print)
Evaluator's Signature: Date:

JPM SUMMARY

Student Handout

INITIAL CONDITIONS

You have been directed to move Fuel Assemblies from Region 1 to Region 2 per approved Fuel Transfer Forms.

INITIATING CUE

This activity will require you to work in a Radiological Restricted Area. Given a Radiological Work Permit (RWP) and Survey Map of the FHB, you are to determine the following:

- What are the MINIMUM dress requirements for performing this work per the RWP?
- How long will you be able to perform the task per the RWP and Survey Map?

Provide Answer below:

KEY

SOUTH TEXAS PROJECT

NTN

<i>SIP</i>	ELECTRIC GENE RADIATION	ERATING STATION WORK PERMIT	U10			
2020-1-0071 PERFORM FUEL MOVEMENT ACTIVITIES IN FHB						
REVISION 0 WHI	REVISION 0 WHITE RCA Entry Card Required					
	-	•	ACTIVE 05/01/2020 00:00			
		TER	MINATION 12/31/2020 23:59			
	JOB DES	SCRIPTION				
PERFORM FUEL MOVEMENT I MOVE FUEL FROM REGION 1 ⁻ SUPPORT WORK	PERFORM FUEL MOVEMENT IN FHB MOVE FUEL FROM REGION 1 TO REGION 2 SUPPORT WORK					
	RADIOLO	GICAL DATA				
CONTAMINATION GA: 1000 dpm/100cr WORK: 100000 dpm/100cr	DOSI n ² GA: n ² WORK:	E <i>RATES</i> < 1 mrem/hr 1-5 mrem/hr	ALARM SETPOINTS ALARM SETPOINT: 10 mrem ALARM RATE: 25 mrem/hr			
 NO ENTRY INTO POSTED L NO ENTRY INTO POSTED H NO ENTRY INTO POSTED A NO CONTAMINATED BREA CHANGE OUT OF UNDERWATE THIS RADIATION WORK PERMI BE GREATER THAN 10 rem/hr LENGTH OR LIMIT SWITCHES T PAST THE SURFACE OF THE WARK 	The area in the dosimeter setu- compared to the the Survey Marking RE should compare the Survey Marking RE should compare the Survey Marking RWP. T C The amount of ATE and Survey Marking S hours.	e circle is the alarming point. This setpoint is he dose readings on p where the operator g. The operator re the dose levels on p (2 mrem/hr) to the t (10 mrem) on the f time the operator he task per the RWP ap would calculate to	NOBLE GAS) ION WORK PERMIT FED MATERIAL KNOWN TO CONTROLLED BY TOOL IENT OF THE MATERIAL			
DOCIMETRY			BAD BROT COVERAGE			
WB TLD FPD	N	ONE	INTERMITTENT			
	SIGN	ATURES				
TOMEK, MICHAEL K 05	/07/2020 09:34					
Approved By	Date/Time	Terminated By	Date/Time			

This document when completed, SHALL be retained in accordance with the Documents Type List.

Page 1

PERMT/RWP

KEY

STP 2020-1-0071 REVISION 0 SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION RADIATION WORK PERMIT PERMT/RWP U10

PERFORM FUEL MOVEMENT ACTIVITIES IN FHB

WHITE RCA Entry Card Required

Entry Requirements

PRE-JOB BRIEFING REQUIRED WITH RADIATION PROTECTION PRIOR TO FUEL MOVEMENT

Dress Requirements

FOR REMOVING ITEMS COMPLETELY FROM WATER:

One full set protective clothing

FOR ENTRY INTO A POSTED CONTAMINATION AREA

- One full set protective clothing
- For work over water, surgeons cap may be substituted for hood provided life vest used for floatation does not touch neck.
- Surgeons gloves are to be used for the outer set of gloves when handling fuel handling machine tool.

FOR ENTRY INTO POSTED HIGH CONTAMINATION AREA

- One full set of protective clothing
- Second set of coveralls, second set of shoe covers and second set of glo allowed with permission from radiation protection)
- Water repellent protective clothing may be substituted for second set c

Additional Requirements

FOR PARTIAL REMOVAL OF ITEMS FROM WATER

- As per instructions/guidance from RP

FOR REMOVING ITEMS COMPLETELY FROM WATER

- Due to high contamination levels and the potential for high dose rates, spent fuel pool shall be surveyed by RP and wiped and/or rinsed with do being removed. NOTE: PERMISSION FROM MAIN CONTROL ROOM IS RE DEMIN WATER TO THE SPENT FUEL POOL
- Items shall be lowered back into the water immediately if radiation more
- Permission from RP supervisor/designee required to continue activities of the water exceed 100 mrem/hr.

Cautions/ALARA Notes

- Do not attempt to retrieve any debris or trash observed floating in the v and retrival.
- An area radiation monitor (ARM) set to alarm at 3 mrem/hr shall be placed on rule nanoling bridge prior to movement of fuel. If monitor alarms put the work in a safe condition, leave the area and notify RP.
- Movement of irradiated material or fuel within 5 feet of the southwest spent fuel pool cask canal gate or the transfer canal gate, if the transfer canal is drained, requires specific approval from the radiation protection supervisor responsible for the fuel handling building.

This document when completed, SHALL be retained in accordance with the Documents Type List.

For moving fuel assemblies from Region 1 to Region 2 the operator will be working in a contaminated area per the Survey Map.

MINIMUM dress

requirements would be one full set of protective clothing AND surgeons' gloves as the outer set of gloves when handling the fuel handling machine tool.

NOTE: Both of the above are required for this task, however, a surgeon's cap is optional.

Page 2

KEY



	STPNOC			
Job Performance Measure				
CALCULATE SUBCOOLING MARGIN AND APPLY TECH SPECS				
	JPM Number: <u>NRC A5</u>			
	Revision Number: <u>1</u>			
Date: <u>07/13/2020</u>				
Developed By:	N/A	N/A		
	Instructor (Print/Sign)	Date		
Approved By:	N/A	N/A		
Аррготей Бу.	Training Supervisor (Print/Sign)	Date		
Approved By:	N/A	N/A		
, approved by:	Line Management (Print/Sign)	Date		
NOTE: N/A signature blocks if this JPM is being used on an NRC LOT Exam.				

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. This is an Admin JPM.

JPM Administration:

- 1. Materials needed:
 - Clean copy of Steam Tables
 - Calculator
 - Technical Specifications

INITIAL CONDITIONS

A Safety Injection was manually initiated due to indications of RCS leakage. The Crew is performing the actions of 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant, and is currently at step 15 to determine if SI flow should be terminated.

QDPS DPUs "A" and "C" currently indicate "Bad Data" for RCS subcooling

INITIATING CUE

Calculate RCS subcooling using the same inputs used by QDPS on the given T/C QUAD TEMP screen and determine if any Technical Specification actions apply.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

.....

Task Standard:

Subcooling margin is calculated to be 43°F +/- 1°F. Determines one channel of Subcooling Monitoring must be restored within 48 hours or the plant placed in at least HOT SHUTDOWN within the next 12 hours. TS 3.3.3.6 Function 12, Action 36.b.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
The ap	plicant will need a clean copy of St	<u>NOTE</u> eam Tables to perform this task			
A key is	s not supplied for this JPM. See ad	dditional information in the step sta	ndards	s belov	V.
*1	Calculate RCS subcooling using the same inputs used by QDPS.	Calculates RCS subcooling using the RCS pressure and the maximum average quadrant temperature given on the student handout.			
		<u>NOTE:</u> From Steam Tables, saturation temperature for 1765 psig (1780 psia) is 619.5°F. Subtracting 577°F (Maximum Quadrant TC average) from 619.5°F yields a subcooling margin of 42.5°F. QDPS would round up to 43°F. So Task Standard is 43°F + or - 1°F.			

NRC A5 - rev 1

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*2	Determine Technical Specification applicability for the given RCS Subcooling Margin Monitor conditions	Determines that at least one channel of Subcooling Monitoring must be restored to operable status within 48 hours or the plant placed in HOT SHUTDOWN within the next 12 hours.			
		<u>NOTE:</u> TS 3.3.3.6 Function 12 requires a total number of channels of two, with a minimum number of channels required of one. Action 36.b states that with the number of operable channels less than minimum, one inoperable channel must be restored within 48 hours, or be in at least HOT SHUTDOWN within the next 12 hours.			
CUE	This JPM is complete				

JPM Stop Time:

............

Operator's Name: Jo	ob Title: 🗌 RO 🛛 SRO
JPM Title: CALCULATE SUBCOOLING MARGIN A	AND APPLY TECH SPECS
JPM Number: <u>A5</u> Revision N	umber: <u>1</u>
Task Number and Title: SRO-10300, Interpret Tech	nnical Specications
K/A Number and Importance: <u>G2.2.40 3.4/4.7</u>	
Suggested Testing Environment: Simulator	☐ Control Room
Alternate Path: ☐ Yes ⊠No	
Task Designed For: SRO Only RO/SRO	AO/RO/SRO
Time Critical: □Yes ⊠No	
Level of Difficulty: <u>3</u>	
Reference(s): Lesson LOT202.44, QDPS; Technical S	Specification 3.3.3.6
Actual Testing Environment: Simulator	ntrol Room 🛛 In-Plant 🗌 Other
Testing Method: 🗌 Simulate 🔲 Perform	
Estimated Time to Complete: <u>15</u> minutes Ac	ctual Time Used: minutes
Critical Steps (*) 1	
Evaluation Summary: Were all the Critical Steps performed satisfactorily?	□Yes □No
The operator's performance was evaluated against sta contained within this JPM and has been determined to	andards be: 🗌 Satisfactory 🗌 Unsatisfactory
Comments:	
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

A Safety Injection was manually initiated due to indications of RCS leakage. The Crew is performing the actions of 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant, and is currently at step 15 to determine if SI flow should be terminated.

QDPS DPUs "A" and "C" currently indicate "Bad Data" for RCS subcooling

INITIATING CUE

Calculate RCS subcooling using the same inputs used by QDPS on the given T/C QUAD TEMP screen and determine if any Technical Specification actions apply.

Student Handout

T/C QUAD TEMP

07/13/20 10:20:57



STPNOC				
Job Performance Measure				
REVIEW RCS INVENTORY AND DETERMINE TS APPLICABILITY				
	JPM Number: <u>NRC A6</u>			
	Revision Number: <u>1</u>			
Date: <u>07/13/2020</u>				
N/A N				
	Instructor (Print/Sign)	Date		
Approved By:	N/A	N/A		
Approved by.	Training Supervisor (Print/Sign)	Date		
Approved By:	N/A	N/A		
Арріочец Бу.	Line Management (Print/Sign)	Date		

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. This is an Admin JPM.

INITIAL CONDITIONS:

Unit 1 is at 100% steady state power. Due to issues performing 0PSP03-RC-0006, Reactor Coolant Inventory, 0PSP03-RC-0006A, Alternate Reactor Coolant Inventory, has just been completed using a manual calculation.

INITIATING CUE:

You are the Unit Supervisor and 0PSP03-RC-0006A, Alternate Reactor Coolant Inventory, has been forwarded to you for review. Report all conclusions and determine applicable TS LCO's, if any, based on your review.

You are to take the following into account during your review:

• Chemistry has determined Primary to Secondary leakage is 13 gpd.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Took Standard:

Task Standard:

The Senior Reactor Operator determines the following:

- A transposition error caused a miscalculation of the UNIDENTIFIED LEAK RATE. The UNIDENTIFIED LEAK RATE should have been recorded as 1.057 gpm. (1.05 to 1.065 gpm is acceptable)
- Identifies that the UNIDENTIFIED LEAK RATE does NOT meet the Acceptance Criteria of 0PSP03-RC-0006A, Alternate Reactor Coolant Inventory, Step 7.1 (does NOT exceed 1.0 gpm) and that TS 3.4.6.2 applies.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		<u>NOTE</u>			
Provide Invento RCDT.	Initial Cue Sheet, Student HO1 of ry, Student HO2 of Plant Curve 10	⁵ 0PSP03-RC-0006A, Alternate Rea .8 for PRT and Student HO3 of Pla	actor C ant Cui	Coolan [:] ve 10.	t 9 for
When t begin th	he student has reviewed the Initial ne JPM, then record the start time	Cue <u>and</u> they have indicated they for the JPM.	are rea	ady to	
A KEY leakage	is provided showing the transpositi e should be.	ion error and what the correct unide	entified	RCS	
*1	The Senior Reactor Operator reviews the completed surveillance 0PSP03-RC- 0006A, Alternate Reactor Coolant Inventory.	The Senior Reactor Operator determines that a transposition error caused a miscalculation of the RCS UNIDENTIFIED LEAKAGE Rate. The UNIDENTIFIED LEAKAGE RATE should have been 1.057 gpm.			
		NOTE:			
		A calculated value for RCS unidentified leakage of			
		1.05 to 1.065 gpm			
		will be acceptable.			

NRC A6 – Rev 1

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*2	The Senior Reactor Operator applies the correct Technical Specification. CUE: If the Operator only reports that the acceptance criteria is NOT met, then ask them to identify why the acceptance criteria is not met and the specific TS that applies.	The Senior Reactor Operator determines that Technical Specification 3.4.6.2 applies to the unidentified RCS leakage being greater than 1.0 gpm.			
CUE	This JPM is completed	·	•		
JPM Sto	op Time:				

Operator's Name:	Job Title: 🗌 RO 🛛 SRO
JPM Title: REVIEW RCS INVENTORY AND DETEI	RMINE TS APPLICABILITY
JPM Number: NRC A6 Revision	Number: <u>0</u>
Task Number and Title: SRO - 12000, Authorize th	he Start of and Review Surveillance Tests
K/A Number and Importance: <u>G2.1.7 4.4/4.7</u>	
Suggested Testing Environment: Simulator	□ Control Room □ In-Plant ⊠ Other
Alternate Path: 🗌 Yes 🖂 No	
Task Designed For: 🛛 SRO Only 🗌 RO/SRO	AO/RO/SRO
Time Critical: 🗌 Yes 🖂 No	
Level of Difficulty: 3	
Reference(s): 0PSP03-RC-0006A, Alternate React	tor Coolant Inventory, Rev 12
Actual Testing Environment: Simulator 0 Testing Method: Simulate Perform Estimated Time to Complete: <u>10</u> minutes Critical Steps (*) 1 Evaluation Summary: Were all the Critical Steps performed satisfactorily? The operator's performance was evaluated against so contained within this JPM and has been determined Comments:	Control Room In-Plant Other Actual Time Used: minutes Yes No standards to be: Satisfactory Unsatisfactory
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS:

Unit 1 is at 100% steady state power. Due to issues performing 0PSP03-RC-0006, Reactor Coolant Inventory, 0PSP03-RC-0006A, Alternate Reactor Coolant Inventory, has just been completed using a manual calculation.

INITIATING CUE:

You are the Unit Supervisor and 0PSP03-RC-0006A, Alternate Reactor Coolant Inventory, has been forwarded to you for review. Report all conclusions and determine applicable TS LCO's, if any, based on your review.

You are to take the following into account during your review:

• Chemistry has determined Primary to Secondary leakage is 13 gpd.

0PSP03-RC-0006A

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Rev. 12

Alternate Reactor Coolant Inventory

<u>NOTE</u>

- This test should be performed over a two hour period unless steady conditions cannot be maintained. A test period of one hour is sufficient to satisfy the surveillance test. The test period may be specified at the discretion of the Shift Manager/Unit Supervisor.
- Although makeup to the VCT for T_{ave} control during the data collection period does not invalidate the test results, plant conditions should be established, when possible, such that this activity is not be required during the test period. <u>IF</u> a makeup is required, <u>THEN</u> sufficient time for plant stabilization should be allowed prior to obtaining stop time data.
- Steps 4.8 and 4.9 direct data recording requirements when Makeup Totalizer FQI-0111B is **NOT** functional.
 - 5.5 <u>WHEN</u> determined test period has elapsed, <u>THEN</u> PERFORM the following:
 - 5.5.1 ENSURE Stop time Reactor Power is within 1% of Start time Reactor Power.
 - 5.5.2 ENSURE Stop time PRZR pressure is within 10 psig of Start time PRZR pressure. (<u>IF</u> <1700 psig PRZR pressure and utilizing stable RCS pressure, <u>THEN</u> ENSURE STOP time RCS pressure is within 10 psig of START time QDPS RCS pressure.)
 - 5.5.3 <u>WHEN</u> Reactor Power and Pressure data are within above limits, <u>THEN</u> RECORD STOP data on Data Sheet 1.
 - 5.6 DETERMINE PRT level in gallons from percent using the Plant Curve Book, Figure 10.8, PZR Relief Tank.
 - 5.7 DETERMINE RCDT level in gallons from percent using the Plant Curve Book, Figure 10.9, RC Drain Tank.
 - 5.8 PERFORM Pressurizer level correction factor calculation $\frac{\text{correctly, however, it was}}{\text{transposed to Data Sheet}}$

 $\frac{68.3 + 0.023 (2235 - 2241)}{\text{Stop Press}} = \frac{68.162 \text{ gal}}{9}$

This value is calculated correctly, however, it was transposed to Data Sheet 1 as 6.8162. (off by a factor of 10)

- 5.9 PERFORM temperature correction factor calculation:
 - 5.9.1 <u>IF pressure is approximately 400 psig AND</u> Stop Temperature is between 240 and 400°F, <u>THEN</u> PERFORM the following:

$$32 + 0.147 (\underbrace{\mathsf{N/A}}_{\text{Stop Temp}} \,^{\circ}\text{F} - 240) = \underbrace{\mathsf{N/A}}_{\text{gal/}^{\circ}\text{F}} \text{gal/}^{\circ}\text{F}$$

5.9.2 <u>IF pressure is approximately 2235 psig AND</u> Stop Temperature is between 500 and 600°F, <u>THEN</u> USE Addendum 1.

N/A



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Alternate Reactor Coolant Inventory

	NOT	Ε					
•	• Uncontained RCS Leakage may be determined using computer generated data when available or Form 1, Uncontained Identified Leakage Rate.						
•	• <u>IF</u> the Uncontained Identified Leakage Rate is less than 0.001 gpm, <u>THEN</u> zero (0) may be entered in Step 5.11.5.						
	5.11.5 ENTER the Uncontained Form 1, Uncontained Ider program.	Identified RCS Leak Rate as determined by ntified Leakage Rate, or approved computer					
	Uncontained Identified La	eakage Rate:gpm					
	NOT	<u>E</u>					
	IDENTIFIED LEAKAGE Rate Acceptance	Criteria is less than or equal to 10 gpm.					
AC	C 5.12 DETERMINE IDENTIFIED LEAK Primary-to-Secondary and Uncontai	AGE Rate by SUMMING Contained, ined Leakage Rates.					
		0.0 gpm = 0.292 gpm					

0.282	gpm +	0.01 gpm	i +	0.0	gpm =	0.29	92	gpm
(5.11.2)		(5.11.4)		(5.11.5)		IDENTI	FII	ED LEAKAGE Rate
Contained Rate	l Leak	Primary - Secon dary Leakage Rate		Uncontair Leak Rate	ned			

5.12.1 VERIFY the leakage recorded in Step 5.12 satisfies the Acceptance Criteria of Section 7.0.

0PSP03-RC-0006A

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Alternate Reactor Coolant Inventory

-			
		NOTE	
•	UN 1 gj	NIDENTIFIED LEAKAGE Rate Acceptance Criteria is less than or equal to gpm.	
•	Due Uni neg	the to uncertainties in determining Gross and Identified Leakage, the value for nidentified Leakage may be negative. <u>IF</u> the Unidentified Leakage result is gative, <u>THEN</u> data collected during the test period should be reviewed for errors.	
AC	5.13	DETERMINE UNIDENTIFIED LEAKAGE Rate by s LEAKAGE Rate from GROSS Leakage Rate. 0.408 gpm - 0.292 gpm = 0.116 gpm (5.10.2) -0.292 gpm = 0.116 gpm UNIDENTIFIED LEAKAGE Rate by s the acceptance Criteria per the Note above.	d e ie
Error orwai 5.11.2 1.349	carried rd from 2. It sho	d N NIDENTIFIED Leakage is less than -0.1 gpm, <u>THEN</u>	
		RE-PERFORM Reactor Coolant Inventory one additional time.	/A
	5.15	<u>IF</u> repeated results for UNIDENTIFIED Leakage indicate less than -0.1 gpm, <u>THEN</u> PERFORM the following:	
		5.15.1 EVALUATE RCS for in-leakage.	/A
		5.15.2 NOTE evaluation in Note section of DATA Sheet 1.	I/A
	5.16	ENSURE all applicable data has been transcribed to Data Sheet 1.	
	5.17	OBTAIN an independent verification that the manual calculations and data transcriptions are correct.	/
	5.18	ENSURE all performers and verifiers sign/initial on Data Sheet 1.	
	5.19	DETERMINE test results by using Acceptance Criteria, Section 7.0 AND sign Test Performed by.	/
	5.20	NOTIFY Shift Manager/Unit Supervisor of test results and completion.	
	5.21	ENTER the UNIDENTIFIED LEAKAGE result in the Enhanced Unidentified Leak Rate Program. (Refer to Addendum 2)	/

	0PSP03-R	RC-0006A	Rev	. 12	Page 24 of 26
	Alternate Rea	ictor Coolant In	ventory		
Data Sheet 1	Alternate	Leak Rate Data H	Package		Page 1 of 2
Unit Number:	Test Interval: (TS Credit) - Per the Surveillance	Reference:	cations	Plant M	ODE:
I	Ďatabase ´	4.4.6.2	.1.c		1,2,3, or 4
Reason for Test: ⊠ Periodic Surveil	lance Test 🛛 🖾 For S	Surveillance Credit			
Test Results:					
Technical Specifications	Allowable Value Exceeded:		⊠NO □YES	S (expla	in in Remarks)
I Acceptable □ Unaccepta	e (All AS LEFT data within to ble (Any AS LEFT data <u>NO</u>	olerance) <u>T</u> within tolerance)	(explain in Rer	narks)	
Test Performed by:	Jack Snow		Today	25	minutes ago
	Reactor Operator		Date		Time
Data Transcription and	Bubba Smith		Today	15	i minutes ago
Calculations Verified	By: Reactor Operator		Date	_	Time
Plant Ops Review: Potential Reportable Occ LCO Action Statement E Reviewed By:	urrence:	or	Date	- <u> </u>	ne
Operations Surveillanc	e Coordinator Review:				
Reviewed By:(Dperations Surveillance Coo	rdinator	Date		Time

Performers and Verifiers:

Name (Print)	Signature	Initials
Jack Snow	Jack Snow	JS
Bubba Smith	Bubba Smith	BS

Remarks: None

	0PSP03-RC-0006A	Rev. 12	Page 25 of 26
	Alternate Reactor Coolant Invento	ory	
Data Sheet 1	Alternate Leak Rate Data Packa	ge	Page 2 of 2

<u>NOTE</u>

- Computer generated data should be used whenever possible.
- In all cases the same instrument must be used for STOP data that was used for START data.
- <u>IF</u> indicated instrument is unavailable, <u>THEN</u> annotate in remarks instrument used.
- Steps 4.8 and 4.9 direct data recording requirements when Makeup Totalizer FQI-0111B is **NOT** functional.
- <u>IF</u> Makeup Totalizer FQI-0111B is <u>NOT</u> functional, <u>THEN</u> data may be substituted for Makeup Totalizer FQI-0111B data per Step 4.8 or 4.9.

		Step 5.4	Step 5.5			
	Instrument	Start	Stop	Correction Factor (CF)	Calculation	Result
Time	N/A	167 minutes ago	3 <mark>0 minutes ago</mark>	N/A	STOP - START	<u>137</u> min.
Reactor Power	U1169	his value has	been %	N/A	STOP - START	$-0.01 \leq 1.0\%$
PRZR/RCS Pressure	QDPS PT0456 fr	ansposed inco om step 5.8 a	orrectly nd is off ^{sig}	This ^{N/} facto	value is off by a or of 10 due to the	$2.0 \leq 10 \text{ psig}$
VCT Level	L0112 or s	y a factor of 10 hould be 68.10	0. It 62.	33shou	sposition error. It Ild be 143.14.	41.7 gal
PRZR Level	LE0465	55.60%	53.50 %	<u>6.8162</u>	(START - STOP)CF	<u>14.314</u> gal
RCS Tavg/Tcold	TA0412A	591.75_°F	_592.00_°F	(1) <u>81.3</u> (2 of 3)	(STOP - START)CF	_20.325_gal
Makeup Totalizer	FQI-0111B or	<u>43602</u> gal	_43665_gal	N/A	STOP - START	<u>63</u> gal
PRT Level	L0485 or	% gal	<u>71.0</u> % <u>11528</u> gal	N/A	STOP - START	0 gal
RCDT Level	L4901 or	<u>40</u> % <u>148.7</u> gal	50 % 87.3 gal	N/A	STOP - START	<u>38.6</u> gal
From step 5.13 should be 1.34 gpm.	9 OSS 0.408 (4)	gpm - IDEN	TIFIED 0.292 (5)	_ gpm = UNI	DENTIFIED 0.116	_ gpm
	IDENTIFI	ED includes (Prima	ry - to - Secondary)	0.01 gpm (7)	and (Other) $\underbrace{0}_{(8)}$ gpm	ı
(1) Step 5.	⁸ acce	ptable) The SI	RO should ider	ntify that A	cceptance Criteria	from
(6) Step 5.	¹³ step	7.1 is NOT me ade exceeds 1	et for UNIDEN .0 gpm) and th	FIFIED LE	AKAGE (the unider pec 3.4.6.2 applies	ntified
	11115	Data Direct, wit	cii compicica, si			

		0PGP03-ZO-	ECO1A	Rev. 31	Page 93 of 119
	Equi	pment Clearance	e Order Instructions		
Form 3 (Rev. 1)		Equipment Cle	arance Order Form		Page 1 of 3
ECO Number:U	1 2020 Unit Year	- <u>11111</u> Number	Unit: (1)	2 Pa	nge <u>1</u> of <u>3</u>
HAZARDOUSE ENH	ERGY?	□Yes ☑No	Notify Fire Protection	n? □Ye	es 🗵 No
Notify Security?	□ Yes	🗷 No			
What Is Being Tagge	d? <u>MTLO</u>	<u>Cooler #11</u>	TPNS#	<u>7T111MH</u>	<u>X002A</u>
Work Description: R	Remove MTLC	O Cooler #11 end	bell and clean tubes		
Prepared By:		Red Duke	То	day	Now
		Signature	D	ate	Time
Tech Review By:		Signature	D	ate	Time
Approved By:		Signature	D	ate	Time
Notes:					
		Exception	al ECO		
Due to	o Single Va	lve Protect	ion to Hazardou	ıs Ener <u></u>	SY

			0	PGP03-ZO-E	CO1A	Rev. 31	Page 94 of 119
			Equip	ment Clearance	e Order Instructions		
Form	3 (Rev. 2)		Equipm	ent Clearance O	rder Form (Job Additions)		Page 2 of 3
ECO Num	ber: <u>1</u> Unit	2020 <u>11</u> Year Nu	111 mber			Page <u>2</u>	_of <u>3</u>
Job Number	Work Documer WAN / CR / Procedure	nt Work Group	Job Addition Add SRC	Ready for Work Group Acceptance	Work Group Sign ON (Print, Sign, Date Time)	Worl Sign OFF(T	k Group Print, Sign, Date Time)
	114260	MM					
Control LO	Configuration and is	olate MTLO Cool	er #11 to perfo	orm initial venting	and draining in preparation of end bell	removal and tub	e cleaning.
(Work De	escription)						
(Work De	escription)					1	L. L
(Work De	escription)						
(Work De	escription)						
(Work De	escription)	I	ı I		1	1	I

THIS FORM, WHEN COMPLETE, SHALL BE RETAINED FOR A MINIMUM OF 5 YEARS.



NOTE

1-LT-0063, LO Cooler Interchange Valve, is a bypass valve around 1-LT-0049, LO Cooler Transfer Valve. The Operator may identify this valve as missing but it is NOT required for this ECO



	T
NOTES 1. ALL PIPING, VALVES, INSTRUMENTS, AND LINE NUMBERS ON THIS DIAGRAM ARE SUPPLIED BY (B) UNLESS OTHERWISE NOTED.	
2. ALL INSTRUMENT TAG NUMBERS SHOWN ON THIS DIAGRAM ARE PREFIXED BY THE UNIT NUMBER 1 UNLESS OTHERWISE NOTED.	
SEE GENERAL NOTE D ON 9A310F00002. 3. LOW BEARING OIL TRIP SWITCHES MOUNTED IN TERMINAL BOX "A" ON THE GOV. PED. (REF. 3)	
 SWITCHES MOUNTED IN TERMINAL BOX "L" NEAR THE TURNING GEAR. ADJUSTABLE CHECK VALVE. 	
6. ALL INSTRUMENTS ON THIS P&ID HAVE SYSTEM DESIGNATOR LT. UNLESS OTHERWISE NOTED.	
 ALL LOBE OIL SOPPLY PIPING IS GOARDED BY THE LUBE OIL RETURN PIPING. 8. ALL INSTRUMENTS ON THIS P&ID HAVE SEPARATION GROUP N. 	
9. FOR LUBE OIL PURIFICATION SYSTEM SEE P&ID 7T179FØØØ51#1 (REF.4).	C
10. FOR PIPING,VALVES,INSTRUMENTS,EQUIPMENT, ETC.REFER TO DRAWINGS 9A310F00001 AND 9A310F00002 FOR IDENTIFICATION NUMBER DETAILS.	
 DELETED COMPUTER SOUNDS AUDIBLE ALARM AND PRINTS WHICH TEMPERATURE IS HIGH WHEN A TEMPERATURE LIMIT IS REACHED. THE ALARM SHALL BE SUCH THAT 	
THE ALARM MUST BE ACKNOWLEDGED. 13. FOR MORE DETAIL OF LOOP SEAL OIL TANK AND ASSOCIATED PIPING SEE DRAWING 7TØ49F1ØØØ3.	
14. EMERGENCY TRIP OB DRAWING 4534D05, BECHTEL LOG NO. 400304-01322WT.	
15. TURNING GEAR® DRAWING 88800415, BECHTEL LOG NO. 4ØØ3Ø8-Ø1141WT. 16. DELETED	
 17. ALL OM AND OS LINE NUMBERS ON THIS DRAWING HAVE A SUFFIX -XX7. 18. VALVE SV 6217 IS OPEN BELOW 600 RPM. 	
19. → DENOTES RESTRICTION WITHIN PIPING FOR INSTRUMENT SENSING.	
INSIDE RESERVOIR. GOVERNOR 21. THIS IS A DUAL THREE-WAY TRANSFER PLUG-TYPE PEDESTAL	
SELECT TRANSFER VALVE POSITION FOR DESIRED SERVICE COOLER. REFER TO THE FOLLOWING DOCUMENTS FOR DETAILS: TURBINE GENERATOR INSTRUCTION BOOK	
400088-0100110WT, SECTION 1 AND MAIN TURBINE MANUAL 400319-01405WT, VOLUME #2, BOOK #2. 22. 3%" NPT ENTERPAC FITTING WITH DUST COVER. CR-400.	
FOR MANUAL BEARING LUBRICATION DURING MAINTENANCE, TYPICAL FOR BEARINGS 3 THROUGH 8.	
REFERENCES	
1. W DWG. 743J616 E.H. FLUID SYSTEM & LUB. DIAG., SHT.3 (400305-00007WT).	
 2. W DWG. 749J85Ø PPG. OIL FLOW (4ØØ3Ø5-Ø128ØWT). 3. W DWG. 4646D72 LUB. OIL RES. OUTLINE 	
400305-01267WT). 4.7T179F00051#1LUBE OIL PURIFICATION AND TRANSFER. 5.FOR PIPING AND INSTRUMENTATION SYMBOLS SEE DRAWING	
9A310F00001 & 9A310F00002. 6. 🕲 DWG. 4477D26 GENERATOR LOOP SEAL SYSTEM OUTLINE. (400305-00166WT).	
	\mathbf{O}
KEY	
	m
	A
PIPING AND INSTRUMENTATION DIAGRAM LUBE OIL DIAGRAM	
SCALE DWG. NO. SHT. REV.	
1	
	I



	STPNOC	
	Job Performance Measur	e
REVIEW AN E	ECO FOR A MAIN TURBINE LU	JBE OIL COOLER
	JPM Number: <u>NRC A7</u>	
	Revision Number: <u>1</u>	
	Date: <u>07/23/2020</u>	
Developed By:	N/A Instructor (Print/Sign)	N/A Date
Approved By:	N/A	N/A
Approved By:	Training Supervisor (Print/Sign) N/A	Date N/A
, ipp:0100 D):	Line Management (Print/Sign)	Date
Revision Record (Summary)

- **Revision 0,** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. This is an Admin JPM – No simulator setup instructions required.

INITIAL CONDITIONS

Unit 1 is at 100% power.

Main Turbine Lube Oil Cooler #11 had indications of tube blockage and has been removed from service. Main Turbine Lube Oil Cooler #12 was placed in service. An ECO has been prepared for Main Turbine Lube Oil Cooler #11 to control LO System Configuration and isolate Main Turbine Lube Oil Cooler #11 to perform initial venting and draining.

INITIATING CUE

As the Unit Supervisor, you are to review the ECO for Main Turbine Lube Oil Cooler #11 based on the ECO request received from Mechanical Maintenance.

NOTE:

• The Oracle ECO Database is unavailable.

Review the equipment clearance order in its entirety.

- If no errors are found then sign for the 'Tech Review By' and turn in to the examiner.
- If errors are found then document all errors prior to turning into the examiner.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Ilso

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Task Standard:

Reviews an ECO which isolates and drains the Open Loop side of Main Turbine Lube Oil Cooler #11 in accordance with 0PGP03-ZO-EC01A, Equipment Clearance Order Instructions. Identifies two errors.

- 1-LT-0049, LO Cooler Transfer Valve, Required Position is correct. The position listed is for LO HX #11. It should be LO HX #12.
- 1-OC-0092, Turbine LO Cooler 11 Outlet Isolation Valve, is NOT the correct isolation valve. It should be 1-OC-0029.

JPM Step #3.

JPM Start Time:

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<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
Provide HO HO HO HO HO HO The sture	e the following Student Handouts: 1 – ECO request completed by ma 2 – Prepared ECO 3 – Blank copy of 0PGP03-ZO-EC 4 – Blank copy of 0POP02-LT-000 5 – Blank copy of 0POP02-OC-000 6 – Main Turbine Lube Oil P&ID 7 – Open Loop Aux Cooling Water Ident should also use Form 10, I 5 d for this JPM.	NOTE nintenance O1A 1 D1 P&ID ECO Technical Reviewer Checkli	ist, bu	t it is i	not
1	Reviews Page 1 of Form 3:	 Reviews the form: ECO Number (1-2020- 11111) Unit 1 (circled) Hazardous System – NO Notify Fire Protection - NO Notify Security – NO What is being tagged? – Main Turbine Lube Oil Cooler #11 TPNS - #7T111MHX002A Work Description – Filled in Prepared By – Signed Notes – Marked as 'Exceptional ECO' due to single valve protection to Hazardous Energy. 			
2	Reviews Page 2 of Form 3:	 Reviews the form: ECO Number (1-2020- 11111) WAN – 114260 Work Group – MM Work Description – Filled in 			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	Review page 3 of Form 3:	 Determines ECO has two errors: ECO Line #1 - 1-LT-0049, LO Cooler Transfer Valve, is positioned for LO HX #11. It should be position to LO HX #12. ECO Line #3 - 1-OC-0092 is NOT the correct isolation valve. It should be 1-OC-0029. NOTE: See Task Standard and KEY provided. 			
CUE	This JPM is complete			1	

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JPM Stop Time:

....

JPM SUMMARY

Operator's Name: Job Title: RO SRO
JPM Title: REVIEW AN ECO FOR A MAIN TURBINE LUBE OIL COOLER
JPM Number: <u>NRC A7</u> Revision Number: <u>1</u>
Task Number and Title: <u>148210 (SRO), Authorize Equipment Clearances</u>
K/A Number and Importance: 2.2.13 4.1/4.3
Suggested Testing Environment: Simulator Control Room In-Plant Other
Alternate Path: Yes No
Task Designed For: SRO Only 🛛; RO/SRO 🔲; AO/RO/SRO 🗌
Time Critical: □Yes ⊠No
Level of Difficulty: <u>4</u>
Reference(s): 0PGP03-ZO-ECO1A, Equipment Clearance Order Instructions, Rev. 31; 9F00033#1; 9F20010#1
Actual Testing Environment: 🗌 Simulator 🛛 Control Room 🗌 In-Plant 🛛 Other
Testing Method: 🗌 Simulate 🖂 Perform
Estimated Time to Complete: 25 minutes Actual Time Used: minutes
Critical Steps (*) 3
Evaluation Summary: Were all the Critical Steps performed satisfactorily?
The operator's performance was evaluated against standards contained within this JPM and has been determined to be:
Comments:
Evaluator's Name:(Print)

Student Handout

INITIAL CONDITIONS

Unit 1 is at 100% power.

Main Turbine Lube Oil Cooler #11 had indications of tube blockage and has been removed from service. Main Turbine Lube Oil Cooler #12 was placed in service. An ECO has been prepared for Main Turbine Lube Oil Cooler #11 to control LO System Configuration and isolate Main Turbine Lube Oil Cooler #11 to perform initial venting and draining.

INITIATING CUE

As the Unit Supervisor, you are to review the ECO for Main Turbine Lube Oil Cooler #11 based on the ECO request received from Mechanical Maintenance.

NOTE:

• The Oracle ECO Database is unavailable.

Review the equipment clearance order in its entirety.

- If no errors are found then sign for the 'Tech Review By' and turn in to the examiner.
- If errors are found then document all errors prior to turning into the examiner.

	STPNOC			
Job Performance Measure				
DETERMINE EMERGENCY EXPOSURE LIMITS				
	JPM Number: <u>NRC A8</u>			
	Revision Number: <u>1</u>			
	Date: <u>07/13/2020</u>			
Developed By:	N/A Instructor (Print/Sign)	Date		
Approved By:	N/A Training Supervisor (Print/Sign)	Date		
Approved By:	N/A ine Management (Print/Sign)	Date		
NOTE: N/A signature blocks if this JPM is being used on an NRC LOT Exam.				

Revision Record (Summary)

- **Revision 0,** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

This is an Admin JPM – No simulator setup instructions required.

INITIAL CONDITIONS

Unit 1 is in a Site Area Emergency (SAE) due to an RCS Loss of Coolant Accident (LOCA) and Loss of Containment Integrity.

In an attempt to protect company assets, a Plant Operator will be required to go into a radiation area. The Plant Operator has worked at STP for a short time and previously worked as a radiation worker at another facility during this same calendar year.

INITIATING CUE

Determine the MAXIMUM amount of exposure the Plant Operator can be authorized for and the Approval Authority in accordance with 0ERP01-ZV-IN06, Radiological Exposure Guidelines, for the situation given in the INITITIAL CONDITIONS.

The Plant Operators current calendar year radiation exposure is provided.

Provide the following data below to complete the JPM:

• The Plant Operator's current exposure used to determine Emergency Exposure Approval.

_____ REM TEDE

• The MAXIMUM amount of exposure that can be authorized for the specified Plant Operator for the situation given in the INITIAL CONDITIONS.

_____ REM TEDE

• MAXIMUM Exposure Limit for the situation given in the INITIAL CONDITIONS.

_ REM TEDE

• Approval Authority for the exposure:

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

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Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

Determines the following:

- The Plant Operator's current exposure used to determine Emergency Exposure Approval.
- <u>0.770</u> REM TEDE
- The MAXIMUM amount of exposure that can authorize for the specified Plant Operator for the situation given in the INITIAL CONDITIONS.
- <u>9.230</u> REM TEDE
- MAXIMUM Exposure Limit for the situation given in the INITIAL CONDITIONS.

___<u>10</u>____ REM TEDE

• Approval Authority:

Emergency Director

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number	
Provide A KEY	<u>Note</u> Provide Student Handout of Initiating Cue and Student Handouts HO1, HO2 & HO3. A KEY is not needed with this JPM. See TASK STANDARD below.					
*1	Determines Emergency Exposure in accordance with 0ERP01-ZV-IN06, Radiological Exposure Guidelines.	 Determines the following based on the Initiating Cue: The Plant Operator's current exposure used to determine Emergency Exposure Approval. (Add exposure from STP AND Diablo Canyon - 0.050 + 0.720 = 0.770) 0.770 REM TEDE The MAXIMUM amount of exposure that can authorize for the specified Plant Operator for the situation given in the INITIAL CONDITIONS. (Maximum Exposure Limit minus Current Exposure – 10 – 0.770 = 9.230) 9.230 REM TEDE MAXIMUM Exposure Limit for the situation given in the INITIAL CONDITIONS. (See Add 1 of 0ERP01-ZV-IN06) 10 REM TEDE Approval Authority: Emergency Director 				
CUE	This JPM is complete					

JPM Stop Time:

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JPM SUMMARY

Operator's Name:	Job Title: 🗌 RO 🛛 SRO
JPM Title: DETERMINE EMERGENCY EXPOSU	<u>RE LIMITS</u>
JPM Number: <u>A8</u> Revision	Number: <u>1</u>
Task Number and Title: SRO-12800, Activate the	Emergency Plan
K/A Number and Importance: <u>G2.3.4 3.2/3.7</u>	
Suggested Testing Environment:	\Box Control Room \Box In-Plant \boxtimes Other
Alternate Path: Yes No	
Task Designed For: 🛛 SRO Only 🛛 RO/SRO	AO/RO/SRO
Time Critical: □Yes ⊠No	
Level of Difficulty: <u>3</u>	
Reference(s): 0ERP01-ZV-IN06, Radiological Expo	sure Guidelines, Rev 8
Actual Testing Environment: Simulator C Testing Method: Simulate Perform	Control Room 🛛 In-Plant 🗌 Other
Estimated Time to Complete: 15 minutes	Actual Time Used: minutes
Critical Steps (*) 1	
Evaluation Summary: Were all the Critical Steps performed satisfactorily?	□Yes □No
The operator's performance was evaluated against s contained within this JPM and has been determined	standards to be:
Comments:	
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

Unit 1 is in a Site Area Emergency (SAE) due to an RCS Loss of Coolant Accident (LOCA) and Loss of Containment Integrity.

In an attempt to protect company assets, a Plant Operator will be required to go into a radiation area. The Plant Operator has worked at STP for a short time and previously worked as a radiation worker at another facility during this same calendar year.

INITIATING CUE

Determine the MAXIMUM amount of exposure the Plant Operator can be authorized for and the Approval Authority in accordance with 0ERP01-ZV-IN06, Radiological Exposure Guidelines, for the situation given in the INITITIAL CONDITIONS.

The Plant Operators current calendar year radiation exposure is provided.

Provide the following data below to complete the JPM:

• The Plant Operator's current exposure used to determine Emergency Exposure Approval.

____ REM TEDE

• The MAXIMUM amount of exposure that can be authorized for the specified Plant Operator for the situation given in the INITIAL CONDITIONS.

_____ REM TEDE

• MAXIMUM Exposure Limit for the situation given in the INITIAL CONDITIONS.

_____ REM TEDE

• Approval Authority for the exposure:

	STPNOC			
Job Performance Measure				
DECLARE EMERGENCY ACTION LEVELS				
	JPM Number: <u>NRC A9</u>			
	Revision Number: <u>1</u>			
Date: <u>07/13/2020</u>				
Developed By:	N/A	N/A		
	Instructor (Print/Sign)	Date		
Approved By:	N/A	N/A		
Арргочец Бу	Training Supervisor (Print/Sign)	Date		
Approved By:	N/A	N/A		
	Line Management (Print/Sign)	Date		

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

1. This is an Admin JPM.

JPM Administration:

- 1. Setup an area with a copy of the following references:
 - 0ERP01-ZV-SH01, Shift Manager, with an extra copy of Checklists 1 4
 - 0ERP01-ZV-IN01, Emergency Classification
 - Laminated Emergency Classification Charts (Fission Product Barriers, Hot Modes, All Modes, and Cold Modes)
- 2. Check and clean the laminated charts.
- 3. Inform the student this JPM is time critical.
- 4. Read the cue to the student and fill in the JPM Start Time when the student acknowledges the Initiating Cue.

INITIAL CONDITIONS

Both Units are at 100% power.

A tornado touched down in the Oily Waste Area causing minor structural damage. The tornado then damaged the ECW Intake Structure. The Unit 1 "B" train watertight door was physically separated from the building and is lying next to the ECW Intake Structure.

INITIATING CUE

You are the Emergency Director and you are to classify the event at its **<u>MINIMUM</u>** Emergency Classification Level including the corresponding Initiating Condition and specific Emergency Action Level (EAL).

THIS JPM IS TIME CRITICAL.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

An ALERT (Emergency Classification) is declared on SA9 (Initiating Condition) EAL1 - a AND b.2 (specific EAL). Also see KEY provided.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number	
	NOTE					
Use a b	inder, if available, for the Student	Handouts for this JPM.				
Provide Emerge	e a copy of 0ERP01-ZV-IN01, Eme ency Classification Charts from Ado	rgency Classification, and/or lamin dendum 4, 5, 6 and 7.	ated c	opies o	of the	
The AL SAFET DAMA(mode.)	The ALERT classification is based on SA9 EAL1 - a AND b2 (Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.)					
*1	Classify the event in accordance with Addendum 1 in 0ERP01-ZV-IN01.	Classifies the event at the MINIMUM Emergency Classification Level including the corresponding Initiating Condition and specific Emergency Action Level (EAL).				
		ALERT based on SA9 EAL1 - a AND b.2				
		Time Critical Stop Time				
2	Implement 0ERP01-ZV-SH01, Shift Manager.	0ERP01-ZV-SH01, Shift Manager, is implemented.				
CUE	This JPM is complete (Must be completed within 15 minutes.)					

JPM Stop Time: _____

JPM S	UMMARY
-------	--------

Operator's Name:	Job Title: 🗌 RO	□SRO
JPM Title: DECLARE EMERGENCY ACTION LEV	/ELS	
JPM Number: <u>A9</u> Revision N	Number: <u>1</u>	
Task Number and Title: <u>SRO-12800</u> , Activate the	<u>Emergency Plan</u>	
K/A Number and Importance: <u>G2.4.41 2.9/4.6</u>		
Suggested Testing Environment:	Control Room	🗌 In-Plant 🛛 Other
Alternate Path: Yes No		
Task Designed For: 🛛 SRO Only 🛛 RO/SRO	🗌 AO/RO/SRO	
Time Critical: Xes No		
Level of Difficulty: <u>4</u>		
Reference(s): 0ERP01-ZV-IN01, Emergency Classif 0ERP01-ZV-SH01, Shift Manager, Re	ication, Rev. 10 ev. 32	
Actual Testing Environment: Simulator C Testing Method: Simulate Perform Estimated Time to Complete: <u>15</u> minutes A Critical Steps (*) 1	ontrol Room	In-Plant
Evaluation Summary: Were all the Critical Steps performed satisfactorily?	□Yes	🗆 No
The operator's performance was evaluated against st contained within this JPM and has been determined t	tandards œ be: □ Satisfa	actory 🗌 Unsatisfactory
Comments:		
Evaluator's Name:(Print)		
Evaluator's Signature:	Date:	

Student Handout

INITIAL CONDITIONS

Both Units are at 100% power.

A tornado touched down in the Oily Waste Area causing minor structural damage. The tornado then damaged the ECW Intake Structure. The Unit 1 "B" train watertight door was physically separated from the building and is lying next to the ECW Intake Structure.

INITIATING CUE

You are the Emergency Director and you are to classify the event at its **MINIMUM** Emergency Classification Level including the corresponding Initiating Condition and specific Emergency Action Level (EAL).

THIS JPM IS TIME CRITICAL.

Record MINIMUM Emergency Classification Level including the corresponding Initiating Condition and specific EAL below:

Emergency Classification Level _____

Initiating Condition _____

Specific EAL _____

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	Emergency Classification				
Addendum 1Emergency Classification TablesPage 53 of 159					

ALERT			
Initiating Condition	Hazardous event affecting operating mode.	a SAFETY SYSTEM needed for the current	(SA9)
Emergency Action L	evels (1)	Operating Mode Applicability: 1,2,3,4	

Notes:

• None

EAL-1

a. The occurrence of **ANY** of the following hazardous events listed in Table S3:

Table S3: Hazardous Events					
• Seismic event (earthquake)					
Internal or external flooding event					
High winds or tornado strike					
• FIRE					
• EXPLOSION					
• Predicted or actual breach of Main Cooling Reservoir retaining dike Wall.	along North				
• Other events with similar hazard characteristics as determined by the Manager	e Shift				

AND

b. **EITHER** of the following:

1. Event damage has caused indications of degraded performance in at least one train of a SAFETY SYSTEM needed for the current operating mode.

OR

2. The event has caused VISIBLE DAMAGE to a SAFETY SYSTEM component or structure needed for the current operating mode.



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Emergency Classification					
Addendum 1	Page 54 of 159				

Basis:

This IC addresses a hazardous event that causes damage to a SAFETY SYSTEM, or a structure containing SAFETY SYSTEM components, needed for the current operating mode. This condition significantly reduces the margin to a loss or potential loss of a fission product barrier, and therefore represents an actual or potential substantial degradation of the level of safety of the plant.



EAL# 1.b.1- addresses damage to a SAFETY SYSTEM train that is in service/operation since indications for it will be readily available. The indications of degraded performance should be significant enough to cause concern regarding the operability or reliability of the SAFETY SYSTEM train.

EAL# 1.b.2- addresses damage to a SAFETY SYSTEM component that is not in service/operation or readily apparent through indications alone, or to a structure containing SAFETY SYSTEM components.

Operators will make this determination based on the totality of available event and damage report information. This is intended to be a brief assessment not requiring lengthy analysis or quantification of the damage.

Escalation of the EMERGENCY CLASSIFICATION LEVEL would be via IC FS1 or RS1.

EAL SELECTION BASES

The listed hazards are from NEI 99-01 Rev.6 with the exception of the Main Cooling Reservoir breach along the north wall which was included because it is a credible hazard and analyzed in the STPEGS UFSAR.



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	Emergency Classification		
Addendum 5	Hot Modes Chart		Page 1 of 1

	"5" - System Malfunction (Mode 1, 2, 3, 4)											007	P01-2V-IN01 Rev. 10 Page 177 of 179
	AC Power	Control Room Indications	Coolant Activity	RCS Leakage	RPS Failure	Communication	Containment Isolation	DC Power	Hazards			Addendum 5	HOT MODES CHART Page 1 of 1
	<u>SG1</u> Prolonged loss of ALL officite and ALL onsite AC gover to emergency buses SEE NOTE 4 1a. Loss of ALL officite and ALL onsite AC power to 41609 AC ESP buses.	Table S1: Plant Parameters Reactor Power HCS Lovel HCS Pressure	Table S2: Communications Methods METHOD EAL-1 EAL-2 METHOD EMISTE ORD If PA system X X	Table 53: Hazard 54:-3 - Selonic overt (earthquike) Internal or external flooting - Internal or external flooting High winds or transda title - High winds or transda title	our fronts			SGE Loss of ALL AC and Vital DC power sources for 15 minutes or longer. SEE NOTE 1 Loss of ALL offsite and ALL onsite AC power to ALL three 41007 AC ESP busins for 15 minutes or longer.					
General Emergency	b. ETHER of the following: Restoration of at least one 4160V AC ESF bus in less than 4 hours is not likely. Cone Cooling – Iked entry condition met	Core Exit Temperature Levels in at least two steam generators Steam Generator Auxiliary Feed Water Flow	nt Radios X st tolephone system X X silite phones X City X X City X X X X X X X X X X	FiRE EXPLOSION Predicted or actual breach of retaining dike along North W Other events with similar has discussion with similar has	Main Cooling Reservoir all, and characteristics as and reserves and the second second second second second second second second second second second second second			 Indicated voltage is less than 105.5 VDC on ALL Class 1E 125 VDC battery buses for 15 minutes or longer. 		General Emergency			NOTES
		- Mi - Sei - Dei - Ett	rowave Lines to Houston X unity radio to Matagorda County X Easted Ring-down lines X Line	X Generative by the states made							1	CU1, CU2, CU3, CU4, CA1, CA2, H56, SU1, SU2, SU4, SA1, SA2, SS1, SS8, SG8	The Emergency Director should declare the event promptly upon determining that 15 minutes has been exceeded, or will likely be exceeded.
	551 Loss of ALL offsite and ALL onsite AC power				555 inability to shutdown the reactor causing a	1		558 Loss of all Vital DC power for 15 minutes or			2	CS1, CG1	The Emergency Director should declare the event promptly upon determining that 30 minutes has been exceeded, or will likely be exceeded.
	to emergency buses for 13 minutes or longer. SEE NOTE 1				challenge to core cooling or RCS heat removal. 1a. Entry into OPOP05-E0-FRS1, Response to Nuclear Power Generation – ATWS			longer.			3	RU1, RG2	The Emergency Director should declare the event promptly upon determining that 60 minutes has been exceeded, or will likely be exceeded.
City Arrow	 Loss of ALL offsite and ALL omite AC power to ALL three 4160V AC ESF Buses for 15 minutes or longer. 				AND b. ALL manual actions to shutdown the reactor have been unsuccessful. AND c. ETHER of the following conditions exist:			Indicated voltage is less than 105.5 VDC on ALL Class IE 125 VDC battery buses for 15 minutes or longer.		C 1 1 1	4	5G1	The Emergency Director should declare the event promptly upon determining that 4 hours has been exceeded, or will likely be exceeded.
Site Area Emergency					Core Cooling – Red entry conditions met OR Heat Sink- Red entry conditions met					Site Area Emergency	5	RA1, RS1, RG1, HU4, CA3	The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
					Modes 1, 2 Only						6	RA1, RS1, RG1	If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes.
	SAL Loss of ALL but one AC power source to ensergency buses for 15 minutes or longer.	SA2 UNPLANNED loss of Control Room indications for 13 minutes or lower with a similared transleet	1		SAS Automatic or manual trip fails to shutdown the reactor, and subsequent manual actions taken at				SAS Hazardous event affecting a SAFETY SYSTEM evented for the current operation mode.		7	RU1	If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 60 minutes.
	SEE NOTE 1	SEE NOTE 1 A. An UNPLANNED event results in the inability to			the reactor control panels are not successful in shutting down the reactor.				2a. The occurrence of ANY of the following hazardous events in Table 53. AND		8	RU1, RA1, RS1, RG1	If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer VALID for classification purposes.
Alert	Buses is reduced to a single power source for 15 minutes or longer. AND b. ANY additional single power source failure will result in aloss of A&A AC power to SAFETY	monitor one or more of the following parameters in Table 51 from within the Control Room for 15 minutes or longer. AND b. ANY of the following transient events in progress.			Power Generation – ATW5				 EITHER of the following: (1) Event damage has caused indications of degraded performance in at least one train of a SAFETY SISTEM needed for the current 	Alert	9	RA1, RS1, RG1	The pre-calculated effluent monitor values presented in EAL#1 should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.
Juli	SYSTEMS.	Automatic or manual runback greater than 25% thermal reactor power Electrical load rejection greater than 25% full electrical load Bractor trip			Modes 1, 2 Only				operating mode. OR (2) The event has caused VISIBLE DAMAGE to a SAFETY SISTEM component or structure needed for the current operating mode.	<i>p</i> icit	10	RA3, HAS	If the equipment in the listed room or area was already inoperable or out-of-service before the event occurred, then no emergency classification is warranted.
		ECCS (3) actuation									11	RS2, RG2	EAL-1 is not applicable until the enhanced SFP level instrumentation is available for use.
	921 Loss of ALL offsite AC power capability to emergency buses for 15 minutes or longer.	1012 UNPLANNED loss of Control Room indications for 15 minutes or longer.	503 Reactor coolant activity greater than Technical Specification allowable limits.	SUE IRCS leakage for 15 minutes or longer.	SUS Automatic or manual trip fails to shutdown the reactor.	SUE Loss of ALL onsite or offsite communications capabilities.	SU2 Failure to isolate containment or loss of containment pressure control.			1	12	низ	EAL 84 does not apply to routine traffic impediments such as fog, snow, ice, or vehicle breakdowns.
	SEE NOTE 1 1. Loss of ALL offsite AC power capability to ALL three 4160V AC ESF Buses for 15 minutes or longer.	SEE NOTE 1 1. An UNPLANNED event results in the inability to monitor one or more of the following parameters in Table 51 from within the Control Room for 15	RT-8039 reading greater than 30 µCl/ml. Sample analysis indicates that a reactor coolant activity value is greater than an allowable limit specified in Technical Specifications:	SEE NOTE 1 1. RCS unidentified or pressure boundary leakage greater than 10 gpm for 15 minutes or longer.	SEE NOTE 13 La. An automatic trip did not shutdown the reactor. AND b. A subsequent manual action taken at the reactor	Loss of ALL of the following Onsite communication methods in Table S2. Loss of ALL of the following Offsite Response Organization (CRO) communications methods in	La. Failure of containment to isolate when required by an actuation signal. AND b. ALL required penetrations are not isolated within 15 minutes of the actuation signal.	n			13	sus	A manual action is ANY operator action, or set of actions, which causes the control rods be rapidly inserted into the core, and does not include manually driving control rods or implementation of boron injection strategies.
Unusual Event		minutes or longer.	Greater than 1 µCl/gm Dose Equivalent I-131 OR Greater than 100/ E µCl/gm gross activity	RCS identified leakage greater than 25 gpm for 15 minutes or longer. Leakage from the RCS to a location outside containment greater than 25 gpm for 15 minutes or	control panels is successful in shutting down the reactor. 2a. A manual trip did not shutdown the reactor. AND	Table 52. 3. Loss of ALL of the following NRC communications methods in Table 52.	2.a. Containment pressure greater than 9.5 ptig. AND b. No Containment Spray train is operating per			Unusual Event	14	RAZ	EAL-3 is not applicable until the enhanced SFP level instrumentation is available for use.
				larger."	 ETHER of the following: (1) A subsequent menual action taken at the reactor control panels is successful in shutting down the reactor. OR (2) A subsequent automatic trip is successful in shutting down the reactor. 		design for 15 minutes of langer.						

ES-301 Control Room/In-Plant Systems Outline Form ES-301-2					
Facility: South Texas Project	Date of Examination: 7-13-20				
Exam Level: RO ■ SRO-I □ SRO-U □	Operating	g Test No.:	DT 24 NRC		
Control Room Systems:* 8 for RO, 7 for SRO-I, and 2 or 3 for SRO-U					
System / JPM Title Type Code* S					
a. (S1) Recover a Mis-Aligned Control Rod KA: 001	44.06 (2.9/3.2)	M,S	1		
b. (S2) Manually Load an ESF Bus KA: 064 A4.06 (3.	9/3.9)	A,E,EN,M,S	6		
c. (S3) Depress RCS during SGTR KA: 010 A2.02 (3.	9/3.9)	A,D,E,L,S	3		
d. (S4) Loss of Circulating Water Pump KA: 075 A2.0	02 (2.5/2.7)	A,N,S	8		
e. (S5) Containment Spray Pump Performance Test A2.08 (3.2/3.7)	KA: 026	M,S	5		
f. (S6) Transfer MFW Control from LPFRV to MFRV I A4.08 (3.0/2.9)	D,S	4S			
g. (S7) Respond to RCB Rad Monitor Alarm KA: 073 (3.9/3.9)	A4.01	A,D,S	7		
h. (S8) Lower SI Accumulator Level KA: 006 A1.13 (3	3.5/3.7)	D,EN,S	2		
In-Plant Systems:* 3 for RO, 3 for SRO-I, and 3 or 2 f	or SRO-U				
i. (P1) MCC Power Restoration per 0POP04-ZO-0001 A4.04 (2.6/2.7)	KA: 062	E,L,N	6		
j. (P2) Place RWST on Recirc followed by an SI KA: ((4.0/3.8)	006 A4.02	A,D,R	2		
k. (P3) Verify Containment Isolation Phase B KA: 10 (3.5/3.8)	3 A2.03	D,E,L,R	5		
* All RO and SRO-I control room (and in-plant) systems functions, all 5 SRO-U systems must serve different functions may overlap those tested in the control	tems must be dif ent safety function l room.	fferent and serve di ons, and in-plant sy	fferent safety /stems and		
* Type Codes	Criteria for R	0/SRO-I/SRO-U			
(A) Iternate Path $4-6 / 4-6 / 2-3$ (C) ontrol Room $\leq 9 / \leq 8 / \leq 4$ (D) irect from Bank $\geq 1 / \geq 1 / \geq 1$ (E) mergency or abnormal in-plant $\geq 1 / \geq 1 / \geq 1$ (EN) gineered Safety Features $\geq 1 / \geq 1 / \geq 1$ (L) ow-Power / Shutdown $\geq 1 / \geq 1 / \geq 1$ (N) ew or (M) odified from bank including 1(A) $\geq 2 / \geq 2 / \geq 1$					
(P)revious 2 exams $\leq 3 / \leq 2$ (randomly selected)(R)CA $\geq 1 / \geq 1 / \geq 1$ (S)imulator \geq					

ES-301 Control Room/In-Plant Systems Outline Form ES-301-2						
Facility: South Texas Project	Date of E	Examination: 7	7-13-20			
Exam Level: RO □ SRO-I ■ SRO-U □	Operating	g Test No.: <u>L(</u>	OT 24 NRC			
Control Room Systems:* 8 for RO, 7 for SRO-I, and 2	or 3 for SRO-	U				
System / JPM Title		Type Code*	Safety Function			
a. (S1) Recover a Mis-Aligned Control Rod KA: 001 A	4.06 (2.9/3.2)	M,S	1			
b. (S2) Manually Load an ESF Bus KA: 064 A4.06 (3.9	9/3.9)	A,E,EN,M,S	6			
c. (S3) Depress RCS during SGTR KA: 010 A2.02 (3.9	9/3.9)	A,D,E,L,S	3			
d. (S4) Loss of Circulating Water Pump KA: 075 A2.0	2 (2.5/2.7)	A,N,S	8			
e. (S5) Containment Spray Pump Performance Test A2.08 (3.2/3.7)	KA: 026	M,S	5			
f. (S6) Transfer MFW Control from LPFRV to MFRV k A4.08 (3.0/2.9)	(A: 059	D,S	4S			
g. (S7) Respond to RCB Rad Monitor Alarm KA: 073 (3.9/3.9)	A4.01	A,D,S	7			
h.						
In-Plant Systems:* 3 for RO, 3 for SRO-I, and 3 or 2 for	or SRO-U	•				
i. (P1) MCC Power Restoration per 0POP04-ZO-0001 A4.04 (2.6/2.7)	KA: 062	E,L,N	6			
j. (P2) Place RWST on Recirc followed by an SI KA: 0 (4.0/3.8)	006 A4.02	A,D,R	2			
k. (P3) Verify Containment Isolation Phase B KA: 103 (3.5/3.8)	3 A2.03	D,E,L,R	5			
* All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions, all 5 SRO-U systems must serve different safety functions, and in-plant systems and functions may overlap those tested in the control room.						
* Type Codes	Criteria for R	0/SRO-I/SRO-U				
(A)Iternate Path (C)ontrol Room (D)irect from Bank	4- ≤	6 / 4 - 6 / 2 - 3 $9 / \le 8 / \le 4$				
(E)mergency or abnormal in-plant (EN) gineered Safety Features (L)ow-Power / Shutdown	2 2 2	1 / ≥1 /≥1 1 / ≥1 /≥1 (contro 1 / ≥1 /≥1	l room system)			
(N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA	2 5 2	2 / ≥ 2 / ≥ 1 3 / ≤ 3 / ≤ 2 (randor 1 / ≥ 1 / ≥ 1	nly selected)			
(S)imulator						

ES-301 Control Room/In-Plant S	systems Outline	Form	ES-301-2			
Facility: South Texas Project	Date of E	Examination: 7	2-13-20			
Exam Level: RO □ SRO-I □ SRO-U ■ Operating Test No.: LOT 24 NRC						
Control Room Systems:* 8 for RO, 7 for SRO-I, and	d 2 or 3 for SRO-	U				
System / JPM Title	Type Code*	Safety Function				
a. (S1) Recover a Mis-Aligned Control Rod KA: 007	I A4.06 (2.9/3.2)	M,S	1			
b. (S2) Manually Load an ESF Bus KA: 064 A4.06 (3.9/3.9)	A,E,EN,M,S	6			
c. (S3) Depress RCS during SGTR KA: 010 A2.02 (3.9/3.9)	A,D,E,L,S	3			
d.						
е.						
f.						
g.						
h.						
In-Plant Systems:* 3 for RO, 3 for SRO-I, and 3 or 2	2 for SRO-U					
i.						
j. (P2) Place RWST on Recirc followed by an SI KA (4.0/3.8)	: 006 A4.02	A,D,R	2			
k. (P3) Verify Containment Isolation Phase B KA: (3.5/3.8)	03 A2.03	D,E,L,R	5			
* All RO and SRO-I control room (and in-plant) sy functions, all 5 SRO-U systems must serve diff functions may overlap those tested in the cont	vstems must be dif erent safety functio rol room.	ferent and serve di ons, and in-plant sy	fferent safety stems and			
* Type Codes	Criteria for R	0/SRO-I/SRO-U				
(A)Iternate Path (C)ontrol Room (D)irect from Bank (E)mergency or abnormal in-plant (EN) gineered Safety Features (L)ow-Power / Shutdown (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams $4-6 / 4-6 / 2-3$ $\leq 9 / \leq 8 / \leq 4$ $\geq 1 / \geq 1 / \geq 1$ $\geq 1 / \geq 1 / \geq 1$ $\geq 1 / \geq 1 / \geq 1$ $\geq 2 / \geq 1 / \geq 1$ $\leq 3 / \leq 2$ (randomly selected)						
(R)CA ≥ 1 / ≥ 1 / ≥ 1 (S)imulator						

STP LOT-24 NRC Systems JPM Description

Control Room Systems JPMs

- (S1) <u>Recover a Mis-Aligned Control Rod</u> Demonstrate the ability to control reactor core reactivity while recovering a mis-aligned control rod in accordance with 0POP04-RS-0001, Control Rod Malfunction.
- (S2) <u>Manually Load an ESF Bus</u> Demonstrate the ability to ensure equipment has properly loaded on to an ESF 4.16KV Bus in accordance with 0POP04-AE-0001, First Response to Loss of any or all 13.8KV or 4.16KV Bus. This is an Alternate Path JPM.
- (S3) <u>Depress RCS During SGTR</u> Demonstrate the ability to depress the RCS after a SGTR in accordance with 0POP05-EO-EO30, Steam Generator Tube Rupture. This is an Alternate Path JPM.
- (S4) Loss of Circulating Water Pump Demonstrate the ability to operate the Circulating Water System after a trip of a Circulating Water Pump in accordance with 0POP04-CW-0001, Loss of Circulating Water Flow. This is an Alternate Path JPM.
- (S5) <u>Containment Spray Pump Performance Test</u> Demonstrate the ability to operate the Containment Spray Pumps in accordance with 0POP07-CS-0001, Containment Spray Pump 1A(2A) Functional Test.
- (S6) <u>Transfer MFW Control from LPFRV to MFRV</u> Demonstrate the ability to operate Main Feedwater control valves in accordance with 0POP03-ZG-0005, Plant Startup to 100%.
- (S7) <u>Respond to RCB Rad Monitor Alarm</u> Demonstrate the ability to operate the RCB Supplemental Purge System after a Radiation Monitor high alarm in accordance with 0POP04-RA-0001, Radiation Monitoring System Alarm Response. This is an Alternate Path JPM.
- (S8) <u>Lower Safety Injection Accumulator Level</u> Demonstrate the ability lower Safety Injection Accumulator level in accordance with 0POP02-SI-0001, Safety Injection Accumulators.

NOTE: All Control Room JPMs will be performed dynamically in the Simulator. JPMs will be performed in pairs; S1 & S2 together, S3 & S7 together, S5 & S6 together and S4 & S8 together.

STP LOT-24 NRC Systems JPM Description

In Plant Systems JPMs

- (P1) <u>MCC Power Restoration per 0POP04-ZO-0001, Control Room Evacuation</u> Demonstrate the ability to restore power to vital MCCs after a control room evacuation in accordance with 0POP04-ZO-0001, Control Room Evacuation.
- (P2) <u>Place RWST on Recirc followed by an Safety Injection</u> Demonstrate the ability to monitor the Safety Injection System alignments in order to prevent equipment damage in accordance with 0POP02-FC-0001, Spent Fool Pool Cooling and Cleanup System. This is an Alternate Path JPM.
- (P3) <u>Verify Containment Isolation Phase B</u> Demonstrate the ability to locally close Component Cooling Water valves associated with Containment Isolation Phase B in accordance with 0POP05-EO-EC00, Loss of all AC Power.

	STPNOC				
Job Performance Measure					
RECOVER A MISALIGNED CONTROL ROD					
JPM Number: <u>NRC S1</u>					
	Revision Number: <u>1</u>				
	Date: <u>07/13/2020</u>				
Developed By:	N/A	N/A			
Approved By:	N/A	N/A			
Арргочец Бу.	Training Supervisor (Print/Sign)	Date			
	N/A	N/A			
ANNIOVED BV.					

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. Set up a 100% IC. Go to RUN. Ensure Control Bank D Step Counters indicate the same for both groups and record the position.
- Move Control Bank D Rods in two DRPI transitions. That would be > 6 steps but ≤ 12 steps.
- 3. Insert the following malfunction:
 - Rod D4 Fails to Move with Bank D (01-05-09)
- 4. Withdraw Control Bank D to the original recorded position ensuring that Control Rod D4 does not move.
- 5. Delete malfunction Rod D4 Fails to Move with Bank D (01-05-09)
- 6. Go to FREEZE and then store the IC

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM is scheduled to be performed with JPM S2.
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - 0POP04-RS-0001, Control Rod Malfunction.
- NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.
- 5. Reset the simulator to IC 203 and verify the following:
 - Red light at the end of CP-010 is out
 - ICS annunciators have stopped counting up
- 6. Place simulator in RUN and quickly silence/acknowledge/reset alarms, **including plant computer/ICS alarms.**
- 7. PLACE simulator in FREEZE.
- 8. When the student and the examiners are ready to proceed, place the simulator in RUN.
- 9. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

1. Provide the Instructor with a paper clip to change Step Counter Position (JPM Step *8)

INITIAL CONDITIONS

Unit 1 is in Mode 1 at 100% power. Control Rod D4 in Group 1 of Control Rod Bank D became misaligned by 12 indicated steps on DRPI 90 minutes ago.

The Crew entered 0POP04-RS-0001, Control Rod Malfunction. I/C Maintenance and Reactor Engineering, along with Operations Management, have determined that Control Rod D4 will be re-aligned to the affected bank.

The Crew has completed Addendum 2, Recovery of Misaligned Rods, through step 7.0 and are ready to GO TO step 17.0.

INITIATING CUE

The Unit Supervisor directs you to perform 0POP04-RS-0001, Control Rod Malfunction, Addendum 2, Recovery of Misaligned Rods, starting at step 17.0.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

Realign Control Rod D4 to a position that is equal to the other Control Rods in Control Rod Bank D. All Critical JPM Steps #5, 6, 9, 10, 11 are completed.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number						
Hand o	NOTE Hand out the Student Initiating Cue Sheet along with the Student HO1 of 0POP04-RS-0001,										
DO NO At JPM Unit th	Rod Malfunction, Addendum 2, Ro T hand out Student HO2 from th I Step 8, a paper clip is used to c ere is a thumbwheel. Ensure a p	ecovery of Misaligned Rods e PCB Table 1.3 until JPM Step 4 change the step counters in the s aper clip is available.	4. simula	tor. In	the						
1	CHECK Both Groups Of Each Bank At The Same Step Counter Position • Control Bank A • Control Bank B • Control Bank C • Control Bank D • Shutdown Bank A • Shutdown Bank B (Step 17)	The operator determines both groups of each bank at the same Step Counter position • Control Bank A • Control Bank B • Control Bank C • Control Bank D • Shutdown Bank A • Shutdown Bank B NOTE: All Control Rod Banks with two groups will be at the same step counter position.									
2	CHECK That The Misaligned Rod Is In Control Bank D (Step 18)	The operator determines that the misaligned rod is in Control Bank D. NOTE: Control Rod D4 is in Control Bank D, Group 1.									
<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number						
-------------	---	---	-----	-------	-------------------						
3	DETERMINE That The Misaligned Rod In Control Bank D Will Be Realigned To The Affected Bank.	The operator determines that the misaligned rod in Control Bank D will be realigned with the affected Bank.									
	(Step 19)	NOTE: The initiating cue tells the									
		operator that Control Rod D4 will be realigned with the affected Control Rod Bank which is D.									
4	DETERMINE DRPI Transition Point For Misaligned Rod From Plant Curve Book Table 1.3, Rod Control Demand Position versus Outward DRPI Transitions.	The operator determines that the next outward DRPI transition point for Control Rod D4 is 234 steps. NOTE:									
	(Step 20)	DRPI will be indicating 228 steps for Control Rod D4. The									
	When Operator locates PCB Table 1.3, then hand out Student HO2.	the outward direction is 234 steps OR 240 steps.									
*5	SELECT Affected Bank On "ROD BANK SELECTOR SW" (Step 21)	The operator selects position 'CB D' on the Rod Bank Selector Switch.									
*6	PLACE Lift Coil Disconnect Switches For ALL Rods In Affected Bank EXCEPT The Misaligned Rod In The ROD	The operator goes to the Control Rod Disconnect Switch Box behind the Main Control Board CP004.									
	(Step 22)	The Operator will place all switches for Control Bank D, except Control Rod D4, in the DISCONNECTED position.									

<u>STEP</u>	ELEMENT	<u>STANDARD</u>	SAT	UNSAT	Comment Number
7	 MAINTAIN Tavg Within 1.5°F Of Tref During Rod Movement By Adjusting The Following As Necessary While Maintaining Reactor Power Stable: ADJUST Turbine Load ADJUST RCS Boron Concentration IF Turbine is offline, THEN ADJUST demand on the Steam Generator PORVs OR Steam Dumps. 	The operator will maintain Tavg within 1.5°F of Tref while realigning Control Rod D4. NOTE: Tavg should already be within 1.5°F of Tref and should remain in this band as the Control Rod D4 will be moved out ≤ 12 steps.			
8	 PERFORM Rod Realignment: CHECK length of time since rod misalignment – LESS THAN EIGHT HOURS Check that the misaligned rod is inserted past the DRPI transition point listed in Plant Curve Book Table 1.3. (Step 24 a and b) (Step 24 continued on next page) 	 The operator: Verifies the rod misalignment has been < 8 hours. (This information was in the Initial Conditions) Verifies Control Rod D4 is inserted past the DRPI Transition. (Control Rod D4 by DRPI is at 228 steps and the DRPI Transition is 234 steps or 240 steps.) 			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*9	PERFORM Rod Realignment: (continued)	The operator:			
	• *REALIGN the misaligned rod using the IN-HOLD-OUT Switch until the affected rod has transitioned with an outward step to the DRPI position indicated in Plant Curve Book Table 1.3.	 *Moves Control Rod D4 out to 234 steps and stops OR 240 steps and stops per DRPI indication. The Control Bank Step Counter position for Group 1 will stop at 242 to 244 steps OR 248 to 250 steps. 			
	 *ALIGN step counter for Misaligned Rod group to match Plant Curve Book Table 1.3, Rod Control Demand Position versus Outward DRPI Transitions 	 *Sets Control Bank D Group 1 Step Counter to 233 steps or 239 steps per Plant Curve Book Table 1.3, Rod Control Demand Position versus Outward DRPI Transitions. (Ensure a paper clip is available to operator to change step counter) 			
	 *ENSURE the misaligned rod is aligned to the other rods in affected bank using the IN-HOLD-OUT Switch to match the other rods in affected bank. 	 *Ensures Control Rod D4 is moved IN OR OUT to match Control Bank D Group 2 Step Counter. (239 steps). NOTE: If Control Bank D Group 1 Step Counter stopped at 239 steps during the previous action then no further control rod movement will be necessary. 			
	 GO TO Step 26.0 of this Addendum 	 Goes to Step 26.0 of this Addendum. 			
	(Step 24 c, d, e and f)				

*10 PLACE ALL Lift Coil Disconnect Switches For The Affected Bank The operator goes to the Control Rod Disconnect Switch	STEP	ELEMENT	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*11 PLACE "ROD BANK SELECTOR SW" In "MAN" (Step 27) The Operator places the Rod Bank Selector Switch in MANUAL.	*10	PLACE ALL Lift Coil Disconnect Switches For The Affected Bank In The ROD CONNECTED Position (Step 26)	The operator goes to the Control Rod Disconnect Switch Box behind the Main Control Board CP004. The Operator will place all switches for Control Bank D in the ROD CONNECTED position.			
	*11	PLACE "ROD BANK SELECTOR SW" In "MAN" (Step 27)	The Operator places the Rod Bank Selector Switch in MANUAL.			
12 RECORD Time Of Realignment In Control Room Log (Step 28) The Operator records time of rod realignment in the Control Room Log.	12	RECORD Time Of Realignment In Control Room Log (Step 28)	The Operator records time of rod realignment in the Control Room Log. NOTE: Have the Operator record time on the Initiating Cue Sheet.			
13 GO TO Step 42.0 of this	13	GO TO Step 42.0 of this Addendum. (Step 29)				
CUE This JPM is complete		This JPM is complete				

Operator's Name:	Job Title: 🗌 RO 🛛 SRO
JPM Title: RECOVER A MISALIGNED CONTROL	ROD
JPM Number: NRC S1 Revision N	Number: <u>1</u>
Task Number and Title: <u>T86900 – Respond to a C</u>	ontrol Rod Misalignment
K/A Number and Importance: 001 A4.06 2.9/3.2	
Suggested Testing Environment: 🖂 Simulator	🗌 Control Room 🛛 In-Plant 🛛 Other
Alternate Path: 🗌 Yes 🖂 No	
Task Designed For: 🗌 SRO Only 🛛 🖾 RO/SRO	AO/RO/SRO
Time Critical: 🗌 Yes 🖾 No	
Level of Difficulty: 3	
Reference(s): 0POP04-RS-0001, Control Rod Malfu	nction, Rev 37
Actual Testing Environment: Simulator Construction Constr	ontrol Room
Critical Stope (*) 5 6 9 10 11	
Evaluation Summary: Were all the Critical Steps performed satisfactorily? The operator's performance was evaluated against st	□Yes □No andards
contained within this JPM and has been determined t Comments:	o be: Satisfactory Unsatisfactory
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

Unit 1 is in Mode 1 at 100% power. Control Rod D4 in Group 1 of Control Rod Bank D became misaligned by 12 indicated steps on DRPI 90 minutes ago.

The Crew entered 0POP04-RS-0001, Control Rod Malfunction. I/C Maintenance and Reactor Engineering, along with Operations Management, have determined that Control Rod D4 will be re-aligned to the affected bank.

The Crew has completed Addendum 2, Recovery of Misaligned Rods, through step 7.0 and are ready to GO TO step 17.0.

INITIATING CUE

The Unit Supervisor directs you to perform 0POP04-RS-0001, Control Rod Malfunction, Addendum 2, Recovery of Misaligned Rods, starting at step 17.0.

	Joh Dorformonoo Moogu	
	Job Performance Measu	re
N	IANUALLY LOAD AN ESF E	BUS
	JPM Number: <u>NRC S2</u>	
	Revision Number: <u>1</u>	
	Date: <u>07/13/2020</u>	
Developed By:	N/A Instructor (Print/Sign)	N/A Date
Approved By:	N/A	N/A
Approved By:	Fraining Supervisor (Print/Sign)	Date N/A
L NOTE: N/A signature blo	Ine Management (Print/Sign) cks if this JPM is being used on an NF	Date RC LOT Exam

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. Set up a 100% IC. Go to RUN and insert the following malfunctions:
 - Inhibit auto start of CCW Pump 1B (50-KA-05)
 - Sheared Shaft on ECW Pump 1B 5 seconds after starting CCW Pump 1B (04-09-11)
- 2. Open the supply breaker from 13.8KV STBY Bus 1G to 4.16KV ESF Bus E1B and override the supply breaker in 'NORMAL AFTER TRIP"
- 3. After the sequencer has timed out, about 5 minutes, go to FREEZE and then store the IC

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM is scheduled to be performed with JPM S1.
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - 0POP04-AE-0001, First Response to loss of any or all 13.8 KV or 4.16 KV Bus, Rev. 45

- 5. Reset the simulator to IC 203 and verify the following:
 - Red light at the end of CP-010 is out
 - ICS annunciators have stopped counting up
- 6. Place simulator in RUN and quickly silence/acknowledge/reset alarms, **including plant computer/ICS alarms.**
- 7. PLACE simulator in FREEZE.
- 8. When the student and the examiners are ready to proceed, place the simulator in RUN.
- 9. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

1. None

NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

INITIAL CONDITIONS

The plant is in Mode 1 operating at 100% power. The 4160V ESF Bus E1B Supply Breaker, E1B/1, tripped open causing a loss of power to 4160V ESF Bus E1B.

INITIATING CUE

The Unit Supervisor has directed you to ensure 4160V ESF Bus 1B is energized AND loaded by performing 0POP04-AE-0001, First Response to loss of any or all 13.8 KV or 4.16 KV Bus, starting at Step 3.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

Manually loads RCFC Fan 12B and CCW Pump 1B on 4.16KV Bus Train B and then stops #12 ESF DG prior to the diesel generator shutting down due to failure from high engine temperatures caused by loss of cooling water flow from ECW Pump 1B sheared shaft. All Critical JPM Steps #4 & 5 are completed.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	IAS	UNSAT	Comment Number
No Han 0001, F CUE If "CNT that an	Mout is provided with this JPM. Th First Response to loss of any or all MT PRESS HI/LO alarm comes i other operator will address this	NOTE e operator should use the copy of (13.8 KV or 4.16 KV Bus, provided in during this JPM, then instruct alarm.	DPOP(in the the o p)4-AE- simula perato	tor. r
1	 Status: ANY 4.16 KV ESF Bus NOT energized from offsite power (VERIFY the voltage on all three phases of each ESF Bus). VERIFY Applicable STBY DG(s) running VERIFY Applicable STBY DG(s) output breaker(s) closed to the associated 4.16 KV ESF bus (Step 3) 	 4.16KV ESF Bus Train B is not energized from offsite power #12 ESF DG is running #12 ESF DG output breaker is closed 			
2	 CHECK ECW Status: ECW pumps – RUNNING ECW pump discharge isolation valves – OPEN ECW blowdown isolation valves - CLOSED (Step 4) 	 The operator verifies: ECW Pump 1B is running ECW Pump 1B discharge valve is open ECW Pump 1B blowdown isolation valve is closed 			
3	CHECK Sequencer Loading for any running STBY DG per Addendum 1 (Step 5)	The operator checks sequencer loading per Addendum 1 for #12 ESF DG. NOTE: The next JPM step is a listing of loads from Addendum 1.			

<u>STEP</u>	ELEMENT	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*4	 CHECK the following equipment LOADED ON THE BUS: 480V LOAD Centers ECW Pumps RCFCs (Fan 12B) CCW Pumps (Pump 1B) AFW Pumps Essential Chilled Water Pumps EAB HVAC Supply Fans EAB HVAC Return Fans Control Room supply, return and cleanup HVAC fans FHB Main Exhaust fans Essential Chillers (Add 1 Step 1) 	The operator checks all listed Train B equipment loaded on 4.16KV ESF Bus Train B. NOTE: The RNO for Add 1 Step 1 requires all loads to be manually loaded on the bus if needed. The Operator will have to manually start RCFC Fan 12B and CCW Pump 1B which is the critical part of this step. 5 seconds after CCW Pump 1B is started, ECW Pump 1B is started, ECW Pump 1B is started, ECW Pump 1B will have a sheared shaft and cooling flow will be lost to Train B. Annunciator <u>ECW</u> <u>PUMP 1B DISCH PRESS LO</u> will come in. The DG 12 TRBL alarm on 03M3 will also come in.			
	Alternat	e Path starts here.	1		
*5	 IF ECW header pressure decreased to less than or equal to 30 psig, THEN PERFORM the following: PLACE Standby DG 12 "EMER STOP" plunger in the PULL TO STOP position to prevent diesel operation without cooling water. (02M4 – D3, Step 1a) 	The operator goes to 0POP09- AN-02M4 – D3 to address annunciator <u>ECW PUMP 1B</u> <u>DISCH PRESS LO</u> . The first step will require the operator to place #12 ESF DG in PTS.			
CUE	This JPM is complete				

JPM Stop Time: _____

IDM		
	1.50	ΔRY

Operator's Name: Jo	b Title: 🗌 RO 🛛 SRO
JPM Title: MANUALLY LOAD AN ESF BUS	
JPM Number: NRC S2 Revision Nu	mber: <u>1</u>
Task Number and Title:63100 - RESPOND to loss of 0POP04-AE-0001.	power on a 4.16KV ESF Bus per
K/A Number and Importance: 064 A4.06 3.9/3.9	
Suggested Testing Environment: \square Simulator \square	Control Room
Alternate Path: 🖂 Yes 📋 No	
Task Designed For: SRO Only RO/SRO	AO/RO/SRO
Time Critical: 🗌 Yes 🖾 No	
Level of Difficulty: 3	
Reference(s): 0POP04-AE-0001, First Response to los Rev 45	ss of any or all 13.8 KV or 4.16 KV Bus,
Actual Testing Environment: Simulator	trol Room 🛛 In-Plant 🗌 Other
Testing Method: 🗌 Simulate 🔲 Perform	
Estimated Time to Complete: <u>15</u> minutes Act	ual Time Used: minutes
Critical Steps (*) 4, 5	
Evaluation Summary: Were all the Critical Steps performed satisfactorily?	□Yes □No
The operator's performance was evaluated against star contained within this JPM and has been determined to I	ndards be:
Comments:	
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

The plant is in Mode 1 operating at 100% power. The 4160V ESF Bus E1B Supply Breaker, E1B/1, tripped open causing a loss of power to 4160V ESF Bus E1B.

INITIATING CUE

The Unit Supervisor has directed you to ensure 4160V ESF Bus 1B is energized AND loaded by performing 0POP04-AE-0001, First Response to loss of any or all 13.8 KV or 4.16 KV Bus, starting at Step 3.

	STPNOC	
	Job Performance Measur	е
DEPRES	SURIZE RCS DURING SG TUE	E RUPTURE
	JPM Number: <u>NRC S3</u>	
	Revision Number: <u>1</u>	
	Date: <u>07/13/2020</u>	
Developed By:	N/A	N/A
	N/A	N/A
Approved by.	Training Supervisor (Print/Sign)	Date
Approved D.	N/A	N/A
ADDroved BV		

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. Set up an at power IC. Go to RUN and insert a medium sized Tube Rupture in SG 1A.
- 2. Go through all the EO00 steps and EO30 steps up to step 18.
- 3. Insert a failure for PZR Spray Valve Loop D, RC-PCV-0655B, where the valve fails open 40 seconds after it's red light comes on.
- 4. Go to FREEZE and then store the IC

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM is scheduled to be performed with JPM S7.
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - 0POP05-EO-EO30, Steam Generator Tube Rupture

- 5. Reset the simulator to IC 207 and verify the following:
 - Red light at the end of CP-010 is out
 - ICS annunciators have stopped counting up
- 6. Place simulator in RUN and quickly silence/acknowledge/reset alarms, **including plant computer/ICS alarms.**
- 7. PLACE simulator in FREEZE.
- 8. When the student and the examiners are ready to proceed, place the simulator in RUN.
- 9. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

1. None

NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

INITIAL CONDITIONS

The plant has experienced a Steam Generator Tube Rupture in the 1A Steam Generator. Emergency Operating Procedure, 0POP05-EO-EO30, Steam Generator Tube Rupture is in progress. The Reactor Coolant System cooldown has been performed.

INITIATING CUE

The Unit Supervisor has directed you to depressurize the RCS in accordance with Step 18.0 of 0POP05-EO-EO30, Steam Generator Tube Rupture.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

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Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

Initiate maximum PZR Spray by opening both PZR Spray valves, RC-PCV-0655B and RC-PCV-0655C, fully. (Fully is 90% to 100% demand on the controller and red light on for each valve.) Then secure RCPs 1A and 1D after determining that PZR Spray valve, RC-PCV-0655B has failed open. All Critical JPM Steps #1 & #4 are completed. JPM Start Time: _____

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		NOTE			
No Han EO30, \$	dout is provided with this JPM. The Steam Generator Tube Rupture, th	e operator should use the copy of (at is in the simulator.)POP()5-EO-	
*1	 DEPRESSURIZE RCS to minimize break flow and refill pressurizer: Normal pressurizer spray AVAILABLE PLACE group "C" pressurizer heater control switch to PULL TO LOCK PLACE all other pressurizer heater group control switches to OFF INITIATE maximum pressurizer spray (Step 18a-d) 	The operator determines that normal pressurizer spray is available and establishes maximum PZR spray by opening both PZR spray valves, RC-PCV-0655B and RC-PCV- 0655C, fully. Fully is a 90% to 100% demand on the controller and red light on for each valve. NOTE: After Loop D PZR Spray valve, RC-PCV-0655B, opens, the valve will fail full open.			

<u>STEP</u>	<u>ELEMENT</u>	STANDARD	SAT	UNSAT	Comment Number
2	CHECK Any of the following conditions - SATISFIED: BOTH of the following: RCS pressure - LESS THAN RUPTURED SG PRESSURE Pressurizer level - GREATER THAN 8% [44%] OR BOTH of the following: RCS pressure - WITHIN 300 PSI OF RUPTURED SG(S) PRESSURE PRZR level - GREATER THAN 38% [50%] OR Pressurizer level - GREATER THAN 70% [50%] OR RCS subcooling based on core exit T/Cs - LESS THAN 35°F [45°F] (Step 8e)	The operator will continue with the RCS depressurization AND NOT go to any other step in the procedure until one of the conditions is met.			
3	 STOP RCS depressurization: Normal spray valves - CLOSED (Step 8f) 	The operator closes both PZR spray valves, RC-PCV-0655B and RC-PCV-0655C, using each valves controller but then notices that the red light stays on for Loop D PZR Spray valve, RC-PCV-0655B. Operator Goes to RNO step for step 8f.			
	Alternat	e Path starts here.			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*4	 IF spray valve(s) can NOT be closed, THEN PERFORM the following: *STOP RCP 1A. *STOP RCP 1D. IF RCS pressure continues to lower, THEN STOP all but one RCP. (Step & RNO) 	The operator will secure RCPs 1A & 1D, and then watch RCS pressure to determine if another RCP should be stopped. NOTE: Determining if a third RCP should be stopped is very subjective. Therefore, the only critical part of this step			
CUE	This JPM is complete	is to secure RCPs 1A and 1D.			

JPM Stop Time:

		-				
	DM	ופו	ТИЛ	М.	ᄭᄝ	V
J	F IV	1	J I V I	IVIA		

Operator's Name: Job Title:
JPM Title: DEPRESSURIZE RCS DURING SG TUBE RUPTURE
JPM Number: <u>NRC S3</u> Revision Number: <u>1</u>
Task Number and Title: 80642 – RESPOND to a Steam Generator Tube Rupture in accordance with POP05-EO-EO30.
K/A Number and Importance: 010 A2.02 3.9/3.9
Suggested Testing Environment: \square Simulator \square Control Room \square In-Plant \square Other Alternate Path : \square Yes \square No
Task Designed For: SRO Only RO/SRO AO/RO/SRO
Time Critical: □ Yes ⊠ No Level of Difficulty: 3 Reference(s): 0POP05-EOEO30, Steam Generator Tube Rupture, Rev 27
Actual Testing Environment: Simulator Control Room In-Plant Other Testing Method: Simulate Perform Estimated Time to Complete: 15 minutes Actual Time Used: minutes
Critical Steps (*) 1, 4
Evaluation Summary:Were all the Critical Steps performed satisfactorily? Yes
The operator's performance was evaluated against standards contained within this JPM and has been determined to be:
Comments:
Evaluator's Name: (Print)
Evaluator's Signature: Date:

Student Handout

INITIAL CONDITIONS

The plant has experienced a Steam Generator Tube Rupture in the 1A Steam Generator. Emergency Operating Procedure, 0POP05-EO-EO30, Steam Generator Tube Rupture is in progress. The Reactor Coolant System cooldown has been performed.

INITIATING CUE

The Unit Supervisor has directed you to depressurize the RCS in accordance with Step 18.0 of 0POP05-EO-EO30, Steam Generator Tube Rupture.

	STPNOC	
	Job Performance Measur	е
LO	SS OF CIRCULATING WATER	PUMP
	JPM Number: <u>NRC S4</u>	
	Revision Number: <u>1</u>	
	Date: <u>07/13/2020</u>	
Developed By:	N/A	N/A
	Instructor (Print/Sign)	Date
Approved By:	N/A	N/A
· · · · · ·	Training Supervisor (Print/Sign)	Date
Approved By:	N/A	N/A
Аррголей Бу.	Line Management (Print/Sign)	Data

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. Set to a 100% IC with ONLY CW Pumps 11, 12 and 13 running. Ensure CW Pump 14 is in standby.
- 2. Go to RUN and set CW Pump #13 discharge valve to be held open and then set it to close when CW Pump #13 handswitch is taken to STOP.
- 3. Go to FREEZE and then store the IC

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM is scheduled to be performed with JPM S8.
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - 0POP04-CW-0001, Loss of Circulating Water Flow
 - 0POP09-AN-09M1, A-3, CWP TRIP/FAIL START

- 5. Reset the simulator to IC 209 and verify the following:
 - Red light at the end of CP-010 is out
 - ICS annunciators have stopped counting up
- 6. Place simulator in RUN and quickly silence/acknowledge/reset alarms, **including plant computer/ICS alarms.**
- 7. PLACE simulator in FREEZE.
- 8. When the student and the examiners are ready to proceed, place the simulator in RUN.
- 9. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

1. None

NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

INITIAL CONDITIONS

Unit 1 is at 100% power.

INITIATING CUE

You are the Secondary Reactor Operator. You are to respond to any alarms received on CP006 to CP0010.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Task Standard:

Close the discharge valve on CW Pump #13 by placing CW Pump #13 handswitch in STOP and back to NORMAL and Start CW Pump #14. All Critical JPM Steps #6 & #12 are completed.

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		<u>NOTE</u>			
No Han 09M1 –	dout is provided with this JPM. Th A3 and 0POP04-CW-0001, Loss	e operator should use the copy of (of Circulating Water Flow, that are)POP(in the)9-AN- simula	tor.
Ensure CW Pu	CW Pump indicating light covers (mp alignment.	green and red) are changed to from	sted fo	r curre	nt
The Sin second	nulator Operator will trip CW Pump s after the JPM has started.	o #13 using seized shaft malfunctio	n 5 to	10	
1	Annunciator 09M1 A-3, CWP TRIP/FAIL START, comes in.	The Operator determines that CW Pump 13 has tripped and			
		responds using 0POP09-AN- 09M1 A-3, CWP TRIP/FAIL START			
2	IF CW Pump Tripped, THEN GO TO 0POP04-CW-0001, Loss of Circulating Water Flow	The operator pulls the annunciator response			
	(09M1 – A3, Step 2)	TRIP/FAIL START and determines that 0POP04-CW- 0001, Loss of Circulating Water Flow, needs to be entered.			
		NOTE:			
		Operator N/As Step 1 for a CWP that failed to start.			
		Operator performs Step 2 for a CWP that has tripped.			
3	CHECK This Procedure Has Been Entered Due To Circulating Water Traveling Screen High Differential Level (CW-0001, Step 1)	The operator determines that alarm was NOT due to Circulating Water Traveling Screen High Differential Level and goes to Step 3.			
4	CHECK Two or More Circulating Water Pumps	The operator determines two			
	RUNNING.	running. CW Pumps 11 & 12			
	(Ow-0001, Step 3)				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
5	CHECK All Secured/Tripped Circulating Water Pumps Discharge Valves – CLOSED (CW-0001, Step 4)	The operator determines that the tripped CW Pump 13 discharge valve is still open and goes to the RNO for step 4. NOTE:			
		When a CW Pump trips the discharge valve is supposed to automatically close.			
	Alternat	e Path starts here.			
*6	 IF affected circulating water pump discharge valve is NOT closed, THEN PERFORM the following: PLACE the affected circulating water pump hand switch to STOP and RETURN to NORMAL. (CW-0001, Step 4, RNO) 	The operator places the handswitch for CW Pump #13 in STOP & back to NORMAL and determines that the discharge valve is going closed.			
7	START A Standby Circulating Water Pump Per Addendum 1, Circulating Water Pump Start (CW-0001, Step 5)	The operator goes to Addendum 1 to start CW Pump #14			
8	VERIFY "SEAL WATER PRESSURE" GREATER THAN 30 psig at each CW pump. (CWIS Pit in ZLC Cabinet Next to Pump) (CW-0001, ADD 1, Step 1)	The operator calls a plant operator to check seal water pressure for the CW Pumps. NOTE Do not let the operator use the simulator radio.			
	CUE Seal Water pressure at each CW Pump is 35 psig.	Operator will simulate calling a Plant Operator to report CW Seal Water pressure.			

<u>STEP</u>	ELEMENT	<u>STANDARD</u>	SAT	UNSAT	Comment Number
9	VERIFY blue "PERM SATISFIED" light for CW pump to be started has been illuminated for GREATER THAN 2 minutes. (CW-0001, ADD 1, Step 2)	The operator ensures the blue light permissive has been on for greater than 2 minutes for CW Pump #14. NOTE The blue light permissive for CW Pump #14 will have been on since the start of the JPM.			
10	ENSURE no change has been made to CW System (e.g., pump starts or stops, water box valve position changes, outfall vacuum breaker valve position changes) for at least 5 minutes. (CW-0001, ADD 1, Step 3)	The operator determines that no changes in Circ Water flow have occurred in the last 5 minutes. NOTE Time compression can be used if the operator gets to this step within 5 minutes of starting the JPM.			
11	 (UNIT 1 ONLY) ENSURE the vacuum breaker isolation valve for the CW pump to be started is CLOSED: (CWIS) CW Pump 14 "1-CW-0351" (CW-0001, ADD 1, Step 4) CUE CW Pump 14 "1-CW-0351" is closed. 	The operator calls a plant operator to close CW Pump 14 "1-CW-0351". NOTE Do not let the operator use the simulator radio. Operator will simulate calling a Plant Operator to close CW Pump 14 "1-CW-0351".			
*12	START The Selected CIRCULATING WATER PUMP: • "CW PUMP 14" (CW-0001, ADD 1, Step 5)	The operator starts CW Pump #14			
CUE	This JPM is complete				

JPM Stop Time:

JPM	SUMMARY	/

Operator's Name:	Job Title: 🗌 RO 🛛 SRO
JPM Title: LOSS OF CIRCULATING WATER PUN	<u>1P</u>
JPM Number: NRC S4 Revision N	Number: <u>1</u>
Task Number and Title: 75250 – RESPOND Circula	ting Water System Alarms.
K/A Number and Importance: 075 A2.02 2.5/2.7	
Suggested Testing Environment: 🖂 Simulator	□ Control Room □ In-Plant □ Other
Alternate Path: 🖂 Yes 📋 No	
Task Designed For: 🗌 SRO Only 🛛 🖂 RO/SRO	AO/RO/SRO
Time Critical: 🗌 Yes 🖂 No	
Level of Difficulty: 3	
Reference(s): 0POP04-CW-0001, Loss of Circulating 0POP09-AN-09M1 – A3, CWP TRIP/F	g Water Flow, Rev 18 FAIL START, Rev 34
Actual Testing Environment: Simulator	ontrol Room 🛛 In-Plant 🗌 Other
Testing Method: 🗌 Simulate 🔲 Perform	
Estimated Time to Complete: <u>15</u> minutes A	ctual Time Used: minutes
Critical Steps (*) 5, 11	
Evaluation Summary: Were all the Critical Steps performed satisfactorily?	□Yes □No
The operator's performance was evaluated against st contained within this JPM and has been determined t	andards o be:
Comments:	
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

Unit 1 is at 100% power.

INITIATING CUE

You are the Secondary Reactor Operator. You are to respond to any alarms received on CP006 to CP0010.

	STPNOC	
	Job Performance Measur	e
PERFC	ORM CONTAINMENT SPRAY P	UMP TEST
	JPM Number: <u>NRC S5</u>	
	Revision Number: <u>1</u>	
	Date: <u>07/13/2020</u>	
Developed Bv [.]	N/A	N/A
	Instructor (Print/Sign)	Date
Approved By:	N/A	N/A
	Training Supervisor (Print/Sign)	Date
Approved By:	N/A	N/A
Аррготей Бу.	Line Management (Print/Sign)	Date
NOTE: N/A signature	blocks if this JPM is being used on an NR	C LOT Exam

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. This JPM needs to be performed in Mode 4 or higher with at least 1 RCP running.
- 2. Using Remote Functions, close 1-CS-0111A and insert 0.95 for 1-CS-0008A.
- 3. Save IC to a designated IC for LOT NRC/Audit Exam usage.

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM is scheduled to be performed with JPM S6.
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - POP09 procedures for CP002

NOTE: It is okay to use a similar IC to the IC listed below, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

- 5. Reset the simulator to IC 208 and verify the following:
- 6. Red light at the end of CP-010 is out
- 7. ICS annunciators have stopped counting up
- 8. Place simulator in run and quickly silence/acknowledge/reset alarms, **including plant computer/ICS alarms.**
- 9. PLACE simulator in FREEZE.
- 10. When the student and the examiners are ready to proceed, place the simulator in RUN.
- 11. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

1. None

INITIAL CONDITIONS

The Unit is in Mode 1.

Containment Spray Pump 1A needs a PMT run.

INITIATING CUE

The Unit Supervisor directs you to perform a PMT run on Containment Spray Pump 1A using 0POP07-CS-0001, Containment Spray Pump 1A(2A) Functional Test, starting at Step 5.3. NOTE:

• Administrative approval to perform the PMT has been given by the Shift Manager.

- The prerequisites have been met and initialed in the procedure.
- There are no changes in the Work Risk Assessment.
- Pump DP and Vibration Data are not required.
- Non-intrusive check valve testing is NOT being performed.
- Section 5.1 has already been performed.
- Section 5.2 has been marked N/A.
- A Plant Operator is ready at CS Pump 1A.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Task Standard:

Starts CS Pump 1A, sets CS Pump 1A flow to 560 gpm (548.8–571.2) for 5 minute test period and then stops CS Pump 1A. All Critical JPM Steps #10, 11, 16 are completed.
JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number	
NOTE If allowed by the examiner, handout the provided copy of 0POP07-CS-0001, Containment Spray Pump 1A(2A) Functional Test, to student for review of Section 3.0, Notes & Precautions, and Section 4.0 Prerequisites prior to the start of the JPM. A simulator booth instructor will be needed for JPM steps 11 when signaled by the examiner.						
1	NOTIFY Unit Supervisor/Shift Manager that CS Train 1A is inoperable. (Step 5.3.1) CUE: As Unit Supervisor acknowledge that CS Pump 1A is Inoperable.	Informs Unit Supervisor that CS Pump 1A is Inoperable.				
2	ENSURE "CS PUMP 1A DISCH ISOL, MOV-0001A" is closed using the handswitch on CP002. (Step 5.3.2)	Ensures CS Pump 1A discharge valve is closed. NOTE: CS Pump 1A discharge valve will already be closed.				
3	UNLOCK <u>AND</u> CLOSE "1-CS- 0111A CS PUMP 1A DISCHARGE ISOL VALVE" (Step 5.3.3) CUE: As a Plant Operator respond that 1-CS-0111A has been unlocked and closed.	Calls Plant Operator to unlock and close 1-CS-0111A. NOTE: This valve has already been closed as part of the IC setup.				

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<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
4	UNLOCK and OPEN "1-CS-0008A SIS CSS TEST LINE 1A ISOL VALVE". (Step 5.3.4) CUE: As a Plant Operator respond that 1-CS-0008A has been unlocked and opened.	Calls Plant Operator to unlock and open 1-CS-0008A. NOTE: This valve has already been throttled to a predetermined setting of 0.95 as part of the IC setup. It is throttled instead of fully open because 1-CS-0009A is not modeled. See JPM steps 5 & 6.			
5	THROTTLE "1-CS-0009A SIS CSS TEST LINE 1A VALVE" to Greater Than 50% open. (Step 5.3.5) CUE: As a Plant Operator respond that 1-CS-0009A has been throttled to > 50% open.	Calls Plant Operator to throttle 1-CS-0009A to > 50% open. NOTE: 1-CS-0009A is not modeled.			
6	THROTTLE "1-CS-0009A SIS CSS TEST LINE 1A VALVE" to 25% open. (Step 5.3.6) CUE: As a Plant Operator respond that 1-CS-0009A has been throttled to 25% open.	Calls Plant Operator to throttle 1-CS-0009A to 25% open. NOTE: 1-CS-0009A is not modeled.			
7	ENSURE DG 11 is NOT being paralleled <u>OR</u> operated in parallel with offsite power. (Step 5.3.7)	Ensures DG 11 is NOT operating.			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
8	IF in Modes 5, 6, or Defueled <u>THEN</u> RECORD the AS FOUND position of the components identified in Step 5.5.9. (Step 5.3.8)	N/As this step because plant is in Mode 1.			
9	IF the Unit is in Mode 5, 6, or Defueled, <u>THEN</u> PERFORM the following: (Step 5.3.9)	N/As the steps associated with step 5.3.9 because plant is in Mode 1.			
*10	START "CSS PUMP 1A" using the handswitch on CP002. (Step 5.3.10) CUE: If asked then report as the Plant Operator that CS Pump 1A looks good for a start and then, after the start, the pump is running SAT. If Operator starts to make a PA announcement then inform the operator a PA announcement has been made. If operator starts to go to CP022 and check SI/CS Room Fan started then tell the operator that it is running.	Starts CS Pump 1A. NOTE: When CS Pump 1A is started system flow will be out of range high and will have to be adjusted down to 560 gpm (548.8 – 571.2 gpm) which is a requirement in the next JPM step. There is not a specific step to check SI/CS Room Fan running after starting the CS Pump, however, the operator may want to check that it is running. To help cut down on crossing paths with operator of the other JPM a CUE is given that the fan is running.			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*11	THROTTLE "1-CS-0009A SIS CSS TEST LINE 1A VALVE" until flow indicated on "1-CS- FI-0815 CONTAINMENT SPRAY PUMP 1A TEST LINE FLOW INDICATOR" of 560 gpm (548.8–571.2 gpm) is established. (Step 5.3.11) CUE: If asked about system flow prior to making an adjustment, as the Plant Operator, report that initial flow is 586 gpm. After directing the Plant Operator to adjust flow per step 5.3.11, as a Plant Operator report that 1-CS- 0009A has been throttled to establish 560 gpm on local indicator FI-0815.	Calls Plant Operator to throttle 1-CS-0009A to establish local flow at 560 gpm. NOTE: Signal the booth operator to throttle 1-CS-0008A to the predetermined setting of 0.85 so that flow is lowered to a little above 500 gpm on Control Room indicator FI- 0813A. FI-0813A in the control room does not read flow as accurate as local indicator 1- CS-FI-0815. This critical step is performed by the Plant Operator but the Reactor Operator must direct it to ensure flow is between 548.8 and 571.2 gpm or the functional test would be invalid.			
12	RECORD flow indicated on "1-CS-FI-0815 CONTAINMENT SPRAY PUMP 1A TEST LINE FLOW INDICATOR" and time: (Step 5.3.12) CUE: If asked again, as the plant operator, report that flow has remained steady at 560 gpm.	Records CS Pump 1A local flow and the current time.			

<u>STEP</u>	ELEMENT	<u>STANDARD</u>	SAT	NSAT	mment umber
				Б	Col N
13	WHEN at least 5 minutes have elapsed since performing Step 5.3.12, AND flow indicated on "1(2)-CS-FI-0815 CONTAINMENT SPRAY PUMP 1A(2A) TEST LINE FLOW INDICATOR" is still equal to the Reference Value flow rate THEN RECORD time and flow: (Step 5.3.13)	Records CS Pump 1A local flow and the current time. NOTE: Time compression can be used at this step.			
	CUE:				
	If asked again, as the plant operator, report that flow has remained steady at 560 gpm.				
14	IF performing Section 5.3 for PMT AND pump DP and vibration data is NOT required, THEN MARK Steps 5.3.15 through 5.3.19 N/A. (Step 5.3.14)	The operator N/As Steps 5.3.15 through 5.3.19 and then goes to Step 5.5.1 to complete PMT. NOTE: The Initiating Cue states that			
		Pump DP, Vibration Data and Non-Intrusive Check Valve Testing are not required for the PMT.			
15	IF this procedure is being performed in conjunction with Non-Intrusive Check Valve Testing, THEN ENSURE Engineering Department personnel are prepared to take data at SI- 002A, Safety Injection Train 1A(2A) Suction Header Check Valve in conjunction with 0PEP07-ZE- 0008 (Non-Intrusive Check Valve Testing.	The operator NAs this step because Non-Intrusive Check Valve Testing is not being performed.			
	(Step 5.5.1)				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*16	STOP "CSS Pump 1A" using the handswitch on CP002. (Step 5.5.2)	The operator stops CS Pump 1A.			
CUE	This JPM is completed	-	•		•

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JPM Stop Time:

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JPM SUMMARY

Operator's Name:	Job Title: 🗌 RO	□SRO
JPM Title: PERFORM CONTAINMENT SPI	RAY PUMP TES	<u>T</u>
JPM Number: <u>NRC S5</u> Revision	Number: <u>1</u>	
Task Number and Title: <u>10200, Perform Containm</u>	ent Spray Pump Ir	<u>iservice Test</u>
K/A Number and Importance: 026 A2.08 3.2/3.7		
Suggested Testing Environment: 🖂 Simulator	Control Room	🗌 In-Plant 🛛 Other
Alternate Path: 🗌 Yes 🖂 No		
Task Designed For: 🗌 SRO Only 🛛 🖾 RO/SRO	AO/RO/SRO	
Time Critical: 🗌 Yes 🖾 No		
Level of Difficulty: <u>3</u>		
Reference(s): 0POP07-CS-0001, Containment Spr	ay Pump 1A(2A) F	unctional Test, Rev. 6
Actual Testing Environment: Simulator	Control Room	In-Plant ☐ Other : minutes ☐ No
Comments:		
Evaluator's Name:(Print)		
Evaluator's Signature:	Date:	

Student Handout

INITIAL CONDITIONS

The Unit is in Mode 1.

Containment Spray Pump 1A needs a PMT run.

INITIATING CUE

The Unit Supervisor directs you to perform a PMT run on Containment Spray Pump 1A using 0POP07-CS-0001, Containment Spray Pump 1A(2A) Functional Test, starting at Step 5.3.

NOTE:

- Administrative approval to perform the PMT has been given by the Shift Manager.
- The prerequisites have been met and initialed in the procedure.
- There are no changes in the Work Risk Assessment.
- Pump DP and Vibration Data are not required.
- Non-intrusive check valve testing is NOT being performed.
- Section 5.1 has already been performed.
- Section 5.2 has been marked N/A.
- A Plant Operator is ready at CS Pump 1A.

STPNOC				
	Job Performance Measure	9		
TRANSFER MFW FROM LPFRV TO MFRV				
JPM Number: <u>NRC S6</u>				
Revision Number: <u>1</u>				
Date: <u>07/13/2020</u>				
Developed Bv:	N/A	N/A		
	Instructor (Print/Sign)	Date		
Approved By:	N/A	N/A		
Approved By:	Training Supervisor (Print/Sign)	Date		
	N/A	N/A		
Approved By:				

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. Restore to an IC with power at about 15 to 17 percent and the MFRVs in service on SGs A, B & D. Place SG 1C on the LPFR valve.
- 2. Save IC to a designated IC for LOT NRC/Audit Exam usage.

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM this JPM is scheduled to be performed with JPM S5
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - A Student Handout is used with this JPM.

NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

- 5. Reset the simulator to IC 208 and verify the following:
- 6. Red light at the end of CP-010 is out
- 7. ICS annunciators have stopped counting up
- 8. Place simulator in run and quickly silence/acknowledge/reset alarms, **including plant computer/ICS alarms.**
- 9. PLACE simulator in FREEZE.
- 10. When the student and the examiners are ready to proceed, place the simulator in RUN.

11. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

1. None

INITIAL CONDITIONS

A plant startup is in progress per 0POP03-ZG-0005, Plant Startup to 100%.

- Reactor power is at about 17% by Delta Ts.
- The turbine is on the grid and the SU SGFP #14 is in service.

INITIATING CUE

The Unit Supervisor hands you Addendum 11 of 0POP03-ZG-0005, Plant Startup to 100%, and directs you to transfer steam generator water level control from the low power feedwater regulating valve to the main feedwater regulating valve for 'C' Steam Generator.

A pre-job brief has already been performed.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Taals Ofen deud

Task Standard:

The Operator feeds SG 1C from the Main Feed Regulating Valve (MFRV) by manually closing the Low Power Feed Regulating Valve (LPFRV) while manually and simultaneously opening the MFRV until the LPFRV is closed in manual and the MFRV is in AUTO controlling SG 1C level. All critical JPM steps #4, 5 & 6 are completed.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
<u>NOTE</u> Student Handout of 0POP03-ZG-0005 Addendum 11, Transferring feed from AFW to Main Feed, will be handed out with the initiating cue.					in
1	Ensure that SG 1C narrow range level is stable between 65% and 75%. (Addendum 11, Step 2.1.1)	Verifies that SG 1C narrow range level indication is stable between 65% and 75%.			
2	ENSURE SG 1C main feedwater regulating valve is in manual and fully closed. (Addendum 11, Step 2.1.2)	Verifies that SG 1C "NORM FCV-0553" Main Feed Regulating valve is in manual and closed.			
	If asked, as a Plant Operator, report that SG 1C MFRV is fully closed by local indication.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		NOTE			
The ma	nual isolation valve is already ope	n.	1	1	
3	Ensure the SG 1C main feedwater regulating valve isolation valve is open.	Dispatches a Plant Operator to open 1-FW-0093, SG 1C Feedwater Reg. Valve Isolation			
	(Addendum 11, Step 2.1.3)				
	Cue:				
	Plant Operator Reports that 1-FW-0093 is open.				
		<u>NOTE</u>			
Record instrum Flowrat	ing flow is optional. Other method ent may be used (as approved by e should be approximately .557	s such as grease mark on the cont the Unit Supervisor/Shift Manager) 5 (M lbm/hr)	rol boa).	ard flov	N
*4	Place SG 1C low power feedwater regulating valve in manual and NOTE SG feedwater flow.	 * Depresses MANUAL pushbutton on SG 1C "LOW PWR FV-7153". Notes SG 1C Flowrate by 			
	(Addendum 11, Steps 2.1.4 and 2.1.5)	recording or marking flow. * - critical portion			
*5	Begin transfer from low power to main feedwater regulating valve.	Maintains SG 1C Feedwater flowrate approximately constant while transferring control as follows:			
	2.1.9)	 Throttles OPEN "NORM 			
	Cue:	FCV-0553" until feed flow increase is noticed.			
	If permission is requested to use 2 handed operations, as the Unit Supervisor, give permission to use 2 handed	 Throttles CLOSED "LOW PWR FV-7153" until feed flow returns to initial value. 			
	operation.	 Repeats these steps until "LOW PWR FV-7153" is approximately 8% to 10% open. 			

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<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	IAS	UNSAT	Comment Number
*6	Complete transfer from low power to main feedwater regulating valves. (Addendum 11, Steps 2.1.10 and 2.1.11)	 *Places "NORM FCV-0553" in AUTO THEN Slowly CLOSES "LOW PWR FV-7153", ensuring SG Narrow Range Level is within the normal control band (65%-75%) and leaves valve in MANUAL. 			
CUE	This JPM is complete				

JPM Stop Time: _____

	JPM	SU	MM/	٩RY
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Operator's Name:	Job Title: 🗌 RO 🛛 SRO
JPM Title: TRANSFER MFW FROM LPFRV TO M	<u>MFRV</u>
JPM Number: <u>NRC S6</u> Revision I	Number: <u>1</u>
Task Number and Title: 21050, Place Main Feed	<u>Reg. Valves in Auto</u>
K/A Number and Importance: 059 A4.08 3.0/2.9	<u>)</u>
Suggested Testing Environment: 🖂 Simulator	□ Control Room □ In-Plant □ Other
Alternate Path: 🗌 Yes 🛛 No	
Task Designed For: 🗌 SRO Only 🛛 RO/SRO	A0/R0/SRO
Time Critical: 🗌 Yes 🖂 No	
Level of Difficulty: <u>3</u>	
Reference(s): 0POP03-ZG-0005, Plant Startup to 1	00%, Rev 114
Actual Testing Environment: Simulator	Control Room
Critical Stops (*) 4 5 8 6	
Evaluation Summany:	
Were all the Critical Steps performed satisfactorily?	□Yes □No
The operator's performance was evaluated against s contained within this JPM and has been determined	standards to be:
Comments:	
Evaluator's Name:(Print)	
Evaluator's Signature:	Date:

Student Handout

INITIAL CONDITIONS

A plant startup is in progress per 0POP03-ZG-0005, Plant Startup to 100%.

- Reactor power is at about 17% by Delta Ts.
- The turbine is on the grid and the SU SGFP #14 is in service.

INITIATING CUE

The Unit Supervisor hands you Addendum 11 of 0POP03-ZG-0005, Plant Startup to 100%, and directs you to transfer steam generator water level control from the low power feedwater regulating valve to the main feedwater regulating valve for 'C' Steam Generator.

A pre-job brief has already been performed.

	STPNOC		
	Job Performance Measure	e	
RESPOND TO A RADIATION MONITOR ALARM RT-8012 and RT-8013			
	JPM Number: <u>NRC S7</u>		
	Revision Number: <u>1</u>		
	Date: <u>07/13/2020</u>		
Developed By:	N/A	N/A	
, ,	Instructor (Print/Sign)	Date	
Approved By:	N/A	N/A	
	Training Supervisor (Print/Sign)	Date	
Approved By:	N/A	N/A	
	Line Management (Print/Sign)	Date	

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. Restore to **100% power** storepoint. Place the simulator in **RUN**.
- 2. Bring in <u>High</u> Alarm on **RT-8012** by performing the following:
 - a Select "Malfunction"
 - b Select "Rad. Monitoring and Radwaste Systems"
 - c Select "09-07-01,"Cntmt Purge Exhaust Monitor"
 - d Enter value ".0022" (6.38E-4) and "Insert"
- 5. Bring in <u>Alert</u> Alarm on **RT-8013** by performing the following:
 - a Select "Schematic"
 - b Build schematic "CMP004"
 - c Select "RT-8013, Info Matrix"
 - d Change "Rad Variable Malfunction" value to .00065" (2.02E-4)
- 6. Verify the following conditions exist:
 - a RM-11 is on Grid 3
 - b **RT-8012** has a red high rad **alarm**
 - c **RT-8013** has a yellow high rad **alert**
- 7. **Reset** all 3 trains of **CVI** on CP-0022.
- 8. Return Rad Monitor RT-8011 to service as follows:
 - a Open "CNTMT ATM SAMPLE ICIV RA-MOV-0001"
 - b **Open** "CNTMT ATM Sample OCIV **RA-MOV-0004**"
 - c Open "CNTMT ATM RETURN ICIV RA-MOV-0003"
 - d Open "CNTMT ATM RETURN OCIV RA-MOV-0006"
 - e **Select RT-8011** ON RM-11. Click "**FLOW**" button once and wait for normal, flowing status. Return to grid #3.
- 9. Establish Supplementary Purge as follows:
 - 1. Open Supply OCIV FV-9776
 - 2. Open Supply ICIV MOV-0003
 - 3. Open EXH OCIV FV-9777
 - 4. Open EXH ICIV MOV-0005
 - 5. Start EXH Fan 11A
 - 6. Start Supply Fan 11A

10. Save IC to a designated IC for LOT NRC/Audit Exam usage.

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM this JPM is scheduled to be performed with JPM S3
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - 0POP04-RA-0001, Radiation Monitoring System Alarm Response.
- NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.
- 5. Reset the simulator to IC 207 and verify the following:
- 6. Red light at the end of CP-010 is out
- 7. ICS annunciators have stopped counting up
- Place simulator in run and quickly silence/acknowledge/reset alarms, including plant computer/ICS alarms and individually acknowledge all RM-11 alarms except RT-8012 and RT-8013. DO NOT CLICK on the 'ACK ALL' button. ENSURE RM-11 alarms are silenced.
- 9. PLACE simulator in FREEZE.
- 10. When the student and the examiners are ready to proceed, place the simulator in RUN

11. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

None

INITIAL CONDITIONS

Unit was tripped due to a Steam Generator tube rupture 90 minutes ago.

The Radiation Monitor Computer (RM-11) just signaled an active alarm.

INITIATING CUE

The Unit Supervisor directs you to investigate RM-11 and take necessary actions.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Task Standard:

The operator determines that RT-8012 and RT-8013 are alarming and a Containment Ventilation Actuation is required but did not occur. The operator completes the required actions for the Containment Ventilation Actuation by securing supplementary purge and closing the containment radiation monitor isolation valves.

JPM Critical Steps 7, 9 and 10.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
No Han 0001, F	dout is provided with this JPM. The Radiation Monitoring System Alarm	<u>NOTE</u> e operator should use the copy of Response, that is in the simulator)POP()4-RA-	
1	CHECK RM-11 Available (Step 1)	Operator determines RM-11 is available.			
2	PERFORM the Following From RM-11 Panel to DETERMINE the Type Of Alarm: a. IDENTIFY Alarming Rad Monitor. b. LEFT CLICK On The Alarming Rad Monitor (Step 2)	Operator determines that RT-8012 and RT-8013 are alarming.			
3	CHECK The Individual Monitor In Alarm – ALERT OR HIGH. (Step 3)	Operator determines that RT-8012 is in HIGH alarm and RT-8013 is in ALERT alarm.			
4	 PERFORM the following: a. RIGHT CLICK the alarming Rad Monitor b. EVALUATE activity readings for a reasonable indication of increased radioactivity. c. GO TO the correct Addendum. (Step 4) 	Operator determines that RT-8012 and RT-8013 both have increased radioactivity readings. Operator will proceed to Addendum 3.			
5	CHECK HIGH Alarm Exists on Radiation Monitor RT-8012 or RT-8013. (Addendum 3, Step 1.0)	Operator determines that a HIGH alarm exists on RT-8012.			

<u>STEP</u>	ELEMENT	<u>STANDARD</u>	SAT	UNSAT	Comment Number
6	CHECK The Following Automatic Actions Have Occurred: Normal Containment Purge Fans stopped. "SPLY FAN 11A" "SPLY FAN 11B" "EXH FAN 11A" "EXH FAN 11B" (Addendum 3, Step 2.a)	Operator determines that all Normal Containment Purge Fans are already secured. NOTE Normal Containment Purge is secured and containment valves de-energized.			
	Alternat	e path begins here	I	1	
*7	CHECK The Following Automatic Actions Have Occurred: • Supplementary Containment Purge Fans stopped: • * "SPLY FAN 11A" • "SPLY FAN 11B" • * "EXH FAN 11B" • "EXH FAN 11B" (Addendum 3, Step 2.b)	Operator ensures Supplementary Containment Purge Fans stopped: {CP022} NOTE Operator stops Supply Fan 11A and Exhaust Fan 11A. They are the only ones running.			
8	 CHECK Normal Containment Purge valves closed "SPLY OCIV MOV-0007" "SPLY ICIV MOV-0008" "EXH ICIV MOV-0009" "EXH OCIV MOV-0010" (Addendum 3, Step 2.c) 	Operator ensures Normal Containment Purge valves closed: {CP022} NOTE Normal Containment Purge is secured and containment valves de-energized.			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*9	CHECK Supplementary Containment Purge valves closed • "SPLY OCIV FV-9776" • "SPLY ICIV MOV-0003" • "EXH ICIV MOV-0005" • "EXH OCIV FV-9777" (Addendum 3, Step 2.d)	Operator closes Supplementary Containment Purge valves: {CP022} NOTE Operator has to close all four containment isolation valves: • "SPLY OCIV FV-9776" • "SPLY ICIV MOV-0003" • "EXH ICIV MOV-0005" • "EXH OCIV FV-9777"			
*10	 CHECK RCB Atmosphere Radiation Monitor valves closed "CNTMT ATM SAMPLE ICIV MOV-0001" "CNTMT ATM SAMPLE OCIV MOV-0004" "CNTMT ATM RETURN ICIV MOV-0003" "CNTMT ATM RETURN OCIV MOV-0006" (Addendum 3, Step 2.e) 	Operator closes RCB Atmosphere Radiation Monitor valves closed: {CP002} NOTE Operator has to close all four containment isolation valves: • "CNTMT ATM SAMPLE ICIV MOV-0001" • "CNTMT ATM SAMPLE OCIV MOV-0004" • "CNTMT ATM RETURN ICIV MOV-0003" • "CNTMT ATM RETURN OCIV MOV-0006"			
CUE	This JPM is complete				

JPM Stop Time: _____

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JPM SUMMARY

Student Handout

INITIAL CONDITIONS

Unit was tripped due to a Steam Generator tube rupture 90 minutes ago. The Radiation Monitor Computer (RM-11) just signaled an active alarm.

INITIATING CUE

The Unit Supervisor directs you to investigate RM-11 and take necessary actions.

	STPNOC	
	Job Performance Measur	е
LOWER S	SAFETY INJECTION ACCUMUL	ATOR LEVEL
	JPM Number: <u>NRC S8</u>	
	Revision Number: <u>1</u>	
	Date: <u>07/13/2020</u>	
Developed By:	N/A	N/A
	Instructor (Print/Sign)	Date
Approved By:	N/A	N/A
	Training Supervisor (Print/Sign)	Date
	N/A	N/A
Approved By:		

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

NOTE: The following IC setup may be modified depending on JPMs that may be performed at the same time with this one.

IC Setup

- 1. Set to a 100% IC./NOT.
- Using 0POP02-SI-0001, Safety Injection Accumulators, raise level in the selected accumulator until the annunciator window for the selected accumulator comes in. "ACC TK ?? LEVEL HI/LO"
- 3. Save IC to a designated IC for LOT NRC/Audit Exam usage.

After IC is Stored and ready to perform JPM

- 1. For LOT 24 NRC Exam this JPM this JPM is scheduled to be performed with JPM S4
- 2. Ensure Radio volume for both stations are set to a reasonable level.
- 3. Ensure the PA buttons on the communications consoles are taped to help eliminate usage.
- 4. Check and clean the following procedures:
 - 0POP02-SI-0001, Safety Injection Accumulators.
 - 0POP09-AN-01M2 B5, ACC TK 1B LEVEL HI/LO

- 5. Reset the simulator to IC 209 and verify the following:
- 6. Red light at the end of CP-010 is out
- 7. ICS annunciators have stopped counting up
- 8. Place simulator in run and quickly silence/acknowledge/reset alarms, **including plant computer/ICS alarms.**
- 9. PLACE simulator in FREEZE.
- 10. When the student and the examiners are ready to proceed, place the simulator in RUN.
- 11. There is no simulator lesson plan for this JPM.

Booth Instructor Actions

1. None

NOTE: It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

INITIAL CONDITIONS

The plant is at 100% power. Annunciator Window 1M02 Window B-5, ACC TK 1B LEVEL HI/LO, is lit. It has been determined that level is high.

INITIATING CUE

You have been given the procedure and the Unit Supervisor directs you to lower SI Accumulator tank 1B level to 9050 gallons in accordance with 0POP02-SI-0001, Safety Injection Accumulators, Section 6.0, Lowering Accumulator Level.

NOTE: 0POP02-SI-0001, Safety Injection Accumulators, Section 3.0, Prerequisites, has been completed SAT.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

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Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Tack Standard:

Task Standard:

Safety Injection Accumulator 1B level is adjusted to between 8822.8 and 9076.0 gallons and alarm ACC TK 1B LEVEL HI/LO is NOT lit. All critical JPM steps #5, 6, 7, 8 are completed.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number	
Hand o Safety A rece	<u>NOTE</u> Hand out the Student Initiating Cue Sheet along with the Student HO of 0POP02-SI-0001, Safety Injection Accumulators. A recent change to the level band of the Unit 1 SI accumulators has not been modeled					
yet in t simula	he Simulator. The procedure hai tor modeling.	nd out uses the revision that stil	l matc	hes th	le	
1	RECORD the level of the accumulator in which level is to be lowered:	The operator records the current level of accumulator tank 1B.				
	ACC 1B Plant Computer point SILA0952/SILA0953.	NOTE Have the operator use the				
	(Step 6.1)	Initiating Cue Sheet to record				
	Cue:	level.				
	If asked, this is the first time the alarm has come in since the last boron sample which was within TS limits.					
2	IF accumulator level needs minor adjustment, THEN level may be adjusted using accumulator sample lineup. (Step 6.2)	The operator determines that accumulator sample lines will not be used to lower accumulator level by conferring with the Unit Supervisor.				
	As the Unit Supervisor, direct the Operator that accumulator sample lines are NOT to be used to lower level.					

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
3	 PERFORM the following for applicable Train valves listed on Addendum 1, Manual SI Test Valves: Record as found position. Align to test position. 	The operator determines that all valves listed in Addendum 1 that are in the required flowpath are known to be OPEN by conferring with the Unit Supervisor and NAs the step.			
	(Step 6.3) Cue:				
	As the Unit Supervisor, inform the Operator that all valves listed in Addendum 1 that are in the required flowpath are known to be OPEN.				
4	VERIFY the accumulator that is to be drained is in service with the "ACC DISCH ISOL" valve open:	The operator verifies that SI- MOV-0039B is OPEN NOTE			
	 ACC "1B(2B)" "MOV-0039B" (Step 6.4) 	open.			
*5	OPEN "TEST LN ICIV FV-3970 and 3971". (Step 6.5 and 6.6)	The operator opens SI-FV-3970 and 3971.			
*6	OPEN the Upstream SIS Test Valve for accumulator to be drained:	The operator opens SI-FV-3968 to begin lowering level. NOTE			
	"FV-3968 ACC 1B UP STREAM" (Step 6.7)	It will take about 45 to 60 seconds to clear the alarm.			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*7	WHEN ACC TK 1B HI/LO Annunciator is extinguished AND required level is attained, THEN CLOSE the Upstream SIS Test Valve for the accumulator being drained: "FV-3968 ACC 1B UP STREAM" (Step 6.8)	The operator closes SI-FV-3968 when the alarm clears and level is within the desired ban. NOTE Per the Initiating CUE the operator will stop lowering level when level reaches 9050 gallons. The annunciator will have cleared.			
*8	CLOSE "TEST LN ICIV FV- 3970 and 3971". (Step 6.9 and 6.10)	The operator closes SI-FV-3970 and 3971.			
9	 VERIFY level between 8822.8 and 9076.0 gallons in the accumulator that was drained: ACC 1B Plant Computer point SILA0952/SILA0953 (Step 6.11) 	The operator verifies accumulator 1B level is between 8822.8 and 9076.0 gallons.			
10	 VERIFY pressure between 616.3 and 643.7 psig for the accumulator that was drained: ACC 1B Plant Computer point SIPA0962/SIPA0963 (Step 6.12) 	The operator verifies accumulator 1B pressure is between 616.3 and 643.7 psig. NOTE Pressure may come down some during the drain process but should stay within band.			

STEP	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
11	 RECORD the final level of the accumulator that was drained in the Control Room narrative log and the amount that was drained by subtracting the final level from the level recorded in Step 6.1. The Plant Computer is the preferred source: ACC 1B Plant Computer point SILA0952/SILA0953 (Step 6.13) 	The operator records final accumulator level and the amount in gallons that was drained. NOTE Have the operator use the Initiating Cue Sheet to record level.			
CUE	This JPM is complete	·			

JPM Stop Time: _____

JPM SUMMARY

Operator's Name: Job Title:
JPM Title: LOWER SAFETY INJECTION ACCUMULATOR LEVEL
JPM Number: <u>NRC S8</u> Revision Number: <u>1</u>
Task Number and Title: <u>T29400 – Lower level in an in-service accumulator</u>
K/A Number and Importance: 006 A1.13 3.5/2.7
Suggested Testing Environment: Simulator Control Room In-Plant Other
Alternate Path: 🗌 Yes 🛛 No
Task Designed For: 🗌 SRO Only 🛛 RO/SRO 🗌 AO/RO/SRO
Time Critical: 🗌 Yes 🖂 No
Level of Difficulty: <u>3</u>
Reference(s): 0POP02-SI-0001, Safety Injection Accumulators, Rev 41 0POP09-AN-01M2 – B5, ACC TK 1B LEVEL HI/LO, Rev 34
Actual Testing Environment: 🗌 Simulator 🛛 Control Room 🗌 In-Plant 🗌 Other
Testing Method: 🗌 Simulate 🔲 Perform
Estimated Time to Complete: 20 minutes Actual Time Used: minutes
Critical Steps (*) 5, 6, 7, 8
Evaluation Summary: Were all the Critical Steps performed satisfactorily?
The operator's performance was evaluated against standards contained within this JPM and has been determined to be:
Comments:
Evaluator's Name:(Print)
Evaluator's Signature: Date:
Student Handout

INITIAL CONDITIONS

The plant is at 100% power. Annunciator Window 1M02 Window B-5, ACC TK 1B LEVEL HI/LO, is lit. It has been determined that level is high.

INITIATING CUE

You have been given the procedure and the Unit Supervisor directs you to lower SI Accumulator tank 1B level to 9050 gallons in accordance with 0POP02-SI-0001, Safety Injection Accumulators, Section 6.0, Lowering Accumulator Level.

NOTE: 0POP02-SI-0001, Safety Injection Accumulators, Section 3.0, Prerequisites, has been completed SAT.

	STPNOC	
	Job Performance Measure	
	MCC POWER RESTORATION	1
	JPM Number: <u>NRC P1</u>	
	Revision Number: <u>1</u>	
	Date: <u>07/13/2020</u>	
Developed By:	N/A	N/A
	Instructor (Print/Sign)	Date
Approved By:	N/A	N/A
, approved by:	Training Supervisor (Print/Sign)	Date
Approved By:	N/A	N/A
	Line Management (Print/Sign)	Date

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1**; Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

IC Setup

• No setup required. This is an In-Plant JPM.

INITIAL CONDITIONS

A fire isolated to the Relay Room adjacent to the Control Room caused the Control Room to be evacuated. 0POP04-ZO-0001, Control Room Evacuation, has been implemented. At the Auxiliary Shutdown Panel, the crew is preparing for a plant cooldown and Step 44.0, *MAINTAIN* RCS Pressure Between 2000 And 2250 psig Using Pressurizer Heaters And PORVs' has just been completed.

The fire in the Relay Room has been extinguished, the area has been roped off and a reflash watch has been established.

INITIATING CUE

In the affected Unit you are instructed to replace the Unit Supervisor position for the Control Room evacuation and the Operator at the Auxiliary Shutdown Panel has instructed you to complete required local actions Step 45.0, 46.0 and 47.0.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Task Standard:

The Shunt Trip for MCC 1(2)B5 has been disabled, MCC 1(2)B5 has been energized and the associated CRDM & Reactor Cavity Fans have been selected for local control and started. All Critical JPM Steps (#1, 2, 3, 4) are completed.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number		
<u>NOTE</u> Hand out the Student Initiating Cue Sheet along with the Student HO of 0POP04-ZO-0001, Control Room Evacuation.							
The Un MCC 1	<u>CUE</u> The Unit Supervisor position is in the Train B Switchgear room in the EAB 35' level. MCC 1(2)B5 is in the electrical penetration area.						
If aske affect t MCC 1	If asked, the area affected by the fire that is roped off in the Relay Room DOES NOT affect the travel path from the switchgear room to the electrical penetration area where MCC 1(2)B5 is located.						
*1	DIRECT ESF Switchgear Operators To Open Control Power Disconnect Switches To Disable Shunt Trips For 480V MCC 1A5(2A5), 1B5(2B5), and	Operator locates and opens the fused switch at Train B, RR121B DS4.					
	1C5(2C5): • Train B. RR121B DS4	RR121B is in the Train B switchgear room.					
	(Step 45.0) CUE:	Basically all of the fused switches in the Relay Rack are numbered. The Operator					
	DO NOT open the Relay Rack Door.	has to find the correct fused switch and then position the					
	Have the Operator describe what they would see and how they would position the fused switch.	fused switch so that one end of the fuse is NOT making contact with the fuse connector.					
	INITIALLY: Both ends of the selected fuse are properly connected at both ends.	See pictures of a typical relay panel on the next 3 pages.					
	FINALLY: One end of the selected fuse has been positioned so that it is NOT connected to its connector.						







NRC P1 – Rev 1

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*2	DIRECT ESF Switchgear Operators To Close 480 VAC MCC Feeder Breakers To MCCs 1A5(2A5), 1B5(2B5), and 1C5(2C5): • Train B, "TO 480V MCC 1B5(2B5)" (MCC E1B4(E2B4)/G1) (Step 46.0) CUE: Use pen or other device to point to breaker positions. INITIALLY: Breaker is OFF/DOWN FINALLY: Breaker is ON/UP	Operator locates and positions ON: Train B, "TO 480V MCC 1B5(2B5)" (MCC E1B4(E2B4)/G1) NOTE: MCC E1B4(E2B4) is in the Train B switchgear room.			

NRC P1 – Rev 1

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	DISPATCH Operator To Place All CRDM Fans And Cavity Fans Transfer Switches in LOCAL:	The Operator locates MCC 1B5(2B5)/C2 and places the two Transfer Switches in the LOCAL position.			
	 "REACTOR SUPPORT EXHAUST FAN EN037" 	NOTE:			
	 "CRDM VENT FAN FN018" 	The location of the transfer switches are in the Train B			
	(Step 47.0 Part 1)	Electrical Penetration area on MCC 1B5(2B5) Cubicle C2			
	CUE:				
	Use pen or other device to point to switch positions and light indications.				
	INITIALLY: Both switches are in REMOTE (handle is vertical for control room)				
	FINALLY: Both switches are in LOCAL (handle is 45° off center for local)				
	IF asked:				
	Reactor Support Exhaust Fan FN037 green light LIT; red light OFF				
	CRDM Vent Fan FN018 green light LIT; red light OFF				

NRC P1 – Rev 1

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*4	DISPATCH Operator To Start All CRDM Fans And Cavity Fans:	The Operator locates MCC 1B5(2B5)/C2 and starts the two Fans.			
	 "REACTOR SUPPORT EXHAUST FAN FN037" 	NOTE:			
	"CRDM VENT FAN FN018"	The location of the control switches are in the Train B Electrical Penetration area on MCC 1B5(2B5) Cubicle C2			
	(Step 47.0 Part 2)				
	CUE:				
	Use pen or other device to point to light indications.				
	INITIALLY: Reactor Support Exhaust Fan FN037 green light LIT; red light OFF				
	INITIALLY: CRDM Vent Fan FN018 green light LIT; red light OFF				
	FINALLY: Reactor Support Exhaust Fan FN037 green light OFF; red light LIT				
	FINALLY: CRDM Vent Fan FN018 green light OFF; red light LIT				
CUE	This JPM is completed				
	an Time:				

JPM Stop Time:

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JPM	SU	MM	ARY
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Operator's Name: Job Title:
JPM Title: MCC POWER RESTORATION
JPM Number: <u>NRC P1</u> Revision Number: <u>1</u>
Task Number and Title: 85700, Respond to a Control Room Evacuation.
K/A Number and Importance: 062 A4.04 2.6/2.7
Suggested Testing Environment: Simulator Control Room In-Plant Other
Alternate Path: Yes No
Task Designed For: 🗌 SRO Only 🔲 RO/SRO 🖾 AO/RO/SRO
Time Critical: □ Yes ⊠ No
Level of Difficulty: 2
Reference(s): 0POP04-ZO-0001, Control Room Evacuation, Rev. 47
Actual Testing Environment: Simulator Control Room In-Plant Other Testing Method: Simulate Perform
Estimated Time to Complete: 20 minutes Actual Time Used: minutes
Critical Steps (*) 1, 2, 3, 4
Evaluation Summary: Were all the Critical Steps performed satisfactorily?
The operator's performance was evaluated against standards contained within this JPM and has been determined to be:
Comments:
Evaluator's Name:
(Print)
Evaluator's Signature: Date:

Student Handout

INITIAL CONDITIONS

A fire isolated to the Relay Room adjacent to the Control Room caused the Control Room to be evacuated. 0POP04-ZO-0001, Control Room Evacuation, has been implemented. At the Auxiliary Shutdown Panel, the crew is preparing for a plant cooldown and Step 44.0, *MAINTAIN* RCS Pressure Between 2000 And 2250 psig Using Pressurizer Heaters And PORVs' has just been completed.

The fire in the Relay Room has been extinguished, the area has been roped off and a reflash watch has been established.

INITIATING CUE

In the affected Unit you are instructed to replace the Unit Supervisor position for the Control Room evacuation and the Operator at the Auxiliary Shutdown Panel has instructed you to complete required local actions Step 45.0, 46.0 and 47.0.

Job Performance Measure PLACE RWST ON RECIRCULATION JPM Number: NRC P2 Revision Number: 1 Date: 07/13/2020 MA N/A Developed By: N/A N/A Instructor (Print/Sign) Date Approved By: N/A N/A MA N/A N/A Approved By: N/A N/A Main (Print/Sign) Date N/A		STPNOC	
PLACE RWST ON RECIRCULATION JPM Number: NRC P2 Revision Number: 1 Date: 07/13/2020 Developed By: N/A N/A Instructor (Print/Sign) Date Date Approved By: N/A N/A Date Main Supervisor (Print/Sign) Date Date N/A Approved By: N/A N/A Date Main Supervisor (Print/Sign) Date Date Date		Job Performance Measur	е
JPM Number: NRC P2 Revision Number: 1 Date: 07/13/2020 Developed By: N/A Instructor (Print/Sign) Date Approved By: N/A V/A N/A Approved By: N/A N/A Date Approved By: N/A N/A Date Approved By: N/A N/A Date N/A Date	F	PLACE RWST ON RECIRCULA	TION
Number: 1 Date: 07/13/2020 Developed By: N/A Instructor (Print/Sign) Date Approved By: N/A Instructor (Print/Sign) Date Approved By: N/A Instructor (Print/Sign) Date Approved By: N/A Instructor (Print/Sign) Date Date N/A Instructor (Print/Sign) Date		JPM Number: <u>NRC P2</u>	
Date: 07/13/2020Developed By:N/AN/AInstructor (Print/Sign)DateApproved By:N/AN/ATraining Supervisor (Print/Sign)DateApproved By:N/AN/ALine Management (Print/Sign)Date	Revision Number: <u>1</u>		
N/AN/ADeveloped By:Instructor (Print/Sign)DateApproved By:N/AN/ATraining Supervisor (Print/Sign)DateApproved By:N/AN/ALine Management (Print/Sign)Date	Date: <u>07/13/2020</u>		
Instructor (Print/Sign)DateApproved By:N/AN/ATraining Supervisor (Print/Sign)DateApproved By:N/AN/ALine Management (Print/Sign)Date	Developed By:	N/A	N/A
Approved By: N/A N/A Training Supervisor (Print/Sign) Date Approved By: N/A N/A Line Management (Print/Sign) Date		Instructor (Print/Sign)	Date
Approved By: N/A N/A Line Management (Print/Sign) Date	Approved By:	N/A Training Supervisor (Print/Sign)	N/A
Line Management (Print/Sign) Date	Approved By:	N/A	N/A
	Approved by.	Line Management (Print/Sign)	Date
NOTE: N/A signature blocks if this JPM is being used on an NRC LOT Exam.	NOTE: N/A signature	blocks if this JPM is being used on an NF	C LOT Exam.

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

IC Setup

• No setup required. This is an In-Plant JPM.

INITIAL CONDITIONS

Unit 1 is at 100% power, steady state conditions. Maintenance has been recently completed on the Refueling Water Purification Pump (RWPP) and it is time to return it to service.

INITIATING CUE

The Unit Supervisor has given you 0POP02-FC-0001, Spent Fuel Pool Cooling and Cleanup System, and directs you to place the RWST on purification recirculation using the RWPP through SFP demineralizer 1A(2A) in accordance with Step 7.4, Purification of RWST.

- Prerequisites of this procedure have been verified.
- NO TCCs are installed.
- SFP Purification is aligned through SFP Demineralizer 1B(2B).
- The Head Plant Operator is standing by in the FHB to assist.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

Task Standard:

Operator has the RWST on purification recirculation using the RWPP through the SFP demineralizer 1A(2A). A short time after the operator places the RWPP in service, a reactor trip with SI will occur. The operator must then secure the RWPP.

Completes JPM Critical Steps 3, 4, 5 & 6.

JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number	
Hand o Spent F The are Area (C If asked If asked The He This JP	NOTE Hand out the Student Initiating Cue Sheet along with the Student HO of 0POP02-FC-0001, Spent Fuel Pool Cooling and Cleanup System. The area around the Refueling Water Purification Pump may be posted as a Contaminated Area (CA). However, the valves and indications will be visible from the CA boundary. If asked, the 1A(2A) SFP Demineralizer boron concentrations are equalized. If asked, no ESF DG is operating or is scheduled to be run. The Head Plant Operator is available in the FHB to start the RWPP. This JPM can be performed in either Unit					
1	IF simultaneous purification of the SFPCCS AND RWST is desired, THEN ENSURE the Spent Fuel Pool Purification System is aligned to Demineralizer 1B(2B). (Step 7.4.1) Cue: If asked, as the Unit Supervisor, report that SFP purification is in service and aligned through SFP demineralizer 1B(2B).	Verifies SFP purification is in service and aligned through SFP demin 1B (2B). Note: The status of SFP demineralizer alignment was given in the Initiating Cue. SFP Demineralizer 1B(2B) is in service.				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number		
Step	NOTE Step 7.4.2 and 7.4.4 are N/A, the TCC to support E1A11(E2A11) DC Bus Outages is NOT installed.						
2	 Open RWST to SFP Cleanup System valves. (Steps 7.4.3 and 7.4.5) Cue: If asked, as the Unit Supervisor, report that there are NO TCCs installed. When asked, as the Control Room Operator, report that valves SI-FV- 3936 and SI-FV-3937 are open. 	Contacts the Control Room to open the RWST TO SFP CLEANUP SYS valves FV-3936 and FV-3937. Note: The status of TCCs is given in the Initiating Cue.					
NOTE							
 For the next JPM Step: 1(2)-FC-0046B is located in the MAB 41' elevation, filter row Room 237 and is a wall mounted reach rod 90° turn valve. 							

- When facing the south wall, it is about 1/3 of the way down the hall, on the right side, approximately 1' above the floor.
- A ratchet wrench is needed to operate the valve and the operator will simulate its use. A ratchet wrench is normally available in the Radwaste Control Room.

<u>STEP</u>	ELEMENT	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	Open "1(2)-FC-0046B SFP PURIFICATION LOOP 1A(2A) RETURN TO RWST ISOLATION VALVE".	Opens 1(2)-FC-0046B "SFP PURIFICATION LOOP 1A(2A) RETURN TO RWST ISOLATION VALVE			
	(Step 7.4.6)	Note:			
	Cue: Use pen or other device to point to valve position.	FC-0046B requires the use of a ratchet with socket to operate valve. The ratchet and socket can be found in			
	 Initially the VPI indicates FC-0046B CLOSED When the operator demonstrates opening the valve provide a VPI that indicates the valve is OPEN 	the Radwaste Control Room.			
		NOTE			
The Pu The ope	mp Control Handswitch is located erator can simulate calling the Hea	in the FHB and the pump itself is ir d Plant Operator on the radio to st	n the M art the	1AB. RWPI	∍.
*4	Start " N1(2)FCHS1419 RWPP 1A(2A)".	Calls the Radwaste Operator on the radio to start the 1A(2A)			
	(Step 7.4.7)	RWPP			
	Cue:				
	Head Plant Operator:				
	• The Head Plant Operator reports that he has taken the pump start switch to "START" and has a RED indicating light illuminated on ZLP-749.				
	 The Refueling Water Purification Flow Low Alarm on ZLP-749 has cleared. 				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
		NOTE			
The are Area (C	ea around the Refueling Water Pur CA). However, the valves and indica	ification Pump may be posted as a ations will be visible from the CA be	Conta ounda	aminate ry.	ed
*5	Throttle "1(2)-FC-0042 REFUELING WATER PURIF PUMP DISCHARGE THROTTLE VALVE", as necessary to obtain between 190 AND 200 gpm as indicated by "1(2)-FC-FIS-1417".	Throttles 1(2)-FC-0042, REFUELING WATER PURIF PUMP DISCHARGE THROTTLE VALVE, as necessary to obtain between 190 and 200 gpm on 1(2)-FC- FIS-1417.			
	(Step 7.4.8)	Note:			
	Cue:	FIS-1417 is located on the			
	Use pen or other device to point to flow and pressure indications.	See FIS-1417 picture on next page.			
	lf/when asked:	After the student locates FIS-			
	 RWPP shaft is turning, normal motor noise is heard and initial discharge pressure is 130 psig. 	1417, then this picture may be used to illustrate the discharge flow changes to the student as they simulate throttling FC-0042.			
	 Discharge flow on 1(2)-FC- FIS-1417 is initially indicating 220 gpm. 	The Operator will go to the 41' MAB to perform the next			
	• As the operator simulates throttling closed on 1(2)- FC-0042, give flow decrements of 10 gpm down to 195 gpm. Final pump discharge pressure is 140 psig.	procedure steps.			



<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number	
CUE CUE the following as a PLANT PAGE when the operator leaves the MAB Penetration Room 64 where the RWPP is located (the operator will be going to the 41' MAB to perform the next procedure steps) • "ATTENTION ALL PLANT PERSONNEL, ATTENTION ALL PLANT PERSONNEL, UNIT 1(2) REACTOR TRIP AND SAFETY INJECTION" Alternate path starts here.						
*6	Secure the RWPP. (CAUTION before Step 7.4.1) Cue: If the operator contacts the Head Plant Operator, inform the operator that you are in the EAB at this time and not available. Use pen or other device to point to pump handswitch and indicating lights or breaker position. Pump Handswitch INITIALLY: Red light ON, Green light OFF FINALLY: Green light ON, Red light OFF OR Pump Breaker INITIALLY: Breaker is ON/UP FINALLY: Breaker is OFF/DOWN	Secures the RWPP using either one of the following methods: • Simulates taking Pump Control Handswitch at ZLP- 749 to "STOP" (FHB 22' elevation) OR • Simulates taking Pump Supply Breaker at 480 V MCC 1(2)K3/D2 to "OFF" (MAB 10' Electrical Equipment Room 65) Terminate the JPM when the operator performs one of the two actions listed in this standard.				
CUE	This JPM is completed.	·				

JPM Stop Time:

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JPM SUMMARY
Operator's Name: Job Title:
JPM Title: PLACE RWST ON RECIRCULATION
JPM Number: <u>NRC P2</u> Revision Number: <u>1</u>
Task Number and Title: 18450, Line up to recirculate and/or purify the refueling/borated water storage tank 18450, Line up to recirculate and/or purify the refueling/borated
K/A Number and Importance: 006 A4.02 4.0/3.8
Suggested Testing Environment: Simulator Control Room In-Plant Other
Alternate Path: Yes No
Task Designed For: 🗌 SRO Only 🗌 RO/SRO 🛛 🖾 AO/RO/SRO
Time Critical: Yes No
Level of Difficulty: <u>3</u>
Reference(s): 0POP02-FC-0001, Spent Fuel Pool Cooling and Cleanup System, Rev 95
Actual Testing Environment: Simulator Control Room In-Plant Other Testing Method: Simulate Perform Estimated Time to Complete: 20 minutes Actual Time Used: minutes Critical Steps (*) 3, 4, 5 and 6 Evaluation Summary: Yes No Were all the Critical Steps performed satisfactorily? Yes No The operator's performance was evaluated against standards contained within this JPM and has been determined to be: Satisfactory Unsatisfactory Comments:
Evaluator's Name: (Print)

Student Handout

INITIAL CONDITIONS

Unit 1 is at 100% power, steady state conditions. Maintenance has been recently completed on the Refueling Water Purification Pump (RWPP) and it is time to return it to service.

INITIATING CUE

The Unit Supervisor has given you 0POP02-FC-0001, Spent Fuel Pool Cooling and Cleanup System, and directs you to place the RWST on purification recirculation using the RWPP through SFP demineralizer 1A(2A) in accordance with Step 7.4, Purification of RWST.

- Prerequisites of this procedure have been verified.
- NO TCCs are installed.
- SFP Purification is aligned through SFP Demineralizer 1B(2B).
- The Head Plant Operator is standing by in the FHB to assist.

STPNOC			
Job Performance Measure			
VERIFY CONTAINMENT ISOLATION PHASE "B"			
JPM Number: <u>NRC P3</u>			
	Revision Number: <u>1</u>		
	Date: <u>07/13/2020</u>		
Developed By:	N/A	N/A	
	Instructor (Print/Sign)	Date	
Approved By:	N/A Training Supervisor (Print/Sign)	N/A Date	
Approved By:	N/A	N/A	
	Line Management (Print/Sign)	Date	

Revision Record (Summary)

- **Revision 0;** Drafted JPM for use on the LOT 24 NRC exam.
- **Revision 1;** Updated for Final Submittal on the LOT 24 NRC exam.

SIMULATOR SETUP INSTRUCTIONS

IC Setup

• No setup required. This is an In-Plant JPM.

INITIAL CONDITIONS

A Loss of All AC Power has occurred in the Unit and the Control Room Operators are performing their supplementary actions of 0POP05-EO-EC00, LOSS OF ALL AC POWER, and are at Step 22. Containment pressure is 10.2 PSIG. The Crew has determined that the Containment Phase 'B' Isolation valves will not close from the Control Room.

INITIATING CUE

You have been given the procedure and the Unit Supervisor directs you to perform Step 22 RNO e. of 0POP05-EO-EC00, LOSS OF ALL AC POWER.

Fill in the JPM Start Time when the student acknowledges the Initiating Cue.

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Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* Denotes critical steps.

If Time Critical, estimated time is the Time Critical time.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section. The comment section should be used to document: the reason that a step is marked as unsatisfactory, marginal performance relating to management expectations, or problems the examinee had while performing the JPM. Comments relating to procedural or equipment issues should be entered and tracked using the site's appropriate tracking system.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

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Task Standard:

Operator locally closes the Containment Isolation Phase B valves. Completes JPM Critical Steps 1, 2, 3 & 4. JPM Start Time:

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	IAS	UNSAT	Comment Number
Hand out the Student Initiating Cue Sheet LOSS OF ALL AC POWER. Valves located 41' MAB PEN area under g The JPM steps can be performed in any o		NOTE along with the Student HO of 0PC grating. order.)P05-E	O-EC	00,
*1	Manually close "1(2)-CC-MOV- 0291 RCP AND HEAT EXCHANGERS CCW SUPPLY HEADER SECOND ISOLATION MOV OPERATOR". (RNO Step 22.e 1 st bullet) Cue: Use pen or other device to point to valve positions. • Initially, valve is OPEN • Finally, valve is CLOSED	The operator locates "1(2)-CC- MOV-0291 RCP AND HEAT EXCHANGERS CCW SUPPLY HEADER SECOND ISOLATION MOV OPERATOR", simulates depressing the declutch lever, and closes the valve.			
*2	Manually close "1(2)-CC-MOV- 0318 RCP AND HEAT EXCHANGERS CCW SUPPLY ORC ISOLATION MOV OPERATOR". (RNO Step 22.e 2 nd bullet) Cue: Use pen or other device to point to valve positions. • Initially, valve is OPEN • Finally, valve is CLOSED	The operator locates "1(2)-CC- MOV-0318 RCP AND HEAT EXCHANGERS CCW SUPPLY ORC ISOLATION MOV OPERATOR", simulates depressing the declutch lever, and closes the valve.			

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
*3	Manually close "1(2)-CC-MOV- 0404 RCP AND HEAT EXCHANGERS CCW RETURN ORC ISOLATION MOV OPERATOR". (RNO Step 22.e 3 rd bullet)	The operator locates "1(2)-CC- MOV-0404 RCP AND HEAT EXCHANGERS CCW RETURN ORC ISOLATION MOV OPERATOR", simulates depressing the declutch lever, and closes the valve.			
	Cue:				
	Use pen or other device to point to valve positions.				
	 Initially, valve is OPEN 				
	• Finally, valve is CLOSED				

<u>STEP</u>	<u>ELEMENT</u>	<u>STANDARD</u>	SAT	UNSAT	Comment Number
1(2)-C0 1-IA-80 (UNIT * 2-IA-80 *4	 C-FV-4493 is the outermost valve of the stairs, to the rest of the stairs, the state of the stairs of the stairs of the rest of the stairs of the state of the stairs of the state of	NOTE on left side of platform ladder. ight, behind the stanchion, and about on for 2-CC-FV-4493 (UNIT 2 ONL) The operator locates and simulates closing 1(2)-CC-FV- 4493 by performing the following: • Isolates "1(2)-IA-8044 INSTRUMENT AIR TO 1(2)- CC-FV-4493 SECOND ISOLATION VALVE" AND • OPENS the petcock vent (on the valve actuator) of 1(2)- CC-FV-4493, bleeding off any residual air pressure.	ove RT Y).		
CUE	is CLOSED This JPM is completed.				

JPM Stop Time: _____

Operator's Name:	Job Title: 🗌 RO 🔤 SRC)
JPM Title: VERIFY CONTAINMENT ISOLATION	PHASE "B"	
JPM Number: NRC P3 Revision	Number: <u>1</u>	
Task Number and Title: 82044, Respond to a Los	s of All AC Power Condition	ion
K/A Number and Importance: 103 A2.03 3.5/3.8	3	
Suggested Testing Environment:	Control Room In-	Plant 🗌 Other
Alternate Path: 🗌 Yes 🛛 No		
Task Designed For: SRO Only RO/SRO	AO/RO/SRO	
Time Critical: □Yes ⊠No		
Level of Difficulty: <u>3</u>		
Reference(s): 0POP05-EO-EC00, Loss of All AC P	ower, Rev. 32.	
Actual Testing Environment: Simulator 0 Testing Method: Simulate Perform Estimated Time to Complete: 8 minutes Critical Steps (*) 1, 2, 3, 4 Evaluation Summary: Were all the Critical Steps performed satisfactorily? The operator's performance was evaluated against so contained within this JPM and has been determined Comments:	Control Room In-Pla Actual Time Used:	nt ☐ Other _ minutes ☐ No ☐ Unsatisfactory
Evaluator's Signature:	Date:	

Student Handout

INITIAL CONDITIONS

A Loss of All AC Power has occurred in the Unit and the Control Room Operators are performing their supplementary actions of 0POP05-EO-EC00, LOSS OF ALL AC POWER, and are at Step 22. Containment pressure is 10.2 PSIG. The Crew has determined that the Containment Phase 'B' Isolation valves will not close from the Control Room.

INITIATING CUE

You have been given the procedure and the Unit Supervisor directs you to perform Step 22 RNO e. of 0POP05-EO-EC00, LOSS OF ALL AC POWER.

LOT 24 NRC EXAM

SIMULATOR OPERATING TEST

SCENARIO #1

Revision 1

Week of 07/13/2020
SCENARIO OUTLINE

Examine	ers:			Operators:	
nitial Co Mode ² 25-30 { in serv <u>Furnovei</u> AFW P	<u>nditions:</u> I at 100% P & 120-150 G 'ice. <u>''</u> ump #11 is	ower, MOL PM Letdown C out of service	Drifices are	<u>Critical Tasks:</u> • E6 – CT13; Manually Trip Main Turbine • E7 – CT46; Establish RCS Bleed and Feed	
Event No.	Malf. No.	Event Type*		Event Description	
1 (0 min)	N/A	RO (N)	Close the 25-	30 GPM Letdown Orifice.	
2 (10 min)	CM_RT804 6TVCLRP 1	SRO (TS ONLY)	SG 1A Main Steam Radiation Monitor RT-8046 failure.		
3 (20 min)	04-03-02 0	RO (C) SRO (C)	RCP 1B Thermal Barrier Isolation Valve goes closed after a CCW System perturbation.		
4 (33 min)	05-12-04 0	BOP (I) SRO (I & TS)	SG 1D Controlling NR level channel fails low. LT-0549		
5 (43 min)	08-28-01 True	BOP (C) SRO (C)	LPHD Pump	LPHD Pump #11 Trip	
6 (52 min)	Multiple	All (M)	Main Genera manual RX T	or Output Breaker trips open causing an automatic or rip.	
7 (N/A)	Multiple	RO (C) SRO (C)	On the RX Tr inadvertent F (Critical Tas	ip the Main Turbine fails to auto trip and there is an WI. <)	
8 (N/A)	10-11-02 True	RO (C) SRO (C)	Train B 4160	Train B 4160V bus lockout. (On Reactor Trip)	
9 (N/A)	Multiple	All (M)	Loss of Heat Sink and entry into FRH1. (Critical Task)		
			(AFW Pump overspeeds.	11 OOS, Pump 12 No Power, Pump 13 Trips, Pump 14)	
10 (N/A)	08-02-01 1	BOP (C) SRO (C)	AFW Pump 14 has an overspeed trip.		
11 (N/A)	08-03-06	BOP (C)	AFW Pump 13 trips on overcurrent.		

Total Estimated Time: 1 hour, 10 minutes

	Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes
1.	Malfunctions after EOP entry (1–2)	3
2.	Abnormal events (2–4)	4
3.	Major transients (1–2)	2
4.	EOPs entered/requiring substantive actions (1–2)	1
5.	Entry into a contingency EOP with substantive actions (<u>></u> 1 per scenario set)	1
6.	Preidentified critical tasks (≥2)	2

SCENARIO MISCELLANEOUS INFORMATION

INSTRUCTOR NOTES:

- Critical Tasks are indicated by "**CT**-##" in the position column and indicated in bold type. In some instances, an "*" will indicate that only a portion of the task listed is considered critical.
- Shaded cells indicate procedural entry points.

RECORDED PARAMETERS:

Recorded parameters will be determined during NRC Validation week.

The parameters identified for recording may be of value in evaluating crew performance. Once the scenario is complete for each crew, printout the recorded parameters and label the printout with date, time, crew number and scenario number. See Scenario Instructions section for further details on how to save the Recorded Parameters.

- Core Exit T/C
- Pressurizer Level
- SG 1D Narrow Range Level

SCENARIO OBJECTIVES

Event 1 Objective

• Operate alternate Charging and Letdown flowpaths per 0POP02-CV-0004, Chemical Volume Control System Subsystem.

Event 2 Objective

• Respond to Radiation System Monitoring alarms per 0POP04-RA-0001, Radiation Monitoring System Alarm Response.

Event 3 Objective

• Respond to a Reactor Coolant Pump abnormal condition per 0POP04-RC-0002, Reactor Coolant Pump Off Normal.

Event 4 Objective

• Respond to a loss of feedwater flow or control per 0POP04-FW-0001, Loss of Steam Generator Level Control.

Event 5 Objective

• Respond to feedwater heater vent and drip alarms per 0POP04-CD-0001, Loss of Condensate Flow.

Event 6 and 7 Objective

• Respond to a Main Turbine and Reactor Trip per 0POP05-EO-EO00, Reactor Trip or Safety Injection.

Event 8 Objective

 Respond to a loss of power to a 4.16KV ESF Bus during a reactor trip per 0POP04-AE-0001, First Response to Loss of Any or All 13.8KV of 4.16KV Bus.

Event 9, 10 and 11 Objective

• Respond to Loss of Heat Sink per 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink.

LOT 24 NRC OP-TEST SCENARIO #1 Rev 1 Page 5 of 38

Op-Test	No.: 1	Scenario No.: 1 Event No.: 1		
Event De	Event Description: Close the 25-30 GPM Letdown Orifice.			
Time	Position	Required Operator Actions	Notes	
	SRO	Directs Operator to perform 0POP02-CV-0004, Chemical and Volume Control System Subsystem, Section 10.0, Removing a Second or Third Letdown Orifice from Service with the RCS Pressurized.		
	RO	NOTIFY Health Physics of pending changes in the letdown or charging flow paths to ensure they can survey the area that has changed. (<i>Step 10.1</i>)		
	RO	ENSURE demineralizers bypassed per Section 7.0. (Step 10.2)		
	RO	NOTIFY Health Physics of pending changes in the letdown or charging flow paths to ensure they can survey the area that has changed. (<i>Step 7.1</i>)		
	RO	ENSURE "DIVERT TCV-0143" in the VCT position to bypass the CVCS Demineralizers. <i>(Step 7.2)</i>		
	RO	NOTIFY Chemistry that the CVCS Demineralizers are bypassed. (<i>Step 7.3</i>) <i>RO will go back to step 10.3.</i>		
	RO	PLACE "PRESS CONT PCV-0135" in MAN. (Step 10.3)		
	RO	ADJUST "PRESS CONT PCV-0135" to obtain a letdown pressure of 400 psig as indicated on "OUTLET PRESS PI-0135".		
		(Step 10.4)		
		During this evolution a procedure NOTE instructs the Operator to monitor letdown pressure to ensure "PSV-3100 LETDOWN LINE RELIEF TO PRT" does not lift. (600 psig)		
		The Operator may also have to adjust "CHG FLOW CONT FK-0205" for PZR level control.		

LOT 24 NRC OP-TEST SCENARIO #1 Rev 1 Page 6 of 38

Op-Test	No.: 1	Scenario No.: 1 Event No.: 1	
Event De	escription: C	Close the 25-30 GPM Letdown Orifice.	
Time	Position	Required Operator Actions	Notes
	RO	CLOSE the appropriate letdown orifice isolation valve. • "25-30 GPM MOV-0014 ORIF ISOL VLV"	
		(Step 10.5)	
	RO	WHEN the letdown orifice isolation valve is full closed, THEN ADJUST "PRESS CONT PCV- 0135" to obtain a letdown pressure between 350 psig and 380 psig as indicated on "OUTLET PRESS PI-0135".	
		(Step 10.6)	
	RO	PLACE "PRESS CONT PCV-0135" in "AUTO".	
		(Step 10.7)	
		(<u>Event 2</u> can be triggered on request from the lead examiner.)	
	RO	ENSURE demineralizers in service per Section 7.0, as desired.	
		(Step 10.7)	
		The Operator will go to step 7.4.1 to place CVCS demineralizers back in service.	

Op-Test No.: 1 Scenario No.: 1 Event No.: 1				
Event Description: Close the 25-30 GPM Letdown Orifice.				
Time	Position	Required Operator Actions	Notes	
	RO	 ENSURE the CVCS Demineralizer meets ALL of the following conditions, OTHERWISE N/A this step and PLACE the CVCS Demineralizer in service per the applicable Sections: CVCS Bed Demineralizer has been previously flushed and sampled. (Modes 1, 2, 3 and 4 ONLY) CVCS Bed Demineralizer has been isolated for less than 2 hours. Current RCS Boron within + 25 ppm from the RCS Boron WHEN the CVCS Bed Demineralizer was last in service (Boron Meter or samples). IF the current RCS Boron is less than or equal to 25 ppm, THEN the effluent of the CVCS Bed Demineralizer [WHEN it was last in service (Boron Meter or samples)] is less than or equal to the current RCS Boron concentration. (Step 7.4.1) The Operator will continue with step 7.4.2 as ALL of the conditions are met for the CVCS 		
	RO	ENSURE that the demineralizer being restored to service is the same demineralizer that was in service at the time it was bypassed, OTHERWISE PLACE the demineralizer in service per Section 34.0, 37.0, 39.0, or 63.0as appropriate.		
	RO	PLACE "DIVERT TCV-0143" in the DEMIN		
		position. (Step 7.4.2)		
	RO	NOTIFY Chemistry that the CVCS Demineralizers are in service. (Step 7.4.2)		

Op-Test	Op-Test No.: 1 Scenario No.: 1 Event No.: 2 (Examiner Trigger)				
Event De	Event Description: SG 1A Main Steam Radiation Monitor RT-8046 failure.				
Time	Position	Required Operator Actions	Notes		
	BOP	Acknowledges RM-11 alarm.			
	SRO BOP	Determines RM-11 alarm is a High Alarm on RT- 8046, SG 1A Main Steam Radiation Monitor.			
	SRO	Directs actions of 0POP04-RA-0001, Radiation Monitor System Alarm Response.			
		NOTE: Steps 1 to 6 of 0POP04-RA-0001, Radiation Monitor System Alarm Response, can be performed as 'Skill of the Craft' per Conduct of Operations, Chapter 2.			
	BOP	Uses 0POP04-RA-0001, Radiation Monitor System Alarm Response, Addendum 19, to respond to the high alarm indicated for RT-8046.			
	BOP	 CHECK ALERT Or HIGH Alarm Exists On One Or More Of The Following Radiation Monitors: RT-8046 RT-8047 RT-8048 RT-8049 			
	BOP	CHECK For Increased Readings On The Following Radiation Monitors: RT-8010B RT-8022 RT-8023 RT-8023 RT-8024 RT-8025 RT-8027 RT-8043 RT-8130A RT-8131A RT-8132A RT-8133A (ADD 19, Step 2) Increased readings on these radiation monitors would validate a high reading on RT-8046. However, they are all reading normal and the Operator will go to the RNO for step 2.			

Op-Test	Op-Test No.: 1 Scenario No.: 1 Event No.: 2 (Examiner Trigger)				
Event De	Event Description: SG 1A Main Steam Radiation Monitor RT-8046 failure.				
Time	Position	Required Operator Actions	Notes		
	SRO BOP	 PERFORM the following: IF RT-8027 is secured, THEN EVALUATE if chemistry should place RT-8027 inservice. CONFIRM alarm condition by sample analysis. IF sample analysis confirms the alarm condition is valid, THEN GO TO Step 3.0 of this Addendum. IF sample analysis confirms the alarm condition is invalid, THEN GO TO procedure and step in effect. (ADD 19, Step 2 RNO) The Operator will determine that no confirmation exists to validate the alarm on RT-8046 is valid. The SRO will declare RT-8046 INOPERABLE and enter TS 3.3.3.6. See TS details below. (Event 3 can be triggered after SRO has announce TSs or on request from the lead examiner.) 			
TS 3 3 3 6 Function 16 Action 40a					

unction 16, Action 40a

With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirements and with a functional diverse channel, restore at least one inoperable channel to OPERABLE status within 30 days, or submit a Special Report within the next 14 days outlining the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the inoperable instrumentation channels to OPERABLE status.

NOTE: SG 1A Blowdown Radiation Monitor, RT-8022, is a functional diverse channel.

Op-Test No.: 1 Scenario No.: 1 Event No.: 3 (Examiner Trigger)					
Event De	Event Description: RCP 1B Thermal Barrier Isolation Valve goes closed after a CCW System perturbation.				
Time	Position	Required Operator Actions	Notes		
	RO	 Acknowledges and announces the following annunciators from 04M7 & 02M3: 04M7 - RCP 1B THERM BAR CCW FLOW/TEMP/TRBL (D-4) 02M3 - CCW HX 1A OUTL FLOW HI/LO (C-5) 			
		NOTE: The CCW perturbation is caused by Train A RHR HX, CC-FV-4531 failing open. This will cause CCW Pump 1C to start on system low pressure. The crew will look at associated ARPs for this part of the event but no actions will be taken including TSs because CC-FV-4531 fails in the required ESF position. The CCW alignment would have to remain as is until repairs could be made to CC-FV-4531.			
	SRO/RO	Determines "CCW THERM BAR ISOL MOV- 0374" has closed.			
	SRO	Directs actions of 0POP09-AN-04M7 - D4, RCP 1B THERM BAR CCW FLOW/TEMP/TRBL'			
	RO	 CHECK the following RCP 1B thermal barrier Plant Computer Points: FD4625, RCP 1B THERM BAR CCW DISCH FLOW (flow greater than 60 gpm) FD4626, RCP 1B THERM BAR CCW DISCH FLOW (flow less than 30 gpm) TD4626, RCP 1B THERM BAR CCW DISCH TEMP (temperature greater than 187°F) T0182, RCP 1B SEAL 1 WTR INLET TEMP (temperature less than 230°F) (Step 1) 			
	RO	IF RCP 1B thermal barrier CCW flow is high (greater than 60 gpm) OR thermal barrier CCW discharge temperature is high (greater than 187°F), THEN ENSURE "CCW THERM BAR ISOL MOV-0374" closed. (<i>Step 2</i>) <i>NOTE: CC-MOV-0374 is already closed</i> .			

Op-Test No.: 1		Scenario No.: 1 Event No.: 3 (Examiner Trigger)		
Event De	scription: R pe	CP 1B Thermal Barrier Isolation Valve goes closed a erturbation.	fter a CCW System	
Time	Position	Required Operator Actions	Notes	
	RO	IF "CCW THERM BAR ISOL MOV-0374" closed due to CCW flow perturbations as determined by the Shift Manager/Unit Supervisor, THEN GO TO 0POP04-RC-0002, Reactor Coolant Pump Off Normal, Addendum 1, Establishing Normal RCP Seal Cooling.		
		(Step 3)		
		NOTE: The US should make the decision to go to 0POP04-RC-0002, Reactor Coolant Pump Off Normal, Addendum 1, Establishing Normal RCP Seal Cooling.		
	SRO	Directs actions of 0POP04-RC-0002, Reactor Coolant Pump Off Normal, Addendum 1, Establishing Normal RCP Seal Cooling.		
	RO	CHECK RCP Seal Cooling – ANY SOURCE SUPPLYING COOLING FLOW • RCP thermal barrier CCW flow OR		
		RCP seal injection flow		
		(Add 1, Step 1)		
	RO	CHECK RCP Seal 1 Inlet Temperatures On Plant Computer Display RC-010 or RC-011 – ALL LESS THAN 230°F • T0181 RCP 1A • T0182 RCP 1B • T0183 RCP 1C • T0184 RCP 1D (Add 1, Step 2)		
	RO	CHECK RCP Thermal Barrier CCW Flow – LOST		
		(Add 1, Step 3)		
		NOTE: Flow is lost for RCP 1B		
	RO	CHECK CCW Pumps - AT LEAST ONE RUNNING (Add 1, Step 4)		

Op-Test	Op-Test No.: 1 Scenario No.: 1 Event No.: 3 (Examiner Trigger)				
Event De	Event Description: RCP 1B Thermal Barrier Isolation Valve goes closed after a CCW System perturbation.				
Time	Position	Required Operator Actions	Notes		
	RO	CHECK Running CCW Pump Common Header Supply And Return Valves – OPEN			
		(Add 1, Step 5)			
	RO	CHECK CCW To RCP Inlet And Outlet Thermal Barrier Containment Isolation Valves – OPEN • "INL OCIV MOV-0318" • "INL OCIV MOV-0291" • "OUTL ICIV MOV-0542" • "OUTL ICIV MOV-0403" • "OUTL OCIV MOV-0404" • "OUTL OCIV FV-4493" (Add 1, Step 6)			
	RO	 CHECK RCP Thermal Barrier CCW Outlet Valves OPEN RCP 1B(2B) "CCW THERM BAR ISOL MOV-0374" (Add 1, Step 7) 			
	RO	 OPEN RCP thermal barrier CCW outlet valves for RCP(s) WITH seal 1 inlet temperatures LESS THAN 230°F. RCP 1B(2B) "CCW THERM BAR ISOL MOV-0374" (Add 1, Step 7 RNO) 			
	RO	CHECK RCP Seal Injection Flow – LOST (Add 1, Step 8)			
	RO	RETURN TO Procedure step in effect. (<i>Add 1, Step 8 RNO</i>) (<u>Event 4</u> can be triggered on request from the lead examiner.)			

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Op-Test No.: 1		Scenario No.: 1 Event No.: 4 (Examiner	Trigger)	
Event Description: SG 1D Controlling NR level channel fails low. LT-0549				
Time	Position	Required Operator Actions	Notes	
	BOP	Acknowledges and announces the following annunciators on 06M4: SG 1D LVL DEV HI/LO (B6) SG 1D LVL LO-LO ALERT (D-6)		
		condition, then alarms will come in on SG 1D with the rising SG level.		
	SRO BOP	Determines SG 1D Controlling Narrow Range Channel LT-0549 is failed low. Performs immediate actions of 0POP04-FW-0001, Loss of Steam Generator Level Control:		
		 PLACE any SG Feedwater Regulating Valve(s) not properly responding in MANUAL AND ADJUST as necessary to restore affected SG NR level(s) to between 68% and 74%. 		
	SRO	Enters 0POP04-FW-0001, Loss of Steam Generator Level Control.		
	BOP	CHECK SG Feedwater Regulating Valve(s) - RESPONDING IN AUTOMATIC (See previous immediate action step)		
		(Step 1, an immediate action step.)		
	BOP	CHECK SGFP Speed Controllers - RESPONDING IN AUTOMATIC		
		(Step 2, an immediate action step, however, SGFP speed control in automatic is not affected.)		
	BOP	 CHECK Main Feedwater Regulating Valves: CHECK Main Feedwater Regulating Valve(s) - IN SERVICE SG 1A "NORM FCV-0551" SG 1B "NORM FCV-0552" SG 1C "NORM FCV-0553" SG 1D "NORM FCV-0554" CHECK Main Feedwater Regulating Valve(s) - ANY IN MANUAL CHECK Affected Main Feedwater Regulating Valve(s) - RESPONDING IN MANUAL (Step 3) 		

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Op-Test No.: 1		Scenario No.: 1 Event No.: 4 (Examiner	Trigger)
Event Description: SG 1D Controlling NR level channel fails low. LT-054			9
Time	Position	Required Operator Actions	Notes
	BOP	CHECK Low Power Feedwater Regulating Valves:	
		 CHECK Low Power Feedwater Regulating Valve(s) - IN SERVICE 	
		RNO	
		GO TO Step 5.0.	
		(Step 4)	
	BOP	CHECK SGFP Master Speed Controller - IN MANUAL	
		RNO	
		GO TO Step 7.0.	
		(Step 5)	
	BOP	CHECK Individual SGFP Speed Controllers - ANY IN MANUAL	
		RNO	
		GO TO Step 9.0. (<i>Step 7</i>)	
	BOP	MONITOR Feedwater/Steam Header DP –	
		GREATER THAN OR EQUAL TO DP REQUIRED BY Addendum 1	
		 SGFP Master Speed Controller At 100% Demand In Auto 	
		(Step 9)	
	BOP	RESTORE Affected SG NR Level(s) To Between 68% And 74%	
		(Step 10)	
	BOP	MONITOR SG NR Levels - GREATER THAN 20%	
		(Step 11)	
	BOP	MONITOR SG NR Levels - LESS THAN 87.5%	
		(Step 12)	

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Op-Test No.: 1		Scenario No.: 1 Event No.: 4 (Examiner	Trigger)
Event De	scription:	9	
Time	Position	Required Operator Actions	Notes
	BOP	CHECK SG NR Level Indicators - ALL OPERABLE	
		RNU REREORM the following:	
		 SELECT the operable SG level channel for affected SG(s) level control. LT-0574 CHECK status of "QDPS ALARM SGWLCS" Annunciator Lampbox 6M03, Window A-8. IF Annunciator Lampbox 6M03, Window A-8 is illuminated, THEN DETERMINE the alarming channels(s) using the QDPS DETAIL DATA Menu, Page 5 display. 	
		(Step 13)	
		NOTE: SG 1D NR Level Indicator LT-0549 is failed low.	
	BOP	CHECK Feedwater Flow Transmitters - ALL OPERABLE	
		(Step 14)	
	BOP	CHECK Steam Flow Transmitters - ALL OPERABLE	
		(Step 15)	
	BOP	CHECK Steam Pressure Transmitters - ALL OPERABLE	
		(Step 16)	
	BOP	CHECK SG NR Levels - BETWEEN 68% And 74%	
		(Step 17)	
	BOP	CHECK Main Feedwater Regulating And Low Power Feedwater Regulating Valves Automatic Control – OPERABLE	
		(Step 18) NOTE: Automatic control has not been affected.	

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Op-Test No.: 1		Scenario No.: 1 Event No.: 4 (Examiner	Trigger)		
Event De	Event Description: SG 1D Controlling NR level channel fails low. LT-0549				
Time	Position	Required Operator Actions	Notes		
	BOP	CHECK Main Feedwater Regulating OR Low Power Feedwater Regulating Valve(s) - IN AUTO • SG 1D "NORM FCV-0554" RNO			
		WHEN SG levels return to between 68% and 74%, THEN PERFORM the following:			
		 PLACE in-service Feedwater Regulating Valve(s) with operable Automatic Control in Auto. MONITOR proper operation of Feedwater Regulating Valve(s) in Auto. 			
		(Step 19)			
	BOP	CHECK SGFP Master Speed Controller - IN AUTO			
		(Step 20)			
	SRO	TAKE Appropriate Actions Per Technical Specifications 3.3.1, 3.3.2, 3.3.3.6 and TRM 3.7.1.7			
		(Step 21)			
		See TS details below.			

OPERATOR ACTIONS

TS 3.3.1, Function 14, Action 6; and TS 3.3.2, Function 5.b, Action 20 and 3.3.2, Function 6.d, Action 20

With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. For Functional Units with installed bypass test capability, the inoperable channel may be placed in bypass, and must be placed in the tripped condition within 72 hours.

Note: A channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.1.1, provided no more than one channel is in bypass at any time.

- b. For Functional Units with no installed bypass test capability,
 - 1. The inoperable channel is placed in the tripped condition within 72 hours, and
 - 2. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.1.1. (4.3.2.1)

SRO	NOTIFY I&C To Place The Affected Channel In Trip Or Bypass. REFER TO Addendum 2, Procedure List For The Appropriate Procedure	
	(Step 22)	

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Op-Test No.: 1		Scenario No.: 1	Event No.: 4 (Examiner T	rigger)	
Event De	Event Description: SG 1D Controlling NR level channel fails low. LT-0549				
Time	Position	Required Op	erator Actions	Notes	
	SRO	INITIATE Corrective Act Component	ions For Failed		
		(Step 23)			
		(<u>Event 5</u> can be triggere announce TSs or on req examiner.)	ed after SRO has uest from the lead		

Op-Test	No.: 1	Scenario No.: 1 Event No.: 5 (Examiner	Trigger)		
Event De	Event Description: LPHDP #11 Trip				
Time	Position	Required Operator Actions	Notes		
	BOP	Acknowledges and announces the following annunciator from 08M3:			
		LP HDP TRIP (A-4)			
	SRO BOP	Reports that Heater Drip Pump #11 has tripped. Refers to Annunciator Response Procedure (ARP).			
		(The ARP will direct the crew to go to 0POP04-CD-0001, Loss of Condensate Flow.)			
	SRO	Enters and directs the actions of 0POP04-CD- 0001, Loss of Condensate Flow.			
	BOP	 CHECK Required number of Condensate Pumps Running: LESS THAN 50% RTP – One Condensate Pump GREATER THAN 50% RTP – Two Condensate Pumps 			
		(Step 1)			
	BOP	ENSURE Discharge Valve Of Any Secured/Tripped Condensate Pump Is CLOSED			
		(Steps 2)			
	BOP	 MONITOR ICS Parameters For Running Condensate Pumps: Motor winding temperatures < 266°F Pump thrust bearing temperatures < 200 °F (<i>Steps 3</i>) (<i>Condensate Pumps are operating normally</i>) 			
	BOP	CHECK LPHD Pump Status – All Running RNO IF LPHD Pump(s) tripped, THEN GO TO Addendum 2, LPHD Pump Trip			
		(Step 4)			
	BOP	CHECK FWH 15(25) & 16(26) Strings – INSERVICE			
		(Addendum 2, Step 1)			
	ROD	(Addendum 2, Step 2)			
		(Demand will be at 100%)			

Op-Test	No.: 1	Scenario No.: 1 Event No.: 5 (Examiner	Trigger)
Event Do	escription:	LPHDP #11 Trip	
Time	Position	Required Operator Actions	Notes
	BOP	START Third Condensate Pump Per Addendum 1, Condensate Pump Start That Requires Venting Prior To Start	
		(Addendum 2, Step 3)	
	BOP	Checks if SGFPT SEAL WTR DP LO Annunciators lit.	
		 If so, DA Level Control valve is throttled closed to clear SGFPT SEAL WTR DP LO alarms (3) on CP-006. 	
		(Addendum 1, Steps 1 and 2)	
		(Condensate Pump 13 will be started.)	
	BOP	 VERIFY Miniflow Recirc Line Is Full By Dispatching An Operator To Vent The "COND PUMP MINIFLOW RECIRC VENT" For Pump To Be Started: Pump 13 "1-CD-0786" 	
		(Addendum 1, Step 3)	
	AO	(The TGB watch will report back that the recirc line has been vented.)	
	BOP	Dispatch an operator to ENSURE "1-CD-0801, COND PUMPS DISCH COMMON VENT LINE ISOL VALVE" IS OPEN <u>AND</u> to OPEN "1-CD- 0802 COND PUMP 13 DISCH COMMON VENT LINE ISOL VALVE"	
		(Addendum 1, Steps 4 and 5)	
	AO	(The TGB watch will report back that CD-801 and CD-802 are open.)	
	BOP	START The Selected Condensate Pump: • "COND PUMP 13"	
		(Addendum 1, Step 6)	
	BOP	Dispatch an Operator to CLOSE "1-CD-0802 COND PUMP 13 DISCH COMMON VENT LINE ISOL VALVE"	
		(Addendum 1, Step 7)	
	AO	(The TGB watch will report back that CD-802 has been closed.)	

Op-Test	No.: 1	Scenario No.: 1 Event No.: 5 (Examiner	Trigger)
Event Description: LPHDP #11 Trip			
Time	Position	Required Operator Actions	Notes
	BOP	PLACE DA Level Controller In Manual AND LOWER Demand To < 80%	
		(Addendum 1, Step 8)	
		(Will reduce the chance of a CP Bypass.)	
	BOP	 OPEN Condensate "PUMP DISCH ISOL" Valve For Condensate Pump Started To Place Pump In Service: PUMP 13 "MOV-0088" 	
		(Addendum 1, Step 9)	
		(With 3 CD Pumps aligned and running there is a chance for a CP Bypass to occur.)	
	BOP	CONTROL DA Level Control Valve To Restore DA Level	
		(Addendum 1, Step 10) (Last step of this addendum, the SRO should go to Addendum 2, Step 5.)	
		(<u>Event #6</u> can occur after this point at the discretion of the Lead Examiner.)	
	BOP	RETURN To Procedure And Step In Effect	
		(Addendum 1, Step 11)	
		(Last step of this addendum, the SRO should go back to Addendum 2, Step 5.)	
	BOP	CHECK Affected Flash Tank High Level Dump Valve Is Maintaining Flash Tank Level	
		(Addendum 2, Step 5)	
	BOP	 PERFORM The Following For The Affected LPHD Flash Tank: PLACE the flash tank level control valve controller in manual CLOSE the flash tank level control valve DISPATCH An Operator To Investigate The Cause For LPHD Pump Trip (Addendum 2, Step 6) (Since the cause of the LPHD Pump 11 trip is 	
		investigation prior to trying a restart.)	
		(The crew will mark their place in Addendum 2 and GO TO procedure step 12.0.)	

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Op-Test No.: 1		Scenario No.: 1 Event No.: 6 & 7 (Examin	ner Trigger Event 6)		
Event De	scription: E tı E iı E	 went 6 - Main Generator Output Breaker trips open, rip and inadvertent FWI. went 7 - On the RX Trip the Main Turbine fails to automative trent FWI. (CT - 13) Event 8 - Train B 4160V bus lockout. (On Reactor Trees and the sector Trees and the s	ain Generator Output Breaker trips open, Main Turbine fails to auto vertent FWI. In the RX Trip the Main Turbine fails to auto trip and there is an FWI. (CT - 13) rain B 4160V bus lockout. (On Reactor Trip)		
Time	Position	Required Operator Actions	Notes		
	ALL	Notice RCS temperature and pressure rising, SG Levels and Feedwater flows lowering and several annunciator alarms. (NOTE: If the crew is slow to diagnose this condition, the reactor may automatically trip.)			
	SRO	Directs a Reactor Trip			
	SRO	Enters 0POP05-EO-EO00, Reactor Trip or Safety Injection, and ensures immediate actions are performed.			
	RO CT-13	Completes immediate actions of 0POP05-EO- EO00 and determines: Reactor is tripped (Step 1) Turbine is NOT tripped (Step 2) VERIFY all turbine throttle valves – CLOSED RNO Manually TRIP turbine If turbine will NOT trip (UNIT TRIP light NOT lit), THEN *PLACE EH pumps in PULL TO LOCK Manually RUNBACK turbine AC ESF Busses are energized except for Train B (Step 3) Train B 4.16KV ESF Bus has an over- current lockout. The operator must trip ESF DG #12 because the diesel is running with no cooling water. (Event 8)			
	BOP	 Check SI status (Step 4) (RO will complete immediate actions. BOP Operator will monitor the plant and make an announcement of the Reactor trip.) (During a pause between performing immediate actions and verifying immediate actions, the BOP should notice and announce that only AFW Pump #13 is running. (AFW Pump #11 is OOS, #12 has no power and AFW Pump #14 tripped on overspeed.) 			

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Op-Test No.: 1		Scenario No.: 1 Event No.: 6 & 7 (Exami	ner Trigger Event 6)
 Event Description: Event 6 - Main Generator Output Breaker trips open, trip and inadvertent FWI. Event 7 - On the RX Trip the Main Turbine fails to autinadvertent FWI. (CT - 13) Event 8 - Train B 4160V bus lockout. (On Reactor Trip 			Main Turbine fails to auto to trip and there is an ip)
Time	Position	Required Operator Actions	Notes
	SRO	Directs/ensures the immediate actions of EO00, Reactor Trip/SI have been completed by performing a procedure read through of them.	
		During the read through of the immediate actions of EO00 the operator will notice that AFW Pump #13 has now tripped and there is no AFW flow.	
		If a Safety Injection has actuated, then the SRO will continue with 0POP05-EO-EO00.	
		If a Safety Injection has NOT actuated, then the SRO will transition straight to 0POP05-EO- FRH1, Response to Loss of Secondary Heat Sink.	
		(See Actions FRH1 on page 24.)	
	BOP	VERIFY Proper SI Equipment Operation Per ADDENDUM 5, VERIFICATION OF SI EQUIPMENT OPERATION	
		(Step 5)	
		(See Actions on pages 26-28)	
	RO	 MONITOR If Containment Spray Is Required: Containment pressure - GREATER THAN 9.5 PSIG (QDPS) 	
		 PERFORM the following: CHECK Containment pressure - HAS EXCEEDED 9.5 PSIG "PRESS PR-0934" "EXTD RNG PRESS PR-9759" IF containment pressure HAS EXCEEDED 9.5 PSIG, THEN GO TO Step 6.b. IF containment pressure HAS REMAINED LESS THAN 9.5 PSIG, THEN GO TO Step 7. (Step 6) (Containment pressure will be less than 9.5 psig 	
		and the crew will GO TO Step 7)	

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Op-Test	No.: 1	Scenario No.: 1 Event No.: 6 & 7 (Exami	ner Trigger Event 6)		
Event De	 Event Description: Event 6 - Main Generator Output Breaker trips open, Main Turbine fails to auto trip and inadvertent FWI. Event 7 - On the RX Trip the Main Turbine fails to auto trip and there is an inadvertent FWI. (CT - 13) Event 8 - Train B 4160V bus lockout. (On Reactor Trip) 				
Time	Position	Required Operator Actions	Notes		
	RO	 VERIFY Total AFW Flow – GREATER THAN 576 GPM RNO PERFORM the following: IF SG NR Level GREATER THAN 14% [34%] in any SG, THEN Control feed flow to maintain SG NR level. IF NR Level LESS THAN 14% [34%] in ALL SGs, THEN manually START pumps AND ALIGN valves. IF TOTAL AFW Flow CANNOT be established GREATER THAN 576 GPM AND SG NR Level in ALL SGs are LESS THAN 14% [34%], THEN GO TO 0POP05-EO- FRH1, RESPONSE TO LOSS OF SECONDARY HEAT SINK, Step 1. (Step 7) 			

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Op-Test	Op-Test No.: 1 Scenario No.: 1 Event No.: 8				
Event De	Event Description: Event 9 - Loss of Heat Sink and entry into FRH1. (CT - 46) Event 10 - AFW Pump 14 has an overspeed trip. Event 11 - AFW Pump 13 trips on overcurrent.				
Time	Position	Required Operator Actions	Notes		
	SRO	Enters 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink.			
	RO	 CHECK If Secondary Heat Sink Is Required: RCS pressure - GREATER THAN ANY NON-FAULTED SG PRESSURE RCS wide range hot leg temperatures - GREATER THAN 350°F 			
		(Step 1)			
	RO CT-46	 RCS BLEED AND FEED CRITERIA AFTER STEP 1: WITH a heat sink required per STEP 1, IF SG wide range levels on any TWO SGs are LESS THAN 50% [73%] OR pressurizer pressure is GREATER THAN OR EQUAL TO 2335 PSIG due to loss of secondary heat sink, THEN PERFORM the following: *TRIP RCPs* GO TO Step 11 to initiate bleed and feed to prevent core damage. (CIP) NOTE: At least 3 SG WR levels will probably be less than 50% when this procedure is entered, and the crew will trip all RCPs and go to Step 11. 			
	RO	ACTUATE SI			
		(Step 11)			
		(Actuating SI will start HHSI Pumps)			

Op-Test	No.: 1	Scenario No.: 1 Event No.: 8		
Event Description: Event 9 - Loss of Heat Sink and entry into FRH1. (CT - 46) Event 10 - AFW Pump 14 has an overspeed trip. Event 11 - AFW Pump 13 trips on overcurrent.				
Time	Position	Required Operator Actions	Notes	
	RO CT-46	 VERIFY RCS Feed Path: CHECK CCP pump status - at least one running Maximum Charging Flow ESTABLISHED RNO – If SI had actuated then the oerator will have to reset Phase A and open the Charging OCIV, CV-MOV-0025. Establish Maximum Charging (≥ 150 gpm) CHECK HHSI pumps - (at least 2 for CT) CHECK valve alignment for operating HHSI pumps: HHSI pumps suction from RWST OPEN HHSI pumps discharge valves OPEN HHSI cold leg injection valves - OPEN 		
	RO CT-46	 ESTABLISH RCS Bleed Path: VERIFY power to BOTH pressurizer PORV isolation valves – AVAILABLE (RC-MOV-0001B will not have power but the valve was open when power was lost.) VERIFY both pressurizer PORV isolation valves – OPEN OPEN both pressurizer PORVs (Step 13) (Terminate Scenario) 		

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Op-Test No.: 1 Scenario No.: 1 Event No.: N/A				
Event Description: 0POP05-EO-EO00, Addendum 5, Actions if SI actuated.				
Time	Position	Required Operator Actions	Notes	
	BOP	 VERIFY FW isolation: SGFPTs – TRIPPED SU SGFP – TRIPPED VERIFY the following valves –CLOSED FWIVs FWIBs FW preheater bypass valves FW regulating valves Low power FW regulating valves SG blowdown isolation valves SG sample isolation valves SG sample isolation valves (POP05-EO-EO00, Reactor Trip or Safety Injection, Addendum 5, Step 1) (OPOP05-EO-EO00, Reactor Trip or Safety Injection.) (This addendum is performed in parallel with Steps 5 to 15 of 0POP05-EO-EO00, Reactor Trip or Safety Injection.) 		
	BOP	CHECK if main steamline should be isolated: CHECK for any of the following conditions: Containment pressure – GREATER THAN OR EQUAL TO 3 PSIG OR SG pressure (without low steamline pressure SI blocked) - LESS THAN OR EQUAL TO 735 PSIG OR SG pressure (with low steamline pressure SI blocked) - LESS THAN OR EQUAL TO 735 PSIG OR SG pressure (with low steamline pressure SI blocked) - LOWERING AT A RATE GREATER THAN OR EQUAL TO 100 PSI/SEC, BY OBSERVANCE OF THE STEAMLINE PRESSURE RATE BISTABLES RNO GO TO Step 3 of this Addendum 		
	BOP	 VERIFY AFW system status: Motor-driven pump – RUNNING Turbine-driven pump – RUNNING 		
	BOP	VERIFY AFW valve alignment - PROPER EMERGENCY ALIGNMENT (Step 4)		

Op-Test No.: 1 Scenario No.: 1 Event No.: N/A				
Event Description: 0POP05-EO-EO00, Addendum 5, Actions if SI actuated.				
Time	Position	Required Operator Actions	Notes	
	BOP	VERIFY total AFW Flow - GREATER THAN 576 GPM (Step 5)		
	BOP	 VERIFY containment isolation phase A: Phase A – ACTUATED (Step 6) 		
	BOP	 VERIFY ECW status: ECW pumps – RUNNING ECW pump discharge isolation valves – OPEN (Step 7) 		
	BOP	VERIFY CCW pumps – RUNNING (Step 8)		
	BOP	VERIFY RCFC status: • RCFCs – RUNNING • Cooling water - TRANSFERRED TO CCW (Step 9)		
	BOP	 VERIFY SI pump status: HHSI pumps – RUNNING LHSI pumps – RUNNING (<i>Step 10</i>) 		
	BOP	VERIFY SI valve alignment – PROPER EMERGENCY ALIGNMENT (Step 11)		
	BOP	 VERIFY SI flow: RCS pressure - LESS THAN 1745 PSIG (RNO) GO TO Step 13 of this Addendum. (Step 12) 		
	BOP	 VERIFY containment ventilation isolation: Containment atmosphere radiation monitor isolation valves – CLOSED Normal purge supply and exhaust fans – STOPPED Supplemental purge supply and exhaust fans – STOPPED Purge Dampers – CLOSED (Step 13) 		

Op-Test No.: 1 Scenario No.: 1 Event No.: N/A				
Event Description: 0POP05-EO-EO00, Addendum 5, Actions if SI actuated.				
Time	Position	Required Operator Actions	Notes	
	BOP	 VERIFY ventilation actuation: Control room HVAC – OPERATING IN EMERGENCY RECIRC EAB HVAC - OPERATING IN EMERGENCY RECIRC FHB HVAC - OPERATING IN EMERGENCY MODE FHB Exhaust Fans - ONLY TWO TRAINS OPERATING Exhaust booster fans Main exhaust fans (RNO) PERFORM the following: IF three trains FHB exhaust fans running, THEN PLACE one train FHB exhaust fans in PULL TO LOCK. (Back to A/ER) SECURE one FHB filter train by PERFORMING the following: PLACE the outlet damper Controller in manual Manually close the outlet damper VERIFY proper operation of filter train in service Essential chilled water pumps – RUNNING ESCS pump room fan coolers – RUNNING AFW pump cubicle fans – RUNNING FHB truck bay doors – CLOSED 		
	BOP	NOTIFY Unit Supervisor that Addendum 5 is COMPLETE (Step 15)		
	SRO	IMPLEMENT Functional Restoration Procedures as required (Step 16)		
	SRO	RETURN TO procedure step in effect. (Step 17)		

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO	CT-13 MANUALLY TRIP THE MAIN TURBINE Place EHC Pumps	Manually trip the main turbine before a severe (Orange Path) challenge develops to either the Subcriticality or Integrity CSF OR before transition to 0POP05-EO-EC21, whichever happens first.	
	indication green lights lit and pump EHC discharge pressure slowly lowering to main turbine trip setpoint.	 SAFETY SIGNIFICANCE Failure to trip the main turbine under the postulated plant conditions causes challenges to CSFs beyond those irreparably introduced by the postulated conditions. Additionally, such an omission constitutes a failure by the crew to "demonstrate the ability to take one or more actions that would prevent a challenge to plant safety." Thus, failure to manually trip the main turbine under the postulated conditions can result in challenges to the following CSFs: Integrity Subcriticality 	

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO	 CT-46 INITIATE RCS BLEED AND FEED Trip the RCPs – Pump indication green lights lit. Ensure at least one CCP running – Pump indication red light lit. Maximum charging flow – Charging flow ≥ 150 gpm. HHSI Pumps running (at least 2) – Pump indication red lights lit and HHSI cold leg flow to RCS indicated. Open both PZR PORVs – Valve indication green lights lit. 	Initiate RCS Bleed and Feed so that the RCS depressurizes sufficiently for HHSI pump injection to occur prior to CET temperature reaching 708°F or an Orange Path on Core Cooling. SAFETY SIGNIFICANCE for HP Plants: For the HP plants, failure to initiate RCS bleed and feed results in significant and sustained core uncovery. If bleed and feed is successfully initiated, then core uncovery is prevented or minimized. Acceptance criterion used in WCAP- 16902-P, "Loss of Secondary Heat Sink Upgrade Analysis for Emergency Response Guideline FR-H.1," for successful bleed and feed cooling of the RCS is that the core exit vapor temperature does not exceed 1200°F on the average fuel rod channel, which is considered appropriate for a beyond design basis event. Analysis showed that when this criterion is met, long term core cooling is sustained through RCS bleed and feed heat removal. Stopping all RCPs is included as an element of this critical task. If the crew fails to trip the RCPs as instructed by FR- H.1, then pump heat from the RCPs continues to be transferred into the RCS, leading to earlier dryout of the SGs. SG dryout results in all decay heat being absorbed by the RCS, which causes RCS pressure to rise rapidly. When the PZR PORVs open (due either to automatic operation on high system pressure or to manual actuation by the crew during establishment of RCS bleed and feed cooling), the higher system pressure (higher than if RCPs had been manually tripped per instruction) results in a higher rate of RCS inventory depletion and reduced SI flow. The acceptable results for RCS bleed and feed cooling obtained in the loss of secondary heat sink analyses of WCAP-16902-P are predicated upon manually tripping all RCPs prior to CET temperature reaching 708°F or an Orange Path on Core Cooling.	
If an operator or the Crew significantly deviates from or fails to follow procedures that affect the maintenance of basic safety functions, those actions may form the basis of a CT identified in the post-scenario review.			

EXPECTED BOOTH COMMUNICATIONS

EVENT 1:

- As Chemistry and Health Physics, acknowledge that CVCS alignment will be changing. **EVENT 2:**
- As a Plant Operator, if asked, CCW Pump 1C is running SAT.
- As I&C Maintenance or the Duty Maintenance Supervisor, if notified of the failure of RT-8046, report that an I&C maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the failure of RT-8046. No further action is necessary.

EVENT 3:

- As the Duty Maintenance Supervisor, if notified of the failure of Train A RHR HX, CC-FV-4531, report that a maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the failure of Train A RHR HX, CC-FV-4531. No further action is necessary.

EVENT 4:

- As I&C Maintenance or the Duty Maintenance Supervisor, if notified of the failure of SG 1D NR level transmitter, LT-0549, report that an I&C maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the failure of SG 1D NR level transmitter, LT-0549. No further action is necessary.

EVENT 5:

- As a Plant Operator, if asked, LPHD Pump #11 has an overcurrent indicated.
- As a Plant Operator, if asked, the TGB watch will report the following
 - CD Pump #13 recirc line is vented.
 - CD-0801 and CD-0802 are open and then that CD-0802 is reclosed after pump has started.
 - 13.8 KV Switchgear room is clear and CD Pump #13 is good to start.
- As Mechanical Maintenance or the Duty Maintenance Supervisor, if notified of the trip of LPHD Pump #11 report that a maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the trip of LPHD Pump #11. No further action is necessary.

EVENT 6 and 7:

• There are no Booth Communications expected for Events 6 & 7.

EXPECTED BOOTH COMMUNICATIONS (cont'd.)

EVENT 8:

• If asked, as a plant operator, report that 4.16KV ESF Bus Train B has over current flags actuated.

EVENT 9, 10 and 11:

- If asked, as a plant operator, report that AFW Pump #13 has an acrid smell at the motor and the breaker has an over current flag actuated.
- If asked, as a plant operator, report that AFW Terry Turbine has tripped on overspeed and attempts are being made to reset the overspeed trip device. Report that Mechanical Maintenance assistance may be needed.

EXPECTED BOOTH ACTIONS

- 1. If asked to open the Deaerator High Level Dump Bypass Valves, then trigger the step for 'DA HLD Bypass Valves FW-486 & FW-487'.
- 2. If asked to fill the AFWST, then trigger the step for 'AFWST Makeup'.

SIMULATOR SETUP

NOTE

<u>ALL</u> Annunciator Response Procedures (ARP's) must be checked if this scenario is the first to be run on this day. Setup for subsequent runs of this scenario only requires those ARP's that were actually marked in to be checked.

Instructors running the scenario must keep track of which ARP's these are, otherwise, all will have to be checked for subsequent scenarios as well.

Each time before running the scenario check and/or clean the following: 1st Peer 2nd 3rd 4th **Specific Scenario Procedures** Peer Peer Peer After Last Scenario $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ 0POP02-CV-0004. Chemical and Volume Control System Subsystem 0POP04-RA-0001, Radiation Monitor System Alarm Response 0POP09-AN-04M7 - D4, RCP 1B THERM BAR CCW FLOW/TEMP/TRBL' 0POP04-RC-0002, Reactor Coolant Pump Off Normal, Addendum 1, Establishing Normal RCP Seal Cooling 0POP04-FW-0001, Loss of Steam Generator Level Control 0POP04-CD-0001, Loss of Condensate Flow 0POP05-EO-EO00, Reactor Trip or Safety Injection 0POP05-EO-FRH1, Response to Loss of Secondary Heat Sink 1st Peer 2nd Peer 3rd Peer 4th Peer After Last **Other Procedures Used By Students** Scenario $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ **During Scenario Including POP09s.** 3rd 1st Peer 2nd Peer Peer **∆**th Peer After Last **Miscellaneous Items to Restore** Scenario $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ STA ICS Screens to PD Menu All ICS Trends to normal (not scenario specific) Student Selected ICS Points changed to U1118 **Control Panel ICS Screens to Normal RM 11 History and Screens** RM 23 – No Alarm Indications

SIMULATOR SETUP (cont'd.)

NOTE

The Scenario Lesson Plan <u>MUST</u> be run from the left most Instructor Station in Simulator Booth.

For LOT 24 the Simulator Configuration must be set to: **'wsTrain_Sep2021/Train_Sep2021'**

- Log into Instructor Workstation as 'lotnrc' user, open Orchid (nstps server), then 'Unlock' Initial Conditions Group 'lotnrc'.
- Reset to IC #201 and perform the following:
 - Switch Check
 - Ensure red light on end of CP-010 off
 - Ensure ICS Annunciators have stopped counting up
- Go to RUN and perform the following:
 - Ensure Simulator is ready by performing applicable checkoffs from LOR-GL-0006, LOR Conduct of Simulator Training Guidelines, Addendum 5, Simulator Readiness Checklist.
 - Ensure VCT Makeup Integrators are set as follows:
 - Momentarily place RC M/U CONT to STOP and then START to reset BA BATCH/GALLONS and TOT M/U BATCH/GALLONS counters to zero.
 - Reset BA BATCH/GALLONS setpoint to 0 gallons and reset TOT M/U BATCH/GALLONS setpoint to 10 gallons.
 - Verify BA Controller Pot setting is 2.50
 - Place ECO Tag on AFW Pump #11
- Open lesson plan for 'Scenario 1' in 'lotnrc' directory for LOT 24, then EXECUTE lesson plan. These actions will set up any initial conditions for the scenario.
- If this scenario IC has changing conditions (i.e. Xenon is changing, etc.), then place the simulator in FREEZE, otherwise it is OK to leave in RUN.
- Run the scenario in accordance with the next section, 'Scenario Instructions'.

SCENARIO INSTRUCTIONS

NOTE

Steps 1 to 4 below can be performed in the LOR Debrief Room prior to the crew coming into the Simulator provided exam security measures are taken.

- 1. Provide Shift Turnover sheets to the crew and review the information.
- 2. Have the Crew perform a Pre-Job Brief closing the 85-100 gpm letdown orifice. Ensure the crew doesn't have any other questions about the Shift Turnover.
- 3. Ensure the Beacon book from the simulator is available to the crew if they are in the LOR Debrief Room.
- 4. Review the Simulator Differences list with the crew if needed.
- 5. When signaled by Simulator Staff, have the crew perform their board walkdown and inform the floor instructor when ready to take the watch.
- 6. Ensure the simulator is in RUN and verify simulator clock is set correctly. Note the time that the Crew takes the watch.

NOTE

Malfunction Step and/or Lesson Plan Steps (Events) are triggered upon the Lead Examiners signal during the scenario unless an agreed upon time is discussed with the examiner prior to the start of the scenario.

Always 'TRIGGER' events in the Simulator Scenario Lesson Plans. This way delays associated with events will take place as intended.

Refer to 'EXPECTED BOOTH COMMUNCATIONS' and 'EXPECTED BOOTH ACTIONS' Sections for instructions for Instructor actions during the scenario.

- 7. Trigger the step titled 'Start Chart' and ensure specified Recorded Parameters for the scenario begin recording as the scenario runs. If the chart speed is NOT set to 5400 seconds (90 minutes) then perform the following:
 - Under 'CHARTS' click on 'SET TIME'
 - In the dialog box enter 5400 seconds (90 minutes)
 - Click OK.
- 8. The crew will close the 25-30 gpm letdown orifice Event #1
- 9. When signaled by Lead Examiner, trigger **MALFUNCTION STEP** This will insert Step #1, Event #2.
- 10. When signaled by Lead Examiner, trigger STEP 2 Event #3
- 11. When signaled by Lead Examiner, trigger STEP 3 Event #4
- 12. When signaled by Lead Examiner, trigger STEP 4 Event #5
- 13. When signaled by Lead Examiner, trigger STEP 5 Event #6
- 14. Place simulator in FREEZE when cued by the Lead Examiner to terminate scenario.
- 15.DO NOT RESET simulator until the steps on the next page are completed and all Examiners have completed Follow-Up Questioning.

SCENARIO INSTRUCTIONS (cont'd.)

NOTE

Some scenarios will have more than one chart. For these, each chart file must be separately saved with a unique filename.

16. Saving Recorded Parameters Data

- Click on the 'Charts' icon on the left side of the screen
- Select 'Pause' icon, then select 'All'
- Click on the 'Print Chart' icon, then select 'All'
- This will bring up a window in the TASK BAR called PRIMOPDF.
- Click on 'Create PDF'
- This will bring up a File Save As window.
- Save to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 Scenario 1' followed by a name that identifies the crew (e.g. 'Crew A).
- Save the new file. It will be saved in a folder already on the desktop. LOT24 Charts.
- 17. Saving Scenario SAM (Simulator Action Monitor)
 - Under 'TOOLS' click on 'SAM'
 - In the dialog box that comes up click on 'SAVE TO'
 - Save as a 'TEXT FILE' to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 SAM INFO Scenario 1' followed by a name that identifies the crew (e.g. 'Crew A).
SCENARIO - 01

	0POP01-ZQ-0022			
Plant Operations Shift Routines				
For Training Only Shift Turnover Checklist Page 1 of 1				

PART I - To be completed prior to shift turnover.

Unit:	<u>1</u> Off- Go	oing Shift:	Days (Nights)	Dat	e: <u>Today</u>		Mode:	<u>1</u>
	Dilution		E	Boration		Co	ntrol Rods	
Current	1% Pwr	1° F	Current	1% Pwr	1° F	Current	1% Pwr	1° F
Setpoint	Change	Change	Setpoint	Change	Change	Position	Change	Change
10			0					
	240	263	flushing with	36	39	227	9	9
	As Required		As	Required		As	s Required	
∧l Target				Channel		RCS Boror	ı	

[∆]l Target -3.73%

U1144

880

<u>Unit 1 Status</u>

- Mode 1, 100% Power
- Core burnup is 10,000 MWD / MTU, MOL
- AFW Pump #11 is Out of Service.

Load Reduction:

- 100-90%/1hr = **173**
- 100-80%/10min = **408**
- 100-75%/30min = **471**
- 100-60%/1hr = **454**
- 100-50%/10min = 727

Information:

- The crew will close the 25-30 gpm letdown orifice per 0POP02-CV-0004, Chemical and Volume Control System Subsystem, Section 10.0, Removing a Second or Third Letdown Orifice from Service with the RCS Pressurized. A satisfactory PMT was performed on the 25-30 gpm letdown orifice on the previous shift.
- BAT 1A & 1B Concentrations are 7300 ppm
- Fuel Handling Building truck bay doors are closed
- No personnel are in containment
- Ron Gibbs has the duty
- The NLO compliment is 5 watch standers and a head operator

ECO/LCO/RAsCAL:

TS 3.7.1.2 for AFW Pump #11, Action a. With one motor-driven auxiliary feedwater pump inoperable, within 28 days restore the pump to OPERABLE status or apply the requirements of the CRMP or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

LOT 24 NRC EXAM

SIMULATOR OPERATING TEST

SCENARIO #2

Revision 1

Week of 07/13/2020

SCENARIO OUTLINE

Facility:	South Te	xas Project	Scenar	io No.: 2	Op-Test No.: LOT 24 NRC
Examine	ers:			<u>Operators:</u>	
Initial Co • Mode <u>Turnover</u> • AFW P	<u>nditions:</u> 1 at 78% Po <u>:</u> ump #11 is	wer out of service		Critical Task • E5 – CT1 • E5 – CT3	<u>ss:</u> 7; Isolate the faulted/ruptured SG. 4; Begin Cooldown of RCS.
Event No.	Malf. No.	Event Type*	Event Description		
1 (1 min)	02-20-01 1.0	RO (I) SRO (I, TS)	PZR level channel LT-0465 fails high.		
2 (11 min)	05-17-01 1.0	BOP (I) SRO (I, TS)	1A SG PORV pressure transmitter (PT-7411) fails high.		
3 (16 min)	08-23-01 True	BOP (C) SRO (C)	Condensate Pump #11 Trips		
4 (21 min)	Multiple	RO (R) BOP (R) SRO (R)	Main Generate Bars 36B and reduction.	or Stator Cooling 36T. Including G	DT Alarm due to high DT across Stator GCM alarm that leads to fast load
5 (35 min)	50-SA-11 0.25 50-HB-10 0.1	ALL (M)	Faulted and R (2 Critical Tas	Ruptured SG 1B. sks)	Faulted on MS Line in IVC.
6 (N/A)	10-09-03 True	RO (C) BOP (C) SRO (C)	Loss of power to ESF 4.16KV E1C. (Integral to Scenario)		
7 (N/A)	Multiple	RO (C) SRO (C)	OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C. (Integral to Scenario)		
8 (N/A)	SD-59 1.0	BOP (C) SRO (C)	SG 1B Blowdown Isolation valve fails to close on the SI. Crew will have to close the SG 1B Blowdown Flow Control valve.		
			(Integral to S	cenario) (Part o	f Critical Task for isolating SG 1B)
Lot* (N)o	rmal, (R)ead	ctivity, (I)nstrum	ient, (C)ompor	nent, (M)ajor,	(TS) Technical Specification

Total Estimated Time: 1 hour, 20 minutes

	Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes
1.	Malfunctions after EOP entry (1–2)	3
2.	Abnormal events (2–4)	4
3.	Major transients (1–2)	1
4.	EOPs entered/requiring substantive actions (1–2)	2
5.	Entry into a contingency EOP with substantive actions (<u>></u> 1 per scenario set)	1
6.	Preidentified critical tasks (≥2)	2

SCENARIO MISCELLANEOUS INFORMATION

INSTRUCTOR NOTES:

- Critical Tasks are indicated by "**CT**-##" in the position column and indicated in bold type. In some instances, an "*" will indicate that only a portion of the task listed is considered critical.
- Shaded cells indicate procedural entry points.

RECORDED PARAMETERS:

Recorded parameters will be determined during NRC Validation week.

The parameters identified for recording may be of value in evaluating crew performance. Once the scenario is complete for each crew, printout the recorded parameters and label the printout with date, time, crew number and scenario number. See Scenario Instructions section for further details on how to save the Recorded Parameters.

- Pressurizer Level
- SG 1A Pressure
- SG 1A Steam Flow
- SG 1B Steam Flow
- SG 1B Feedwater Flow
- SG 1B Main Steam Rad Monitor, RT-8047

SCENARIO OBJECTIVES

Event 1 Objective

• Respond to a pressurizer level control malfunction in accordance with per 0POP04-RP-0002, Loss of Automatic Pressurizer Level Control.

Event 2 Objective

• Respond to an excessive steam demand per 0POP04-MS-0001, Excessive Steam Demand.

Event 3 Objective

• Respond to a Condensate Pump trip per 0POP04-CD-0001, Loss of Condensate Flow.

Event 4 Objective

 Respond to Main Generator Alarms per 0POP09-AN-07M3, Annunciator Response.

Event 5 Objective

 Respond to a Faulted and ruptured Steam Generator per 0POP05-EO-EO00, Reactor Trip or Safety Injection, 0POP05-EO-EO20, Faulted Steam Generator, 0POP05-EO-EO30, Steam Generator Tube Rupture and 0POP05-EO-EC31, SGTR with Loss of Reactor Coolant – Subcooled Recovery Desired.

Event 6 Objective

 Respond to a loss of power to a 4.16KV ESF Bus during a reactor trip per 0POP04-AE-0001, First Response to Loss of Any or All 13.8KV of 4.16KV Bus.

Event 7 & 8 Objective

 Respond to equipment failures during a reactor trip per 0P0P05-E0-E000, Reactor Trip or Safety Injection.

LOT 24 NRC OP-TEST SCENARIO #2 Rev 1 Page 5 of 42

Op-Test	No.: 1	Scenario No.: 2 Event No.: 1				
Event De	Event Description: PZR level channel LT-0465 fails high.					
Time	Position	Required Operator Actions	Notes			
	RO	 Acknowledges and announces the following annunciators on 04M8: PRZR LEVEL HI RX TRIP ALERT (A-6) PRZR LEVEL DEV HI B/U HTRS ON (C-6) CHG FLOW HI/LO (F-3) 				
		(NOTE: Other alarms may come in as the event progresses.)				
	SRO/RO	 Determines that Pressurizer Level Channel LT- 0465 failed high. Performs immediate actions of 0POP04-RP- 0002: PLACES "CHG FLOW CONT FK-0205" in Manual and controls PZR Level on Program. (Immediate Action of 0POP04-RP-0002, Loss of Automatic Pressurizer Level Control.) 				
	SRO	Directs action of 0POP04-RP-0002, Loss of Automatic Pressurizer Level Control.				
	RO	PLACE "CHG FLOW CONT FK-0205" Controller In MANUAL (Step 1 immediate action)				
	RO	ADJUST "CHG FLOW CONT FK-0205" To Maintain Pressurizer Program Level (Step 2 immediate action)				
	RO	VERIFY Letdown – IN SERVICE (Step 3) (Letdown will still be in service.)				

LOT 24 NRC OP-TEST SCENARIO #2 Rev 1 Page 6 of 42

Op-Test No.: 1 Scenario No.: 2 Event No.: 1					
Event Description: PZR level channel LT-0465 fails high.					
Time	Position	Required Operator Actions	Notes		
	RO	 CHECK All Pressurizer Level Channels - OPERABLE (RNO) PERFORM the following: POSITION Pressurizer level control selector switch to remove failed channel from service: Failed Channel Select RC-LT-0465 L467/466 RC-LT-0467 L465/467 RC-LT-0467 L465/466 POSITION Pressurizer level recorder selector switch to an operable channel. PLACE Pressurizer "HTR CONT GRP 1C" to ON. IF normal letdown has isolated, THEN PLACE excess letdown in service as necessary per Addendum 3 to maintain Pressurizer level on Pressurizer Program Level. NOTIFY I&C to bypass or trip the Pressurizer low level for the failed channel, using plant surveillance procedure listed in Addendum 4. (Step 4) (Selects channel L467/466) 			
	RO	CHECK All Tavg Channels – OPERABLE (Step 5)			
	RO	CHECK Tavg – WITHIN 1.5°F OF Tref (Step 6)			
	RO	CHECK Pressurizer Level - GREATER THAN 17% (Step 7)			
	RO	CHECK Normal Letdown – IN SERVICE (Step 8)			
	RO	CHECK "CHG FLOW CONT FK-0205" - OPERABLE (Step 9)			

LOT 24 NRC OP-TEST SCENARIO #2 Rev 1 Page 7 of 42

Op-Test	Op-Test No.: 1 Scenario No.: 2 Event No.: 1					
Event De	Event Description: PZR level channel LT-0465 fails high.					
Time	Position	Required Operator Actions	Notes			
	RO	 CHECK PZR Level Controller: CHECK PZR Level Controller LK- 0665 "LEVEL CONT." – OPERABLE PLACE PZR Level Controller LK- 0665 "LEVEL CONT." in MANUAL AND ADJUST output to match "CHG FLOW CONT FK- 0205" output PLACE PZR Level Controller LK- 0665 "LEVEL CONT." in AUTO (Step 10) 				
	RU	CHECK P2R Level Controller LK- 0665 "LEVEL CONT." Output Is Stable				
	RO	PLACE "CHG FLOW CONT FK-0205" In Automatic				
	RO	CHECK Pressurizer Level – MAINTAINED ON PRESSURIZER PROGRAM LEVEL (Step 13)				
	RO	CHECK Excess Letdown – ISOLATED (Step 14)				
	RO	REFER TO Addendum 7 For Applicable Technical Specifications (Step 15) (TS 3.3.1, Function 12, Action 6 - Place the failed channel in the tripped condition within 72 hours. See below for details.)				
TS 3.3.1, With the r	TS 3.3.1, Function12, Action 6 With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP					

OPERATOR ACTIONS

and/or POWER OPERATION may proceed provided the following conditions are satisfied: a. For Functional Units with installed bypass test capability, the inoperable channel may be placed in bypass, and must be placed in the tripped condition within 72 hours.

Note: A channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.1.1, provided no more than one channel is in bypass at any time.

LOT 24 NRC OP-TEST SCENARIO #2 Rev 1 Page 8 of 42

Op-Test	No.: 1	Scenario No.: 2	Event No.: 1	
Event Description: PZR level channel LT-0465 fails high.				
Time	Position	Required Op	erator Actions	Notes
	RO	INITIATE Corrective Ac Component (<i>Step 16</i>) (<u>Event 2</u> can be trigger announce TSs or on rec examiner.)	tion for Failed ed after SRO has quest from the lead	

Op-Test	Op-Test No.: 1 Scenario No.: 2 Event No.: 2 (Examiner Trigger)				
Event De	Event Description: 1A SG PORV pressure transmitter (P1-7411) fails high.				
Time	Position		Notes		
	BOP	Acknowledges and reports annunciator 6M03-A1, SG PORV NOT CLOSE.			
	SRO BOP	Diagnoses that 1A SG PORV is open.			
	SRO	Directs/ensures the actions of 0POP04-MS-0001, Excessive Steam Demand.			
	BOP	CHECK Reactor Power – LESS THAN OR EQUAL TO 100% (Step 1 Immediate Action Step) (Reactor Power is already < 100%)			
	BOP	 IDENTIFY And ISOLATE Steam Leak: CHECK Condenser Steam Dump Valves – CLOSED CHECK Steam Generator PORVs - CLOSED (RNO) ENSURE SG PORVs are responding to control SG pressures to LESS THAN OR EQUAL to 1225 psig. IF Steam Generator pressures are LESS THAN 1225 psig, THEN PERFORM the following: PLACE affected Steam Generator PORV(s) IN "MAN" AND CLOSE on MCB controller {CP006}: "PORV PV-7411" REFER TO Technical Specifications 3.3.5.1, 3.7.1.6 TS 3.3.5.1 Action 2a (Auto Actuation) TS 3.7.1.6 Action a (SG 1A PORV) GO to Step 3.0 (Step 2) (Event 3 can be triggered after SRO has announce TSs or on request from the lead examiner.) (See TS details on next page.)			

Op-Test	Op-Test No.: 1 Scenario No.: 2 Event No.: 2 (Examiner Trigger)			
Event De	scription: 1	A SG PORV pressure tra	nsmitter (PT-7411) fails high).
Time	Position	Required Operator Actions		Notes
TS 3.3.5. With one inoperable HOT STA TS 3.7.1.0 With one the requir CRMP; of following	1, Automati less than the e channel to NDBY within 6, Atmosph less than the ed atmosph be in at leas 6 hours and	c Actuation Control Cha e required number of OPE OPERABLE status or ap in the next 6 hours. eric Steam Relief Valves e required atmospheric st eric steam relief valves to st HOT STANDBY within place the required RCS/H	annels, Action 2a ERABLE channels, within 7 c ply the requirements of the 0 s, Action a eam relief valves OPERABL OPERABLE status or apply the next 6 hours and in HOT RHR loops in operation for de	days restore the CAMP; or be in at least E, within 7 days restore the requirements of the SHUTDOWN within the ecay heat removal.

Op-Test No.: 1 Scenario No.: 2 Event No.: 3 (Examiner Trigger)						
Event Description: Condensate Pump #11 Trip.						
Time	Position	Required Operator Actions	Notes			
	BOP	Acknowledges and announces the following annunciator on 9M01				
		COND PMP TRIP (A-1).				
	SRO BOP	Diagnoses that Condensate Pump (CD) #11 has tripped and closes CD Pump #11 discharge valve.				
		(Annunciator Response Step 1)				
	AO	(If called, the Plant Operator will report that there are no visible signs of trouble with the pump, however, the breaker has an over current indicated.)				
	SRO	Directs performance of 0POP04-CD-0001, Loss of Condensate Flow.				
	BOP	CHECK Required number of Condensate Pumps Running:				
		 GREATER THAN 50% RTP - Two Condensate Pump 				
		 RNO IF a Standby Condensate Pump is available AND DOES NOT require venting prior to start, THEN PERFORM the following: START Standby Condensate Pump (CD Pump #13) OPEN Condensate "PUMP DISCH ISOL" Valve for Condensate Pump started to place pump in service: PUMP 13 "MOV0088" CONTROL DA level control valve to restore DA level (Step 1 and Step 1 RNO) (DA level will be lowering slowly and operator may make manual adjustments with DA level controller as level is restored to the DA.) 				
	BOP	ENSURE Discharge Valve of any secured/tripped Condensate Pump is CLOSED (CD Pump #11) (Step 2)				
		(This step may have been performed earlier using the Annunciator Response procedure.)				

Op-Test	No.: 1	Scenario No.: 2 Event	No.: 3 (Examiner Trigge	er)	
Event De	Event Description: Condensate Pump #11 Trip.				
Time	Position	Required Operator Actions		Notes	
	RO	MONITOR ICS parameters for Condensate Pumps:	unning		
		 Motor Winding temperature 266°F. 	LESS THAN		
		 Pump Thrust Bearing tempe THAN 200°F. 	rature LESS		
		(Step 3)			
		(<u>Event 4</u> can be triggered on re lead examiner.)	quest from the		

TF

Op-Test	No.: 1	Scenario No.: 2 Event No.: 4 (Examiner	Trigger)
Event De	Event Description: Main Generator Stator Cooling DT Alarm due to high DT across Stator Bars 36B and 36T. Including GCM alarm that leads to fast load reduction.		
Time	Position	Required Operator Actions	Notes
	BOP	Acknowledges and announces the following annunciators from 07M3:	
		STATR COIL WTR DIFF TEMP HI/TEMP HI (A- 5)	
	SRO BOP	Determines a high Stator Cooling Water differential temperature between Stator Bars 36B and 36T.	
	SRO	Directs actions of 0POP09-AN-07M3, Window A-5, STATR COIL WTR DIFF TEMP HI/TEMP HI.	
	BOP	 CHECK the following ICS Trends for an indication of stator coil water differential temperature greater than 14.4(17.0)°F [U5524 Top Coil], 14.4°F [U5525 Bottom Coil] OR stator coil water temperature greater than 174°F [U5520 or U5521]: a) Generator Monitoring Global Trend – 63 b) Stator Coil Cooling Water Status Graphic - GC-011P 	
		(07M3 – A5, Step 1)	
		(Stator bar 36T will slowly rise over a 3-minute ramp causing a deltaT of 20.5°F with the rest of the top bars.)	
	BOP	IDENTIFY the affected thermocouples (ICS points T6112-T6154 & T6156-T6184) from ICS Point Groups 190 through 196 OR Custom Graphic GC-011P Stator Coil Cooling Status.	
		(07M3 – A5, Step 2)	
	BOP	IF alarm is caused by TCV-6100 cycling OR otherwise malfunctioning, THEN BYPASS TCV- 6100 per 0POP02-GC-0001, Generator Stator Cooling.	
		(07M3 – A5, Step 3)	
	AO	(If asked, a plant operator will report that TCV- 6100 is not cycling.)	

Op-Test	Op-Test No.: 1 Scenario No.: 2 Event No.: 4 (Examiner Trigger)		
Event Description: Main Generator Stator Cooling DT Alarm due to h 36B and 36T. Including GCM alarm that leads to f			DT across Stator Bars load reduction.
Time	Position	Required Operator Actions	Notes
	BOP	IF the problem indication is Failed (Failed high, low or erratic), THEN GO TO Step 10.	
		(07M3 – A5, Step 4)	
		(Will determine that temperature instruments are not failed.)	
	BOP	IF the alarm is caused by a differential temperature alarm that is being driven by one lowering thermocouple temperature, THEN GO TO Step 10. (07M3 – A5, Step 5) (Will determine Stator Bar 36T is NOT lowering.)	
	BOP	 IE either of the following conditions exist; Stator coil water differential temperature (U5524 or U5525) is greater than or equal to 21.5°F High stator coil water temperature (U5520 or U5521) is greater than or equal to 194°F THEN PERFORM the following: 1. IF Reactor Power is greater than P-9 (50%), THEN PERFORM the following: a) TRIP the Reactor. b) TRIP the Main Turbine. c) GO TO 0POP05-EO-EO00, Reactor Trip or Safety Injection. 2. IF Reactor Power is less than P-9 (50%), THEN PERFORM the following: a) TRIP the Main Turbine. GO TO 0POP04-TM-0003, Turbine Trip Below P-9. (07M3 – A5, Step 6) (At about this time annunciator window 0POP09- AN-07M3, Window A-4, GEN CONDITION MON ALARM, will come in.) 	
	SRO	Directs actions of 0POP09-AN-07M3, Window A-4, GEN CONDITION MON ALARM.	

Op-Test	Op-Test No.: 1 Scenario No.: 2 Event No.: 4 (Examiner Trigger)			
Event De	Event Description: Main Generator Stator Cooling DT Alarm due to high DT across Stator Bars 36B and 36T. Including GCM alarm that leads to fast load reduction.			
Time	Position	Required Operator Actions	Notes	
	BOP	 IF BD6023 "GCM VERIFIED ALARM" is in ALARM on the plant computer (ICS), <u>THEN</u> PERFORM the following: REDUCE load at a rate of 2% to 5% Per Minute in accordance with 0POP04-TM-0005, Fast Load Reduction. <u>WHEN</u> below P9 (50%), THEN TRIP the turbine AND ENTER 0POP04-TM-0003, Turbine Trip Below P-9. <u>WHEN</u> resources permit, <u>THEN</u> MONITOR ICS point A6028 "GM GCM MONITOR" for diagnostic data (expect less than 50% for verified GCM alarm). (07M3 – A4. Step 1) 		
		(ICS point BD6023 will be in ALARM and the crew will begin a Fast Load Reduction.)		
	BOP	 <u>IF</u> BD6023 "GCM VERIFIED ALARM" is NOT in ALARM on the plant computer (ICS), <u>THEN</u> PERFORM the following: DISPATCH Operator to check local GCM alarm indication panel N1GMAIT6028 inside ZLP-952 (TGB 55' Rm 203, Exciter Rm). <u>IF</u> local GCM alarm panel "VERIFIED ALARM" is lit, <u>THEN</u> PERFORM 0POP04-TM-0005, Fast Load Reduction, to reduce load at a rate of 2% to 5% Per Minute until the unit is offline. <u>WHEN</u> resources permit, <u>THEN</u> MONITOR ICS point A6028 "GM GCM MONITOR" for diagnostic data (expect less than 50% for verified GCM alarm). 		
	AO	(07M3 – A4, Step 1) (If asked, a Plant Operator will report that the local GCM "VERIFIED ALARM" is lit.)		
	SRO	Directs actions of 0POP04-TM-0005, Fast Load Reduction, due to the GENERATOR CONDITION MON ALARM.		

Op-Test	Op-Test No : 1 Scenario No : 2 Event No : 4 (Examiner Trigger)				
Event De	Event Description: Main Generator Stator Cooling DT Alarm due to high DT across Stator Bars 36B and 36T. Including GCM alarm that leads to fast load reduction.				
Time	Position	Required Operator Actions	Notes		
	RO BOP	 PERFORM The Following To Reduce Turbine Load: NOTIFY STP Co-Owners Using The EMS Website That Load Reduction Is Commencing DETERMINE Amount Of Boric Acid To Add To Reduce Reactor Power To Desired Level AND COMMENCE RCS Boration (about 200 to 300 gallons of Boric Acid) CHECK Rod Control System - IN AUTOMATIC ENERGIZE Pressurizer Heaters For Boron Equalization PERFORM The Following To Lower Turbine Load: CHECK Main Turbine - IN THE IMPULSE PRESSURE FEEDBACK MODE IMP IN PLACE Main Steam to DA valves in "MOD" position and return to "AUTO" "STM TO DEAER SPLY VLV" "PV-7174 and PV-7174A" (A single handswitch controls both valves) REDUCE Turbine Load At A Rate Of Less Than Or Equal To 5% Per Minute Using Operator Auto (Step 1) (The above steps can be performed in any order) 			
	BOP	 MAINTAIN Main Generator Reactive Load (VARs) Within The Following: Less than 450 MVARs Guidelines of The Plant Curve Book, Figure 7.1. (Step 2) 			
	BOP	 MONITOR Rod Control System Responding To RCS TAVG/TREF Deviation By Ensuring The Following: Control Rods Are Responding AND RCS Tavg trending to within 3°F of Tref OR RCS Tavg within 3°F of Tref (Step 3) 			

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Op-Test	No.: 1	Scenario No.: 2 Event No.: 4 (Examiner	Trigger)
Event Description: N 3		Vain Generator Stator Cooling DT Alarm due to high DT across Stator Bars 6B and 36T. Including GCM alarm that leads to fast load reduction.	
Time	Position	Required Operator Actions	Notes
	RO	MAINTAIN Pressurizer Level Within The Following: REFER TO Addendum 4, Pressurizer Level Table	
		 Trending to Program Level OR 	
		• At Program Level	
		(Step 4)	
	BOP	MAINTAIN Pressurizer Pressure Within The Following:	
		 Trending to between 2220 psig and 2250 psig OR 	
		 Between 2220 psig and 2250 psig 	
		(Step 5)	
	BOP	MAINTAIN Steam Generator NR Level Within The Following:	
		 Trending to between 68% and 74% OR 	
		 Between 68% and 74% 	
		(Step 6)	
		(<u>Event 5</u> can be triggered when crew performance has been evaluated for the event and on request from the lead examiner.)	

Op-Test I	No.: 1	Scenario No.: 2 Event No.: 5, 6, 7, 8 (Exa	aminer Trigger)		
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C.				
	E	Event 8: SG 1B Blowdown Isolation valve fails to clo have to close the SG 1B Blowdown Flow Co	se on the SI. Crew will ontrol valve.		
Time	Time Position Required Operator Actions Notes				
	RO BOP	Multiple annunciator alarms will be received on primary and secondary panels indicating issues with primary and secondary temperature, pressure and flow control.			
	ALL	Determine that SG 1B is Faulted and Ruptured.			
	AO (If asked, a plant operator will report that a large amount of steam is coming from Train B Isolation Valve Cubicle (IVC).				
		(At this time the crew may only diagnose as a SGTR.)			
	SRO	Directs a Reactor Trip, safety Injection and Main Steam Line Isolation. Enters and directs the actions of 0POP05-EO-EO00, Reactor Trip and Safety Injection.			

Op-Test No.: 1		Scenario No.: 2 Ev	vent No.: 5, 6, 7, 8 (Exa	miner Trigger)
Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Criti			S Line in IVC. (2 Critical	
Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C. Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew will have to close the SG 1B Blowdown Flow Control valve.				
Time	Position	Required Opera	tor Actions	Notes
	RO	Completes immediate action EO00 and determines: Reactor is tripped (Step Main Turbine is Tripped AC ESF Busses are en Train C (Step 3) ENSURE ESF DG # loaded. ENSURE "SPLY" a breakers for "4.16H CLOSED (Event 6 and 7) Check SI status (Step 4 (RO will complete immedia BOP Operator will monitor an announcement of the Re (During a pause between p actions and verifying immed The SRO will direct the Pump #12 in PTL as p 1B per the CIP and throttle the other AFW the RCS cool down By: Resetting the AFW Reg flow. Total AFW flow must remain until at least one SG level is adverse containment})	ns of 0POP05-EO- () (Step 2) ergized except for (13 Started and nd "OUTP" (V/480V XFMR"(s) – () te actions. the plant and make eactor trip.) erforming immediate diate actions: e BOP to place AFW art of isolating SG pump flows to limit () Valves () to lower total AFW () above 576 gpm s >14% NR {34% for	
	SRO	Directs/Ensures the immed Reactor Trip/SI have been performing a procedure rea	iate actions of EO00, completed by id through of them.	

Op-Test No.: 1 Scenario No.: 2 Event No.: 5, 6, 7, 8 (Exa		iminer Trigger)				
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical					
	Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C. Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew will have to close the SG 1B Blowdown Flow Control valve.					
Time	Position	Required Operator Actions	Notes			
	BOP	VERIFY Proper SI Equipment Operation Per ADDENDUM 5, VERIFICATION OF SI EQUIPMENT OPERATION				
		(Step 5)				
		(See Actions on pages 31 to 33)				
	RO	 MONITOR If Containment Spray Is Required: Containment pressure - GREATER THAN 9.5 PSIG (QDPS) 				
		(RNO)				
		 PERFORM the following: CHECK Containment pressure - HAS EXCEEDED 9.5 PSIG "PRESS PR-0934" "EXTD RNG PRESS PR-9759" IF containment pressure HAS EXCEEDED 9.5 PSIG, THEN GO TO Step 6.b. IF containment pressure HAS REMAINED LESS THAN 9.5 PSIG, THEN GO TO Step 7. (Step 6) (Containment pressure will be less than 9.5 psig and the crew will GO TO Step 7) 				
	RO	VERIFY Total AFW Flow – GREATER THAN 576 GPM (Step 7) (BOP will have throttled AFW flow.)				
	RO	 CHECK RCP Seal Cooling: ENSURE seal injection flow between 6 and 13 gpm (Step 8) (RO may have to adjust seal injection.) 				

Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Cristasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during los power to ESF 4.16KV E1C. Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew whave to close the SG 1B Blowdown Flow Control valve. Time Position Required Operator Actions Notes RO MONITOR RCS Temperatures - • WITH ANY RCP RUNNING, RCS TAVG	itical s of will
Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during los power to ESF 4.16KV E1C. Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew whave to close the SG 1B Blowdown Flow Control valve. Time Position RO MONITOR RCS Temperatures - • WITH ANY RCP RUNNING, RCS TAVG	s of will
Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew whave to close the SG 1B Blowdown Flow Control valve. Time Position Required Operator Actions Notes RO MONITOR RCS Temperatures - • WITH ANY RCP RUNNING, RCS TAVG •	will
Time Position Required Operator Actions Notes RO MONITOR RCS Temperatures - • WITH ANY RCP RUNNING, RCS TAVG •	
RO MONITOR RCS Temperatures - • WITH ANY RCP RUNNING, RCS TAVG	
STABLE AT OR TRENDING TO 567°F OR WITHOUT ANY RCP RUNNING, RCS	
TCOLD STABLE AT OR TRENDING TO 567°F (Step 9)	
(Because of the faulted SG 1B Main Steam will already be isolated and the crew will continue to next step.)	
ROCHECK Pressurizer Status: • PORVs - CLOSED • Normal pressurizer spray valves - CLOSED • Auxiliary spray valve - CLOSED • Excess letdown isolation valves - CLOSED	
(Step 10)	
RO MONITOR If RCPs Should Be Stopped: • HHSI pump - AT LEAST ONE RUNNING • RCS pressure - LESS THAN 1430 PSIG (RNO) • GO TO Step 12. (Step 11)	
(Crew may or may not have to stop RCPs.)	
 RO VERIFY The Following Containment Isolation Valve – CLOSED Seal return isolation valves Containment atmosphere radiation monitor isolation valves (Step 12) 	

Op-Test No.: 1		Scenario No.: 2 Event No.: 5, 6, 7, 8 (Exa	aminer Trigger)		
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critica				
	 Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C. Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew will 				
Time Position Required Operator Actions Notes					
	RO	 CHECK If SG Secondary Pressure Boundary Intact: CHECK pressures in all SGs – CONTROLLED OR RISING GREATER THAN CONTAINMENT PRESSURE (RNO) IF any faulted SG is NOT isolated, AND is NOT needed for RCS cooldown, THEN PERFORM the following: GO TO 0POP05-EO-EO20, Faulted Steam Generation Isolation, Step 1. MONITOR Critical Safety Functions. WHEN Addendum 5 of this procedure is complete, THEN Functional Restoration Procedures may be IMPLEMENTED. (Step 13) 			
	SRO	Enters 0POP05-EO-EO20, Faulted Steam Generator Isolation.			
	BOP	Checks MSIV's and MSIB's closed. (Step 1, 0POP05-EO-EO20, Faulted SG Isolation) (MSIVs and MSIBs will already be closed.)			
	BOP	CHECK If Any SG Secondary Pressure			
	DOI	 Boundary Intact: CHECK pressures in all SGs – ANY SG PRESSURE CONTROLLED OR RISING (Step 2) (SG's 'A', 'C' and 'D' pressures are 'controlled'. SG 'B' pressure is NOT controlled.) 			

Op-Test	No.: 1	Scenario No.: 2 Event No.: 5, 6, 7, 8 (Exa	aminer Trigger)		
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical				
	Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C. Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew will have to close the SG 1B Blowdown Flow Control valve.				
Time	Position	Required Operator Actions	Notes		
	BOP	 IDENTIFY Faulted SG(s): CHECK pressure in all SGs – ANY SG PRESSURE LOWERING IN AN UNCONTROLLED MANNER OR ANY SG COMPLETELY DEPRESSURIZED (Step 3) (SG 1B is faulted) 			
	SRO BOP CT17	 Isolates the faulted SG (1B) Verifies all FWIV's closed. Verifies all FWIB's closed. Verifies all FW Preheater bypass valves closed. Verifies all FW Regulating and Low Power FW Regulating Valves closed. Isolates AFW flow to 'B' SG Resets SI* Resets SG LO-LO level AFW actuations* Checks SG 1D intact Closes 'B' SG AFW OCIV, AF-MOV-0065* Verifies SG 'B' PORV closed Verifies SG 'B' Blowdown isolation valves closed. (<i>SB-FV-4152 will not close</i>) RNO IF valve(s) can NOT be closed, THEN CLOSE SG blowdown flow control valve(s) for faulted SG* (<i>Event 8 – Operator will close SB-FV-4156 on CP018</i>) A/ER Verifies SG 'B' sample isolation valves closed 			

Op-Test No.: 1		Scenario No.: 2 Event No.: 5, 6, 7, 8 (Exa	aminer Trigger)			
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of					
	E	Event 8: SG 1B Blowdown Isolation valve fails to clo have to close the SG 1B Blowdown Flow C	se on the SI. Crew will ontrol valve.			
Time	Position	Required Operator Actions	Notes			
	BOP	 Check Secondary Radiation: Resets SI Resets SG LO-LO level AFW actuations Resets SG Blowdown and Sampling Isolations Notifies Chemistry to sample all SG's hourly for activity. Checks the following Rad Monitors: Main Steamline SG Blowdown CARS Pump RNO GO TO 0POP05-EO-EO30, Steam Generator Tube Rupture Step 1.) (Step 5) (The first 2 resets have already been done so the operator will just check that they are still reset.) (Main Steam Line and SG Blowdown Radiation Monitors will indicate a tube Rupture on SG 1B.) 				
	SRO	Enters 0POP05-EO-EO30, Steam Generator Tube Rupture.				
	RO BOP	 MONITOR If RCPs Should Be Stopped: HHSI pump - AT LEAST ONE RUNNING RCS pressure - LESS THAN 1430 PSIG (RNO) GO TO Step 2. (Step 1) (Crew should not have to stop RCPs.) IDENTIFY Ruptured SG(s) 				
		(Step 2) (Crew has already determined that SG 1B is the ruptured SG.)				

Op-Test No.: 1 Scenario No.: 2 Event No.: 5, 6, 7, 8 (Examiner Trigger)			miner Trigger)			
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical					
	Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C.					
		have to close the SG 1B Blowdown Flow Co	ontrol valve.			
Time	Position	Required Operator Actions	Notes			
	BOP	 ISOLATE Flow From Ruptured SG(s): ADJUST ruptured SG(s) PORV controller setpoint to BETWEEN 1260 PSIG AND 1265 PSIG (QDPS PRI/SEC) CHECK ruptured SG(s) PORV controller - IN AUTO CHECK ruptured SG(s) PORV CLOSED VERIFY blowdown isolation valve(s) from ruptured SG(s) CLOSED CHECK SG 1D – RUPTURED RNO GO TO Step 3.h. A/ER CLOSE ruptured SG(s) MSIV(s) and MSIB(s) (Step 3) 				
	BOP	 MONITOR Ruptured SG(s) Level: NR level - GREATER THAN 14% [34%] STOP AFW flow to ruptured SG(s): RESET SI RESET SG LO-LO level AFW actuations CLOSE AFW OCIV (SG 1B AFW OCIV was already closed inn OPOP05-EO-EO20.) 				
	BOP	CHECK Ruptured SG(s) Pressure GREATER THAN 468 PSIG RNO GO TO 0POP05-EO-EC31, SGTR WITH LOSS OF REACTOR COOLANT - SUBCOOLED RECOVERY DESIRED, Step 1. (<i>Step 5</i>) (SG 1B pressure will be < 468 psig.				
	SRO	Enters 0POP05-EO-EC31, SGTR WITH LOSS OF REACTOR COOLANT - SUBCOOLED RECOVERY DESIRED.				

Op-Test No.: 1		Scenario No.: 2 Event No.: 5, 6, 7, 8 (Examiner Trigger)	
Event De	escription: E	Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical	
	E	Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to A power to ESF 4.16KV E1C.	uto Close during loss of
	E	Event 8: SG 1B Blowdown Isolation valve fails to clo have to close the SG 1B Blowdown Flow C	ose on the SI. Crew will ontrol valve.
Time	Position	Required Operator Actions	Notes
	RO	RESET SI	
		(Step 1)	
	RO	RESET SI AUTO RECIRC	
		(Step 2)	
	RO	RESET ESF Load Sequencers	
		(Step 3)	
	RO	RESET Containment Isolation Phase A	
		(Step 4)	
	RO	RESET Containment Isolation Phase B	
		(Step 5)	
	RO	ENERGIZE MCCs And Distribution Panels Per ADDENDUM 1, MCC POWER RESTORATION	
		(Step 6)	
	AO	(Addendum will be performed by plant operator and they will report back when addendum complete.)	
	RO	RESET ESF Load Sequencers Mode I Logic Per ADDENDUM 2, RESETTING ESF SEQUENCER MODE I LOGIC	
		(Step 7)	
	AO	(Addendum will be performed by plant operator and they will report back when addendum complete.)	
	RO	ESTABLISH IA To Containment: • IA pressure - GREATER THAN 95 PSIG • OPEN IA OCIV	
		(Step 8)	

Op-Test	No.: 1	Scenario No.: 2 Event No.: 5, 6, 7, 8 (Examiner Trigger)				
Event De	escription: E	Event 5: Faulted and Ruptured SG 1B. Faulted on M	S Line in IVC. (2 Critical			
	Tasks) Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C.					
		have to close the SG 1B Blowdown Flow Co	ontrol valve.			
Time	Position	Required Operator Actions	Notes			
	RO	 ENSURE SFPC In Service Within 2.5 HOURS Of Loss Of SFPC: CHECK CCW pumps - AT LEAST TWO RUNNING ALIGN CCW flow to SFPC heat exchanger(s) CHECK SFPC pump – RUNNING 				
		(Step 9)				
		(SRO may hold off on this step because they have 2.5 hours to complete.)				
	RO	VERIFY All 13.8KV And 4.16KV AC Busses - ENERGIZED BY OFFSITE POWER				
	(Step 10)					
RO		 TURN OFF All Pressurizer Heaters: PLACE group "C" pressurizer heater control switch to PULL TO LOCK PLACE all other pressurizer heater switches to OFF CONSULT TSC Staff for a recommended minimum indicated pressurizer water level that will ensure heaters are covered. 				
	DO	(Step 11)				
RO		 Stopped: Spray pumps – RUNNING RNO GO TO Step 13, OBSERVE CAUTION prior to Step 13. (Step 12) 				
	RO	 MONITOR Ruptured SG(s) Level: NR level -GREATER THAN 14% [34%] STOP AFW flow to ruptured SG(s) 				
		(Step 13) (AFW Flow has already been stopped to the ruptured SG.)				

Op-Test No.: 1		Scenario No.: 2 Event No.: 5, 6, 7, 8 (Examiner Trigger)			
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical				
 Event 6: Loss of power to ESF 4.16KV E1C. Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to Auto Close during loss of power to ESF 4.16KV E1C. Event 8: SG 1B Blowdown Isolation valve fails to close on the SI. Crew will have to close the SG 1B Blowdown Flow Control valve 					
Time	Position	Required Operator Actions	Notes		
	RO	 MONITOR If LHSI Pumps Should Be Stopped: CHECK RCS pressure: Pressure - GREATER THAN 415 PSIG Pressure - STABLE OR RISING STOP LHSI pumps and PLACE in AUTO 			
		(Step 14)			
	RO	 INITIATE Evaluation Of Plant Status: CHECK MAB and FHB radiation NORMAL NOTIFY Chemistry to collect post-event samples in accordance with the following procedures, as necessary: 0PCP07-ZS-0001, SAMPLING AT PRIMARY SAMPLE PANEL ZLP-131 0PCP08-AP-0003, POST-ACCIDENT SAMPLING OF LIQUIDS AND RCB ATMOSPHERE AT PASS ENSURE the following ventilation systems in service: At least two CRDM ventilation fans – RUNNING At least one Reactor cavity and supports supply fan – RUNNING At least one Reactor cavity and supports exhaust fan – RUNNING 			
		(Step 15) (If CRDM vent fans and reactor cavity supply & exhaust fans have not been started yet they will be started here.)			

Op-Test No.: 1		Scenario No.: 2 Event No.: 5, 6, 7, 8 (Ex	aminer Trigger)			
Event De	Event Description: Event 5: Faulted and Ruptured SG 1B. Faulted on MS Line in IVC. (2 Critical Tasks) Event 6: Loss of power to ESF 4.16KV E1C.					
	E	Event 7: OUTP BKR, E1C/2A to LC E1C2, fails to A power to ESF 4.16KV E1C.	uto Close during loss of			
	E	Event 8: SG 1B Blowdown Isolation valve fails to clo have to close the SG 1B Blowdown Flow C	ose on the SI. Crew will ontrol valve.			
Time	Position	Required Operator Actions	Notes			
	RO	 CHECK If Charging Flow Has Been Established: CCPs - AT LEAST ONE RUNNING Charging flow – ESTABLISHED RNO CLOSE charging flow control valve. ENSURE CCP discharge valves open. ENSURE normal or alternate charging isolation valve open. ENSURE charging OCIV open A/ER VERIFY pressurizer level GREATER THAN 22% [50%] RNO CONTROL charging flow control valve to establish maximum charging flow. WHEN pressurizer level is restored to GREATER THAN 22% [50%], THEN CONTROL charging to maintain pressurizer level. 				
	BOP	 CHECK If SG Secondary Pressure Boundary Intact: CHECK pressures in all SGs CONTROLLED OR RISING GREATER THAN CONTAINMENT PRESSURE IF any faulted SG, NOT needed for RCS cooldown, is unisolated, THEN GO TO 0POP05-EO-EO20, FAULTED STEAM GENERATOR ISOLATION, Step 1. (Step 17) (Only SG 1B is depressurized and it has already been isolated.) 				

Op-Test No.:	1	Scenario No.: 2 Event No.: 5, 6, 7, 8 (Examiner Trigger)		
Event Description: E		vent 5: Faulted and Ruptured SG 1B. Faulted on M	S Line in IVC. (2 Critical	
	uto Close during loss of se on the SI. Crew will ontrol valve.			
Time Pos	Time Position Required Operator Actions Notes			
B	3OP	 MONITOR INTACT SG Levels: NR levels - GREATER THAN 14% [34%] CONTROL AFW flow to maintain NR levels BETWEEN 25% [34%] and 50% 		
		(Step 18) (Operators will be controlling SG levels to prepare for the plant cooldown in the next step.)		
RO BOP CT-34		 INITIATE RCS Cooldown To Cold Shutdown: MAINTAIN cooldown rate in RCS cold legs - LESS THAN 100°F/HR Shutdown margin - RCS Cb GREATER THAN OR EQUAL TO SHUTDOWN MARGIN LIMIT PER PLANT CURVE BOOK, FIGURE 5.5, 68°F CURVE RNO BORATE RCS to GREATER THAN OR EQUAL TO shutdown margin per PLANT CURVE BOOK, FIGURE 5.5, 68°F CURVE. A/ER CHECK pressurizer pressure LESS THAN 1985 PSIG BLOCK Low Steamline Pressure SI MONITOR RCS wide range hot leg temperatures - GREATER THAN 350°F CHECK condenser AVAILABLE RNO DUMP steam from intact SG(s) using SG PORV(s) (SG 1A – PV-7411, SG 1C – PV- 7431, SG 1D – PV-7441) (Step 19) (The crew may use 1, 2 or 3 SG PORVs for cooldown. However, with just 2 SG PORVs open a cooldown rate of LESS THAN 100°F/HR can be challenged.) (Terminate Scenario) 		

Op-Test	Op-Test No.: 1 Scenario No.: 2 Event No.: N/A				
Event De	Event Description: 0POP05-EO-EO00, Addendum 5				
Time	Position	Required Operator Actions	Notes		
	BOP	 VERIFY FW isolation: SGFPTs – TRIPPED SU SGFP – TRIPPED VERIFY the following valves –CLOSED FWIVs FWIBs FW preheater bypass valves FW regulating valves Low power FW regulating valves SG blowdown isolation valves SG sample isolation valves SG sample isolation valves (<i>OPOP05-EO-EO00, Reactor Trip or Safety</i> Injection, Addendum 5, Step 1) (<i>OPOP05-EO-EO00, Reactor Trip or Safety</i> Injection, Addendum 5, Verification of Equipment Operation.) (<i>This addendum is performed in parallel with</i> Steps 5 to 15 of <i>OPOP05-EO-EO00, Reactor</i> <i>Trip or Safety Injection.</i>) (<i>This addendum does not have specific steps</i> for isolating a failed open SG blowdown isolation valve. See step 4 of <i>OPOP05-EO-EO20 on page 23</i>) 			
	BOP	CHECK if main steamline should be isolated: CHECK for any of the following conditions: Containment pressure – GREATER THAN OR EQUAL TO 3 PSIG SG pressure (without low steamline pressure SI blocked) - LESS THAN OR EQUAL TO 735 PSIG SG pressure (with low steamline pressure SI blocked) - LOWERING AT A RATE GREATER THAN OR EQUAL TO 100 PSI/SEC, BY OBSERVANCE OF THE STEAMLINE PRESSURE RATE BISTABLES RNO 			
	BOP	 VERIFY AFW system status: Motor-driven pump – RUNNING Turbine-driven pump – RUNNING (Step 3) 			

Op-Test I	Op-Test No.: 1 Scenario No.: 2 Event No.: N/A				
Event Description: 0POP05-EO-EO00, Addendum 5					
Time	Position	Required Operator Actions	Notes		
	BOP	VERIFY AFW valve alignment - PROPER EMERGENCY ALIGNMENT (Step 4)			
	BOP	VERIFY total AFW Flow - GREATER THAN 576 GPM <i>(Step 5)</i>			
	BOP	VERIFY containment isolation phase A:Phase A – ACTUATED(Step 6)			
	BOP	 VERIFY ECW status: ECW pumps – RUNNING ECW pump discharge isolation valves – OPEN (Step 7) 			
	BOP	VERIFY CCW pumps – RUNNING (Step 8)			
	BOP	 VERIFY RCFC status: RCFCs – RUNNING Cooling water - TRANSFERRED TO CCW (Step 9) 			
	BOP	 VERIFY SI pump status: HHSI pumps – RUNNING LHSI pumps – RUNNING (<i>Step 10</i>) 			
	BOP	VERIFY SI valve alignment – PROPER EMERGENCY ALIGNMENT (Step 11)			
	BOP	 VERIFY SI flow: RCS pressure - LESS THAN 1745 PSIG (RNO) GO TO Step 13 of this Addendum. (Step 12) 			
	BOP	 VERIFY containment ventilation isolation: Containment atmosphere radiation monitor isolation valves – CLOSED Normal purge supply and exhaust fans – STOPPED Supplemental purge supply and exhaust fans – STOPPED Purge Dampers – CLOSED (Step 13) 			

Op-Test	Op-Test No.: 1 Scenario No.: 2 Event No.: N/A					
Event De	Event Description: 0POP05-EO-EO00, Addendum 5					
Time	me Position Required Operator Actions Note					
	BOP	 VERIFY ventilation actuation: Control room HVAC – OPERATING IN EMERGENCY RECIRC EAB HVAC - OPERATING IN EMERGENCY RECIRC FHB HVAC - OPERATING IN EMERGENCY MODE FHB Exhaust Fans - ONLY TWO TRAINS OPERATING Exhaust booster fans Main exhaust fans (RNO) PERFORM the following: IF three trains FHB exhaust fans running, THEN PLACE one train FHB exhaust fans in PULL TO LOCK. (Back to A/ER) SECURE one FHB filter train by PERFORMING the following: PLACE the outlet damper Controller in manual Manually close the outlet damper VERIFY proper operation of filter train in service Essential chilled water pumps – RUNNING ESCS pump room fan coolers – RUNNING FHB truck bay doors – CLOSED (Step 14) 				
	BOP	NOTIFY Unit Supervisor that Addendum 5 is COMPLETE (Step 15)				
	SRO	IMPLEMENT Functional Restoration Procedures as required (Step 16)				
	SRO	RETURN TO procedure step in effect. (Step 17)				

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO	CT-17 ISOLATE A FAULTED STEAM GENERATOR	Isolate a faulted Steam Generator before transitioning out of 0POP05-EO-EO20, Faulted Steam Generator Isolation.	
	 Reset SI – SI Blocked Train A, B & C annunciators lit. Reset ESF load sequencers – ICS Sequencer data indicates Load sequencers reset. Reset SG LO-LO level AFW actuation – SG Level LO-LO red status lights NOT lit. Close 'B' SG AFW OCIV, AF-MOV-0065 – Green light ONLY lit for valve indication. CLOSE SG blowdown flow control valve for faulted SG 1B, SB- FV-4156 – No flow indicated on SB-FI- 4156 or M/A station in manual with green light ONLY lit. 	 SAFETY SIGNIFICANCE Failure to isolate a faulted SG that can be isolated causes challenges to CSFs beyond those irreparably introduced by the postulated conditions. Also, depending upon the plant conditions, it could constitute a failure by the crew to "demonstrate the ability to recognize a failure or an incorrect automatic actuation of an ESF system or component." Failure to isolate a faulted SG can result in challenges to the following CSFs: Integrity Subcriticality Containment (if the break is inside containment) 	

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT	
SRO/RO	CT-34 BEGIN COOLDOWN OF RCS	Begin an RCS cooldown to cold shutdown to preclude a transition to 0POP05-EO-EC32, SGTR with Loss of Reactor Coolant – Saturated Recover Desired.		
	DUMP steam from intact SG(s) using SG PORV(s) at a cooldown rate NOT to exceed 100°F/HR – Operator calculates cooldown rate or uses QDPS calculation of cooldown rate. Uses SG PORVs PV-7411, PV-7431 and/or PV- 7441.	SAFETY SIGNIFICANCE Depending upon the plant conditions, failure to perform the critical task either causes accelerated depletion of RWST inventory leading to loss of SI and eventual core uncovery or causes increased primary-to-secondary leakage leading to SG overfill and more radioactive release. Thus, failure to perform the critical task leads to "a significant reduction in safety margin beyond that irreparably introduced by the scenario." It also represents a demonstrated inability by the crew to "take one or more actions that would prevent a challenge to plant safety."		
		For the ECA-3.1 critical task: Failure to initiate RCS cooldown when primary to secondary leakage cannot be stopped until the RCS is depressurized results in more reactor coolant leaking into the ruptured SG (than would be the case if the RCS were cooling down and depressurizing). In the case of a ruptured and faulted SG, the increased primary to secondary leakage increases the radioactive release.		
NOTE: (Per NUREG-1021, Appendix D) If an operator or the Crew significantly deviates from or fails to follow procedures that affect the maintenance of basic safety functions, those actions may form the basis of a CT identified in the post-scenario review.				
EXPECTED BOOTH COMMUNICATIONS

EVENT 1:

- As I&C Maintenance or the Duty Maintenance Supervisor, if notified of the failure of PZR level transmitter LT-0465, report that an I&C maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the failure of PZR level transmitter LT-0465. No further action is necessary.

EVENT 2:

- As I&C Maintenance or the Duty Maintenance Supervisor, if notified of the failure of SG 1A PORV pressure transmitter PT-7411, report that an I&C maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the failure of SG 1A PORV pressure transmitter PT-7411. No further action is necessary.

EVENT 3:

- As a plant operator, if notified of the trip of Condensate Pump #11, report that the pump looks OK locally but the pump breaker has an overcurrent indication.
- As the Duty Maintenance Supervisor, if notified of the trip of Condensate Pump #11, report that a maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the trip of Condensate Pump #11. No further action is necessary.

EVENT 4:

- As a plant operator, if asked about AC-TCV-6100, it is NOT oscillating.
- As a plant operator, if notified to check the Generator Condition Monitor, report that the local GCM "VERIFIED ALARM" is lit.
- As Operations Manager, acknowledge that the crew is performing a down power to take the Main Generator offline. No further action is necessary.

EVENT 5:

• A plant operator will perform Addendum 1 and 2 of 0POP05-EO-EC31 and then report back to the control room when completed.

EVENT 6:

• There are no Booth Communications expected for Event 6.

EVENT 7:

• There are no Booth Communications expected for Event 7.

EVENT 8:

• There are no Booth Communications expected for Event 8.

EXPECTED BOOTH ACTIONS

- 1. If asked to open the Deaerator High Level Dump Bypass Valves, then trigger the step for 'DA HLD Bypass Valves FW-486 & FW-487'.
- 2. If asked to fill the AFWST, then trigger the step for 'AFWST Makeup'.
- 3. If asked to perform 0POP05-EO-EC31, Addendum 1, then trigger the step for 'EC31 Add 1'
- 4. If asked to perform 0POP05-EO-EC31, Addendum 2, then trigger the step for 'EC31 Add 2'

SIMULATOR SETUP

NOTE

<u>ALL</u> Annunciator Response Procedures (ARP's) must be checked if this scenario is the first to be run on this day. Setup for subsequent runs of this scenario only requires those ARP's that were actually marked in to be checked.

Instructors running the scenario must keep track of which ARP's these are, otherwise, all will have to be checked for subsequent scenarios as well.

Each time before running the scenario check and/or clean the following: 1st Peer 2nd 3rd **Specific Scenario Procedures** Peer Peer 4th Peer After Last Scenario $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ 0POP04-RP-0002, Loss of Automatic Pressurizer Level Control 0POP04-MS-0001, Excessive Steam Demand 0POP09-AN-09M1 - A1, COND PMP TRIP 0POP04-CD-0001, Loss of Condensate Flow 0POP09-AN-07M3 - A4, GEN CONDITION MON ALARM, and A5, STATR COIL WTR DIFF TEMP HI/TEMP HI 0POP04-TM-0005, Fast Load Reduction 0POP05-EO-EO00, Reactor Trip and Safety Injection 0POP05-EO-EO20, Faulted Steam Generator Isolation 0POP05-EO-EO30, Steam Generator Tube Rupture 0POP05-EO-EC31, SGTR WITH LOSS OF REACTOR COOLANT - SUBCOOLED RECOVERY DESIRED 2nd **Other Procedures Used By Students** 1st Peer Peer 3rd Peer 4th Peer After Last Scenario $\sqrt{}$ $\sqrt{}$ **During Scenario Including POP09s.** 2nd 1st Peer Peer 3rd Peer 4th Peer After Last Miscellaneous Items to Restore Scenario $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ **STA ICS Screens to PD Menu** All ICS Trends to normal (not scenario specific) Student Selected ICS Points changed to U1118 **Control Panel ICS Screens to Normal RM 11 History and Screens** RM 23 – No Alarm Indications

SIMULATOR SETUP (cont'd.)

NOTE

The Scenario Lesson Plan <u>MUST</u> be run from the left most Instructor Station in Simulator Booth.

For LOT 24 the Simulator Configuration must be loaded to: 'wsTrain_Sep2021/Train_Sep2021'

- Log into Instructor Workstation as 'lotnrc' user, open Orchid (nstps server), then 'Unlock' Initial Conditions Group 'lotnrc'.
- Reset to IC #202 and perform the following:
 - Switch Check
 - Ensure red light on end of CP-010 off
 - Ensure ICS Annunciators have stopped counting up
- Go to RUN and perform the following:
 - Ensure Simulator is ready by performing applicable checkoffs from LOR-GL-0006, LOR Conduct of Simulator Training Guidelines, Addendum 5, Simulator Readiness Checklist.
 - Ensure VCT Makeup Integrators are set as follows:
 - Momentarily place RC M/U CONT to STOP and then START to reset BA BATCH/GALLONS and TOT M/U BATCH/GALLONS counters to zero.
 - Reset BA BATCH/GALLONS setpoint to 0 gallons and reset TOT M/U BATCH/GALLONS setpoint to 0 gallons.
 - Verify BA Controller Pot setting is 3.78
 - Place ECO Tag on AFW Pump #11
- Open lesson plan for 'Scenario 2' in 'lotnrc' directory for LOT 24, then EXECUTE lesson plan. These actions will set up any initial conditions for the scenario.
- If this scenario IC has changing conditions (i.e. Xenon is changing, etc.), then place the simulator in FREEZE, otherwise it is OK to leave in RUN.
- Run the scenario in accordance with the next section, 'Scenario Instructions'.

SCENARIO INSTRUCTIONS

NOTE

Steps 1 to 4 below can be performed in the LOR Debrief Room prior to the crew coming into the Simulator provided exam security measures are taken.

- 1. Provide Shift Turnover sheets to the crew and review the information.
- 2. Ensure the Beacon book from the simulator is available to the crew if they are in the LOR Debrief Room.
- 3. Review the Simulator Differences list with the crew if needed.
- 4. When signaled by Simulator Staff, have the crew perform their board walkdown and inform the floor instructor when ready to take the watch.
- 5. Ensure the simulator is in RUN and verify simulator clock is set correctly. Note the time that the Crew takes the watch.

NOTE

Malfunction Step and/or Lesson Plan Steps (Events) are triggered upon the Lead Examiners signal during the scenario unless an agreed upon time is discussed with the examiner prior to the start of the scenario.

Always 'TRIGGER' events in the Simulator Scenario Lesson Plans. This way delays associated with events will take place as intended.

Refer to 'EXPECTED BOOTH COMMUNCATIONS' and 'EXPECTED BOOTH ACTIONS' Sections for instructions for Instructor actions during the scenario.

- 6. Trigger the step titled 'Start Chart' and ensure specified Recorded Parameters for the scenario begin recording as the scenario runs. If the chart speed is NOT set to 5400 seconds (90 minutes) then perform the following:
 - Under 'CHARTS' click on 'SET TIME'
 - In the dialog box enter 5400 seconds (90 minutes)
 - Click OK
- 7. When signaled by Lead Examiner, trigger **MALFUNCTION STEP** This will insert Step #1, Event #1.
- 8. When signaled by Lead Examiner, trigger STEP 2 Event #2
- 9. When signaled by Lead Examiner, trigger STEP 3 Event #3
- 10. When signaled by Lead Examiner, trigger STEP 4 Event #4
- 11. When signaled by Lead Examiner, trigger **STEP 5 –** Event #5
- 12. Place simulator in FREEZE when cued by the Lead Examiner to terminate scenario.
- 13.DO NOT RESET simulator until the steps on the next page are completed and all Examiners have completed Follow-Up Questioning.

SCENARIO INSTRUCTIONS (cont'd.)

NOTE

Some scenarios will have more than one chart. For these, each chart file must be separately saved with a unique filename.

14. Saving Recorded Parameters Data

- Click on the 'Charts' icon on the left side of the screen
- Select 'Pause' icon, then select 'All'
- Click on the 'Print Chart' icon, then select 'All'
- This will bring up a window in the TASK BAR called PRIMOPDF.
- Click on 'Create PDF'
- This will bring up a File Save As window.
- Save to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 Scenario 2' followed by a name that identifies the crew (e.g. 'Crew A).
- Save the new file. It will be saved in a folder already on the desktop. LOT24 Charts.

15. Saving Scenario SAM (Simulator Action Monitor)

- Under 'TOOLS' click on 'SAM'
- In the dialog box that comes up click on 'SAVE TO'
- Save as a 'TEXT FILE' to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 SAM INFO Scenario 2' followed by a name that identifies the crew (e.g. 'Crew A).

LOT 24 NRC OP-TEST SCENARIO #2 Rev 1 Page 42 of 42

SCENARIO - 02

	0POP01-ZQ-0022			
	Plant Operations Shift Routine	S		
For Training OnlyShift Turnover ChecklistPage 1 of 1				

PART I - To be completed prior to shift turnover.

Unit:	<u>1</u> Off- Go	oing Shift:	Days (Nights)	Dat	e: <u>Today</u>	<u>'</u>	Mode:	<u>1</u>
	Dilution		Boration			Control Rods		
Current Setpoint	1% Pwr Change	1° F Change	Current Setpoint	1% Pwr Change	1° F Change	Current Position	1% Pwr Change	1° F Change
0	130	114	0 flushing with	29	25	203	7	6
As Required		As Required		As Required				
∆l Target - 1.05%				Channel U1144		RCS Boror 1413	1	

- Mode 1, 78% Power, BOC.
- Core burnup is 150 MWD / MTU
- AFW Pump #11 is Out of Service.

Load Reduction:

Unit 1 Status

- 100-90%/1hr = **162**
- 100-80%/10min = **382**
- 100-75%/30min = **444**
- 100-60%/1hr = **620**
- 100-50%/10min = **925**

Information:

- The crew will be holding power at 78% per step 7.57 of 0POP03-ZG-0005, Plant Startup to 100%.
- BAT 1A & 1B Concentrations are 7300 ppm
- Fuel Handling Building truck bay doors are closed
- No personnel are in containment
- Ron Gibbs has the duty
- The NLO compliment is 5 watch standers and a head operator

ECO/LCO/RAsCAL:

TS 3.7.1.2 for AFW Pump #11, Action a. With one motor-driven auxiliary feedwater pump inoperable, within 28 days restore the pump to OPERABLE status or apply the requirements of the CRMP or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

LOT 24 NRC EXAM

SIMULATOR OPERATING TEST

SCENARIO #4

Revision 1

Week of 07/13/2020

SCENARIO OUTLINE

Facility:	South Te	xas Project	Scenar	io No.: 4	Op-Test No.: LOT 24 NRC
Examine	ers:			<u>Operators:</u>	
Initial Co	nditions:			Critical Task	<u>(S:</u>
• Mode '	1 at 48% Po	wer, BOC		• E5 – CT2	; Manually Actuate SI
AFW P	<u>':</u> /ump #11 is	out of service		• E7 – C13	6; Manually Align Cold Leg Recirc
Event	Malf.	Event			Event
No.	No.	Type*		D	escription
1 (0 min)	N/A	BOP (N)	Start EHC Pump #12 and secure EHC Pump #11. However, EHC Pump #12 has a leak and EHC Pump #11 must be restarted.		
2 (5 min)	<u>ME</u> Schemat ic bmp003	RO (C) SRO (C, TS)	CCP 1B develops a sheared shaft.		
3 (15 min)	01-07- 09 (True)	RO (C) SRO (C, TS)	One Droppe	d Control Rod.	Control Rod D-12
4 (N/A)	08-17-	BOP (C)	SG 1C MFR	V Stuck in curr	ent position.
	(True)	510 (0)	(Inserted wit	h Dropped Cor	ntrol Rod Malfunction)
5 (40 min)	02-01-	ALL (M)	LBLOCA. (In	itegral to Scena	ario)
(40 11111)	03 0.5		(Critical Task)		
6 (N/A)	04-09- 08 1	BOP (C) SRO (C)	Failure of Train B Essential Chiller to start – (Integral to scenario)		
7 (NI/A)	50-L2-	RO (C)	The auto swa	ap over to cold	leg recirculation will fail and the
(IN/A)	24, 25, 26 1	SRO (C)	crew will hav (Critical Tas	ve to manually a sk)	align. (Integral to Scenario)
Lot* (N)o	Lot* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS) Technical Specification				

Total Estimated Time: 1 hour, 10 minutes

	Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes
1.	Malfunctions after EOP entry (1–2)	2
2.	Abnormal events (2–4)	4
3.	Major transients (1–2)	1
4.	EOPs entered/requiring substantive actions (1–2)	2
5.	Entry into a contingency EOP with substantive actions (<u>></u> 1 per scenario set)	0
6.	Preidentified critical tasks (≥2)	2

SCENARIO MISCELLANEOUS INFORMATION

INSTRUCTOR NOTES:

- Critical Tasks are indicated by "**CT**-##" in the position column and indicated in bold type. In some instances, an "*" will indicate that only a portion of the task listed is considered critical.
- Shaded cells indicate procedural entry points.

RECORDED PARAMETERS:

Recorded parameters will be determined during NRC Validation week.

The parameters identified for recording may be of value in evaluating crew performance. Once the scenario is complete for each crew, printout the recorded parameters and label the printout with date, time, crew number and scenario number. See Scenario Instructions section for further details on how to save the Recorded Parameters.

- RWST Level
- RCS Wide Range Pressure

SCENARIO OBJECTIVES

Event 1 Objective

• Monitor EHC System operation per 0POP02-EH-0001, Main Turbine Electro-Hydraulic Control System.

Event 2 Objective

• Respond to CVCS alarms per 0POP09-AN-04M8, Annunciator Response Instructions.

Event 3 Objective

 Respond to Control Rod Drive System alarms per 0POP04-RS-0001, Control Rod Malfunction.

Event 4 Objective

 Respond to Main Feedwater System alarms per 0POP04-FW-0001, Loss of Steam Generator Level Control.

Event 5 Objective

• Respond to a LBLOCA per 0POP05-EO-EO00, Reactor Trip or safety Injection and 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant.

Event 6 Objective

 Respond to equipment failures during a reactor trip per 0P0P05-E0-E000, Reactor Trip or safety Injection.

Event 7 Objective

• Respond to a failure of automatic transfer to Cold Leg Recirculation per 0P0P05-E0-ES13, Transfer to Cold Leg Recirculation.

LOT 24 NRC OP-TEST SCENARIO #4 Rev 1 Page 5 of 43

Op-Test	No.: 1	Scenario No.: 4 Event No.: 1			
Event De	Event Description: Start EHC Pump #12 and secure EHC Pump #11. However, EHC Pump #12 has a leak and EHC Pump #11 must be restarted.				
Time	Position	Required Operator Actions	Notes		
	SRO	Directs BOP to start EHC Pump #12 and secure EHC Pump #11 per 0POP02-EH-0001, Main Turbine Electro-Hydraulic Control System.			
	BOP	Uses 0POP02-EH-0001, Main Turbine Electro- Hydraulic Control System, Section 8 to start EHC Pump #12 and secure EHC Pump #11.			
	BOP	RECEIVE US/SM permission to transfer EHC Pumps at Power.			
		(Step 8.1)			
		(Permission has been given.)			
	BOP	 <u>IF</u> this is the first start of the Standby EHC Pump OR the EHC Pump is returning from maintenance, <u>THEN</u> VERIFY EHC Pump Lineups are complete (Lineups 1, 3 and 4): (CP007) "EHC SPLY PUMP 11" "EHC SPLY PUMP 12" 			
		(Step 8.2)			
		(Lineups were performed last shift per the Shift Turnover.)			
	BOP	ENSURE the STBY EHC Pump Handswitch is in AUTO:"EHC SPLY PUMP 11""EHC SPLY PUMP 12"			
		(Step 8.3)			
		(M/M is ready with a charging/discharging rig equipped with a pressure gauge per the Shift Turnover.)			
	BOP	START the selected EHC Pump: • "EHC SPLY PUMP 12"			
		(Step 8.4)			

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Op-Test	Op-Test No.: 1 Scenario No.: 4 Event No.: 1				
Event De	Event Description: Start EHC Pump #12 and secure EHC Pump #11. However, EHC Pump #12 has a leak and EHC Pump #11 must be restarted.				
Time	Position	Required Operator Actions	Notes		
	BOP	CHECK EHC Pumps Discharge pressure, for the EHC Pump just started, is stable between 1850 – 2100 psig as indicated on PI-6303 or PI- 6303A. (EHC skid)			
		(Step 8.5)			
	AO	(Plant Operator will report pressure is stable at 2000 psig.)			
	BOP	IF pressure is LESS THAN 1850 psig, THEN EVALUATE the EHC Filter D/P and determine if the EHC Filter SHOULD be changed.			
		(Step 8.6)			
	BOP	IF EHC Pump discharge pressure is NOT between 1850 – 2100 psig, <u>THEN</u> GO TO Section 17.0, EHC Pressure Control Adjustments during System Operation for adjustment to EHC Pump pressure compensator.			
		(Step 8.7)			
	BOP	CHECK EHC System piping and valves for leaks and report results of inspection to Control Room personnel.			
		(Step 8.8)			
	AO	(Plant Operator will report no leaks.)			
	BOP	IF MORE THAN one EHC Pump Running, <u>THEN STOP</u> one EHC Pump AND PLACE control switch in "AUTO": (CP007) • "EHC SPLY PUMP 11"			
		(Step 8.9)			
	AO	(When EHC Pump #11 is stopped and placed in Auto, the Plant Operator will report that they heard a noise on the EHC skid and now see a leak has developed on EHC Pump #12. The leak is about 100 to 120 drops per minute.)			

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*				
Op-Test	No.: 1	Scenario No.: 4 Event No.: 1		
Event De	Event Description: Start EHC Pump #12 and secure EHC Pump #11. However, EHC Pump #12 has a leak and EHC Pump #11 must be restarted.			
Time	Position	Required Operator Actions	Notes	
	SRO BOP	The SRO will direct the BOP to start EHC Pump #11 and Secure EHC Pump #12.		
	AO	(The Plant Operator will report that the leak on EHC Pump #12 has stopped. If asked to check EHC Reservoir level, the Plant Operator will report that level was just above 5/8 and now is right on 5/8 as indicated on LI-6302.) (<u>Event 2</u> can be triggered can be triggered on request from the lead examiner.)		

Op-Test No.: 1 Scenario No.: 4 Event No.: 2 (Examiner Trigger)				
Event De	scription: C	CP 1B develops a sheared shaft.		
Time	Position	Required Operator Actions	Notes	
	RO	Acknowledges and announces annunciators: • "REGEN HX LETDN TEMP HI" (B3) • "CHG FLOW HI/LO" (F3)		
		(Other alarms will come in and clear as the event progresses.)		
	RO	Determines that CCP 1B has a sheared shaft and charging flow has been lost. Operator secures CCP 1B and may place in PTL.		
	AO	(If asked, Plant Operator will report that CCP 1B motor is running but the pump coupling has failed, and the pump is not running.)		
	SRO	Directs the actions of 0POP09-AN-04M8 – B3, REGEN HX LETDN TEMP HI, and F3, CHG FLOW HI/LO.		
	RO	 IF Centrifugal Charging Pump (CCP) START is required, THEN PERFORM the following: IF NO CCP is Running, THEN ENSURE "CHG FLOW CONT VLV FCV-0205" is CLOSED ENSURE the applicable CCP(s) discharge valve is OPEN. ENSURE the miniflow is OPEN for the applicable CCP(s). VERIFY the white "L.O. AVAILABLE" light is lit for the applicable CCP(s). START the applicable CCP(s). START the applicable CCP(s). ADJUST Charging flow AND Seal Injection flows as necessary. CLOSE the miniflow for the applicable CCP(s). WHEN charging flow has stabilized, THEN PLACE "CHG FLOW CONT FK-0205" in Automatic. (04M8 – F3, Step 1) (These steps are required to start CCP 1A and restore charging pump flow. If they are performed first and expeditiously, then REGEN HX LETDN TEMP HI will clear and no other actions are necessary.) (If CCP 1A is NOT started expeditiously, then letdown flow will need to be isolated per the next steps to prevent letdown line oscillations.) 		

Op-Test	Op-Test No.: 1 Scenario No.: 4 Event No.: 2 (Examiner Trigger)				
Event De	escription: C	CCP 1B develops a sheared shaft.			
Time	Position	Required Operator Actions	Notes		
	RO	CHECK Pressurizer level.			
		(04M8 – B3, Step 1)			
		(PZR level will be starting to lower.)			
	RO	IF a Pressurizer level instrument is failed, THEN GO TO 0POP04-RP-0002, Loss of Automatic Pressurizer Level Control.			
		(04M8 – B3, Step 2)			
		(PZR level instruments have not failed.)			
	RO	IF Pressurizer level is above "PRZR PROG LEVEL LI-0665", THEN PERFORM the following:			
		(04M8 – B3, Step 3)			
		(PZR level will be starting to lower.)			
	RO	 IF charging flow has been lost, THEN PERFORM the following: ENSURE "LETDN ORIF HDR ISOL FV-0011" is closed. GO TO 0POP04-CV-0004, Loss Of Normal Letdown. (04M8 – B3, Step 4) 			
	SRO	Directs the actions of 0POP04-CV-0004, Loss Of Normal Letdown.			
	RO	 VERIFY Letdown Line Stop Valves – OPEN "LETDN ISOL LCV-0465" "LETDN ISOL LCV-0468" (Step 1) (Valves will be open.) 			
	RO	VERIFY Letdown Containment Isolation Valves – OPEN • "ICIV MOV-0023" • "OCIV MOV-0024" GO TO Step 6.0 (Step 2 & 3) (Valves will be open.)			

Op-Test	No.: 1	Scenario No.: 4 Event No.: 2 (Examiner T	rigger)
Event De	escription: C	CCP 1B develops a sheared shaft.	
Time	Position	Required Operator Actions	Notes
	RO	 VERIFY Letdown Orifice Header Isolation Valve "LETDN ORIF HDR ISOL FV-0011" – OPEN RNO IF FV-0011 was CLOSED by CIP, THEN GO TO Step 7.0, otherwise PERFORM the following: ENSURE "CHG FLOW CONT FK-0205" in "MAN" and CLOSED. OPEN Centrifugal Charging Pump miniflow valve for operating pump: CCP 1A "RECIRC FCV-0201" CCP 1B "RECIRC FCV-0202" ENSURE Instrument air is available to FV-0011 ENSURE Electrical power is available to FV-0011 IF the source of the problem has been identified and corrected, THEN PERFORM the following: ENSURE all letdown orifice isolation valves are closed: "120-150 GPM ORIFICE ISOL VLV 1(2)- CV-FV-0012" "85-100 GPM ORIFICE ISOL VLV 1(2)- CV-FV-0013" "25-30 GPM ORIFICE ISOL VLV 1(2)- CV-MOV-0014" RESTORE normal letdown per Addendum 4, Placing Normal Letdown In Service 	
	RO	 ENSURE CCP In Service Supplying The RCP Seals (ADD 4, Step 1) (Prior to placing normal letdown back in service this step requires a CCP to be in service if not already in service. It is not required for normal letdown to be placed back in service prior to continuing with the scenario. When CCP 1A has been started, the next event can be triggered.) (Event 3 can be triggered after SRO has checked TS or on request from the lead examiner.) 	

Op-Test	Op-Test No.: 1 Scenario No.: 4 Event No.: 2 (Examiner Trigger)					
Event De	Event Description: CCP 1B develops a sheared shaft.					
Time	Position	Required Op	perator Actions	Notes		
TRM 3.1. With only OPERAB to restore	TRM 3.1.2.2.a At least two charging pumps shall be OPERABLE: Action b With only one required charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 7 days or initiate action in accordance with the Corrective Action Program to restore the item to OPERABLE status as soon as practical.					

Op-Test	Op-Test No.: 1 Scenario No.: 4 Event No.: 3 (Examiner Trigger)				
Event De	Event Description: One Dropped Control Rod. Control Rod D-12.				
Time	Position	Required Operator Actions	Notes		
	RO	 Acknowledges and announces the following Annunciators on: 05M2: T AVG/AUCT T AVG DEV (C-6) DT/AUCT DT DEV (D-6) 05M3: PR UPPER DET FLUX DEV HI/AUTO DEF (A-3) RPI TROUBLE (A-5) PR LOWER DET FLUX DEV HI/AUTO DEF (B-3) PR CHANNEL DEV (C-3) ROD SUPV MNTR ROD POSITION TRBL (D- 5) ROD BOTTOM (F-4) 			
	RO	Diagnoses Rod D12 has dropped into the core, informs the SRO. (Rod D12 is in Control Bank 'D' Group 2)			
	RO	 Performs immediate actions of 0POP04-RS-0001, Control Rod Malfunction. Ensures Rod Control in Manual. Ensures no rod motion. Checks that only 1 rod dropped. (Step 1.0. 2.0 & 3.0) 			
	SRO	Directs the actions of 0POP04-RS-0001, Control Rod Malfunction.			
	RO SRO	Verify Immediate Actions complete and transitions to Addendum 1, Recovery of a Dropped Rod. (<i>Steps 1-3</i>)			
	RO SRO	Addresses DNBR TS if alarm comes in. (Annunciator 4M08 – B5) (Lowering RCS pressure to 2200 psig will cause the DNBR alarm to come in but it will clear as soon as PZR Heaters energize to start restoring RCS pressure.) (TS 3.2.5.b Raise PZR pressure above 2200 psig within 2 hours or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 4 hours.)			

Op-Test I	Op-Test No.: 1 Scenario No.: 4 Event No.: 3 (Examiner Trigger)				
Event De	Event Description: One Dropped Control Rod. Control Rod D-12.				
Time	Position	Required Operator Actions	Notes		
	RO	VERIFY Reactor Power GREATER THAN 5% Power			
		(Addendum 1, Step 1)			
	RO	 Check Tavg Within 1.5°F Of Tref RNO MAINTAIN Tavg Within 1.5°F Of Tref By Adjusting The Following As Necessary While Maintaining Reactor Power Stable: ADJUST Turbine load ADJUST RCS boron concentration IF Turbine is offline, THEN ADJUST demand on the Steam Generator PORVs OR Steam Dumps. (Addendum 1, Step 2) 			
		(Due to the position of Control Rod D12 in the core, Tavg will not be within 1.5°F of Tref.)			
	ALL	 NOTIFY The Following Of The Rod Malfunction: Reactor Engineering Supervisor Plant Operations Manager I&C Maintenance 			
		(Addendum 1, Step 3)			
		(I&C will report that it will take 2 hours to get a qualified technician for the Rod Control System onsite.)			
		(Reactor Engineering will report that they can provide support as needed.)			
	SRO	DOCUMENT Appropriate Entry Into Technical Specification Action Statement 3.1.3.1.b.3 In The Control Room Log As Applicable			
		(Addendum 1, Step 4)			

Op-Test I	No.: 1	Scenario No.: 4 Event No.: 3 (Examiner	Frigger)		
Event De	Event Description: One Dropped Control Rod. Control Rod D-12.				
Time	Position	Required Operator Actions	Notes		
	RO SRO	 Record data for dropped rod. Core location of malfunctioned rod(s) Digital Rod Position Indication (DRPI) for malfunctioned rod(s) Affected bank(s) Group Step Counter Demand position of affected bank(s) Type of malfunction (e.g., misaligned, immovable, etc) Date and time malfunction occurred 			
		(Addendum 1, Step 5)			
	SRO	Determine if reactor power reduction is required. RNO GO TO Step 15.0 of this Addendum.			
		(Addendum 1, Step 6)			
		(Reactor power reduction is not required at this time.)			
		(<i>Event 4</i> is triggered at the same time as this event but it takes a while for Event 4 to be noticed by the crew.)			

TS 3.1.3.1 All full-length shutdown and control rods shall be OPERABLE and positioned within ± 12 steps (indicated position) of their group step counter demand position: Action b.3 b. With one full-length rod trippable but inoperable due to causes other than addressed by ACTION

- a., above, or misaligned from its group step counter demand height by more than ± 12 steps (indicated position), POWER OPERATION may continue provided that within 1 hour:
 - **3.** The rod is declared inoperable and the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is satisfied. POWER OPERATION may then continue provided that:
 - a) A reevaluation of each accident analysis of Table 3.1-1 is performed within 5 days; this reevaluation shall confirm that the previously analyzed results of these accidents remain valid for the duration of operation under these conditions;
 - b) The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is determined at least once per 12 hours;
 - c) A core power distribution measurement is obtained and Fa (Z) and F1:r are verified to be within their limits within 72 hours; and
 - d) The THERMAL POWER level is reduced to less than or equal to 75% of RATED THERMAL POWER within the next hour and within the following 4 hours the High Neutron Flux Trip Setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER.

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Op-Test	No.: 1	Scenario No.: 4 Event No.: 4			
Event De	Event Description: SG 1C MFRV Stuck in current position. (Inserted with Event 3, Dropped Control Rod Malfunction)				
Time	Position	Required Operator Actions	Notes		
	BOP	Acknowledges and announces the following Annunciators on 06M4:SG 1C LVL DEV HI/LO (B-2) Notices slow lowering or rising in SG 1C level.			
	SRO BOP	Directs BOP to take manual control of SG 1C Main Fed Reg Valve to restore SG 1C level to 68% to 74% and determines the valve will not control SG 1C level in manual. (<i>This is an immediate action of 0POP04-FW-0001,</i> <i>Loss of Steam Generator Level Control, however,</i> <i>the procedure may not have been official entered</i> <i>yet.</i>)			
	SRO	Directs the actions of 0POP04-FW-0001, Loss of Steam Generator Level Control.			
	BOP	CHECK SG Feedwater Regulating Valve(s) - RESPONDING IN AUTOMATIC • SG 1C "NORM FCV-0553" RNO PLACE any SG Feedwater Regulating Valve(s) not properly responding in MANUAL AND ADJUST as necessary to restore affected SG NR level(s) to between 68% and 74%. (Step 1 immediate action)			
	BOP	CHECK SGFP Speed Controllers - RESPONDING IN AUTOMATIC (Step 2 immediate action) SGFP Speed Controllers are all responding properly in automatic.)			

Op-Test	Op-Test No.: 1 Scenario No.: 4 Event No.: 4				
Event D	Event Description: SG 1C MFRV Stuck in current position. (Inserted with Event 3, Dropped Control Rod Malfunction)				
Time	Position	Required Operator Actions	Notes		
	BOP	 CHECK Main Feedwater Regulating Valves: CHECK Main Feedwater Regulating Valve(s) - IN SERVICE CHECK Main Feedwater Regulating Valve(s) - ANY IN MANUAL CHECK Affected Main Feedwater Regulating Valve(s) - RESPONDING IN MANUAL RNO PERFORM the following: ADJUST SGFP Master Speed Controller or individual SGFP controller to match feedwater flow to steam flow AND/OR ADJUST Turbine load to match steam flow to feedwater flow PLACE Low Power Feedwater Regulating Valve(s) in service to restore affected SG NR level(s) to between 68% and 74%. SG 1C "LOW PWR FV-7153" GO TO Step 5.0 (<i>Step 3</i>) (<i>If SG 1C level is slowly rising the crew will have to adjust SGFP Master Speed Controller or adjust Main Turbine Load first to get level on a slow downward trend and then place SG 1C Low Power Fed Reg Valve in service and then in Auto to control SG 1C level.)</i> 	Notes		

Op-Test	Op-Test No.: 1 Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger)				
Event De	Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)				
Time	Position	Required Operator Actions	Notes		
	ALL	Multiple alarms come in and the crew determines that a Large Break LOCA has occurred.			
	SRO	Enters and directs the actions of 0POP05-EO- EO00, Reactor Trip and Safety Injection.			
	RO CT2 BOP	Completes immediate actions of 0POP05-EO- EO00 and determines: Reactor tripped. (Step 1) Main Turbine is Tripped (Step 2) AC ESF Busses are energized (Step 3) SI is required and did not automatically actuate. RNO If SI is required, then manually actuate. (Step 4) (RO will complete immediate actions. BOP Operator will monitor the plant and make an announcement of the Reactor trip.) (During a pause between performing immediate actions and verifying immediate actions the SRO will direct the BOP to: Resetting the AFW Reg Valves Throttling the AFW Reg to lower total AFW flow. Total AFW flow must remain above 576 gpm until at least one SG level is >14% NR {34% for adverse containment!)			
	SRO	Directs/Ensures the immediate actions of EO00, Reactor Trip/SI have been completed by performing a procedure read through of them.			
	BOP	VERIFY Proper SI Equipment Operation Per ADDENDUM 5, VERIFICATION OF SI EQUIPMENT OPERATION (Step 5) (See Actions on pages 30-34)			

Op-Test	No.: 1	Scenario No.: 4 Event No.: 5, 6 & 7 (Exami	iner Trigger)		
Event Do	Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)				
Time	Position	Required Operator Actions	Notes		
	RO	 MONITOR If Containment Spray Is Required: Containment pressure - GREATER THAN 9.5 PSIG (QDPS) VERIFY containment spray - INITIATED VERIFY containment isolation Phase B valves - CLOSED "INL OCIV MOV-0318" "INL OCIV MOV-0291" 			
		 "INL OCIV MOV-0542" "INL OCIV MOV-0403" "INL OCIV MOV-0404" "INL OCIV MOV-4493" STOP ALL RCPs (Step 6) (Per the CIP, the SRO will direct securing one CS Pump by placing one CS Pump handswitch in PTL) 			
	RO	VERIFY Total AFW Flow – GREATER THAN 576 GPM <i>(Step 7)</i>			
	RO	 CHECK RCP Seal Cooling: ENSURE seal injection flow between 6 and 13 gpm (Step 8) (RO may have to adjust seal injection.) 			
	RO	 MONITOR RCS Temperatures - WITH ANY RCP RUNNING, RCS TAVG STABLE AT OR TRENDING TO 567°F OR WITHOUT ANY RCP RUNNING, RCS TCOLD STABLE AT OR TRENDING TO 567°F 			
		(Step 9) (RCS Tcold will be lowering but MSIVs and MSIBs are already closed so no further action is needed.)			

Op-Test	Op-Test No.: 1 Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger)				
 Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task) 					
Time	Position	Required Operator Actions	Notes		
	RO	 CHECK Pressurizer Status: PORVs - CLOSED Normal pressurizer spray valves - CLOSED Auxiliary spray valve - CLOSED Excess letdown isolation valves - CLOSED (Step 10) 			
	RO	MONITOR If RCPs Should Be Stopped: • HHSI pump - AT LEAST ONE RUNNING • RCS pressure - LESS THAN 1430 PSIG • STOP all RCPs			
		(Step 11) (PCPs are already stopped)			
	RO	 VERIFY The Following Containment Isolation Valve – CLOSED Seal return isolation valves Containment atmosphere radiation monitor isolation valves 			
		(Step 12)			
	RO	 CHECK If SG Secondary Pressure Boundary Intact: CHECK pressures in all SGs – CONTROLLED OR RISING GREATER THAN CONTAINMENT PRESSURE 			
		(Step 13)			
	RO	 CHECK If SG Tubes Are Intact: Main steamline radiation – NORMAL IF SG blowdown in service, THEN SG blowdown radiation – NORMAL CARS pump radiation – NORMAL NO SG level rising in an uncontrolled manner (Step 14) 			

On Test	No : 1	Seconario No : 4 Event No : 5 6 8 7 (Event	inor Triggor)			
Op-rest	Contract Descriptions Event Schola (Onitical Table)					
Event De	Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)					
Time	Position	Required Operator Actions	Notes			
	RO	CHECK If RCS Is Intact: Containment radiation – NORMAL Containment pressure – NORMAL Containment wide range water level – NORMAL CONDARL RNO GO TO 0POP05-EO-EO10, LOSS OF REACTOR OR SECONDARY COOLANT, Step 1. MONITOR Critical Safety Functions. WHEN Addendum 5 of this precedure 				
		 WHEN Addendum 5 of this procedure is complete, THEN Functional Restoration Procedures may be IMPLEMENTED. 				
		(Step 15)				
		(Critical Safety Functions for Integrity and Containment are expected and will be implemented once 0POP05-EO-EO00, Addendum 5 is completed.)				
	SRO	Enters 0POP05-EO-FRP1, RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION.				
	RO	CHECK RCS pressure - GREATER THAN 415 PSIG				
		IF LHSI pump flow GREATER THAN 500 GPM, THEN RETURN TO procedure step in effect				
	SRO	Enters 0POP05-EO-FRZ1, RESPONSE TO HIGH CONTAINMENT PRESSURE.				
	RO	 VERIFY Containment Spray - ESTABLISHED Containment Pressure LESS THAN 56.5 PSIG. At least one Containment Spray pump – RUNNING Discharge valve OPEN FLOW indication RETURN TO procedure step in effect and PERFORM this procedure as time permits. 				
	SRO	Enters 0POP05-EO-EO10 Loss of Reactor or				
	0110	Secondary Coolant.				

Op-Test No.: 1		Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger)				
Event De	Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)					
Time	Position	Required Operator Actions	Notes			
	RO	 MONITOR If RCPs Should Be Stopped: HHSI pump - AT LEAST ONE RUNNING RCS pressure - LESS THAN 1430 PSIG STOP all RCPs 				
		(Step 11)				
	BOP	(RCPs are already stopped.) DEPRESSURIZE Intact SGs To 1000 PSIG • CHECK RCS pressure - GREATER THAN 415 PSIG RNO • GO TO Step 3. (Step 2)				
	BOP	MONITOR If SG Secondary Pressure Boundary Intact: • CHECK pressures in all SGs • CONTROLLED OR RISING • GREATER THAN CONTAINMENT PRESSURE (Step 3)				
	RO	RESET SI				
		(Step 4)				
	RO	RESET ESF Load Sequencers (Step 5)				
	RO	RESET Containment Isolation Phase A (Step 6)				
	RO	RESET Containment Isolation Phase B (Step 7)				
	BOP	 MONITOR INTACT SG Levels: NR levels - GREATER THAN 14% [34%] CONTROL AFW flow to maintain NR levels BETWEEN 25% [34%] and 50% (Step 8) 				

Op-Test No.: 1 Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger) Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task) Time Position **Required Operator Actions** Notes BOP CHECK Secondary Radiation: PERFORM the following: **RESET SG LO-LO level AFW actuations** • RESET SG blowdown and sample isolations NOTIFY Chemistry to sample all SGs for activity PERFORM the following: MONITOR secondary systems listed below radiation levels - NORMAL Main steamline radiation NORMAL SG blowdown radiation NORMAL CARS pump(s) radiation NORMAL MONITOR SG sample results NORMAL (Step 9) RO **MONITOR Pressurizer PORVs And Isolation** Valves: Power to isolation valves AVAILABLE PORVs – CLOSED Isolation valves - AT LEAST ONE OPEN (Step 10) RO **ESTABLISH IA To Containment:** • IA pressure - GREATER THAN 95 PSIG OPEN IA OCIV (Step 11) RO MONITOR Containment H2 Concentration: Containment H2 - GREATER THAN OR EQUAL TO ZERO (QDPS QUAL PAMS) RNO • PLACE containment H2 monitoring system in service per ADDENDUM 1, ESTABLISHING CONTAINMENT H2 MONITORING. (Step 12a) (RO will place containment H2 monitoring in service per Addendum 1.) RO RESET SI **RESET** Containment Isolation Phase A (Add 1, Step 1 & 2) (SI and Phase A have already been reset.)

Op-Test No.: 1		Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger)			
Event De	Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)				
Time	Position	Required Operator Actions	Notes		
	RO	OPEN H2 sample OCIVs for each train			
		(Add 1, Step 3)			
	RO	 PLACE "CNTMT H2 SAMPLE SELECT" for each train to the desired position: TRAIN A – FV-4100 TRAIN C – FV-4103 			
		(Add 1, Step 4)			
	RO	OPEN selected CNTMT H2 SAMPLE valve for each train.			
		(Add 1, Step 5)			
	RO	OPEN H2 sample ICIVs for each train.			
		(Add 1, Step 6)			
	RO	PLACE mode select switch to OPERATE for each train.			
		(Add 1, Step 7)			
	RO	VERIFY H2 reading for each train GREATER THAN OR EQUAL TO ZERO after 1 minute of operation (QDPS DETAIL DATA MENU PAGE 7)			
		(Add 1, Step 8)			
	RO	RETURN TO procedure step in effect.			
		(Add 1, Step 8)			
	RO	 H2 concentration - GREATER THAN OR EQUAL TO 0.5% RNO Perform the following: WHEN H2 concentration is GREATER THAN 0.5%, THEN PERFORM Step 12.c and 12.d. GO TO Step 13. (Step 12b) (H2 should be reading on scale – 0.0%) 			

Op-Test	No.: 1	Scenario No.: 4 Event No.: 5, 6 & 7 (Exam	iner Trigger)
Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. Event 7: The auto swap over to cold leg recirculation have to manually align. (Critical Task)			ee Page 33) ill fail and the crew will
Time	Position	Required Operator Actions	Notes
	RO	 ENSURE SFPC In Service Within 2.5 HOURS Of Loss Of SFPC: CHECK CCW pumps - AT LEAST TWO RUNNING ALIGN CCW flow to SFPC heat exchanger(s) Check SFPC Pump - RUNNING 	
		(Step 13)	
		(SRO may flag this step because the allowance of 2.5 hours to complete.)	
	RO	 CHECK If Charging Flow Has Been Established: CCPs - AT LEAST ONE RUNNING Charging flow – ESTABLISHED RNO PERFORM the following: CLOSE charging flow control valve. ENSURE CCP discharge valves open. ENSURE normal or alternate charging isolation valve open. ENSURE charging OCIV open. <i>A/ER</i> CONTROL charging flow control valve to restore pressurizer level. (<i>Step 14</i>) 	
	RO	 CHECK If SI Flow Should Be Terminated: RCS subcooling based on core exit T/Cs - GREATER THAN 35°F [45°F] RNO GO TO Step 16, OBSERVE NOTE prior to Step 16. (Step 15) 	

Op-Test No.: 1 Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger)			iner Trigger)		
Event D	Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)				
Time	Position	Required Operator Actions	Notes		
	RO	 MONITOR If Containment Spray Should Be Stopped: Spray pumps – RUNNING Containment pressure - LESS THAN 6.5 PSIG RNO PERFORM the following: WHEN containment pressure LESS THAN 6.5 PSIG, THEN PERFORM Step 16. GO TO Step 17. 			
		(Step 16)			
	RO	 MONITOR If LHSI Pumps Should Be Stopped: CHECK RCS pressure: Pressure - GREATER THAN 415 PSIG RNO GO TO Step 19. 			
		(Step 17)			
	RO	 CHECK RCS And SG Pressures: CHECK pressures in all SGs CONTROLLED OR RISING CHECK RCS pressure - STABLE OR LOWERING (Step 18) 			
	RO	 MONITOR If STBY DGs Should Be Stopped: VERIFY AC ESF busses - ENERGIZED BY OFFSITE POWER 4.16KV ESF bus 480V ESF LCs 480V ESF MCCs RESET any unloaded DG(s) non-emergency trips RELEASE any unloaded DG(s) from EMERGENCY mode STOP any unloaded DG(s) 			

Op-Test	No.: 1	Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger)					
Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)							
Time	Position	Required Operator Actions	Notes				
	RO	 INITIATE Evaluation Of Plant Status: VERIFY cold leg recirculation capability: Power to LHSI pumps – AVAILABLE Power to emergency sump suction valves – AVAILABLE Power to HHSI pump mini flow valves – AVAILABLE Power to HHSI pump mini flow valves – AVAILABLE Power to LHSI pump mini flow valves – AVAILABLE Power to RWST suction isolation valves – AVAILABLE Power to RWST suction isolation valves – AVAILABLE CHECK MAB and FHB radiation NORMAL NOTIFY Chemistry to collect post-event samples in accordance with the following procedures, as necessary: OPCP07-ZS-0001, SAMPLING AT PRIMARY SAMPLE PANEL ZLP-131 OPCP08-AP-0003, POST-ACCIDENT SAMPLING OF LIQUIDS AND RCB ATMOSPHERE AT PASS 					
		 CHECK If RCS Cooldown And Depressurization Is Required: RCS pressure - GREATER THAN 415 PSIG RNO IF LHSI pump flow GREATER THAN 500 GPM, THEN GO TO Step 22. (Step 21) 					

Op-Test No.: 1		Scenario No: 4 Event No: 5.6 & 7 (Examiner Trigger)				
Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)						
Time	Position	Required Operator Actions	Notes			
	RO	 CHECK If Transfer To Cold Leg Recirculation Is Required: RWST level - LESS THAN 75,000 GALLONS (14%) GO TO 0POP05-EO-ES13, TRANSFER TO COLD LEG RECIRCULATION, Step 1 				
		(Step 22)				
		(Anytime RWST level lowers to < 75,000 gallons then the crew must transfer to 0POP05-EO-ES13, TRANSFER TO COLD LEG RECIRCULATION, because this procedure takes priority over the other EOPs and FRPs.)				
	SRO	Enters 0POP05-EO-ES13, TRANSFER TO COLD LEG RECIRCULATION.				
		(Steps 1 to 6 should be performed without delay.)				
		(IF RWST level LESS THAN 32,500 GALLONS (6%), "RWST EMPTY" alarm, THEN any pumps taking suction from the RWST SHALL be stopped.)				
	RO	RESET SI RESET ESF Load Sequencers				
		(Step 1 & 2) (SI and ESF Load Sequencers have already been reset.)				
	RO	VERIFY CCW Flow To RHR Heat Exchangers (Step 3)				
	RO	STOP any running CCP(s)				
		(Step 4)				

Event 5: LBLOCA. (Critical Task) Event 5: Eallore of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task) Time Position Required Operator Actions Notes RO VERIFY SI And Containment Spray Systems - ALIGNED FOR RECIRCULATION: Event 7: HHSI cold leg injection valves OPEN Event 7: HHSI cold leg injection valves OPEN LHSI cold leg injection valves OPEN SIMOV-0011 & 12 : : : 3 LHSI pumps - SI-MOV-0013 & 14 RNO : 'Manually CLOSE HHSI and LHSI pump mini flow valves. AER *Containment sump to SI suction header : 'Containment sump to SI suction header valves - OPEN NOT open, THEN PERFORM the following for the affected train(s), one train at a time: *'STOP all 3 HHSI pumps. : *STOP all 3 LHSI pumps. 'STOP all 3 Containment Spray pumps. 'CLOSE the RWST to SI suction header : 'STOP all 3 LHSI pump. 'START all 3 LHSI pump. 'START all 3 LHSI pump. : 'STOP all 3 LHSI pump. 'STOP all 3 LHSI pump. 'STOP all 3 LHSI pump. : 'STOP all 3 LHSI pump. 'STOP all 3 LHSI pump. 'START al	Op-Test No.: 1 Scenario No.: 4 Event No.: 5, 6 & 7 (Examiner Trigger)						
Time Position Required Operator Actions Notes R0 VERIFY SI And Containment Spray Systems - ALIGNED FOR RECIRCULATION: +HSI cold leg injection valves OPEN - IHSI pumps 7 - HHSI cold leg injection valves OPEN - IHSI cold leg injection valves OPEN - - - IHSI pumps - SI-MOV-0011 & 12 - - - IHSI pumps - SI-MOV-0013 & 14 RNO - - - If any train(S) COSE HHSI and LHSI pump mini flow valves. - A/ER 'Containment sump to SI suction header valves - OPEN - - If any train(s) containment sump valve did NOT open, THEN PERFORM the following for the affected train(s), one train at a time: - *STOP all 3 HHSI pumps. - *STOP all 3 LHSI pumps. 'STOP all 3 LHSI pumps. - *STOP all 3 LHSI pumps. - *STOP all 3 Containment Spray pumps. 'STOP all 3 LHSI pumps. - *STOP all 3 LHSI pumps. - *OPEN the containment sump to SI suction header valves. SI-MOV-0016A, B & C - *OPEN the containment sump to SI suction header valves. - *OPEN the containment sump to SI suction header - *OPEN the containment sump to SI suction header valves. - *OPEN the containment sump to SI suction header valves. - <td colspan="7">Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)</td>	Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)						
RO CT36 VERIFY SI And Containment Spray Systems - ALIGNED FOR RECIRCULATION: • HHSI cold leg injection valves OPEN • LHSI cold leg injection valves OPEN • TENSURE SI pump mini flow valves CLOSED • 3 HHSI pumps - SI-MOV-0011 & 12 • 3 LHSI pumps - SI-MOV-0013 & 14 RNO • "Manually CLOSE HHSI and LHSI pump mini flow valves. • A/ER • "Containment sump to SI suction header valves - OPEN • TH any train(s) containment sump valve did NOT open, THEN PERFORM the following for the affected train(s), one train at a time: • *STOP all 3 HHSI pumps. • *STOP all 3 LHSI pumps. • *STOP all 3 Containment Spray pumps. • *STOP all 3 Containment Spray pumps. • *STOP all 3 Containment sump to SI suction header valves. SI-MOV-0001A, B & C • *OPEN the containment sump to SI suction header valves. • STOP the containment sump to SI suction header valves. • *OPEN the containment sump to SI suction header valves. • START all 3 HHSI pump. • *START all 3 HHSI pump. • *IF containment spray pump. (At least 2 CS Pumps.) A/ER • ENSURE RWST to SI suction header valves CLOSED	Time	Position	Required Operator Actions Notes				
CHECK SI and Containment Spray Systems - AT LEAST ONE TRAIN ALIGNED FOR RECIRCULATION (Step 5)		RO CT36 Event 7	ALIGNED FOR RECIRCULATION: • HHSI cold leg injection valves OPEN • LHSI cold leg injection valves OPEN • *ENSURE SI pump mini flow valves CLOSED • 3 HHSI pumps – SI-MOV-0011 & 12 • 3 LHSI pumps – SI-MOV-0013 & 14 RNO • *Manually CLOSE HHSI and LHSI pump mini flow valves. A/ER • *Containment sump to SI suction header valves – OPEN RNO • *IF any train(s) containment sump valve did NOT open, THEN PERFORM the following for the affected train(s), one train at a time: • *STOP all 3 HHSI pumps. • *STOP all 3 LHSI pumps. • *STOP all 3 LHSI pumps. • *STOP all 3 Containment Spray pumps. • *STOP all 3 Containment Spray pumps. • *CLOSE the RWST to SI suction header valves. SI-MOV-001A, B & C • *OPEN the containment sump to SI suction header valves. SI-MOV-0016A, B & C • *START all 3 HHSI pump. • *START all 3 LHSI pump. • *TE containment spray was running, THEN START containment spray pump. (At least 2 CS Pumps.) A/ER • ENSURE RWST to SI suction header valves CLOSED • CHECK SI and Containment Spray Systems - AT LEAST ONE TRAIN ALIGNED FOR RECIRCULATION (Step 5)				

Op-Test No.: 1		Scenario No.: 4	Event No.: 5, 6 & 7 (Examiner Trigger)				
Event Description: Event 5: LBLOCA. (Critical Task) Event 6: Failure of Train B Essential Chiller to start. (See Page 33) Event 7: The auto swap over to cold leg recirculation will fail and the crew will have to manually align. (Critical Task)							
Time	Position	Required O	Required Operator Actions Notes				
	RO	CHECK SI And Contain HHSI Pumps – RUNNIN LHSI Pumps – RUNNIN Containment Spray Pur (Step 6) (Terminate Scenario)	iment Spray Pump Status: NG IG nps – RUNNING				
Op-Test No.: 1 Scenario No.: 2 Event No.: N/A							
---	----------	--	-------	--	--	--	--
Event Description: 0POP05-EO-EO00, Addendum 5 and Event 6: Failure of Train B Essential							
Time	Position	Required Operator Actions	Notes				
	BOP	 VERIFY FW isolation: SGFPTs – TRIPPED SU SGFP – TRIPPED VERIFY the following valves –CLOSED FWIVs FWIBs FW preheater bypass valves FW regulating valves Low power FW regulating valves SG blowdown isolation valves SG sample isolation valves (EO00 Addendum 5, Step 1) (0POP05-EO-EO00, Reactor Trip or Safety Injection, Addendum 5, Verification of Equipment Operation.) (This addendum is performed in parallel with 					
		Steps 5 to 15 of 0POP05-EO-EO00, Reactor Trip or Safety Injection.)					
	BOP	 CHECK if main steamline should be isolated: CHECK for any of the following conditions: Containment pressure – GREATER THAN OR EQUAL TO 3 PSIG OR SG pressure (without low steamline pressure SI blocked) - LESS THAN OR EQUAL TO 735 PSIG OR SG pressure (with low steamline pressure SI blocked) - LOWERING AT A RATE GREATER THAN OR EQUAL TO 100 PSI/SEC, BY OBSERVANCE OF THE STEAMLINE PRESSURE RATE BISTABLES VERIFY main steamline isolation: MSIVs – CLOSED MSIBs - CLOSED 					
	BOP	 VERIFY AFW system status: Motor-driven pump – RUNNING Turbine-driven pump – RUNNING (Step 3) 					

Op-Test	No.: 1	Scenario No.: 2 Event No.: N/A					
Event De	Event Description: 0POP05-EO-EO00, Addendum 5 and Event 6: Failure of Train B Essential Chiller to start.						
Time	Position	Required Operator Actions	Notes				
	BOP	VERIFY AFW valve alignment - PROPER EMERGENCY ALIGNMENT (Step 4)					
	BOP	VERIFY total AFW Flow - GREATER THAN 576 GPM (<i>Step 5</i>)					
	BOP	 VERIFY containment isolation phase A: Phase A – ACTUATED Phase A valves - CLOSED, REFER TO ADDENDUM 1, PHASE A ISOLATION VERIFICATION (Step 6) 					
	BOP	 VERIFY ECW status: ECW pumps – RUNNING ECW pump discharge isolation valves – OPEN (Step 7) 					
	BOP	VERIFY CCW pumps – RUNNING (Step 8)					
	BOP	 VERIFY RCFC status: RCFCs – RUNNING Cooling water - TRANSFERRED TO CCW (Step 9) 					
	BOP	 VERIFY SI pump status: HHSI pumps – RUNNING LHSI pumps – RUNNING (<i>Step 10</i>) 					
	BOP	VERIFY SI valve alignment – PROPER EMERGENCY ALIGNMENT (Step 11)					
	BOP	 VERIFY SI flow: RCS pressure - LESS THAN 1745 PSIG RNO GO TO Step 13 of this Addendum. (Step 12) 					

Op-Test No.: 1		Scenario No.: 2	Event No.: N/A	
Event De	escription: 0	e of Train B Essential		
Time	Position	Required O	perator Actions	Notes
	BOP	 VERIFY containment Containment atmo isolation valves – (Normal purge supp STOPPED Supplemental purg – STOPPED Purge Dampers – (Step 13) 	ventilation isolation: sphere radiation monitor CLOSED oly and exhaust fans – e supply and exhaust fans CLOSED	

Op-Test No.: 1 Scenario No.: 2 Event No.: N/A						
Event De	Event Description: 0POP05-EO-EO00, Addendum 5 and Event 6: Failure of Train B Essential Chiller to start.					
Time	Position	Required Operator Actions	Notes			
	BOP	 VERIFY ventilation actuation: Control room HVAC - OPERATING IN EMERGENCY RECIRC EAB HVAC - OPERATING IN EMERGENCY RECIRC FHB HVAC - OPERATING IN EMERGENCY MODE FHB Exhaust Fans - ONLY TWO TRAINS OPERATING Exhaust booster fans Main exhaust fans PERFORM the following: IF three trains FHB exhaust fans running, THEN PLACE one train FHB exhaust fans in PULL TO LOCK. A/ER SECURE one FHB filter train by PERFORMING the following: PLACE the outlet damper Controller in manual Manually close the outlet damper VERIFY proper operation of filter train in service Essential chilled water pumps – RUNNING Essential chillers – RUNNING RNO PERFORM the following: WHEN the respective ESF Load Sequencer has completed its automatic sequence OR it is determined that the respective ESF Load Sequencer has failed, THEN manually START essential chiller(s). IF an Essential Chiller fails to start, THEN SECURE the corresponding train of EAB HVAC. (Secures Train B EAB HVAC - Event 6) ECCS pump room fan coolers – RUNNING AFW pump cubicle fans – RUNNING FHB truck bay doors – CLOSED (Step 14) 				
	BOP	NOTIFY Unit Supervisor that Addendum 5 is COMPLETE (<i>Step 15</i>)				

Op-Test No.: 1 So		Scenario No.: 2 Event No.: N/A		
Event Description: 0POP05-EO-EO00, Addendum 5 and Event 6: Failure of Train B Essential Chiller to start.				
Time	Position	Required Operator Actions	Notes	
	SRO	IMPLEMENT Functional Restoration Procedures as required (<i>Step 16</i>)		
	SRO	RETURN TO procedure step in effect. (Step 17)		

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO	CT-2 MANUALLY ACTUATE SAFETY INJECTION Manually actuate SI – Red SI status lights on CP002 lit	Manually actuate at least one train of SI- actuated safeguards before transitioning past Step 4 of 0POP05-EO-EO00, Reactor Trip of Safety Injection. Note: Step 4 is considered completed after performing the immediate actions AND the read through of the step.	
	and LHSI & HHSI red indication lights lit.	 SAFETY SIGNIFICANCE Failure to manually actuate SI under the postulated conditions constitutes "mis-operation or incorrect crew performance that leads to degraded ECCS capacity." In this case, SI can be manually actuated from the control room. Therefore, failure to manually actuate SI also represents a "demonstrated inability by the crew to: Take an action or combination of actions that would prevent a challenge to plant safety Effectively direct/manipulate ESF controls Recognize a failure/incorrect auto actuation of an ESF system or component" Additionally, under the postulated plant conditions, failure to manually actuate SI (when it is possible to do so) results in a "significant reduction of safety margin beyond 	
		that irreparably introduced by the scenario." Finally, failure to manually actuate SI under the postulated conditions is a "violation of the facility license condition."	

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT	
SRO/RO	CT-36 MANUALLY ALIGN SAFETY INJECTION FOR COLD LEG RECIRCULATION - Manually CLOSE all 3 HHSI and all 3 LHSI pump mini	Manually align Safety Injection for Cold Leg Recirculation prior to RWST level lowering to 32,500 gallons (6% - 'RWST EMPTY' Alarm) OR if RWST level lowers to 32,500 gallons, then stop all pumps taking suction from the RWST (prior to RWST level lowering to 0% AND the pumps losing injection flow), manually align for Cold Leg Recirculation and re-establish ECCS recirculation flow.		
	flow valves (SI-MOV- 0011, 12, 13 & 14 on all 3 trains – Valve indication green lights lit. _ Stop all 3 LHSI, HHSI & CS Pumps – Pump indication	SAFETY SIGNIFICANCE – Omission or incorrect performance of this task results in "direct adverse consequences or significant degradation in the mitigative capability of the plant." Failure to transfer to cold leg recirculation before the RWST inventory is totally depleted results in the loss of all pumped safety injection and containment		
	green lights lit. Close RWST to SI suction header valves (SI-MOV- 0001A, B & C) – Valve indication green lights lit.	spray when the RWST empties. Provided that transfer to cold leg recirculation is possible (as is postulated in the plant conditions), a failure to transfer resulting in loss of pumped injection and containment spray constitutes misoperation or incorrect crew performance which fails to prevent "degraded ECCS capacity." It also constitutes "a significant		
	 Open Containment Sump to SI suction header valves (SI- MOV-0016A, B & C) Valve indication red lights lit. 	reduction of safety margin beyond that irreparably introduced by the scenario." Failure to transfer to cold leg recirculation under the postulated plant conditions can result in unnecessary challenges to the following CSFs:		
	 Start all 3 LHSI, HHSI & at least 2 CS Pumps – Pump indication red lights lit. 	 Core cooling Containment Thus, failure to transfer represents a demonstrated inability by the crew to "take one or more actions that would prevent a challenge to plant safety." 		
NOTE: (Per NUREG-1021, Appendix D) If an operator or the Crew significantly deviates from or fails to follow procedures that affect the maintenance of basic safety functions, those actions may form the basis of a CT				

identified in the post-scenario review.

EXPECTED BOOTH COMMUNICATIONS

EVENT 1:

- As a plant operator, when asked, EHC Pump #12 discharge pressure is 2000 psig.
- As a plant operator, when asked about system leaks, at first report there are no leaks but after EHC Pump #11 is secured by the crew report that a noise was heard on the EHC skid and now there is a leak of about 100 to 120 drops per minute out of EHC Pump #12.
- As a plant operator, if asked to check EHC reservoir level, in the beginning report that level is just above 5/8 as indicated on LI-6302. If asked after the leak starts and EHC Pump #12 is secured, then report level is now right at the 5/8 mark.
- As a plant operator, if asked to check EHC Pump 11 casing drain flow (after restarting EHC Pump #11), then report casing drain flow is 0 gpm.

EVENT 2:

- As a Plant Operator, report that CCP 1B motor is running but the pump coupling has failed, and the pump is not running.
- As M/M Maintenance or the Duty Maintenance Supervisor, if notified of the failure of CCP 1B, report that a M/M maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the failure of CCP 1B. No further action is necessary.

EVENT 3:

- As I/C Maintenance or the Duty Maintenance Supervisor, it will be about 2 hours before a technician will be on site for support of Control Rod D-12. No further action is necessary.
- As Reactor Engineering, if asked they can support as needed.
- As Operations Manager, acknowledge the failure of Control Rod D-12. No further action is necessary.

EVENT 4:

- As a plant operator, if asked to check SG 1C MFRV, then report that the valve stem position is not moving, and it is about 50% open.
- As Operations Manager, acknowledge the issues SG 1C MFRV. No further action is necessary.

EVENT 5:

• There are no Booth Communications expected for Event 5.

EVENT 6:

• As a plant operator, if asked to check Essential Chiller 12B, then report that the breaker has an overcurrent indicated.

EVENT 7:

• There are no Booth Communications expected for Event 7.

EXPECTED BOOTH ACTIONS

- 1. If asked to open the Deaerator High Level Dump Bypass Valves, then trigger the step for 'DA HLD Bypass Valves FW-486 & FW-487'.
- 2. If asked to fill the AFWST, then trigger the step for 'AFWST Makeup'.

SIMULATOR SETUP

NOTE

<u>ALL</u> Annunciator Response Procedures (ARP's) must be checked if this scenario is the first to be run on this day. Setup for subsequent runs of this scenario only requires those ARP's that were actually marked in to be checked.

Instructors running the scenario must keep track of which ARP's these are, otherwise, all will have to be checked for subsequent scenarios as well.

Each time before running the scenario check and/or clean the following: 2nd 3rd 1st **Specific Scenario Procedures** Peer Peer Peer 4th Peer After Last Scenario $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ 0POP02-EH-0001, Main Turbine Electro-Hydraulic Control System 0POP09-AN-04M8 - B3, REGEN HX LETDN TEMP HI, and F3, CHG FLOW HI/LO. 0POP04-CV-0004, Loss Of Normal Letdown 0POP04-RS-0001, Control Rod Malfunction 0POP04-FW-0001, Loss of Steam Generator Level Control. 0POP05-EO-EO00, Reactor Trip or Safety Injection 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant 0POP05-EO-FRP1, RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION 0POP05-EO-FRZ1, RESPONSE TO HIGH CONTAINMENT PRESSURE 0POP05-EO-ES13, Transfer to Cold Leg Recirculation 1st Peer 2nd Peer 3rd 4th Peer After Last Peer **Other Procedures Used By Students** Scenario $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ λ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ **During Scenario Including POP09s.** 2nd Peer 3rd 4th After Last 1st Peer Peer Peer Miscellaneous Items to Restore Scenario V $\sqrt{}$ $\sqrt{}$ **STA ICS Screens to PD Menu** All ICS Trends to normal (not scenario specific) Student Selected ICS Points changed to U1118 **Control Panel ICS Screens to Normal RM 11 History and Screens** RM 23 – No Alarm Indications

SIMULATOR SETUP (cont'd.)

NOTE

The Scenario Lesson Plan <u>MUST</u> be run from the left most Instructor Station in Simulator Booth.

For LOT 24 the Simulator Configuration must be set to: **'wsTrain Sep2021/Train Sep2021**'

- Log into Instructor Workstation as 'lotnrc' user, open Orchid (nstps server), then 'Unlock' Initial Conditions Group 'lotnrc'.
- Reset to IC #206 and perform the following:
 - Switch Check
 - Ensure red light on end of CP-010 off
 - Ensure ICS Annunciators have stopped counting up
- Go to RUN and perform the following:
 - Ensure Simulator is ready by performing applicable checkoffs from LOR-GL-0006, LOR Conduct of Simulator Training Guidelines, Addendum 5, Simulator Readiness Checklist.
 - Ensure VCT Makeup Integrators are set as follows:
 - Momentarily place RC M/U CONT to STOP and then START to reset BA BATCH/GALLONS and TOT M/U BATCH/GALLONS counters to zero.
 - Reset BA BATCH/GALLONS setpoint to 0 gallons and reset TOT M/U BATCH/GALLONS setpoint to 0 gallons.
 - Verify BA Controller Pot setting is 4.00
 - Place ECO Tag on AFW Pump #11
- Open lesson plan for 'Scenario 4' in 'lotnrc' directory for LOT 24, then EXECUTE lesson plan. These actions will set up any initial conditions for the scenario.
- If this scenario IC has changing conditions (i.e. Xenon is changing, etc.), then place the simulator in FREEZE, otherwise it is OK to leave in RUN.
- Run the scenario in accordance with the next section, 'Scenario Instructions'.

SCENARIO INSTRUCTIONS

NOTE

Steps 1 to 4 below can be performed in the LOR Debrief Room prior to the crew coming into the Simulator provided exam security measures are taken.

- 1. Provide Shift Turnover sheets to the crew and review the information.
- 2. Have the Crew perform a Pre-Job Brief swapping EHC pumps. Ensure the crew doesn't have any other questions about the Shift Turnover.
- 3. Ensure the Beacon book from the simulator is available to the crew if they are in the LOR Debrief Room.
- 4. Review the Simulator Differences list with the crew if needed.
- 5. When signaled by Simulator Staff, have the crew perform their board walkdown and inform the floor instructor when ready to take the watch.
- 6. Ensure the simulator is in RUN and verify simulator clock is set correctly. Note the time that the Crew takes the watch.

NOTE

Malfunction Step and/or Lesson Plan Steps (Events) are triggered upon the Lead Examiners signal during the scenario unless an agreed upon time is discussed with the examiner prior to the start of the scenario.

Always 'TRIGGER' events in the Simulator Scenario Lesson Plans. This way delays associated with events will take place as intended.

Refer to 'EXPECTED BOOTH COMMUNCATIONS' and 'EXPECTED BOOTH ACTIONS' Sections for instructions for Instructor actions during the scenario.

- 7. Trigger the step titled 'Start Chart' and ensure specified Recorded Parameters for the scenario begin recording as the scenario runs. If the chart speed is NOT set to 5400 seconds (90 minutes) then perform the following:
 - Under 'CHARTS' click on 'SET TIME'
 - In the dialog box enter 5400 seconds (90 minutes)
 - Click OK.
- 8. The crew will start EHC Pump #12 but then stop the pump and restart EHC Pump #11 due to a leak on EHC Pump #12 Event #1
- 9. When signaled by Lead Examiner, trigger **MALFUNCTION STEP** This will insert Step #1, Event #2.
- 10. When signaled by Lead Examiner, trigger STEP 2 Event #3
- 11. When signaled by Lead Examiner, trigger STEP 3 Event #4
- 12. When signaled by Lead Examiner, trigger **STEP 4 –** Event #5
- 13. Place simulator in FREEZE when cued by the Lead Examiner to terminate scenario.
- 14.DO NOT RESET simulator until the steps on the next page are completed and all Examiners have completed Follow-Up Questioning.

SCENARIO INSTRUCTIONS (cont'd.)

NOTE

Some scenarios will have more than one chart. For these, each chart file must be separately saved with a unique filename.

15. Saving Recorded Parameters Data

- Click on the 'Charts' icon on the left side of the screen
- Select 'Pause' icon, then select 'All'
- Click on the 'Print Chart' icon, then select 'All'
- This will bring up a window in the TASK BAR called PRIMOPDF.
- Click on 'Create PDF'
- This will bring up a File Save As window.
- Save to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 Scenario 4' followed by a name that identifies the crew (e.g. 'Crew A).
- Save the new file. It will be saved in a folder already on the desktop. LOT24 Charts.

16. Saving Scenario SAM (Simulator Action Monitor)

- Under 'TOOLS' click on 'SAM'
- In the dialog box that comes up click on 'SAVE TO'
- Save as a 'TEXT FILE' to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 SAM INFO Scenario 4' followed by a name that identifies the crew (e.g. 'Crew A).

LOT 24 NRC OP-TEST SCENARIO #4 Rev 1 Page 43 of 43

SCENARIO - 04

	0POP01-ZQ-0022					
	Plant Operations Shift Routines					
For Training Only	Shift Turnover Checklist		Page 1 of 1			

PART I - To be completed prior to shift turnover.

Unit: <u></u>	<u>1</u> Off- Go	oing Shift:	Days (Nights)	Dat	e: <u>Today</u>	<u>'</u>	Mode:	<u>1</u>
	Dilution		Boration			Control Rods		
Current Setpoint	1% Pwr Change	1° F Change	Current Setpoint	1% Pwr Change	1° F Change	Current Position	1% Pwr Change	1° F Change
0	130	114	0 flushing with	29	25	185	7	6
As Required		As Required			As Required			
ΔI Target Channel RCS Boron 0.56% U1144 1542								

Unit 1 Status

- Mode 1, 48% Power
- Core burnup is 150 MWD / MTU, BOC
- AFW Pump #11 is OOS

Load Reduction:

- 100-90%/1hr = **162**
- 100-80%/10min = **382**
- 100-75%/30min = **444**
- 100-60%/1hr = 620
- 100-50%/10min = **925**

Information:

- The crew will start EHC Pump #12 and secure EHC Pump #11 in order to perform an engineering evaluation of EHC Pump #11. EHC Pump #11 is to be placed in Auto until the evaluation begins later in the shift. EHC Lineups for EHC Pump #12 were completed last shift. M/M is ready with rig and pressure gauge.
- Using unconditioned fuel requirements, continue raising Reactor Power per 0POP03-ZG-0005, Plant Startup to 100%, Step 7.51.
- BAT 1A & 1B Concentrations are 7300 ppm
- Fuel Handling Building truck bay doors are closed
- No personnel are in containment
- Ron Gibbs has the duty
- The NLO compliment is 5 watch standers and a head operator

ECO/LCO/RAsCAL:

TS 3.7.1.2 for AFW Pump #11, Action a. With one motor-driven auxiliary feedwater pump inoperable, within 28 days restore the pump to OPERABLE status or apply the requirements of the CRMP or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

LOT 24 NRC EXAM

SIMULATOR OPERATING TEST

SCENARIO #5

Revision 1

Week of 07/13/2020

SCENARIO OUTLINE

Facility:	South Texa	s Project	Scenario No.: 5 Op-Test No.: LOT 24 NRC		
Examine	ers:		Operators:		
Initial Co	nditions:		Critical Tasks:		
Mode 1	l at 100% Pow 	ver, EOC	• E5 – CT16; Trip RCPs		
AFW P	<u>.</u> ump #11 is ou	ut of service.	• E7 – C111, Manually Isolate RCB Penetration		
Event No.	Malf. No.	Event Type*	Event Description		
1 (1 min)	N/A	SRO (TS Only)	Oil sight glass broken on Containment Spray Pump 1B		
2 (5 min)	<u>ME</u> Schematic cap003	BOP (C) SRO (C)	CRDM Vent Fan 11A Trouble		
3 (10 min)	02-19-03 0	RO (I) SRO (I, TS)	Pressurizer PT-0457 fails low.		
4 (22 min)	07-04-03 1 08-12-04 (True)	RO (R) BOP (R) SRO (R)	SGFPT #13 Trips and SU SGFP #14 trips on O/C. Crew will down power to 80%.		
5 (32 min)	01-11-03	ALL (M)	Ejected Control Rod LOCA – H8		
(02 1111)	1		(Critical Task)		
6 (N/A)	01-12-04A 01-12-04B 01-12-04C	RO (C) SRO (C)	Failure of Phase 'A' to automatically actuate. Manual switches work. (Integral to scenario)		
7	(True)		Containment Normal Sump Discharge ED EV 7900 study		
(N/A)	Multiple	BOP (C)	open. ED-MOV-0064 fails to auto close and must be		
		SRO (C)	manually closed. (Critical Task)		
Lot [*] (N)oi	rmai, (R)eactiv	rity, (I)nstrument	, (C)omponent, (M)ajor, (TS) Technical Specification		

Total Estimated Time: 55 minutes

	Target Quantitative Attributes (Per Scenario; See Section D.5.d)	Actual Attributes
1.	Malfunctions after EOP entry (1–2)	2
2.	Abnormal events (2–4)	4
3.	Major transients (1–2)	1
4.	EOPs entered/requiring substantive actions (1–2)	2
5.	Entry into a contingency EOP with substantive actions (<u>></u> 1 per scenario set)	0
6.	Preidentified critical tasks (≥2)	2

SCENARIO MISCELLANEOUS INFORMATION

INSTRUCTOR NOTES:

- Critical Tasks are indicated by "**CT**-##" in the position column and indicated in bold type. In some instances, an "*" will indicate that only a portion of the task listed is considered critical.
- Shaded cells indicate procedural entry points.

RECORDED PARAMETERS:

Recorded parameters will be determined during NRC Validation week.

The parameters identified for recording may be of value in evaluating crew performance. Once the scenario is complete for each crew, printout the recorded parameters and label the printout with date, time, crew number and scenario number. See Scenario Instructions section for further details on how to save the Recorded Parameters.

- Core Exit T/C
- RCB Normal Sump Level
- Pressurizer Pressure

SCENARIO OBJECTIVES

Event 1 Objective

• Interpret Technical Specifications.

Event 2 Objective

 Respond to Containment System alarms per 0POP09-AN-22M3, Annunciator Response Instructions.

Event 3 Objective

• Respond to Pressurizer Pressure Control System alarms per 0POP04-RP-0001, Loss of Automatic Pressurizer Pressure Control.

Event 4 Objective

• Respond to Main Feedwater System alarms per 0POP04-FW-0001, Steam Generator Feed Pump Trip.

Event 5 Objective

• Respond to an Ejected Control Rod LOCA where RCPs have to be secured per 0POP05-EO-EO00, Reactor Trip or Safety Injection and 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant.

Event 6 and 7 Objective

• Respond to equipment failures during a reactor trip per 0P0P05-E0-E000, Reactor Trip or Safety Injection.

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Op-Test I	No.: 1	Scenario No.: 5 Event No.: 1	
Event De	scription: C	il sight glass broken on Containment Spray Pump 1	B (TS Only)
Time	Position	Required Operator Actions	Notes
	AO	Reports an oil leak on CS Pump 1B. The oil sight glass is broken, and a large amount of oil has drained from the pump motor.	
	BOP	After receiving the call reports to the US that the oil sight glass on CS Pump 1B was broken and a large amount of oil has drained from the pump motor.	
	SRO	Directs the RO to place CS Pump 1B in PTL, declares CS Pump 1B INOPERABLE and applies TSs.	
		(Crew will make arrangements to have oil cleaned up.)	
	RO	Places CS Pump 1B in PTL.	
		<u>(Event 2</u> can be triggered after SRO has checked TS.)	
TS 3.6.2.	1 Action a.	t Care System increasely within 7 days restore the	inenerable Correy Cystem

OPERATOR ACTIONS

With one Containment Spray System inoperable, within 7 days restore the inoperable Spray System to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

Op-Test	No.: 1	Scenario No.: 5 Event No.: 2 (Examiner T	rigger)		
Event De	Event Description: CRDM Vent Fan 11A Trouble.				
Time	Position	Required Operator Actions	Notes		
	BOP	Acknowledges and announces the following annunciator from 22M1: • CRDM VENT FAN TRBL (F-2)			
	BOP	 CHECK the following Plant computer points to determine affected fan: HCPD9623, RCB HVAC CRDM VT FAN 11A (22M1 – F2 Step 1) 			
		(Fan 11A computer point.)			
	SRO	SECURE affected fan. CRDM Vent Fan 11A (22M1 – F2 Step 2)			
	BOP	START a non-affected train fan per 0POP02-HC- 0001, Containment HVAC, within 15 minutes following performance of Step 2.			
		(22M1 – F2 Step 3)			
		(Operator will start CRDM Vent Fan 11C.)			
	SRO	Directs RO to use 0POP02-HC-0001, Containment HVAC, to start CRDM Vent Fan 11C.			
	BOP	START selected CRDM vent fan(s). Train C "VENT FAN 11C HC-VFN019"			
		(0POP02-HC-0001 Step 8.1)			
		(<u>Event 3</u> may occur on signal from the Lead Examiner.)			
	BOP	INITIATE Condition Report for affected fan. (22M1 – F2 Step 4)			

Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 3 (Examiner Trigger)				
Event De	Event Description: Pressurizer PT-0457 fails low.				
Time	Position	Required Operator Actions	Notes		
	RO	 Acknowledges and announces the following annunciator from 04M8: PRZR DNBR PRESS LOW (B-5) PRZR PRESS DEV LO B/U HTRS ON (D-7) PRZR PRESS LO RX TRIP ALERT (E-7) PRZR PRESS LOW PORV BLERT (F-7) PRZR PRESS LOW PORV BLKD (F-8) Acknowledges and announces the following annunciator from 05M2: OTDT RX PRETRP (A-5) Acknowledges and announces the following annunciator from 05M3: DELTA T ROD WTHDRWL BLK ALERT (A-4) 			
	RO	 Identifies the failed pressure channel as PT-0457 failed low and performs the following immediate actions: Places Pressurizer Master Pressure Controller, PK-655A, in MANUAL. Removes failed channel PT-0457 from control by selecting 455/456 or 455/458. Adjusts Pressurizer pressure Controller to control between 2220 and 2250 psig. (These are immediate actions for a controlling PZR Pressure channel that has failed low.) 			
	SRO	Enters and directs the actions of 0POP04-RP- 0001, Loss of Automatic Pressurizer Pressure Control.			
	SRO	Verifies proper actions taken per Step 1 of 0POP04-RP-0001, Loss of Automatic Pressurizer Pressure Control. (Step 1 RNO b)			
	RO	Checks Pressurizer Pressure Controller operable.			
	RO	Checks Pressurizer PORV's closed. • PCV-0655A • PCV-0656A (Step 3)			

Op-Test	No.: 1	Scenario No.: 5 Event No.: 3 (Examiner T	rigger)		
Event De	Event Description: Pressurizer PT-0457 fails low.				
Time	Position	Required Operator Actions	Notes		
	RO	 CHECK Normal Pressurizer Spray Valves: Normal Pressurizer Spray Valves – CLOSED Pressurizer Spray Line temperature - NORMAL 			
		(Step 4)			
	RO	CHECK Pressurizer Auxiliary Spray Valve LV- 3119 CLOSED			
		(Step 5)			
	RO	CHECK Pressurizer Pressure – GREATER THAN 2210 PSIG			
		(Step 6)			
	RO	CHECK Pressurizer Pressure – GREATER THAN 2250 PSIG			
		(Step 7)			
		(Pressure should be less than 2250 psig and the US should go to Step 11.)			
	RO	ENSURE An Operable Pressurizer Pressure Channel Is Selected On The Pressurizer Pressure Recorder Selector Switch			
		(Step 11)			
		(Selects one of 3 Operable PZR pressure channels – 455, 456 or 458.)			
	RO	CHECK Pressurizer Pressure Controller RC-PK-0655A – OPERABLE (Step 12)			
	RO	CHECK Pressurizer Pressure – BETWEEN 2220 AND 2250 PSIG (Step 13)			

Op-Test No.: 1 Scenario No.: 5 Event No.: 3 (Examiner Trigger)					
Event Description: Pressurizer PT-0457 fails low.					
Time	Position	Required Operator Actions	Notes		
	RO	 CHECK The Following: Pressurizer Pressure Controller RC-PK- 0655A demand signal - INDICATING NORMAL FOR EXISTING PLANT CONDITIONS Pressurizer spray valves - IN AUTO Pressurizer heater controls - IN AUTO Pressurizer PORVs - IN AUTO Pressurizer PORVs - IN AUTO Pressurizer PORV Isolation Valves – OPEN Pressurizer Pressure Controller RC-PK- 0655A - IN AUTO RNO 			
		 PLACE Pressurizer Pressure Controller in AUTO. A/ER Pressurizer pressure being maintained - 			
		BETWEEN 2220 AND 2250 PSIG			
	PO	(Step 14)			
	RO	CHECK Pressurizer Pressure Channels - ALL OPERABLE RNO			
		 PERFORM the following: NOTIFY I&C to place the affected Channel in trip or bypass. REFER TO Addendum 1, Procedure List for the appropriate procedure. 			
		 CHECK P-11 permissive in proper state for plant conditions per Technical Specification Table 3.3-3, Item 9.a. (Action 21) 			
		(Step 15)			
		(NOTE: The P-11 TS is satisfied because only one channel is affected, and the other 3 channels satisfy the Minimum Number of Channels OPERABLE)			
	SRO	REFER TO Addendum 3 For Applicable Technical Specifications (Step 16) (See TS Action details on next page.) (<u>Event 4</u> can occur after the SRO checks Tech Specs or on request from the lead examiner.)			

Op-Test No.: 1		Scenario No.: 5	Event No.: 3 (Examiner T	rigger)		
Event De	Event Description: Pressurizer PT-0457 fails low.					
Time	Position	Required Op	erator Actions	Notes		
	RO	CHECK Reactor Coolar OPERATING	it Pumps - ALL			
		(Step 17)				
	SRO	INITIATE Corrective Act Component	tion For Failed			
		(Step 18)				
TS 3.3.1, With the r and/or PC a. For plac Not 4.3 b. For 1. Tr 2. Tr ma Sp	 TS 3.3.1, Function 8, 10 & 11; Action 6 AND TS 3.3.2, Function 1.e; Action 20 With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied: a. For Functional Units with installed bypass test capability, the inoperable channel may be placed In bypass, and must be placed in the tripped condition within 72 hours. Note: A channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.2.1. provided no more than one channel Is in bypass at any time. b. For Functional Units with no Installed bypass test capability, 1. The inoperable channel is placed in the tripped condition within 72 hours. and 2. The Minimum Channels OPERABLE requirement is met; however, the Inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.2.1 					

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Op-Test No.: 1 Scenario No.: 5 Event No.: 4 Event Description: SGFPT #13 Trips and SU SGFP #14 trips on O/C. Crew will down power to 80%. Time Position **Required Operator Actions** Notes BOP Acknowledges and announces the following annunciators from 06M4: • SGFPT 13 TRIP (B-5) (NOTE: Other alarms will come in as event progresses.) SRO Ensures immediate actions of and directs actions of 0POP04-FW-0002, Steam Generator Feed Pump. (NOTE: A SGFPT Trip is a direct entry condition for 0POP04-FW-0002.) BOP **CHECK SGFPTs - REQUIRED NUMBER** RUNNING (RNO) PERFORM the following: ENSURE SU SGFP is running. START a Standby FW Booster Pump. IF a SGFPT trips with the SU SGFP already in • service OR NOT available. THEN PERFORM the following: IF an idle (3300 RPM) SGFPT is available. THEN raise its speed using its individual speed controller to provide adequate Feedwater flow. IF feedwater flow is still LESS THAN required to recover SG Level, THEN GO TO Addendum 1, Turbine Load Reduction, to reduce Turbine load to match steam flow with feedwater flow. (Step 1, an immediate action step.) (The SU SGFP will start and then trip on overcurrent. At 100% power another FW pump will not be available to supply adequate FW and the crew will perform Add 1 to lower power to about 80%.) AO (If dispatched a Plant Operator will report the following: SGFPT 13 has no reason locally why it • tripped. SU SGFP locally looks OK • SU SGFP breaker has an overcurrent • indicated FWBP 13 is running SAT)

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Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 4				
Event De	Event Description: SGFPT #13 Trips and SU SGFP #14 trips on O/C. Crew will down power to 80%.				
Time	Position	Required Operator Actions	Notes		
	RO	 PERFORM The Following To Reduce Turbine Load: NOTIFY STP Co-Owners Using The EMS Website That Load Reduction Is Commencing DETERMINE Amount Of Boric Acid To Add To Reduce Reactor Power To Desired Level AND COMMENCE RCS Paration - Will add about 			
	BOP	 COMMENCE RCS Boration – Will add about 200 to 400 gallons of boric acid by taking RC M/U CONT to BORATE and START. CHECK Rod Control System - IN AUTOMATIC ENERGIZE Pressurizer Heaters For Boron Equalization – Energizes Backup Heaters D and E. PERFORM The Following To Lower Turbine Load: CHECK Main Turbine - IN THE INLET PRESSURE FEEDBACK MODE INL IN PLACE MS to DA valves in 'MOD' position and return to 'AUTO' – One handswitch for PV-7174 and PV-7174A REDUCE Turbine Load At A Rate Of Less Than Or Equal To 5% Per Minute Using Operator Auto – Adjusts Turbine setpoint and then presses "GO' 			
	BOP	 MONITOR SGFP Bearing Temperatures (Pump and Turbine) On ICS FW-011 Display: Turbine Thrust Bearing Temperatures LESS THAN 235°F Turbine Journal Bearing Temperatures LESS THAN 200°F Pump Thrust Bearing Temperature LESS THAN 200°F Pump Journal Bearing Temperature LESS THAN 235°F (Step 2 of Addendum 1) (If the crew does not reduce load SGFPT bearing temperatures will begin to rise on the running pumps. However, if load is not reduced SG level will also lower quickly to the trip set point. SGFPT bearing temperatures should not be a problem if load is expeditiously reduced. SG level will be the critical parameter to monitor.) 			

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Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 4				
Event De	Event Description: SGFPT #13 Trips and SU SGFP #14 trips on O/C. Crew will down power to 80%.				
Time	Position	Required Operator Actions	Notes		
	BOP	 MAINTAIN Main Generator Reactive Load (VARs) Within The Following: Less Than 450 MVARs Guidelines Of The Plant Curve Book, Figure 7.1 (Step 3 of Addendum 1) 			
	RO	 MONITOR Rod Control System Responding To RCS TAVG/TREF Deviation By Ensuring The Following: Control Rods Are Inserting AND RCS Tavg trending to within 3°F of Tref OR RCS Tavg within 3°F of Tref (Step 4 of Addendum 1) 			
	RO	 CHECK Pressurizer Level Within One Of The Following: Trending to Program Level At Program Level (Step 5 of Addendum 1) 			
	RO	 CHECK Pressurizer Pressure Within One Of The Following: Trending to between 2220 psig and 2250 psig Between 2220 psig and 2250 psig (Step 6 of Addendum 1) 			
	BOP	 CHECK SG NR Level Within One Of The Following: Trending to between 68% and 74% Between to 68% and 74% (Step 7 of Addendum 1) (<u>Event 5</u> will be triggered by signal from the Lead Examiner.) 			

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Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 5 (Examiner Trigger)				
Event D	escription: E	sk)			
Time	Position	Required Operator Actions	Notes		
	ALL	Multiple alarms come in and the crew determines that a Safety Injection has occurred due to a loss of reactor coolant.			
	SRO	Enters and directs the actions of 0POP05-EO- EO00, Reactor Trip and Safety Injection.			
	RO	Completes immediate actions of 0POP05-EO- EO00 and determines: • Reactor tripped (Step 1) • Main Turbine is Tripped (Step 2) • AC ESF Busses are energized (Step 3) • SI has actuated (Step 4)			
		(RO will complete immediate actions. BOP Operator will monitor the plant and make an announcement of the Reactor trip.)			
	BOP CT-16	 (During a pause between performing immediate actions and verifying immediate actions the SRO will direct the BOP to: MONITOR If RCPs Should Be Stopped: HHSI pump - AT LEAST ONE RUNNING RCS pressure - LESS THAN 1430 PSIG *STOP ALL RCPs (From CIP) 			
		 Reset the AFW Reg Valves Throttle the AFW Reg valves to lower total AFW flow. 			
		Total AFW flow must remain above 576 gpm until at least one SG level is >14% NR {34% for adverse containment})			
	SRO	Directs/Ensures the immediate actions of EO00, Reactor Trip/SI have been completed by performing a procedure read through of them.			
	BOP	VERIFY Proper SI Equipment Operation Per ADDENDUM 5, VERIFICATION OF SI EQUIPMENT OPERATION			
		(Step 5)			
		(See Actions on pages 22-25)			

Op-Test	No.: 1	Scenario No.: 5 Event No.: 5 (Examiner Tr	rigger)		
Event De	Event Description: Event 5: Ejected Control Rod LOCA – H8. (Critical Task)				
Time	Position	Required Operator Actions	Notes		
	RO	 MONITOR If Containment Spray Is Required: Containment pressure - GREATER THAN 9.5 PSIG (QDPS) 			
		(RNO)			
		 PERFORM the following: CHECK Containment pressure - HAS EXCEEDED 9.5 PSIG "PRESS PR-0934" "EXTD RNG PRESS PR-9759" IF containment pressure HAS EXCEEDED 9.5 PSIG, THEN GO TO Step 6.b. IF containment pressure HAS REMAINED LESS THAN 9.5 PSIG, THEN GO TO Step 7. 			
		(Step 6) (Containment pressure will be less than 9.5 psig and the crew will GO TO Step 7)			
	RO	VERIFY Total AFW Flow – GREATER THAN 576 GPM (<i>Step 7</i>)			
	RO	 CHECK RCP Seal Cooling: ENSURE seal injection flow between 6 and 13 gpm (Step 8) (RO may have to adjust seal injection.) 			
	RO	MONITOR RCS Temperatures - • WITH ANY RCP RUNNING, RCS TAVG STABLE AT OR TRENDING TO 567°F OR • WITHOUT ANY RCP RUNNING, RCS TCOLD STABLE AT OR TRENDING TO 567°F (Step 9)			
		(RCS Tcold will be lowering but MSIVs and MSIBs are already closed so no further action is needed.)			
	RO	 CHECK Pressurizer Status: PORVs - CLOSED Normal pressurizer spray valves - CLOSED Auxiliary spray valve - CLOSED Excess letdown isolation valves - CLOSED (Step 10) 			

Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 5 (Examiner Trigger)				
Event De	Event Description: Event 5: Ejected Control Rod LOCA – H8. (Critical Task)				
Time	Position	Required Operator Actions	Notes		
	RO CT16	 MONITOR If RCPs Should Be Stopped: HHSI pump - AT LEAST ONE RUNNING RCS pressure - LESS THAN 1430 PSIG *STOP ALL RCPs 			
		(Step 11)			
		(This action is on the procedure CIP and will have already been completed.)			
	RO	 VERIFY The Following Containment Isolation Valve – CLOSED Seal return isolation valves Containment atmosphere radiation monitor isolation valves 			
		(Step 12)			
	RO	 CHECK If SG Secondary Pressure Boundary Intact: CHECK pressures in all SGs – CONTROLLED OR RISING GREATER THAN CONTAINMENT PRESSURE 			
		(Step 13)			
	RO	 CHECK If SG Tubes Are Intact: Main steamline radiation – NORMAL IF SG blowdown in service, THEN SG blowdown radiation – NORMAL CARS pump radiation – NORMAL NO SG level rising in an uncontrolled manner 			

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Op-Test No.: 1		Scenario No.: 5 Event No.: 5 (Examiner Tr	igger)
Event De	escription: E	vent 5: Ejected Control Rod LOCA – H8. (Critical Tag	sk)
Time	Position	Required Operator Actions	Notes
	RO	 CHECK If RCS Is Intact: Containment radiation – NORMAL Containment pressure – NORMAL Containment wide range water level – NORMAL Containment wide range water level – NORMAL GO TO 0POP05-EO-EO10, LOSS OF REACTOR OR SECONDARY COOLANT, Step 1. MONITOR Critical Safety Functions. WHEN Addendum 5 of this procedure is complete, THEN Functional Restoration Procedures may be IMPLEMENTED. (Step 15) (Critical Safety Functions will be implemented 	
		once 0POP05-EO-EO00, Addendum 5 is completed but are not expected.)	
	SRO	Enters 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant.	
	RO CT16	 MONITOR If RCPs Should Be Stopped: HHSI pump - AT LEAST ONE RUNNING RCS pressure - LESS THAN 1430 PSIG *STOP ALL RCPs (Step 1) (This action is on the procedure CIP and will have already been completed.) 	

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Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 5 (Examiner Trigger)				
Event Description: Event 5: Ejected Control Rod LOCA – H8. (Critical Task)					
Time	Position	Required Operator Actions	Notes		
	BOP	 DEPRESSURIZE Intact SGs To 1000 PSIG CHECK RCS pressure - GREATER THAN 415 PSIG CHECK pressurizer pressure LESS THAN 1985 PSIG BLOCK Low Steamline Pressure SI CHECK condenser - AVAILABLE CHECK steam dump in steam pressure mode RNO PLACE steam dump controller in MANUAL with zero demand. ADJUST "HDR PRESS CONT PK-0557" setpoint to BETWEEN 7.0 (980 PSIG) and 7.1 (994 PSIG). PLACE steam dump "MODE SEL" switch in the STEAM PRESS position. DEPRESSURIZE intact SGs to BETWEEN 980 PSIG and 994 PSIG using steam dumps in MANUAL. GO TO Step 2.i CHECK RCS TAVG - LESS THAN 563°F PLACE steam dump "INTLK SEL" switches to BYPASS INTERLCK. ENSURE "HDR PRESS CONT PK-0557" in AUTO VERIFY steam dumps controlling SG pressures LESS THAN OR EQUAL TO 994 PSIG ADJUST intact SG PORV controller setpoints to BETWEEN 995 PSIG and 1000 PSIG (QDPS PRI/SEC). ENSURE SG PORV controllers in AUTO. (Step 2) 			
	BOP	 MONITOR If SG Secondary Pressure Boundary Intact: CHECK pressures in all SGs CONTROLLED OR RISING GREATER THAN CONTAINMENT PRESSURE (Step 3) 			
	RO	RESET SI			
		(Step 4)			

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Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 5 (Examiner Trigger)					
Event Description: Event 5: Ejected Control Rod LOCA – H8. (Critical Task)						
Time	Position	Required Operator Actions	Notes			
	RO	RESET ESF Load Sequencers				
		(Step 5)				
	RO	RESET Containment Isolation Phase A (Step 6)				
	RO	RESET Containment Isolation Phase B (Step 7)				
	BOP	 MONITOR INTACT SG Levels: NR levels - GREATER THAN 14% [34%] CONTROL AFW flow to maintain NR levels BETWEEN 25% [34%] and 50% (Step 8) 				
	BOP	 CHECK Secondary Radiation: PERFORM the following: RESET SG LO-LO level AFW actuations RESET SG blowdown and sample isolations NOTIFY Chemistry to sample all SGs for activity PERFORM the following: MONITOR secondary systems listed below radiation levels - NORMAL Main steamline radiation NORMAL SG blowdown radiation NORMAL CARS pump(s) radiation NORMAL MONITOR SG sample results NORMAL 				
	RO	MONITOR Pressurizer PORVs And Isolation Valves: • Power to isolation valves AVAILABLE • PORVs – CLOSED • Isolation valves - AT LEAST ONE OPEN (Step 10)				
	RO	ESTABLISH IA To Containment: • IA pressure - GREATER THAN 95 PSIG • OPEN IA OCIV (Step 11)				

Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 5 (Examiner Trigger)				
Event Description: Event 5: Ejected Control Rod LOCA – H8. (Critical Task)					
Time	Position	Required Operator Actions	Notes		
	RO	 MONITOR Containment H2 Concentration: Containment H2 - GREATER THAN OR EQUAL TO ZERO (QDPS QUAL PAMS) RNO PLACE containment H2 monitoring system in service per ADDENDUM 1, ESTABLISHING CONTAINMENT H2 MONITORING. 			
		(Step 12a)			
		(RO will place containment H2 monitoring in service per Addendum 1.)			
	RO	RESET SI RESET Containment Isolation Phase A			
		(Add 1, Step 1 & 2)			
		(SI and Phase A have already been reset.)			
	RO	OPEN H2 sample OCIVs for each train			
		(Add 1, Step 3)			
	RO	 PLACE "CNTMT H2 SAMPLE SELECT" for each train to the desired position: TRAIN A – FV-4100 TRAIN C – FV-4103 			
		(Add 1, Step 4)			
	RO	OPEN selected CNTMT H2 SAMPLE valve for each train.			
		(Add 1, Step 5)			
	RO	OPEN H2 sample ICIVs for each train.			
		(Add 1, Step 6)			
	RO	train.			
		(Add 1, Step 7)			
	RO	VERIFY H2 reading for each train GREATER THAN OR EQUAL TO ZERO after 1 minute of operation (QDPS DETAIL DATA MENU PAGE 7)			
		(Add 1, Step 8)			
	RO	RETURN TO procedure step in effect.			
		(Add 1, Step 8)			

Op-Test	Op-Test No.: 1 Scenario No.: 5 Event No.: 5 (Examiner Trigger)					
Event Description: Event 5: Ejected Control Rod LOCA – H8. (Critical Task)						
Time	Position	Required Operator Actions	Notes			
	RO	 H2 concentration - GREATER THAN OR EQUAL TO 0.5% 				
		 RNO Perform the following: WHEN H2 concentration is GREATER THAN 0.5%, THEN PERFORM Step 12.c and 12.d. GO TO Step 13. 				
		(Step 12b)				
		(H2 should be reading on scale – 0.0%)				
	RO	 ENSURE SFPC In Service Within 2.5 HOURS Of Loss Of SFPC: CHECK CCW pumps - AT LEAST TWO RUNNING ALIGN CCW flow to SFPC heat exchanger(s) Check SFPC Pump - RUNNING 				
		(Step 13)				
		(SRO may flag this step because the allowance of 2.5 hours to complete.)				
		(Terminate Scenario:				
		Scenario can be completed sooner if Critical Tasks have been completed.)				

Op-Test No.: 1 Scenario No.: 5 Event No.: Addendum 5 and Event 6 & 7							
Event Description: 0POP05-EO-EO00, Addendum 5 Event 6: Failure of Phase 'A' to automatically actuate. Manual switches work. Event 7: RCB Normal Sump Discharge ED-FV-7800 stuck open. ED-MOV-0064 fails to auto close and must be manually closed. (Critical Task)							
Time	Position	Required Operator Actions	Notes				
	BOP	 VERIFY FW isolation: SGFPTs – TRIPPED SU SGFP – TRIPPED VERIFY the following valves –CLOSED FWIVs FWIBs FW preheater bypass valves FW regulating valves Low power FW regulating valves SG blowdown isolation valves SG sample isolation valves (EO00 Addendum 5, Step 1) (0POP05-EO-EO00, Reactor Trip or Safety Injection, Addendum 5, Verification of Equipment Operation.) (This addendum is performed in parallel with Steps 5 to 15 of 0POP05-EO-EO00, Reactor Trip or Safety Injection.) 					
	BOP	CHECK if main steamline should be isolated: CHECK for any of the following conditions: Containment pressure – GREATER THAN OR EQUAL TO 3 PSIG SG pressure (without low steamline pressure SI blocked) - LESS THAN OR EQUAL TO 735 PSIG SG pressure (with low steamline pressure SI blocked) - LOWERING AT A RATE GREATER THAN OR EQUAL TO 100 PSI/SEC, BY OBSERVANCE OF THE STEAMLINE PRESSURE RATE BISTABLES VERIFY main steamline isolation: MSIVs – CLOSED MSIBs - CLOSED 					
	BOP	 VERIFY AFW system status: Motor-driven pump – RUNNING Turbine-driven pump – RUNNING (Step 3) 					
OPERATOR	ACTIONS						
-----------------	---------						
-----------------	---------						

Op-Test I	No.: 1	Scenario No.: 5 Event No.: Addendum 5 ar	nd Event 6 & 7
Event De	scription: 0 E E	POP05-EO-EO00, Addendum 5 vent 6: Failure of Phase 'A' to automatically actuate. vent 7: RCB Normal Sump Discharge ED-FV-7800 s fails to auto close and must be manually close	. Manual switches work. stuck open. ED-MOV-0064 sed. (Critical Task)
Time	Position	Required Operator Actions	Notes
	BOP	VERIFY AFW valve alignment - PROPER EMERGENCY ALIGNMENT (Step 4)	
	BOP	VERIFY total AFW Flow - GREATER THAN 576 GPM (Step 5)	
	BOP	VERIFY containment isolation phase A: Phase A – ACTUATED RNO Manually ACTUATE phase A. (Event 6) A/ER 	
	BOP CT11	 Phase A valves - CLOSED, REFER TO ADDENDUM 1, PHASE A ISOLATION VERIFICATION RNO *Manually CLOSE valves. ED-MOV-0064 (Event 7) (Step 6) 	
		(The critical task stops water from being pumped out of the Containment Normal Sump to the MAB.)	
	BOP	 VERIFY ECW status: ECW pumps – RUNNING ECW pump discharge isolation valves – OPEN (Step 7) 	
	BOP	VERIFY CCW pumps – RUNNING (Step 8)	
	BOP	 VERIFY RCFC status: RCFCs – RUNNING Cooling water - TRANSFERRED TO CCW (Step 9) 	
	BOP	 VERIFY SI pump status: HHSI pumps – RUNNING LHSI pumps – RUNNING (<i>Step 10</i>) 	
	BOP	VERIFY SI valve alignment – PROPER EMERGENCY ALIGNMENT (Step 11)	

Op-Test I	No.: 1	Scenario No.: 5	Event No.: Addendum 5 ar	nd Event 6 & 7
Event De	scription: 0 E E	POP05-EO-EO00, Adde vent 6: Failure of Phase vent 7: RCB Normal Su fails to auto close	ndum 5 'A' to automatically actuate. mp Discharge ED-FV-7800 s e and must be manually clos	. Manual switches work. stuck open. ED-MOV-0064 sed. (Critical Task)
Time	Position	Required O	perator Actions	Notes
	BOP	 VERIFY SI flow: RCS pressure - LE GO TO Step 13 of (Step 12) 	SS THAN 1745 PSIG RNO this Addendum.	
	BOP	 VERIFY containment v Containment atmost isolation valves – C Normal purge support STOPPED Supplemental purgo – STOPPED Purge Dampers – C (Step 13) 	ventilation isolation: sphere radiation monitor COSED ly and exhaust fans – e supply and exhaust fans CLOSED	

OPERATOR ACTIONS

Op-Test I	No.: 1	Scenario No.: 5 Event No.: Addendum 5 ar	nd Event 6 & 7
Event De	scription: 0 E E	POP05-EO-EO00, Addendum 5 vent 6: Failure of Phase 'A' to automatically actuate vent 7: RCB Normal Sump Discharge ED-FV-7800 fails to auto close and must be manually close	. Manual switches work. stuck open. ED-MOV-0064 sed. (Critical Task)
Time	Position	Required Operator Actions	Notes
	BOP	 VERIFY ventilation actuation: Control room HVAC – OPERATING IN EMERGENCY RECIRC EAB HVAC - OPERATING IN EMERGENCY RECIRC FHB HVAC - OPERATING IN EMERGENCY MODE FHB Exhaust Fans - ONLY TWO TRAINS OPERATING Exhaust booster fans Main exhaust fans PERFORM the following: IF three trains FHB exhaust fans running, THEN PLACE one train FHB exhaust fans in PULL TO LOCK. SECURE one FHB filter train by PERFORMING the following: PLACE the outlet damper Controller in manual Manually close the outlet damper VERIFY proper operation of filter train in service Essential chilled water pumps – RUNNING ESCS pump room fan coolers – RUNNING AFW pump cubicle fans – RUNNING FHB truck bay doors – CLOSED 	
	BOP	NOTIFY Unit Supervisor that Addendum 5 is COMPLETE <i>(Step 15)</i>	
	SRO	IMPLEMENT Functional Restoration Procedures as required (Step 16)	
	SRO	RETURN TO procedure step in effect. (Step 17)	

OPERATOR ACTIONS

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO	CT-16 TRIP REACTOR COOLANT PUMPS Stop all Reactor	Trip RCPs so that an Orange Path on Core Cooling (CET temperatures > 707°F) does not occur when forced circulation in the RCS stops.	
	Coolant Pumps when 1 HHSI pump running and injecting into the RCS with RCS pressure < 1430 psig – Pump indication green lights lit.	SAFETY SIGNIFICANCE Failure to trip the RCPs under the postulated plant conditions leads to core uncovery and to fuel cladding temperatures in excess of 2200°F, which is the limit specified in the ECCS acceptance criteria. Thus, failure to perform the task represents misoperation or incorrect crew performance in which the crew has failed to prevent "degradation of the fuel cladding barrier to fission product release" and which leads to "violation of the facility license condition." The analysis presented in the FSAR for a SBLOCA typically assumes that the RCPs trip because of a loss of offsite power that coincides with the reactor trip. However, during a SBLOCA, offsite power might remain available and RCPs might continue to run for some period of time.	

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO	CT-11 MANUALLY ISOLATE ED-MOV-0064, CONTAINMENT NORMAL SUMP DISCHARGE - Manually close ED- MOV-0064, Containment normal sump discharge valve – Valve indication green light lit.	Manually close containment isolation valves, such that at least one valve is closed on each critical Phase 'A' containment penetration prior to completion of 0POP05-EO-EO00, Reactor Trip or Safety Injection, Addendum 5. SAFETY SIGNIFICANCE Closing at least one containment isolation valve on each critical Phase A penetration, under the postulated plant conditions and when it is possible to do so, constitutes a task that "is essential to safety," because "its improper performance or omission by an operator will result in direct adverse consequences or significant degradation in the mitigative capability of the plant." In particular, the crew has failed to prevent "degradation of any barrier to fission product release." In this case, the containment barrier is needlessly left in a degraded condition. Failure to perform the critical task leads to an unnecessary release of fission products to the auxiliary building, increasing the potential for release to the environment and reducing accessibility to vital equipment within the auxiliary building. High radiation in the auxiliary building can lead to increased doses to personnel. Failure to perform the critical task also constitutes a failure by the crew to "demonstrate the (ability to) recognize a failure or an incorrect automatic actuation of an ESF system or component."	
If an operate the mainten	NUKEG-1021, Appendix D or or the Crew significantly ance of basic safety funct) y deviates from or fails to follow procedures th ions, those actions may form the basis of a C1	nat affect

identified in the post-scenario review.

EXPECTED BOOTH COMMUNICATIONS

EVENT 1:

- As a plant operator, call the control room to report an oil leak on CS Pump 1B. The oil sight glass is broken, and a large amount of oil has drained from the pump motor.
- As M/M Maintenance or the Duty Maintenance Supervisor, if notified of the oil leak on CS Pump 1B, report that a M/M maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the oil leak on CS Pump 1B. No further action is necessary.

EVENT 2:

- As E/M Maintenance or the Duty Maintenance Supervisor, if notified of the problems with CRDM Vent Fan 11A, report that an E/M maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the problems with CRDM Vent Fan 11A. No further action is necessary.

EVENT 3:

- As I/C Maintenance or the Duty Maintenance Supervisor, if notified of the failure of PZR PT-0457, report that an I/C maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the failure of PZR PT-0457. No further action is necessary.

EVENT 4:

- As a plant operator, if asked to check SGFPT #13, report that there are no issues locally of why the pump tripped.
- As a plant operator, if asked to check SU SGFP #14, report that there is an overcurrent indicated at the breaker.
- As the Duty Maintenance Supervisor, if notified of the failure of SGFPT #13 and SU SGFP #14, report that a M/M maintenance crew is being assembled for support. No further action is necessary.
- As Operations Manager, acknowledge the issues SGFPT #13 and SU SGFP #14. No further action is necessary.

EVENT 5:

• There are no Booth Communications expected for Event 5.

EVENT 6:

• There are no Booth Communications expected for Event 6.

<u>EVENT 7:</u>

• There are no Booth Communications expected for Event 7.

EXPECTED BOOTH ACTIONS

- 1. If asked to open the Deaerator High Level Dump Bypass Valves, then trigger the step for 'DA HLD Bypass Valves FW-486 & FW-487'.
- 2. If asked to fill the AFWST, then trigger the step for 'AFWST Makeup'.

SIMULATOR SETUP

NOTE

<u>ALL</u> Annunciator Response Procedures (ARP's) must be checked if this scenario is the first to be run on this day. Setup for subsequent runs of this scenario only requires those ARP's that were actually marked in to be checked.

Instructors running the scenario must keep track of which ARP's these are, otherwise, all will have to be checked for subsequent scenarios as well.

Each time before running the scenario che	ck an	nd/or o	clean	the fo	ollow	ing:			
Specific Scenario Procedures	1 st √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	2^{nd}	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	3^{rd}	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	4 th √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	After Last Scenario
0POP09-AN-22M1, F-2, CRDM VENT FAN TRBL									
0POP02-HC-0001, Containment HVAC									
0POP04-RP-0001, Loss of Automatic Pressurizer Pressure Control									
0POP04-FW-0002, Steam Generator Feed Pump Trip									
0POP05-EO-EO00, Reactor Trip or Safety Injection									
0POP05-EO-EO10, Loss of Reactor or Secondary Coolant									
Other Procedures Used By Students During Scenario Including POP09s.	1 st √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	2 nd √	Peer $$	3 rd √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	4 th √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	After Last Scenario
Miscellaneous Items to Restore	1 st √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	2 nd √	$\frac{\mathbf{Peer}}{}$	3 rd √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	4 th √	$\begin{array}{c} \textbf{Peer} \\ \end{array}$	After Last Scenario
STA ICS Screens to PD Menu									
All ICS Trends to normal (not scenario specific)									
Student Selected ICS Points changed to U1118									
Control Panel ICS Screens to Normal									
RM 11 History and Screens									
RM 23 – No Alarm Indications									

SIMULATOR SETUP (cont'd.)

NOTE

The Scenario Lesson Plan <u>MUST</u> be run from the left most Instructor Station in Simulator Booth.

For LOT 24 the Simulator Configuration must be set to: 'wsTrain_Sep2021/Train_Sep2021'

- Log into Instructor Workstation as 'lotnrc' user, open Orchid (nstps server), then 'Unlock' Initial Conditions Group 'lotnrc'.
- Reset to IC #205 and perform the following:
 - Switch Check
 - Ensure red light on end of CP-010 off
 - Ensure ICS Annunciators have stopped counting up
- Go to RUN and perform the following:
 - Ensure Simulator is ready by performing applicable checkoffs from LOR-GL-0006, LOR Conduct of Simulator Training Guidelines, Addendum 5, Simulator Readiness Checklist.
 - Ensure VCT Makeup Integrators are set as follows:
 - Momentarily place RC M/U CONT to STOP and then START to reset BA BATCH/GALLONS and TOT M/U BATCH/GALLONS counters to zero.
 - Reset BA BATCH/GALLONS setpoint to 15 gallons and reset TOT M/U BATCH/GALLONS setpoint to 100 gallons.
 - Verify BA Controller Pot setting is 0.99
 - Place ECO Tag on AFW Pump #11
- Open lesson plan for 'Scenario 5' in 'lotnrc' directory for LOT 24, then EXECUTE lesson plan. These actions will set up any initial conditions for the scenario.
- If this scenario IC has changing conditions (i.e. Xenon is changing, etc.), then place the simulator in FREEZE, otherwise it is OK to leave in RUN.
- Run the scenario in accordance with the next section, 'Scenario Instructions'.

SCENARIO INSTRUCTIONS

NOTE

Steps 1 to 4 below can be performed in the LOR Debrief Room prior to the crew coming into the Simulator provided exam security measures are taken.

- 1. Provide Shift Turnover sheets to the crew and review the information.
- 2. Ensure the Beacon book from the simulator is available to the crew if they are in the LOR Debrief Room.
- 3. Review the Simulator Differences list with the crew if needed.
- 4. When signaled by Simulator Staff, have the crew perform their board walkdown and inform the floor instructor when ready to take the watch.
- 5. Ensure the simulator is in RUN and verify simulator clock is set correctly. Note the time that the Crew takes the watch.

NOTE

Malfunction Step and/or Lesson Plan Steps (Events) are triggered upon the Lead Examiners signal during the scenario unless an agreed upon time is discussed with the examiner prior to the start of the scenario.

Always 'TRIGGER' events in the Simulator Scenario Lesson Plans. This way delays associated with events will take place as intended.

Refer to 'EXPECTED BOOTH COMMUNCATIONS' and 'EXPECTED BOOTH ACTIONS' Sections for instructions for Instructor actions during the scenario.

- 6. Trigger the step titled 'Start Chart' and ensure specified Recorded Parameters for the scenario begin recording as the scenario runs. If the chart speed is NOT set to 5400 seconds (90 minutes) then perform the following:
 - Under 'CHARTS' click on 'SET TIME'
 - In the dialog box enter 5400 seconds (90 minutes)
 - Click OK.
- 7. After report of an oil leak, the SRO will declare Containment Spray Pump 1B inoperable Event #1
- 8. When signaled by Lead Examiner, trigger **MALFUNCTION STEP** This will insert Step #1, Event #2.
- 9. When signaled by Lead Examiner, trigger STEP 2 Event #3
- 10. When signaled by Lead Examiner, trigger STEP 3 Event #4
- 11. When signaled by Lead Examiner, trigger STEP 4 Event #5
- 12. Place simulator in FREEZE when cued by the Lead Examiner to terminate scenario.
- 13.DO NOT RESET simulator until the steps on the next page are completed and all Examiners have completed Follow-Up Questioning.

SCENARIO INSTRUCTIONS (cont'd.)

NOTE

Some scenarios will have more than one chart. For these, each chart file must be separately saved with a unique filename.

14. Saving Recorded Parameters Data

- Click on the 'Charts' icon on the left side of the screen
- Select 'Pause' icon, then select 'All'
- Click on the 'Print Chart' icon, then select 'All'
- This will bring up a window in the TASK BAR called PRIMOPDF.
- Click on 'Create PDF'
- This will bring up a File Save As window.
- Save to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 Scenario 5' followed by a name that identifies the crew (e.g. 'Crew A).
- Save the new file. It will be saved in a folder already on the desktop. LOT24 Charts.

15. Saving Scenario SAM (Simulator Action Monitor)

- Under 'TOOLS' click on 'SAM'
- In the dialog box that comes up click on 'SAVE TO'
- Save as a 'TEXT FILE' to folder c:\Users\lotnrc\Desktop\LOT24 Charts. The file name will be 'LOT24 SAM INFO Scenario 5' followed by a name that identifies the crew (e.g. 'Crew A).

LOT 24 NRC OP-TEST SCENARIO #5 Rev 1 Page 34 of 34

SCENARIO - 05

	0POP01-ZQ-0022		
	Plant Operations Shift Routine	S	
For Training Only	Shift Turnover Checklist		Page 1 of 1

PART I - To be completed prior to shift turnover.

Unit: <u></u>	<u>1</u> Off- Go	oing Shift:	Days (Nights)	Dat	e: <u>Today</u>	<u>'</u>	Mode:	<u>1</u>			
	Dilution		E	Boration		Control Rods					
Current Setpoint	1% Pwr Change	1° F Change	Current Setpoint	1% Pwr Change	1° F Change	Current Position	1% Pwr Change	1° F Change			
100	673	943	15 flushing with	41	50	245	10	11			
	As Required		As	Required		As	s Required	•			
		∆l Target -1.80%	1	Channel U1144		RCS Boror 2	1				

Unit 1 Status

- Mode 1, 100% Power
- Core burnup is 19,200 MWD / MTU, EOC
- The Unit just entered coast down operations and BTRS is secured.
- AFW Pump #11 is OOS

Load Reduction:

- 100-90%/1hr = **172**
- 100-80%/10min = **379**
- 100-75%/30min = **458**
- 100-60%/1hr = **389**
- 100-50%/10min = 637

Information:

- BAT 1A & 1B Concentrations are 7300 ppm
- Fuel Handling Building truck bay doors are closed
- No personnel are in containment
- Ron Gibbs has the duty
- The NLO compliment is 5 watch standers and a head operator

ECO/LCO/RAsCAL:

TS 3.7.1.2 for AFW Pump #11, Action a. With one motor-driven auxiliary feedwater pump inoperable, within 28 days restore the pump to OPERABLE status or apply the requirements of the CRMP or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

ES-301

Transient and Event Checklist

<u>Rev. 2</u>

Form ES-301-5

Facility: South	Date	of Exan	n: 7	-13-20			(Operati	ng Tes	t No.: I	_OT 24	4					
٨	E							Sce	narios								
A P P L I C A N T	LVENT TYPE	2 CREW			CREW CREW CREW									T O T A L		M I N U M(*	r)
		CREW POSITION			CREW			CREW				CREW	V				
Crew A		S R O	A T C	B O P	S R O	A T C	B O P	PC S R O	A T C	N O P	PC S R O	A T C	DN B O P		R	Ι	U
	RX			4										1	1	1	0
RO-1	NOR													0	1	1	1
SRO-I	I/C			2,3,6 8		2,3, 7								7	4	4	2
SRO-U 🗌	MAJ			5		5								2	2	2	1
	TS													0	0	2	2
	RX		4											1	1	1	0
RO 🗌	NOR													0	1	1	1
SRO-I1 ■	I/C		1,6, 7		2,3,4 6,7									8	4	4	2
SRO-U	MAJ		5		5									2	2	2	1
	TS				2,3									2	0	2	2
	RX	4					4							1	1	1	0
RO ∐ SRO-I □	NUK I/C	1,2,3					4.6							। 8	1	1 4	1
SRO-U1 ■		6,7,8														-	~
	MAJ	5					5							2	2	2	1
	15	∠,۱												2	U	2	2

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls" (ATC) and "balance-of-plant" (BOP) positions. Instant SROs (SRO-I) must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an SRO-I additionally serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

 Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a one-for-one basis.

 Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: Sout	h Texas F		Date	of Exan	n: 7	-13-20			(Operating Test No.: LOT 24							
•	-							Sce	narios								
P P L C A N T	EVENT TYPF	1 CREW				2			4					TOTAL		M I N U M(*	f)
	-				D	CREW				N							
Crew B		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	N B O P	S R O	A T C	B O P		R	I	U
	RX						4							1	1	1	0
	NOR													0	1	1	1
RO-2 ■ SRO-I □	I/C			4,5, 10, 11			2,3, 6,8		2,3, 7					11	4	4	2
	MAJ			6,9			5		5					4	2	2	1
	TS													0	0	2	2
	RX					4								1	1	1	0
_	NOR									1				1	1	1	1
RO ∐ SRO-I2 ■ SRO-U □	I/C	3,4, 5,7, 8,10 ,11				1,6, 7				4,6				12	4	4	2
	MAJ	6,9				5				5				4	2	2	1
	TS	2,4												2	0	2	2
	RX				4									1	1	1	0
RO-2 🗌	NOR		1											1	1	1	1
SRO-I3 🔳	I/C		3,7 8		1,2,3 6,7,8			2,3,4 6,7						14	4	4	2
SRO-U 🗌	MAJ		6,9		5			5						4	2	2	1
	TS				1,2			2,3						4	0	2	2

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls" (ATC) and "balance-of-plant" (BOP) positions. Instant SROs (SRO-I) must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an SRO-I additionally serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

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3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: Sout		Date of Exam: 7-13-20 Operating Te								ng Tes	st No.: LOT 24						
	-							Sce	narios								
	L V E N T	1			1 2				5					T O T A		M I N	
C A N T	T Y E	CREW												Ĺ		M U M(*	[,])
		CREW POSITION			P	CREW OSITIC) N	PC	CREW DSITIO	N	PC	CREW DSITIC	/ DN				
Crew C		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P		R	I	U
	RX						4		4					2	1	1	0
	NOR													0	1	1	1
RO-3 ■ SRO-I □	I/C			4,5, 10, 11			2,3,6 ,8		3,6					10	4	4	2
SRO-U 🗌	MAJ			6,9			5		5					4	2	2	1
	TS													0	0	2	2
	RX					4		4						2	1	1	0
RO 🗌	NOR		[l		[0	1	1	1
SRO-I4 🔳	I/C					1,6, 7		2,3,7						6	4	4	2
SRO-U 🗌	MAJ					5		5						2	2	2	1
	TS							1,3						2	0	2	2
	RX				4					4				2	1	1	0
RO 🗌	NOR		1											1	1	1	1
SRO-16 🔳	I/C		3,78		1,2,3 6,7,8					2,7				11	4	4	2
SRO-U 🗌	MAJ		6,9		5					5				4	2	2	1
	TS				1,2									2	0	2	2
	RX													0	1	1	0
	NOR	0.45												0	1	1	1
SRO-I □ SRO-U3 ■	I/C	3,4,5 ,7,8, 10, 11												7	4	4	2
	MAJ	6,9												2	2	2	1
	TS	2,4												2	0	2	2

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls" (ATC) and "balance-of-plant" (BOP) positions. Instant SROs (SRO-I) must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an SRO-I additionally serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

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3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: South	n Texas P	roject			Date	of Exan	n: 7	(Operati	ng Tes	t No.: I	LOT 24	l I							
•	E							Sce	narios											
A P P L I C A N T	EVENT TYPE	1 CREW				4	1		ODEW			T O T A L		M I N U M(*	·)					
		D		N	D) NI	D		N	D	UREV NGITIA	אי							
Crew D		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P		R	Ι	U			
	RX													0	1	1	0			
RO-5	NOR		1				1							2	1	1	1			
SRO-I	I/C		3,7 8				4,6							5	4	4	2			
SRO-U 🗌	MAJ		6,9				5							3	2	2	1			
	TS													0	0	2	2			
	RX													0	1	1	0			
	NOR													0	1	1	1			
RO □ SRO-I5 ■ SRO-U □	I/C	3,4, 5, 7, 8,10 ,11				2,3, 7								10	4	4	2			
	MAJ	6,9				5								3	2	2	1			
	TS	2,4												2	0	2	2			
	RX													0	1	1	0			
RO 🗆	NOR													0	1	1	1			
SRO-U2	I/C			4,5, 10, 11	2,3,4 6,7									9	4	4	2			
	MAJ			6,9	5									3	2	2	1			
	TS				2,3									2	0	2	2			

Instructions:

 Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls" (ATC) and "balance-of-plant" (BOP) positions. Instant SROs (SRO-I) must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an SRO-I additionally serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

 Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a one-for-one basis.

3. Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: South	n Texas F	Project			Date	of Exan	n: 7·	(Operati	ng Tes	t No.: I	_OT 24	4								
•	E							Sce	narios												
A P L I C A N T	EVENT TYPE	1 CREW												T O T A L		M I N U M(*	·)				
		D	CREW		D	CREW				N I			/								
		S		B	S		B	S		B	S		В		R	I	U				
Crew E		R O	T C	O P	R O	T C	O P	R O	T C	O P	R O	T C	O P								
	RX						4							1	1	1	0				
	NOR													0	1	1	1				
RO-4 ■ SRO-I □	I/C			4,5, 10, 11			2,3, 6,8		2,3, 7					11	4	4	2				
	MAJ			6,9			5		5					4	2	2	1				
	TS													0	0	2	2				
	RX					4								1	1	1	0				
	NOR									1				1	1	1	1				
RO □ SRO-I7 ■ SRO-U □	I/C	3,4, 5, 7, 8,10 ,11				1,6, 7				4,6				5	4	4	2				
	MAJ	6,9				5				5				4	2	2	1				
	TS	2,4												2	0	2	2				
	RX				4									1	1	1	0				
RO 🗆	NOR		1											1	1	1	1				
SRO-I8 ■	I/C		3,7 8		1,2,3 6,7,8			2,3,4 6,7						14	4	4	2				
	MAJ		6,9		5			5						4	2	2	1				
	TS				1,2			2,3						4	0	2	2				

Instructions:

 Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls" (ATC) and "balance-of-plant" (BOP) positions. Instant SROs (SRO-I) must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an SRO-I additionally serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.

 Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a one-for-one basis.

 Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

ES-301

Competencies Checklist

Rev. 2 Form ES-301-6

Facility: South Texas Projec	Date of Examination: 7-13-20 Operating Test No.: LOT 24														
					AP	PLICA	NTS –	ITS – Crew A							
	R S S U	0 RO-I RO- 1		R S S	0 RO-l' RO-L	□ 1 ■ J □	R S S	0-1 RO-I RO-l	J						
Competencies	S	SCENARIO			CEN	ARIO	s	SCENARIO				-			
	2u	4b		2a	4u		2b	4a							
Interpret/Diagnose Events and Conditions	1,2, 3,4, 6	4,6		1,4, 6	2,3, 4,7		2,3, 4,6	2,3, 7							
Comply With and Use Procedures (1)	All	1,4, 5,6		1,4, 6,7	All		2,3, 4,6	2,3, 5,7							
Operate Control Boards (2)	N/A	1,4, 5,6		1,4, 5,6, 7	N/A		2,3, 4,6, 8	2,3, 5,7							
Communicate and Interact	All	All		All	All		All	All							
Demonstrate Supervisory Ability (3)	All	N/A		N/A	All		N/A	N/A							
Comply With and Use Tech. Specs. (3)	1,2	N/A		N/A	2,3		N/A	N/A							
Notes: (1) Includes Technical Sp (2) Optional for an SRO-U (3) Only applicable to SR	Notes: (1) Includes Technical Specification compliance for an RO. (2) Optional for an SRO-U. (3) Only applicable to SROs.														

Instructions:

Facility: South Texas Project Date of Examination: 7-13-20 Operating Test No.: LOT 24															
						AP	PLIC	AN1	rs –	Crev	vВ				
	R S S	0 RO-I RO-I	2 ∎ J □		R SI SI	0 RO-1 RO-1	3 📕 J		R SI SI	0-2 R0-1 R0-1	J				
Competencies	S	SCENARIO			SCENARIO			C	S	CEN	ARI	C			
	1u	2a	4b		1a	2u	4u		1b	2b	4a				
Interpret/Diagnose Events and Conditions	2,3, 4,5	1,4, 6	4,6		3,7	1,2, 3,4, 6	2,3, 4,7		4,5	2,3, 4,6	2,3, 7				
Comply With and Use Procedures (1)	All	1,4, 6,7	1,4, 5,6		1,3 6,7, 8,9	All	All		4,5, 6,9, 10, 11	2,3, 4,6	2,3, 5,7				
Operate Control Boards (2)	N/A	1,4, 5,6, 7	1,4, 5,6		1,3 6,7, 8,9	N/A	N/A		4,5, 6,9, 10, 11	2,3, 4,6, 8	2,3, 5,7				
Communicate and Interact	All	All	All		All	All	All		All	All	All				
Demonstrate Supervisory Ability (3)	N/A	N/A	N/A		N/A	All	All		N/A	N/A	N/A				
Comply With and Use Tech. Specs. (3)	2,4	N/A	N/A		N/A	1,2	2,3		N/A	N/A	N/A				
Notes: (1) Includes Technical Sp (2) Optional for an SRO-U (3) Only applicable to SR	ecifi J. Os.	catio	on co	mplia	ance	e for	an F	RO.							

Instructions:

Facility: South Texas Project Date of Examination: 7-13-20 Operating Test No.: LOT 24													
				AP	PLIC	AN	rs –	Crev	v C				
	RO SRO-I SRO-I	4 1 J	R S S	0 RO-I RO-I	6 📕 J		R S S	0-3 RO-I RO-l	J		R SI SI	0 70-1 70- 3	
Competencies	SCEN	S	SCENARIO				CEN	IARIO	0				
	2a	5u	1a	2u	5b		1b	2b	5a		1u		
Interpret/Diagnose Events and Conditions	1,4, 6	1,2, 3,4	3,7	1,2, 3,4, 6	2,4		4,5	2,3, 4,6	3,4		2,3, 4,5		
Comply With and Use Procedures (1)	1,4, 6,7	All	1,3 6,7, 8,9	All	2,4, 5,7		4,5, 6,9, 10, 11	2,3, 4,6	3,4, 5,6		All		
Operate Control Boards (2)	1,4, 5,6, 7	N/A	1,3 6,7, 8,9	N/A	2,4, 5,7		4,5, 6,9, 10, 11	2,3, 4,6, 8	3,4, 5,6		N/A		
Communicate and Interact	All	All	All	All	All		All	All	All		All		
Demonstrate Supervisory Ability (3)	N/A	All	N/A	All	N/A		N/A	N/A	N/A		N/A		
Comply With and Use Tech. Specs. (3)	N/A	2,3	N/A	1,2	N/A		N/A	N/A	N/A		2,4		
Notes: (1) Includes Technical Sp	ecificatio	on com	olianc	e for	an R	XO .							

(2) Optional for an SRO-U.

(3) Only applicable to SROs.

Instructions:

Facility: South Texas Project Date of Examination: 7-13-20 Operating Test No.: LOT 24														
					AP	PLICAN	TS –	Crev	v D					
	R S S U	0 RO-I RO- 2		R SI SI	0 RO-II RO-L	5 1 J	R S S	0-R& RO-I RO-L	5 - J					
Competencies	S	SCENARIO			CEN	ARIO	s	CEN		0		-		
	1b	4u		1u	4a		1a	4b						
Interpret/Diagnose Events and Conditions	4,5	2,3, 4,7		2,3, 4,5	2,3, 7		3,7	4,6						
Comply With and Use Procedures (1)	4,5, 6,9, 10, 11	All		All	2,3, 5,7		1,3 6,7, 8,9	1,4, 5,6						
Operate Control Boards (2)	4,5, 6,9, 10, 11	N/A		N/A	2,3, 5,7		1,3 6,7, 8,9	1,4, 5,6						
Communicate and Interact	All	All		All	All		All	All						
Demonstrate Supervisory Ability (3)	N/A	All		N/A	N/A		N/A	N/A						
Comply With and Use Tech. Specs. (3)	N/A	2,3		2,4	N/A		N/A	N/A						
Notes: (1) Includes Technical Sp (2) Optional for an SRO-U	ecifi	catio	on compl	ianc	e for	an RO.								

(3) Only applicable to SROs.

Instructions:

Facility: South Texas Project Date of Examination: 7-13-20 Operating Test No.: LOT 24															
						AP	PLIC	AN	rs –	Crev	νE				
	R S S	0 RO-I RO-l	7 📕 J		R SI SI	0 RO-I RO-l	8 📕 J		R S S	0-4 RO-I RO-l	J				
Competencies	S	SCENARIO			SCENARIO			C	S	CEN		0			
	1u	2a	4b		1a	2u	4u		1b	2b	4a				
Interpret/Diagnose Events and Conditions	2,3, 4,5	1,4, 6	4,6		3,7	1,2, 3,4, 6	2,3, 4,7		4,5	2,3, 4,6	2,3, 7				
Comply With and Use Procedures (1)	All	1,4, 6,7	1,4, 5,6		1,3 6,7, 8,9	All	All		4,5, 6,9, 10, 11	2,3, 4,6	2,3, 5,7				
Operate Control Boards (2)	N/A	1,4, 5,6, 7	1,4, 5,6		1,3 6,7, 8,9	N/A	N/A		4,5, 6,9, 10, 11	2,3, 4,6, 8	2,3, 5,7				
Communicate and Interact	All	All	All		All	All	All		All	All	All				
Demonstrate Supervisory Ability (3)	N/A	N/A	N/A		N/A	All	All		N/A	N/A	N/A				
Comply With and Use Tech. Specs. (3)	2,4	N/A	N/A		N/A	1,2	2,3		N/A	N/A	N/A				
Notes: (1) Includes Technical Sp (2) Optional for an SRO-L	ecifi J.	catio	on co	ompli	ianc	e for	an F	RO.							

(3) Only applicable to SROs.

Instructions: