Facility: **RIVER BEND STATION** Date of Examination: 9/20/2004 – 9/24/2004
Examination Level: **RO** Operating Test Number: 1

Admin Topic *(Type Code*)* Exam JPM No.	**Description of activity to be performed** K/A Statement(s)	KA	IR	Notes
Conduct of Operations *(M) (A)* ADM-R01	**Complete the Daily Logs verification of power distribution limits during Single Loop Operation** Use plant computer to obtain and evaluate parametric information on system or component status.	2.1.19	3.0	
Conduct of Operations *(M)* ADM-R02	**Determine Primary Containment water level and correlated RPV water level per EOP Enclosure 23** Ability to perform specific system and integrated plant procedures during different modes of plant operation.	2.1.23	3.9	
Equipment Control *(N)* ADM-R03	**Identify required tags and hanging sequence for SLC Pump Relief Valve removal and replacement.** Knowledge of tagging and clearance procedures.	2.2.13	3.6	
Radiation Control *(N) (A)* ADM-RS04	**Enter and exit a High Radiation Area for a valve lineup.** Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.3.10	2.9	

** Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path*

Facility: **RIVER BEND STATION** Date of Examination: 9/20/2004 – 9/24/2004
Examination Level: **SRO** Operating Test Number: 1

Admin Topic *(Type Code*)* Exam JPM No.	**Description of activity to be performed** K/A Statement(s)	KA	IR	Notes
Conduct of Operations *(N) (A)* ADM-S01	**Determine Alternate Decay Heat Removal Method** Ability to obtain and interpret station reference materials such as graphs / monographs / and tables which contain performance data.	2.1.25	3.1	
Conduct of Operations *(N)* ADM-S02	**Complete LCO Status Sheet for inoperable Control Room Fresh Air initiation instrumentation.** Ability to apply technical specifications for a system.	2.1.12	4.0	
Equipment Control *(N) (A)* ADM-S03	**Review completed Quarterly SLC Pump and Valve Operability surveillance procedure for approval.** Knowledge of surveillance procedures.	2.2.12	3.4	
Radiation Control *(N) (A)* ADM-RS04	**Enter and exit a High Radiation Area for a valve lineup.** Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.3.10	3.3	
Emergency Plan *(M)* ADM-S05	**Classify an Emergency Event** Knowledge of emergency action level thresholds and classifications.	2.4.41	4.1	

* *Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path*

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** COMPLETE DAILY LOGS VERIFICATION OF POWER DISTRIBUTION LIMITS DURING SINGLE LOOP OPERATIONS**

REASON FOR REVISION:

NRC Exam JPM **RO ADMIN - 1**

PREPARE / REVIEW:

Erich Weinfurter	1497	7/7/2004
Preparer	KCN	Date
Roger Persons	0862	7/8/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Complete Daily Log Verification of Power Distribution Limits during Single Loop Operation.

TASK REFERENCE:	302001002001

K/A REFERENCE & RATING:	2.1.19 (3.0/3.0)

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Classroom	**X**

COMPLETION TIME:	6 min.

MAX TIME:	N/A

JOB LEVEL:	RO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	Yes

SIMULATOR SETUP SHEET

Task Description: Complete Daily Log Verification of Power Distribution Limits during Single Loop Operation

Required Power: N/A

IC No.: N/A

Notes: **Administrative JPM that will be conducted in a classroom.**

DATA SHEET

References for Development:	STP-000-0001, Daily Operations Logs GOP-0004, Single Loop Operation
Required Materials:	STP-000-0001, Daily Operations Logs GOP-0004, Single Loop Operation Attached POWERPLEX Core Performance Log
Required Plant Condition:	N/A
Applicable Objectives:	STM-514, Obj. H5
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The "A" Reactor Recirc Pump tripped from full power and GOP-0004, Single Loop Operation has been entered. Reactor Engineering has NOT implemented a new core monitoring system thermal limit deck for Single Loop Operation.

Initiating Cue:

The CRS has directed you to complete Step 113 of STP-000-0001, Data Sheet, with the attached Core Performance Log data.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
_____1.	STEP 113 NOTES Power Distribution Limits shall be verified to be within the limits stated in Technical Specifications within 12 hours after Thermal Power is ≥ 23.8% of rated thermal power and once per 24 hours thereafter. During Single Loop Operation, refer to GOP-0004 to determine if administrative limits are applicable.	Refer to administrative limits in GOP-0004 Step 3.4.	_____	**CUE**: Reactor Engineering has not implemented the appropriate core monitoring system thermal limit deck. **NOTE:** Do NOT provide GOP-0004, Attachment 1 until requested by candidate.
_____2.	GOP-0004 Step 3.4 During Single Loop Operation, an administrative limit of 0.980 shall be applied to MFLCPR and an administrative limit of 0.79 shall be applied to MAPRAT while core flow is greater than 50% rated. The administrative limits may be removed once Reactor Engineering implements the appropriate core monitoring system thermal limit deck.	Uses 0.980 Admin limit for MFLCPR and 0.79 for MAPRAT.	_____	**CUE:** If asked as CRS, Reactor Engineering has not implemented the appropriate core monitoring system thermal limit deck.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
___*__3.	Reviews Core Performance Log to obtain values for MFLPD, MAPRAT, and MFLCPR for operating log Step 113.	Fills in Step 113 identifying MFLCPR at 0.988 as exceeding SLO administrative limit. Notifies CRS of MFLCPR exceeding limit.	____	**CUE:** As CRS, acknowledge MFLCPR exceeding limit. **NOTE:** Reading being circled is NOT critical.

Terminating Cue: Step 113 of STP-000-0001, Data Sheet 1 completed and MFLCPR identified as exceeding limit.

.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

RJPM-OPS-ADM-R01

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-ADM-R01

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The "A" Reactor Recirc Pump tripped from full power and GOP-0004 Single Loop Operation has been entered.
Reactor Engineering has NOT implemented a new core monitoring system thermal limit deck for Single Loop Operation.

Initiating Cues: The CRS has directed you to complete Step 113 of STP-000-0001, Data Sheet 1, with the attached Core Performance Log data.

RJPM-OPS-ADM-R01

POWERPLEX – III CORE PERFORMANCE LOG – OPS - 03FEB10 – 164555
B1-01-04 (02.11.03 @ 2100) GEOM=FULL
PREDICT CALCULATION – UPD TDXEC PREV PCS Y RESTART 03FEB10 - 161100

POWER	2036.0	MWTH	CYCLE EXP	10133.4	MWD/MT	CMFLCPR	.988	23-22
	(67.0%)		CORE EXP	23317.4	MWD/MT	CMAPRAT	.781	21-32-17
FLOW	45.4	MLB/HR	PRESS	1015.0	PSIA	CMFLPD	.824	21-32-17
	(53.7%)		DHS	30.40	BTU/LB	CMTPF	2.558	19-32-15
ELEC	719.6	MWE	WFW	7.473	MLB/HR	FCBB	1.879	2.46 FT
ROD-LN	106.9	%	TFW-A	383.7	DEG F	P-PCS	.000	17-34-18
K-EFF	1.0054		NON-EQ XE	.00		P-PCFC	-.252	35-10-10

CONTROL RODS SYMMETRIC, C.R. SEQUENCE: B-1, C.R. DENSITY: .070

	04	08	12	16	20	24	28	32	36	40	44	48	52	
53				--	--	--	--	--	--	--				53
49			--	--	--	--	--	--	--	--	--			49
45		--	--	--	--	--	-	--	--	--	--	--		45
41	--	--	--	--	06	--	12	--	06	--	--	--	--	41
37	--	--	--	--	--	--	--	--	--	--	--	--	--	37
33	--	--	10	P	24*	--	--	--	24	--	10	--	--	33
29	--	--	--	--	--	--	--	--	--	--	--	--	--	29
25	--	--	10	--	24	--	--	--	24	--	10	--	--	25
21	--	--	--	--	--	R- -	12	--	--	--	--	--	--	21
17	--	--	--	--	06	--	--	--	17	--	--	--	--	17
13		--	--	--	--	--	--	--	--	--	--	--		13
09			--	--	--	--	--	--	--	--	--			09
05				--	--	--	--	--	--	--				05
	04	08	12	16	20	24	28	32	36	40	44	48	52	

KEY
R-MFLCPR
M-MAPRAT
X-FDLRX
P-PRECOND
*-MULT

SUBST RODS

THERMAL LIMIT DETAIL (TOP 5)

MFLCPR	LOC	MAPRAT	LOC	MFLPD	LOC	TPF	LOC
.988	23-22	.781	21-32-17	.824	21-32-17	2.558	19-32-15
.961	27-22	.773	19-24-17	.763	19-32-17	2.461	21-34-15
.938	21-28	.760	19-32-17	.751	19-24-17	2.438	23-48-04
.925	15-22	.739	15-20-09	.746	29-48-04	2.376	35-12-04
.920	13-20	.737	13-26-21	.746	29-48-04	2.376	35-12-04

AXIAL REL POWER

LOC	NOTCH	RPOW
25		.098
24	00	.315
23	02	.801
22	04	1.007
21	06	1.100
20	08	1.147
19	10	1.154
18	12	1.150
17	14	1.146
16	16	1.189
15	18	1.189
14	20	1.193
13	22	1.199
12	24	1.184
11	26	1.179
10	28	1.180
09	30	1.178
08	32	1.166
07	34	1.149
06	36	1.124
05	38	1.100
04	40	1.071
03	42	.996
02	44	.780
01	46	.204

FUEL TYPE DETAIL

TYPE	MAX LHGR	LOC	BATCH AVG EXP
14	7.427	15-20-20	32.972
15	6.380	05-20-20	27.034
16	5.005	05-30-20	27.375
17	7.140	19-22-17	20.836
18	8.616	19-28-17	26.561
19	9.622	21-32-15	28.341
20	9.045	21-28-17	12.792
21	10.185	19-32-17	12.224

AXIAL DISTRIBUTION DETAIL

CORE –AVERAGE POWER (PINER) -3.458

CORE-AVERAGE EXPOSURE (INER) -10.915

RADIAL RING	1	2	3	4	5	6	7
RING REL POWER	1.07	1.26	1.29	1.20	1.21	1.13	.59

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** DETERMINE CONTAINMENT WATER LEVEL DURING CONTAINMENT FLOODING**

REASON FOR REVISION:

NRC Exam JPM **RO ADMIN – 2**

PREPARE / REVIEW:

Erich Weinfurter	1497	7/7/2004
Preparer	KCN	Date
Roger Persons	0862	7/8/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Determine Containment Water Level During Containment Flooding.

TASK REFERENCE:	200063005001

K/A REFERENCE & RATING:	2.1.23, 3.9/4.0

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Classroom	**X**

COMPLETION TIME:	8 min.

MAX TIME:	N/A

JOB LEVEL:	RO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: Determine Containment Water Level During Containment Flooding.

Required Power: N/A

IC No.: N/A

Notes: **Administrative JPM that will be conducted in a classroom.**

DATA SHEET

References for Development:	EOP-0005, Enclosure 23, Containment Water Level Determination.
Required Materials:	EOP-0005, Enclosure 23, Containment Water Level Determination.
Required Plant Condition:	None
Applicable Objectives:	HLO-516
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

Containment Flooding is in progress in accordance with SAP-1. Suppression Pool level indication on panel H13-P808 is pegged upscale. The CRS has directed you to determine Containment water level AND a correlated RPV water level using EOP-0005 Enclosure 23, Containment Water Level Determination. The following plant data has been obtained by completing Sections 3.1 and 3.2 of Enclosure 23:

Div II CMS-PI17B indicates 7.5 psig

E51-R604 RCIC PUMP SUCTION PRESSURE indicates 30 psig

Initiating Cue:

Complete EOP-0005, Enclosure 23, given the plant data from Division II CMS and E51-R604 for RCIC suction pressure to provide the CRS a Primary Containment water level AND a correlated RPV water level.

Report Containment water level from Enclosure 23 Figure 8 to the CRS as soon as it is obtained.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
_____1.	EOP Enclosure 23, Figure 8, Primary Containment Water Level Determination, to determine Containment Water Level.	Uses Figure 8 to determine containment water level at ~56 ft (±1 foot). Reports Primary Containment water level to CRS.	____	**CUE:** When candidate reports level from Figure 8, request calculated value to confirm Figure 8 value and use calculated value to determine RPV water level.
*_____2.	Confirms Primary Containment Water Level from Figure 8 with calculation per Step 3.3.	Uses PCWL = [(ECCS Suction Press - CTMT Press) 2.3] + 4 to determine containment water level to be 55.75 ft.	____	**NOTE:** [30-7.5)2.3]+4 = Level in ft [(22.5)2.3]+4 = Level in ft [51.75]+4 = 55.75 ft
*_____3.	Uses Table 1 and calculated value of containment water level to determine RPV water level.	Uses interpolation of Table 1 with the calculated containment level (55.75 ft) to determine RPV water level at -237 inches.	____	

Terminating Cue: Primary Containment water level AND correlated RPV water level are provide to the CRS using EOP-0005, Enclosure 23.

RJPM-OPS-ADM-R02

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-ADM-R02

JPM Task Conditions/Cues
(Operator Copy)

Initial Conditions: Containment Flooding is in progress in accordance with SAP-1.

Suppression Pool level indication on panel H13-P808 is pegged upscale.

The CRS has directed you to determine Containment water level AND a correlated RPV water level using EOP-0005 Enclosure 23, Containment Water Level Determination.

The following plant data has been obtained by completing Sections 3.1 and 3.2 of Enclosure 23:

- Div II CMS-PI17B indicates 7.5 psig
- E51-R604 RCIC PUMP SUCTION PRESSURE indicates 30 psig

Initiating Cues:

Complete EOP-0005, Enclosure 23, given the plant data from Division II CMS and E51-R604 for RCIC suction pressure to provide the CRS a Primary Containment water level AND a correlated RPV water level.

Report a value for Containment water level from Enclosure 23 Figure 8 to CRS as soon as it is obtained.

CONTAINMENT WATER LEVEL from FIG 8 _____

CONTAINMENT WATER LEVEL CALCULATED _____

RPV WATER LEVEL (Based on calculated Containment water level) _____

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** IDENTIFY REQUIRED TAGS AND HANGING SEQUENCE FOR SLC PUMP RELIEF VALVE REMOVAL AND REPLACEMENT**

REASON FOR REVISION:

NRC Exam JPM **RO ADMIN - 3**

PREPARE / REVIEW:

Erich Weinfurter	1497	7/17/2004
Preparer	KCN	Date
Roger Persons	0862	7/17/2004
Technical Review (SME)	KCN	Date
Tim Manry	0757	7/19/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Identify Required Tags and Hanging Sequence For SLC Pump Relief Valve Removal and Replacement

TASK REFERENCE:

K/A REFERENCE & RATING:	2.2.13, 3.6/3.8

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Classroom	**X**

COMPLETION TIME:	17 min.

MAX TIME:	N/A

JOB LEVEL:	RO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description:	Identify Required Tags and Hanging Sequence For SLC Pump Relief Valve Removal and Replacement
Required Power:	N/A
IC No.:	N/A
Notes:	**Administrative JPM that will be conducted in a classroom.**

DATA SHEET

References for Development:	PID 27-16A, System P&ID SOP-0028, Standby Liquid Control OSP-0038 Protective Tagging Guidelines Tech Spec. 3.2.1, SLC LCO
Required Materials:	PID 27-16A, System P&ID SOP-0028, Standby Liquid Control OSP-0038
Required Plant Condition:	Mode 1, During the last performance of STP-0201-6310, SLC Quarterly Pump and Valve Operability Test, the SLC Pump Relief Valve C41-RVF0029A lifted and would not reseat.
Applicable Objectives:	ELP-OPS-CLR Obj. C
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The plant is operating in Mode 1. Maintenance has requested a tagout to replace the Pump Relief Valve C41-RVF029A Standby Liquid Control Pump 1A Header Press Relief Valve per WO579067, which is expected to take 10 hours to complete. The eSOMs Tagging Computer is down so the tagout is to be manual, and the tags will be entered into the system after it is back in service.

Initiating Cue:

The CRS has directed you to assist in preparing a tagout to replace the valve. Because of the 8 hour LCO for both SLC Pumps out of service, the tagout must not INOP the 'B' SLC pump. A tagging Official will complete the remaining parts of the Tagout Cover Sheet you have been given by the CRS.

.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
_____1.	Reviews OSP-0038 Attachment 7 Tagout Cover Sheet and obtains documents to develop tagging.	Obtains PID for SLC and SOP-0028	____	**CUE:** Provide PID and SOP when requested. Provide OP-102 for manual tagout, if requested. **NOTE:** Including the component location on the tagging sheet is NOT critical.
*_____2.	Complete Tagout Tag Hung List Control Switchs	C41-S1A in Main Control Room NEUTRAL with Key Removed	____	JPM Steps 2 thru 5 may be written down in any order on tagout sheet, provided that the final Hang List matches the critical steps when completed
_____3.	Complete Tagout Tag Hung List Control Switch	C41-PC001A H22-PNLP011 Control DISABLE with Key Removed	____	Optional Tag (not required with breaker tagged)
*_____4.	Complete Tagout Tag Hung List Electrical Breaker	EHS-MCC2A BKR 2C OFF	____	
*_____5.	Complete Tagout Tag Hung List Isolation Valves	C41-VF003A and C41-VF002A Both CLOSED	____	

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
*_____6.	Complete Tagout Tag Hung List Sequence for Tag installation	Sequence for Critical Tags Steps 2,4,5 in accordance with attached completed sample. Control, Breaker, Valves	____	

Terminating Cue: Manual Tagout Form completed.

.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-ADM-R03

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

Clearance # (U-YY-Man-##) 1-04-MAN-01
Tagout: 201-C41-RVF029A -001 **Date** 9/20/04

Tag No.	Tag Type	Equipment Equipment Desc Equip Location	Seq	Placement Configuration Notes	Placement 1st Verif	Placement 2nd Verif	Seq	Restoration Configuration Notes	As left Config	Rest 1st Verif	Rest 2nd Verif
1	Danger	C41-S1A SLC Pump A 136' CB H13-P601	1	NEUTRAL Key Removed			5	NEUTRAL Key Removed			
2	Danger	C41-PC001A H22-PNLP011 Control SLSPNL120	2	DISABLE Key Removed			4	DISABLE Key Removed			
3	Danger	EHS-MCC2A BKR 2C Standby Liquid Control Pump A 141' AB West	3	OFF			3	ON			
4	Danger	C41-VF003A SLC Pump A Manual Discharge Vlv 141' RB Az 80	4	CLOSED			2	LOCKED OPEN			
5	Danger	C41-VF002A SLC Pump A Suction Valve 141' RB Az 80	5	CLOSED			1	LOCKED OPEN			

RJPM-OPS-ADM-R03

JPM Task Conditions/Cues
(Operator Copy)

Initial Conditions:

The plant is operating in Mode 1.

Maintenance has requested a tagout to replace the Pump Relief Valve C41-RVF029A Standby Liquid Control Pump 1A Header Press Relief Valve per WO579067, which is expected to take 10 hours to complete.

The eSOMs Tagging Computer is down so the tagout is to be manual, and the tags will be entered into the system after it is back in service.

.

Initiating Cues:

The CRS has directed you to assist in preparing the tagout to remove and replace the relief valve.

Because of the 8 hour LCO for both SLC Pumps out of service, it has been determined that the clearance must not INOP the 'B' SLC pump.

A tagging Official will complete the remaining parts of the Tagout Cover Sheet you have been given by the CRS.

Clearance No. (U-YY-MAN-##) 1-04-MAN-01

Tagout: (SSS-FFFFFFFFFFFFF-QQQ) 201-C41-RVF029A-001

Date: 9/20/04

Component To Be Worked: C41-RVF029A, Standby Liq Cntrl Pmp 1A Header Press Relief Vlv

Description: Clearance for the purpose of replacing the relief valve

Placement Inst.

Hazards: Double valve isolation is NOT required and a vent and drain path are NOT required

Restoration Inst. None for this JPM

Tagout Attributes:

Attribute description	Attribute value
Tech Spec Impact?	Yes\No (circle one)
Compensatory Actions Required?	Yes\No (circle one)
Locked Components?	Yes\No (circle one)
Fire Protection Impairment?	Yes\No (circle one)
Equip Drain/Vent Required?	Yes\No (circle one)

Work Order Task List

Work Order Task #	Description
WO579067	Replace C41-RVF029A, Standby Liq Cntrl Pmp 1A Header Press Relief Vlv

Tagout Verification:

Status	Description	User	Verification Date
Prepared	Ops Prepared By		
Reviewed	Ops reviewed By		
Approved	Approved By		
Verified Hung	Tags Verified By		
Removal Approved	Removal Approved		
Verified Removed	Tags Verified Removed By		

Clearance # (U-YY-Man-##) 1-04-MAN-01
Tagout: 201-C41-RVF029A -001 **Date** 9/20/04

Tag No.	Tag Type	Equipment Equipment Desc Equip Location	Seq	Placement Configuration / Notes	Placement 1st Verif	Placement 2nd Verif	Seq	Restoration Configuration / Notes	As left Config	Rest 1st Verif	Rest 2nd Verif

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** ENTER AND EXIT A HIGH RADIATION AREA FOR VALVE LINEUP**

REASON FOR REVISION:

NRC Exam JPM **RO/SRO ADMIN - 4**

PREPARE / REVIEW:

Roger Persons	0862	7/19/2004
Preparer	KCN	Date
Erich Weinfurter	1497	7/19/2004
Technical Review (SME)	KCN	Date
Tim Manry	0757	7/21/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Perform task requiring entry into a High Radiation Area

TASK REFERENCE:	301001005003 301011005003

K/A REFERENCE & RATING:	2.3.10, 2.9/3.3

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Mockup	**X**

COMPLETION TIME:	14 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	Yes

SIMULATOR SETUP SHEET

Task Description:	Enter and exit a High Radiation Area for a valve lineup
Required Power:	N/A
IC No.:	N/A
Notes:	**This will be performed using the Mockup area for Radiation Worker Training in the Main Admin 3 Building.**

DATA SHEET

References for Development: EOI Rad Worker Training

Required Materials: Mockup area for Radiation Worker Training in the Main Admin 3 Building

Required Plant Condition: N/A

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The plant is operating at 100% power when it becomes necessary to close manually operated Reactor Water Cleanup Drain Valve, G33-V4.

Initiating Cue:

The CRS has directed you to enter the High Radiation in Mockup Area South and close RWCU Drain Valve, G33-V4.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
*_____1.	Reviews appropriate RWP and Task Description for entry requirements.	Selects RWP 2004-2097, Task 1 as the correct RWP for the task assigned and reviews entry requirements and survey map.	____	Provide the three different RWPs for the area.
*_____2.	Obtains Electronic Alarming Dosimeter (EAD) from rack and activates at the terminal using appropriate Radiation Work Permit (RWP) number, and enters CAA entrance through the turnstile.	Insert EAD into the activation slot SCAN the bar code on his TLD and follow instructions on the screen. Entering 2004-2097, Task 1 and answers the questions on the computer fields of the access terminal outside the mockup.	____	**CUE:** Inform the candidate that you will play the role of the independent verifier.
_____3.	Enters mockup High Radiation area.	Before entering mockup High Radiation area and identifies the RP sign is facing the wrong direction and informs RP of the improper posting condition.	____	**CUE:** RP will send a tech out to the area to correct posting as required and write a CR.
*_____4.	Close RWCU Drain Valve, G33-V4.	Attempts to close RWCU Drain Valve, G33-V4 in mockup High Radiation area.	____	**CUE:** Examiner initiates EAD alarm as candidate begins to approach valve and informs candidate his EAD is alarming.
*_____5.	Exits High Radiation area.	Immediately exits area with Independent Verifier and reports to RP.	____	**CUE:** JPM is terminated.

Terminating Cue: Entry and exit of the High Radiation area completed.

RJPM-OPS-ADM-RS04

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-ADM-RS04

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The plant is operating at 100% power when it becomes necessary to close manually operated Reactor Water Cleanup Drain Valve, G33-V4.

Initiating Cues: The CRS has directed you to enter the High Radiation in Mockup Area South and close RWCU Drain Valve, G33-V4.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** DETERMINE ALTERNATE DECAY HEAT REMOVAL METHOD**

REASON FOR REVISION:

NRC Exam JPM **SRO ADMIN - 1**

PREPARE / REVIEW:

Roger Persons	0862	7/17/2004
Preparer	KCN	Date
Erich Weinfurter	1497	7/18/2004
Technical Review (SME)	KCN	Date
Tiffany Aley	1338	7/20/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Determine Alternate Decay Heat Removal Method per OSP-0041

TASK REFERENCE:	301001005003 301011005003

K/A REFERENCE & RATING:	2.1.25, 3.1

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Classroom	**X**

COMPLETION TIME:	25 min.

MAX TIME:	N/A

JOB LEVEL:	SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: Determine Alternate Decay Heat Removal Method per OSP-0041

Required Power: N/A

IC No.: N/A

Notes: **Administrative JPM that will be conducted in a classroom.**

DATA SHEET

References for Development: OSP-0041, Alternate Decay Heat Removal

Required Materials: OSP-0041, Alternate Decay Heat Removal

Required Plant Condition: N/A

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

After operating 200 days at 100% power, the plant was shut down for a refueling outage. The reactor was scrammed to complete the shutdown at 0700 hours on September 19, 2004. It is now 1300 hours on September 20, 2004. RHR A is operating in SDC and the following conditions exist:

- Reactor coolant temperature is 195ºF
- Service Water Temperature is 83ºF
- RPCCW Temperature is 91ºF

RHR Loop B has just been declared inoperable for Shutdown Cooling Mode because SWP-MOVF068B, RHR HX B SVCE WTR RTN valve is closed and cannot be opened with its actuator or locally.

Initiating Cue:

The OSM has directed you to determine an Alternate Decay Heat Removal Method for RHR Loop B by completing OSP-0041, Alternate Decay Heat Removal through Step 6.2.4.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
* 1.	Determine time since reactor shutdown and record on Attachment 1, Mode Selection.	Using information provided, determines time after shutdown to be 30 hours and records on Attachment 1.	____	
* 2.	Determine core decay heat after shutdown, per Attachment 6, Decay Heat After Shutdown From Full Power or from the Incore Fuels Group if extremely accurate Decay Heat Data is needed. Record Value on Attachment 1.	Using time after shutdown at 30 hours determines Decay Heat to be 63 MBtu/hr (±2 MBtu/hr) and records on Attachment 1.	____	**CUE:** Decay Heat information from Incore Fuels Group is NOT available at this time.
* 3.	Determine method of Alternate Decay Heat Removal desired based on the capacity of the systems available. IF RHR-SDC is not being used as an alternate for itself, THEN select an alternate method from Attachment 1, Mode Selection. 1. Record number of inoperable RHR-SDC Loops. 2. List alternate method for each inoperable RHR-SDC Loops.	Records "1" as number of RHR-SDC Loops INOP. Using 63 MBtu/hr (±2 MBtu/hr) as a value for Decay Heat, and referring to Step 3 of Attachment 1, determines and records in Substep 2 of 6.2.3 SPC/ADHR as Alternate Method	____	

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
_____4.	Use the appropriate sections of this procedure, listed below, to verify availability and/or operate the system indicated in Step 6.2.3.2. All other sections of the procedure may be omitted.	Reviews procedure Section 6.4 and verifies SPC/ADHR availability.	____	**CUE:** If candidate requests information on availability of various plant components tell him/her that, except for RHR Loop B, all other plant equipment is operable.

Terminating Cue: OSP-0041, Alternate Decay Heat Removal, Determination of Alternate Decay Heat Removal Method completed.

RJPM-OPS-ADM-S01

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-ADM-S01

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: After operating 200 days at 100% power, the plant was shut down for a refueling outage.

The reactor was scrammed to complete the shutdown at 0700 hours on September 19, 2004.

It is now 1300 hours on September 20, 2004. RHR A is operating in SDC and the following conditions exist:

- Reactor coolant temperature is 195ºF
- Service Water Temperature is 83ºF
- RPCCW Temperature is 91ºF

RHR Loop B has just been declared inoperable for Shutdown Cooling Mode because SWP-MOVF068B, RHR HX B SVCE WTR RTN valve is closed and cannot be opened with its actuator or locally.

Initiating Cues: The OSM has directed you to determine an Alternate Decay Heat Removal Method for RHR Loop B by completing OSP-0041, Alternate Decay Heat Removal through Step 6.2.4.

CONTINUOUS USE

***G12.1.28**

ENTERGY

RIVER BEND STATION
STATION OPERATING MANUAL
***OPERATION SECTION PROCEDURE**

**ALTERNATE DECAY HEAT REMOVAL*

PROCEDURE NUMBER:	***OSP-0041**
REVISION NUMBER:	***8**
Effective Date:	***_____**

NOTE : SIGNATURES ARE ON FILE.

TemRev 2 AddCounter 87 Att Enc DS MSet REGULAR KWN OFF
*INDEXING INFORMATION

TABLE OF CHANGES

LETTER DESIGNATION TRACKING NUMBER	DETAILED DESCRIPTION OF CHANGES

TABLE OF CONTENTS

1 PURPOSE

1.1 To demonstrate the operability of at least one alternate method of decay heat removal for each inoperable required RHR Shutdown Cooling Mode Loop within one hour of inoperability, and to establish alternate cooling, if necessary.

2 REFERENCES

2.1 G13.18.14.0*194-1 Rated Power vs Time Curve

2.2 G13.18.14.0*162-1, RWCU and SFC Heat Removal Capability

2.3 G13.18.2.6*176-0, RHR Hx Performance for FPC Assist Mode

2.4 Memorandum, NUPE-86-1180 Alternate Method of Decay Heat Removal

2.5 Memorandum, GE-CEM-8615, Alternate Shutdown Cooling Configuration

2.6 ER 98-0310, Verification of the Decay Heat Removal Capabilities of the Systems in OSP-0041

2.7 EEAR-89-E0218, Condensate/Main Steam Evaluation

2.8 Memorandum, GES-13,127/86, Alternate Shutdown Cooling Configuration

2.9 SER 7-87

2.10 S-CRB-18831

3 DEFINITIONS

3.1 Cycle - the initiation and actual use of RHR-LPCI mode as an Alternate Shutdown Cooling method.

3.2 Demonstrate - to verify at least once through test and/or operations data the capability of the required components to remove the necessary decay heat loads. This one time initial verification may have occurred at any time prior to placing the Alternate Method of Decay Heat Removal in service including, but not limited to, during previous outages or during pre-operational testing. Subsequent demonstrations would then consist of verifying the documentation of the one time actual heat removal capability and then also verifying the system configuration/line-up.

4 ORGANIZATION AND RESPONSIBILITIES

4.1 The Operations Shift Superintendent (OSS) is responsible for the administration of this procedure.

4.2 The Operations Shift Superintendent/Control Room Supervisor (OSS/CRS) shall be responsible for the following:

4.2.1. Identifying the need for Alternate Decay Heat Removal capability, verifying availability, and implementation of this method, if required.

4.2.2. Determining the applicability of alternate decay heat removal:

1. Mode 3 when RPV pressure is below the RHR cut-in permissive of 135 psig, and one or both Shutdown Cooling Loops are inoperable. (LCO 3.4.9)

2. Mode 4 when one or both Shutdown Cooling Loops are inoperable (LCO 3.4.10).

3. Mode 5 when any Shutdown Cooling Loops are inoperable (LCO 3.9.8, LCO 3.9.9).

5 GENERAL REQUIREMENTS

5.1 The OSS/CRS should be immediately informed if any acceptance criteria cannot be met.

5.2 Use of LPCI Mode for Alternate Shutdown Cooling is not a desirable mode due to the thermal stresses on the LPCI Nozzles, LPCI Coupling, and Reactor Shroud. Use of LPCI is limited to 3 cycles per nozzle.

5.3 When changing or establishing the various modes of Decay Heat Removal, changes should be made at a slow enough rate to avoid excessive thermal stresses on system components.

5.4 Pay close attention to RPV metal temperatures. Do not allow RPV metal temperatures to decrease below 70°F.

5.5 Operating Limits during use of RHR-LPCI as Alternate Decay Heat Removal Method:

5.5.1. Core circulation is established. Refer to Step 5.13.

5.5.2. Reactor coolant temperature must be less than or equal to 140°F.

5.5.3. Drywell temperature must be greater than or equal to 65°F prior to startup.

5.5.4. Maintain RHR Hx differential temperature at less than or equal to 40°F.

5.5.5. IF CRD system is operating, THEN maintain at maximum flow.

5.6 IF RHR-LPCI is used for Alternate Decay Heat Removal, THEN initiate a Condition Report and include the following for trending and analysis:

- Reactor Coolant Temperature
- Drywell Temperature
- RHR Hx Differential Temperature
- Copy of Attachment 7, LPCI Mode Data Sheet used during operation

5.7 IF both Feedwater Lines are to be taken out of service, THEN operate RWCU F/Ds at maximum flow for several hours after initiating the LPCI Mode, but before isolating the Feedwater Lines.

5.8 IF E12-F003A(B), RHR HX OUTLET VALVE(s) is closed, THEN use ERIS/Recorder E12-R601 points 5 or 6 for Reactor Coolant Temperature. Do not use the ERIS/Recorder's RHR Inlet Temperature Indications.

C 5.9 IF the RPV Flange/Shell metal temperatures are used as an alternate method of determining Reactor Coolant Temperature, THEN a lag is introduced because of the slow transport time across the metal thickness. To minimize the lag time, consider raising Reactor Water Level, if possible, to be within a close proximity of the thermocouples.

5.10 Reactor Water should be cooled to less than 120°F prior to removing the normal mode of Shutdown Cooling.

C 5.11 During shutdown operations with time to boil less than two hours on the decay heat curves in OSP-0037, SHUTDOWN OPERATIONS PROTECTION PLAN, or any updated curves if provided by Safety and Engineering Analysis, one or more of the following methods of core circulation is REQUIRED:

- one operating reactor recirc pump,
- one operating RHR shutdown cooling loop, or
- the SPC system operating in the ADHR mode.

C 5.12 STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION, is required to be performed when changing decay heat removal modes or systems, and when there is an inadvertent or intentional loss of decay heat removal.

5.13 It may be necessary to operate the Reactor Recirculation Pumps (RRPs) to reduce the effects of Reactor Coolant Temperature stratification (i.e., maximum RWCU bottom head drain flow and minimum CRD flow is ineffective). RRPs should be operated periodically, as opposed to continuously, if the pump seal cavities were completely vented following RPV depressurization below 300 psig, and seal purge flow has not been interrupted. (SIL 203)

5.14 IF RHR is inoperable under any of the following conditions, THEN it is considered Administratively Inoperable, and may be used as an Alternate Decay Heat Removal System:

5.14.1. Associated Diesel Generator inoperable.

5.14.2. Associated Standby Service Water inoperable, but cooling water is available.

5.14.3. Associated support systems inoperable (i.e., pump seal cooling, isolation instrumentation, MOV power, unit cooler).

5.14.4. Normal Shutdown Cooling flow paths as defined by SOP-0031, RESIDUAL HEAT REMOVAL.

5.15 Flooding of the Main Steam Lines for Alternate Shutdown Cooling should be minimized due to the increased radiation levels, possible airborne contamination, and reduced fatigue margin for the Steam Line Piping.

5.16 The following administrative requirements apply when using RWCU for Decay Heat Removal in Mode 5:

5.16.1. Maximum reactor coolant temperature should be limited to less than or equal to 125°F.

5.16.2. CCP inlet temperature should be less than or equal to 95°F.

5.16.3. RWCU flow should be greater than or equal to 275 gpm.

C 5.17 During cold shutdown conditions with the RPV head in place, the following conditions will be met to minimize temperature stratification which may cause coolant temperatures to exceed 212°F and inadvertent RPV pressurization.

5.17.1. At least one shutdown cooling loop should be in operation.

5.17.2. RPV water level shall be maintained greater than 75 inches using shutdown level instrumentation when Reactor Recirculation Pumps are secured. This level is the minimum natural circulation level.

5.17.3. In the event forced circulation is unavailable (Reactor Recirculation Pump off) and Reactor Water Level at or below the minimum natural circulation level for any reason, then periodic monitoring of vessel metal temperatures above and below the intended water level should be initiated.

5.18 Precautions Particular to MSL Flooding

5.18.1. To preclude brittle fracture concerns, maintain reactor temperature greater than 120°F and reactor pressure less than 700 psig. Temperature can be monitored at the following locations:

1. Bottom head drain when RWCU is in service
2. RHR Pump discharges when RHR A(B) is in service
3. Reactor Recirc Loops when Recirc Pumps are operating

5.18.2. During MSL flooding operations, the reactor shall remain depressurized. Refer to Attachment 11, MSL Alternate Decay Heat Removal Equipment Failures for guidance on RPV pressure increases.

5.18.3. Radiation levels in the Turbine Building increase during the implementation of this procedure. Appropriate precautions and posting of areas should be performed.

5.18.4. The elevation of the Main Steam Lines is approximately 105". IF RPV level is allowed to decrease below this level, THEN RPV Cooling via this method is lost.

5.18.5. The Condenser Hotwell is kept at an elevated level. The following cautions apply:

1. Tube immersion has a major influence on Decay Heat Removal. Maintain Hotwell Level less than or equal to 83' (Vacuum Pump Suction Line) and above the bottom of the tube bundle, 73'6".

2. IF the dose rates are high, THEN a tygon tube and a level transmitter is connected to the Hotwell for level indication. It should be monitored frequently when changing level or during activities with a potential for affecting Hotwell Level.

3. The Condensate System should remain on short or long cycle operation through the Demins to prevent water stagnation in the Hotwell.

4. Leakage detection is via Turbine Building Sump Level Alarms and periodic monitoring of Radwaste Influent Flow by the Aux Control Room.

5. WHEN the Hotwell Level is above the bottom of the Tube Bundle, 73'6", THEN the Circulating Water System must be in operation with pressure maintained in all four waterboxes. This prevents any leakage from the Hotwell to the Circulating Water System.

6. Opening of SRVs (i.e., ADS initiation, etc.) causes the Condenser Hotwell Level to decrease. Uncovering Condenser Tubes has a major influence on decay heat removal.

7. The SJAE and Mechanical Vacuum Pump Suction Lines must be isolated prior to increasing Hotwell Level to greater than 83’.

5.18.6. Loss of the operating Condensate Pump with FWS-FV104, START UP RECIRC FCV open can result in a RPV Level decrease of approximately 1 inch/min if the RWCU System is in service.

5.18.7. The Turbine Bypass Valves are not to be used for decay heat removal while in MSL Flooding.

5.18.8. RPV Level should be maintained at 108" to 196"

1. The 108" limit is to indicate loss of feed to the Vessel.

2. The 196" limit provides adequate head for drain line flow and allow time for operator response on a MSIV closure. This level corresponds to approximately 6.5" below the RPV Flange.

5.18.9. IF work is being performed on the Main Turbine, THEN new or ultrasonically clean Condensate Demin Beds should be used when in long cycle cleanup to prevent airborne contamination.

5.18.10. As a result of engineering review of pipe stress calculations, use of the Main Steam Piping for Alternate Shutdown Cooling is acceptable without pinning the spring hangers.

5.18.11. Maintain Condensate Water Temperature greater than 70°F, due to RPV Temperature concerns, and less than 140°F due to Condensate Demin concerns. Temperature can be monitored on CNM-TI-107, OFF GAS COND INLET TEMP at H13-P680 or by use of contact pyrometers on the Condensate Pump Discharge Piping.

6 INSTRUCTIONS

6.1 Prerequisites

6.1.1. Personnel performing this test procedure must be qualified per ADM-0007, SELECTION, TRAINING, QUALIFICATION AND EVALUATION OF PLANT STAFF PERSONNEL. _____ *(Initials)*

6.1.2. Personnel performing this test verify this procedure and any associated CN(s) are the most current. _____ *(Initials)*

6.1.3. Each performer indicates he has read and understands this procedure by completing the following:

(Signature)	(Print Name)	(Initials)
(Signature)	(Print Name)	(Initials)
(Signature)	(Print Name)	(Initials)
(Signature)	(Print Name)	(Initials)

6.1.4. Obtain OSM/CRS permission to begin this test. _____ *(Initials)*

6.1.5. Inform the NCO of the performance of this procedure. _____ *(NCO)*

6.2 Determination of Alternate Decay Heat Removal Method

6.2.1. Determine time since reactor shutdown and record on Attachment 1, Mode Selection.

_____
(Initials)

NOTE

The values of decay heat given in Attachment 6 are very conservative, especially if the reactor has not been operating continuously at high power for several weeks.

C 6.2.2. Determine core decay heat after shutdown, per Attachment 6, Decay Heat After Shutdown From Full Power or from the Incore Fuels Group if extremely accurate Decay Heat Data is needed. Record value on Attachment 1.

_____
(Initials)

NOTE

RHR SDC loops may be considered as alternates for themselves if Administratively Inoperable per Step 5.14.

6.2.3. Determine method of Alternate Decay Heat Removal desired based on the capacity of the systems available. IF RHR-SDC is not being used as an alternate for itself, THEN select an alternate method from Attachment 1, Mode Selection.

_____
(Initials)

1. Record number of inoperable RHR-SDC Loops.

_____
(Initials)

_____
# of SDC Loops INOP

2. List alternate method used for each inoperable RHR-SDC Loops.

_____
(Initials)

_____
1st Alternate Method

_____
2nd Alternate Method

6.2.4. Use the appropriate sections of this procedure, listed below, to verify availability and/or operate the systems indicated in Step 6.2.3.2. All other sections of the procedure may be omitted.

_____
(Initials)

Alternate Decay Heat Removal Mode	Procedure
RHR-SDC	6.3
SPC/ADHR	6.4
FPC Assist	6.5
RHR-LPCI	6.6
CRD	6.7
RWCU, RWCU/SFC	6.8
Condensate System	6.9
MSL Flooding	6.10

6.2.5. Notify Radiation Protection of Alternate Systems used, as local radiological conditions may change.

_____
(Initials)

6.3 RHR - SDC

NOTE

IF both normal SDC modes are inoperable, THEN only the Alternate Method of Decay Heat Removal not in service need be demonstrated.

It is not required to actually place the RHR-SDC Alternate Decay Heat Removal Mode in operation if the following administrative conditions are met and the normal mode of shutdown cooling has previously demonstrated the ability to remove the Reactor Core Decay Heat.

Section 6.3.1 is used to verify availability of RHR-SDC when any of the following conditions prevent normal SDC operability.

- *Associated Diesel Generator inoperable.*
- *Associated Standby Service Water inoperable, but cooling water is available.*
- *Associated support systems inoperable such as pump seal cooling, isolation instrumentation, MOV power, unit cooler.*
- *Normal Shutdown Cooling flow paths as defined by SOP-0031, RESIDUAL HEAT REMOVAL, are unavailable.*

6.3.1. Administrative Conditions

NOTE

For the purpose of this section, "available" means the referenced items shall be ready for immediate use, and not impeded by system clearances or in progress maintenance activities.

1. E12-C002A(B), RHR A(B) Pump operable. _____ *(Initials)*

2. Operable suction flow path is available:

   - E12-F008, RHR SHUTDOWN COOLING OUTBD ISOL VALVE

   _____ *(Initials)*

   AND

   - E12-F009, RHR SHUTDOWN COOLING INBD ISOL VALVE

   _____ *(Initials)*

NOTE

E12-F037A(B), RHR A(B) TO UPPER POOL FPC ASSIST is only a valid discharge path when the Reactor Head is removed and Reactor Cavity is flooded.

3. Operable discharge flowpath is available:

   - E12-F053A(B), RHR A(B) SDC INJECTION VALVES

   _____ *(Initials)*

   OR

   - E12-F037A(B), RHR A(B) TO UPPER POOL FPC ASSIST

   _____ *(Initials)*

4. RHR Heat Exchangers are operable with capability to establish flow through Heat Exchanger E12-F003A(B), RHR A(B) HX OUTLET VLV(s) and E12-F047A(B), HX INLET VLV(s).

   _____ *(Initials)*

5. RHR Heat Exchanger Cooling Valve E12-F068A(B), RHR HX A(B) SVCE WTR RTN is operable, and cooling water is available.

   _____ *(Initials)*

6.3.2. Operation

1. Operate RHR in the Shutdown Cooling Mode in accordance with SOP-0031, RESIDUAL HEAT REMOVAL.

_____
(Initials)

2. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures per Step 5.12.

_____
(Initials)

6.4 SPC/ADHR

NOTE

IF both normal SDC modes are inoperable, THEN only the alternate method of Decay Heat Removal not in service need be demonstrated.

It is not required to actually place SPC/ADHR in operation, If the following administrative conditions are met and the normal mode of Shutdown Cooling has previously demonstrated the ability to remove the Reactor Core Decay Heat.

6.4.1. Administrative Conditions

NOTE

For the purpose of this section, "available" means the referenced items shall be ready for immediate use and not impeded by system clearances or in-progress maintenance activities.

1. Reactor coolant temperature is less than 200°F.

   _____
   (Initials)

2. SPC-P1A(B), SPC PUMP A(B) operable.

   _____
   (Initials)

3. SPC-E1, SPC HEAT EXCHANGER, is operable.

   _____
   (Initials)

4. SPC-AOV16, SPC HX SERVICE WATER OUTLET THROTTLE VALVE, is operable with cooling water available.

   _____
   (Initials)

5. IF ADHR Configuration 1, SDC suction and LPCI C discharge, is the desired method of Alternate Decay Heat Removal, THEN the following conditions apply:

   1. Operable suction flow path available:

   - E12-F008, SHUTDOWN COOLING OUTBD ISOL VALVE

   _____
   (Initials)

- E12-F009, SHUTDOWN COOLING INBD ISOL VALVE

_____ *(Initials)*

- RHS-AOV62, SPC SUCTION VALVE

_____ *(Initials)*

- RHS-AOV63, SPC SUCTION VALVE

_____ *(Initials)*

2. Operable discharge flow path available:

- SPC-AOV20, SPC FILTER-DEMIN SKID BYPASS VALVE

_____ *(Initials)*

- RHS-AOV64, SPC DISCHARGE VALVE

_____ *(Initials)*

- E12-F042C, RHR PUMP C LPCI INJECT ISOL VALVE

_____ *(Initials)*

NOTE

ADHR Configuration 2 can only be used if the Reactor Head is removed and the Reactor Cavity is flooded.

6. IF ADHR Configuration 2, SDC suction and Upper Pool discharge, is the desired method of Alternate Decay Heat Removal, THEN the following conditions apply:

   1. Operable suction flow path available:

   - E12-F008, SHUTDOWN COOLING OUTBD ISOL VALVE

   _____ *(Initials)*

   - E12-F009, SHUTDOWN COOLING INBD ISOL VALVE

   _____ *(Initials)*

   - RHS-AOV62, SPC SUCTION VALVE

   _____ *(Initials)*

- RHS-AOV63, SPC SUCTION VALVE

_____
(Initials)

2. Operable discharge flow path available:

- SPC-AOV20, SPC FILTER-DEMIN SKID BYPASS VALVE

_____
(Initials)

- SFC-MOV121, PRFCN RTN OUTBD ISOL

_____
(Initials)

- SFC-MOV139, RETURN TO PRFCN CONTMT INBD ISOLATION

_____
(Initials)

NOTE

ADHR Configuration 3 can only be used if the Reactor Head is removed and the Reactor Cavity is flooded.

7. IF ADHR Configuration 3, Upper Pool suction and LPCI C discharge, is the desired method of Alternate Decay Heat Removal, THEN the following conditions apply:

   1. Operable suction flow path:

   - SFC-MOV121, PRFCN RTN OUTBD ISOL

   _____
   (Initials)

   - SFC-MOV139, RETURN TO PRFCN CONTMT INBD ISOLATION

   _____
   (Initials)

   - SPC-AOV14, SPC UPPER POOL SUCTION VALVE

   _____
   (Initials)

   2. Operable discharge flow path:

   - SPC-AOV20, SPC FILTER-DEMIN SKID BYPASS VALVE

   _____
   (Initials)

   - RHS-AOV64, SPC DISCHARGE VALVE

   _____
   (Initials)

- E12-F042C, RHR PUMP C LPCI INJECT ISOL VALVE

_____
(Initials)

6.4.2. Operation

1. Operate SPC/ADHR per SOP-0140, SUPRESSION POOL CLEANUP AND ALTERNATE DECAY HEAT REMOVAL.

_____
(Initials)

2. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures per Step 5.12.

_____
(Initials)

6.5 FPC - Assist

NOTES

IF both normal SDC modes are inoperable, THEN only the alternate method of Decay Heat Removal not in service need be demonstrated.

It is not required to actually place the FPC-Assist Alternate Decay Heat Removal Mode in operation if the following administrative conditions are met and the normal mode of Shutdown Cooling has previously demonstrated the ability to remove the Reactor Core Decay Heat.

6.5.1. Administrative Conditions

NOTE

For the purpose of this section, "available" means the referenced items shall be ready for immediate use, and not impeded by system clearances or in progress maintenance activities.

1. The Reactor Head is removed with the Reactor Cavity >23' above RPV flange and gate open.

_____
(Initials)

2. E12-C002A(B), RHR A(B) Pump operable.

_____
(Initials)

3. Operable suction flowpath is available.

   - SFC-V106, FUEL POOL COOLING TO RHR Manual Isolation

_____
(Initials)

AND

   - E12-F066A(B) RHR A(B), FUEL POOL COOLING SUCTION

_____
(Initials)

4. Operable discharge flowpath is available:

   - E12-F037A(B), RHR A(B) TO UPPER POOL FPC ASSIST

   _____ *(Initials)*

   AND

   - SFC-V107, RHR RETURN TO FUEL POOL COOLING Manual Isolation

   _____ *(Initials)*

5. RHR Heat Exchangers are operable with capability to establish flow through Heat Exchanger E12-F003A(B), RHR A(B) HX OUTLET VLV(s) and E12-F047A(B), HX INLET VLV(s).

   _____ *(Initials)*

6. RHR Heat Exchanger Cooling Valve E12-F068A(B), RHR HX A(B) SVCE WTR RTN is operable, with cooling water available.

   _____ *(Initials)*

6.5.2. Operation

NOTES

This Mode can only be used if the Reactor Head is removed and >23' above RPV flange and gate open.

Natural circulation must be established if a Reactor Recirculation Pump is not running. It is preferred to have a reactor recirculation pump running for temperature monitoring.

1. IF it is desired, THEN verify at least one Reactor Recirculation Pump operating per SOP-0003, REACTOR RECIRCULATION SYSTEM.

   _____ *(Initials)*

2. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures per Step 5.12.

   _____ *(Initials)*

3. Operate the FPC-Assist Mode of RHR per SOP-0031, RESIDUAL HEAT REMOVAL.

   _____ *(Initials)*

6.6 RHR - LPCI

CAUTION

Use of LPCI mode for Alternate Shutdown Cooling is not a desirable mode due to the thermal stresses on the LPCI Nozzles, LPCI Coupling, and Reactor Shroud. Do not use LPCI if other adequate cooling means are available unless plant conditions require its use.

NOTES

IF both normal SDC modes are inoperable, THEN only the alternate method of Decay Heat Removal not in service need be demonstrated.

It is not required to actually place the RHR-LPCI Alternate Decay Heat Removal Mode in operation if the following administrative conditions are met and the normal mode of Shutdown Cooling has previously demonstrated the ability to remove the Reactor Core Decay Heat.

Engineering tracks use of RHR-LPCI using EDP-MP-05, Fatigue Management.

6.6.1. Administrative Conditions

NOTE

For the purpose of this section, "available" means the referenced items shall be ready for immediate use, and not impeded by system clearances or in progress maintenance activities.

1. Reactor Coolant Temperature must be less than or equal to 140°F.

   _____
   (Initials)

2. Drywell Temperature must be greater than or equal to 65°F.

   _____
   (Initials)

3. E12-C002A(B), RHR A(B) Pump operable.

   _____
   (Initials)

4. Operable suction flowpath is available.

   - E12-F008, RHR SHUTDOWN COOLING OUTBD ISOL VALVE

   _____ *(Initials)*

   AND

   - E12-F009, RHR SHUTDOWN COOLING INBD ISOL VALVE

   _____ *(Initials)*

5. Operable discharge flowpath through E12-F042A(B), RHR PUMP A(B) LPCI INJECT ISOL VALVE(S) is available

   _____ *(Initials)*

6. RHR Heat Exchangers are operable with capability to establish flow through Heat Exchanger E12-F003A(B), RHR A(B) HX OUTLET VLV(s) and E12-F047A(B), RHR A(B) HX INLET VLV(s).

   _____ *(Initials)*

7. RHR Heat Exchanger Cooling Valve E12F068A(B), RHR HX A(B) SVCE WTR RTN is operable, and cooling water is available.

   _____ *(Initials)*

8. Core circulation in accordance with Step 5.13 is or may be readily established.

   _____ *(Initials)*

6.6.2. Operation

1. Check reactor coolant temperature is less than or equal to 140°F.

   _____ *(Initials)*

2. IF CRD is operating, THEN raise CRD cooling water flow to maximum.

   _____ *(Initials)*

3. Flush and preheat the selected RHR Loop for Alternate Shutdown Cooling Mode per SOP-0031, RESIDUAL HEAT REMOVAL.

   _____ *(Initials)*

4. Verify closed the following:

   - E12-F004A(B), RHR PUMP A(B) SUP PL SUCTION VALVE(S).

     _____
     (Initials)

   - E12-F064A(B), RHR PUMP A(B) MIN FLOW TO SUP PL.

     _____
     (Initials)

   - E12-F024A(B), RHR PUMP A(B) TEST RTN TO SUP PL

     _____
     (Initials)

   - E12-F037A(B), RHR A(B) TO UPPER POOL FPC ASSIST

     _____
     (Initials)

   - E12-F048A(B), RHR A(B) HX BYPASS VALVE(S).

     _____
     (Initials)

5. On H13-P870, throttle open E12-F068A(B), HT EXCH A(B) SVCE WTR DISCH to obtain less than or equal to 5800 gpm as indicated at H13-P601, on E12-R602A(B), RHR HX A(B) SERVICE WATER FLOW.

   _____
   (Initials)

6. IF a Group 5 Containment Isolation Signal is present, THEN reset isolation by depressing the following:

   - B21H-S33, INBD ISOLATION SEAL IN RESET Pushbutton

     _____
     (Initials)

   - B21H-S32, OUTBD ISOLATION SEAL IN RESET Pushbutton.

     _____
     (Initials)

CAUTION

IF the Shutdown Cooling Isolation Valves are opened with portions of the RHR Piping empty, THEN a significant drop in Reactor Level can occur. Do not open Shutdown Cooling Isolation Valves unless the RHR piping is filled.

7. Verify the RHR Piping, including Suction Lines, is completely filled.

   _____
   (Initials)

8. Verify open the following:

   1. E12-F010, RHR SDC MAN ISOL VLV

   _____
   (Initials)

   2. E12-F009, RHR SHUTDOWN COOLING INBD ISOL VALVE

   _____
   (Initials)

NOTE

It may be necessary to place the RHR SHUTDOWN COOLING OUTBD ISOL VALVE ENABLE/DISABLE Switch to ENABLE on Div 1 RSS Panel C61-PNLP001 in order to operate E12-F008, RHR SHUTDOWN COOLING OUTBD ISOL VALVE from the Main Control Room.

   3. E12-F008, RHR SHUTDOWN COOLING OUTBD ISOL VALVE

   _____
   (Initials)

   4. E12-F006A(B), RHR PUMP A(B) SDC SUCTION VALVE

   _____
   (Initials)

   5. E12-F047A(B), RHR A(B) HX INLET VALVE

   _____
   (Initials)

   6. E12-F042A(B), RHR PUMP A(B) LPCI INJECT ISOL VALVE(S)

   _____
   (Initials)

   7. E12-F027A(B), RHR PUMP A(B) OUTBD ISOLATION VALVE(S)

   _____
   (Initials)

9. Close E12-F003A(B), RHR A(B) HX OUTLET VALVES.

_____
(Initials)

10. Record data on Attachment 7, LPCI Mode Data Sheet beginning 5 minutes prior to start of RHR Pump.

_____
(Initials)

NOTE

Initial flow to the Reactor Vessel from LPCI should bypass the RHR Heat Exchanger. The flow through the LPCI Lines should be raised quickly to minimize thermal stresses.

11. Verify Average Drywell Temperature is greater than or equal to 65°F prior to RHR Pump start.

_____
(Initials)

CAUTION

Failure to establish greater than 1100 gpm within 8 seconds of pump start causes E12-F064A(B), RHR PUMP A(B) MIN FLOW TO SUP PL to open, dumping Reactor Water to the Suppression Pool. Do not start pump unless minimum flow back to the vessel can be established.

12. Start RHR PUMP A(B) and immediately throttle open E12-F048A, RHR A HX BYPASS VALVE to obtain 2000-3000 gpm.

_____
(Initials)

NOTE

Attachment 7, LPCI Mode Data Sheet, data is to be recorded every minute for the first five minutes, and hourly thereafter.

13. Establish a stable flow of approximately 5000 gpm by throttling E12-F048A, RHR A HX BYPASS VALVE.

_____
(Initials)

14. Monitor RHR Hx Differential Temperature on the RHR TEMPERATURES Recorder. Maintain Reactor Coolant Temperature drop less than or equal to 40°F ΔT.

_____
(Initials)

15. Establish a cooldown rate of less than 100°F/hr as follows:

    1. Slowly jog open E12-F003A(B), RHR A(B) HX OUTLET VLV(S) and monitor the cooldown rate.

    _____
    (Initials)

    2. Throttle E12-F003A(B), RHR A(B) HX OUTLET VLV and E12-F048A(B), RHR A(B) HX BYPASS VALVE(S) to obtain the desired cooldown rate while maintaining a constant RHR loop flow.

    _____
    (Initials)

16. Continue to record data on Attachment 7, LPCI Mode Data Sheet.

_____
(Initials)

    1. Maintain RHR Hx Differential Temperature at less than or equal to 40°F.

    _____
    (Initials)

    2. Maintain Rx Coolant Temperature less than or equal to 140°F.

    _____
    (Initials)

17. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures per Step 5.12.

_____
(Initials)

18. Initiate a Condition Report per Step 5.6.

_____
(Initials)

6.7 CRD

NOTES

IF both normal SDC modes are inoperable, THEN only the Alternate Method of Decay Heat Removal not in service need be demonstrated.

Verification of Alternate Decay Heat Removal by the CRD System may be performed by either the Previous Performance Method, Step 6.7.1, Calculation Method, Step 6.7.2, or Demonstration Method, Step 6.7.3.

6.7.1. Verify that the CRD System Alternate Decay Heat Removal capability has been demonstrated via a previous performance.

_____
(Initials)

6.7.2. Verify that the CRD System Alternate Decay Heat Removal capability is satisfactory by obtaining Engineering Acceptance.

_____
(Initials)

_____
Engineering Calculation Reference Number

6.7.3. Verification by demonstration

1. Reduce Reactor Coolant Temperature to approximately 120°F with the in service Shutdown Cooling Loop or Alternate Method.

_____
(Initials)

2. Verify one of the following:

   - At least one Reactor Recirculation Pump is operating. _____ *(Initials)*

   OR

NOTE

Natural circulation must be established if a Reactor Recirculation Pump is not running. It is preferred to have a reactor recirculation pump running for temperature monitoring.

   - IF no forced circulation is in service, THEN establish Natural Core Circulation by increasing Reactor Water Level greater than 75 inches as indicated at H13-P601, on B21-R605, RX WTR LEVEL SHUTDOWN RANGE. _____ *(Initials)*

3. Operate the CRD system per SOP-0002, CONTROL ROD DRIVE HYDRAULICS to remove Reactor Decay Heat. _____ *(Initials)*

4. Remove all Decay Heat Removal Systems in service with exception of the Alternate Decay Heat Removal Method being demonstrated. _____ *(Initials)*

5. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures for Alternate Decay Heat Removal Method verification per Step 5.12. _____ *(Initials)*

6. Restore the CRD System to previous configuration. _____ *(Initials)*

_____
(IND VERIF)

6.7.4. Operation

1. Operate the CRD System per SOP-0002, CONTROL ROD DRIVE HYDRAULICS to remove Reactor Decay Heat.

_____
(Initials)

2. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures, per Step 5.12.

_____
(Initials)

6.8 RWCU, RWCU/SFC

NOTES

IF both normal SDC modes are inoperable, THEN only the Alternate Method of Decay Heat Removal not in service need be demonstrated.

Verification of Alternate Decay Heat removal by the RWCU System may be performed by either the previous Performance Method, Step 6.8.1, Calculation Method, Step 6.8.2, or Demonstration Method, Step 6.8.3.

6.8.1. Verify that the RWCU System Alternate Decay Heat Removal capability has been demonstrated via a previous performance.

_____
(Initials)

6.8.2. Verify that the RWCU System Alternate Decay Heat Removal capability is satisfactory by obtaining Engineering Acceptance.

_____
(Initials)

_____
Engineering Calculation Reference Number

6.8.3. Verification by demonstration

1. Reduce reactor coolant temperature to approximately 120°F with the in-service Shutdown Cooling Loop or Alternate Method.

_____
(Initials)

2. Verify one of the following:

   - At least one Reactor Recirculation Pump is operating.

_____
(Initials)

   OR

NOTE

Natural circulation must be established if a Reactor Recirculation Pump is not running. It is preferred to have a reactor recirculation pump running for temperature monitoring.

   - IF no forced circulation is in service, THEN establish Natural Core Circulation by increasing Reactor Water Level greater than 75 inches as indicated at H13-P601, on B21-R605, RX WTR LEVEL SHUTDOWN RANGE.

_____
(Initials)

3. Operate the RWCU System per Step 6.8.4.1 to remove Reactor Decay Heat.

_____
(Initials)

4. Remove all Decay Heat Removal Systems in service with exception of the Alternate Decay Heat Removal Method being demonstrated.

_____
(Initials)

5. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures for Alternate Decay Heat Removal Method verification.

_____
(Initials)

6. Restore the RWCU System to previous configuration.

_____
(Initials)

_____
(IND VERIF)

7. Restore the SFC System to previous configuration.

_____
(Initials)

_____
(IND VERIF)

6.8.4. Operation

1. Operate the RWCU System per SOP-0090, REACTOR WATER CLEANUP SYSTEM.

   1. IF in Mode 5, THEN additional administrative requirements for operation of RWCU are as follows:

   - WHEN using RWCU for Decay Heat Removal in Mode 5, THEN maximum Reactor Coolant Temperature should be limited to less than or equal to 125°F.

     _____
     (Initials)

   - CCP Inlet Temperature should be less than or equal to 95°F.

     _____
     (Initials)

   - RWCU flow should be greater than 275 gpm.

     _____
     (Initials)

   2. IF possible, THEN bypass the Regenerative Heat Exchanger Return Flow to maximize heat transfer, as follows:

   a Throttle open G33-F107 RWCU REGEN HX BYPASS

   _____
   (Initials)

   b Throttle closed G33-F042 RWCU REGEN HX OUTLET

   _____
   (Initials)

NOTE

Reactor Head must be removed and vessel flooded >23' above flange to use the SFC System for Alternate Decay Heat Removal.

3. IF the Main Condenser is available, THEN use maximum blowdown as necessary.

_____
(Initials)

4. IF using SFC System in conjunction with the RWCU System, THEN operate SFC with suction on the Upper Pool per SOP-0091, FUEL POOL COOLING AND CLEANUP SYS.

_____
(Initials)

2. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures, per Step 5.12.

_____
(Initials)

6.9 Condensate System

NOTES

IF both Normal SDC Modes are inoperable, THEN only the Alternate Method of Decay Heat Removal not in service need be demonstrated.

Verification of Alternate Decay Heat Removal by the Condensate System may be performed by either the Previous Performance Method, Step 6.9.1, Calculation Method, Step 6.9.2, or Demonstration Method, Step 6.9.3.

6.9.1. Verify that the Condensate System Alternate Decay Heat Removal capability has been demonstrated via a previous performance.

_____
(Initials)

6.9.2. Verify that the Condensate System Alternate Decay Heat Removal capability is satisfactory by obtaining Engineering Acceptance.

_____
(Initials)

_____
Engineering Calculation Reference Number

6.9.3. Verification by demonstration

1. Reduce Reactor Coolant Temperature to less than 120°F with the In Service Shutdown Cooling Loop or Alternate Method.

_____
(Initials)

2. Verify one of the following:

- At least one Reactor Recirculation Pump is operating.

_____
(Initials)

OR

NOTE

Natural circulation must be established if a Reactor Recirculation Pump is not running. It is preferred to have a reactor recirculation pump running for temperature monitoring.

- IF no forced circulation is in service, THEN establish Natural Core Circulation by increasing Reactor Water Level greater than 75 inches as indicated at H13-P601, on B21-R605, RX WTR LEVEL SHUTDOWN RANGE.

_____
(Initials)

3. Operate the Condensate System per SOP-0007, CONDENSATE SYSTEM.

_____
(Initials)

NOTE

Either or both of the following flow paths may be utilized in conjunction with the Condensate System.

- IF RWCU is available, THEN use maximum blowdown.

_____
(Initials)

- Increase Reactor Water Level and utilize the Main Steam Lines to drain water to the Main Condenser per SOP-0009, REACTOR FEEDWATER SYSTEM and SOP-0011, MAIN STEAM SYSTEM.

_____
(Initials)

4. Remove all Decay Heat Removal Systems in service with exception of the Alternate Decay Heat Removal Methods being demonstrated.

_____
(Initials)

5. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures for Alternate Decay Heat Removal Method verification, per Step 5.12.

_____
(Initials)

6. Restore the Condensate System to previous configuration.

_____
(Initials)

_____
(IND VERIF)

6.9.4. Operation

1. Operate the Condensate System per SOP-0007, CONDENSATE SYSTEM.

_____
(Initials)

CAUTION

IF the reactor head is installed and tensioned, THEN do not exceed 115 inches as indicated at H13-P601, on B21-R605, RX WTR LEVEL SHUTDOWN RANGE.

Pay close attention to RPV metal temperatures and maintain Tech Spec minimum temperature.

NOTE

Either or both of the following flow paths may be utilized in conjunction with the Condensate System.

- IF RWCU is available, THEN use maximum blowdown.

_____
(Initials)

- Increase reactor water level and utilize the Main Steam lines to drain water to the Main Condenser per SOP-0009, REACTOR FEEDWATER SYSTEM and SOP-0011, MAIN STEAM SYSTEM.

_____
(Initials)

2. Use STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures, per Step 5.12.

_____
(Initials)

6.10 MSL Flooding

6.10.1. Verification of Availability

NOTE

For the purpose of this section, "available" means the referenced items shall be ready for immediate use, and not impeded by system clearances or in progress maintenance activities.

1. A physical demonstration of Main Steam Line Flooding's ability to adequately remove decay heat has been previously performed. Reference last performance package dated 3-26-90 per GSU file #04302.

   _____
   (Initials)

2. The Circulating Water System is available with three Circulating Water Pumps, four Cooling Towers, and four Waterboxes.

   _____
   (Initials)

3. One Condensate Pump is operating on Long Cycle Cleanup through the Demineralizers per SOP-0007, CONDENSATE SYSTEM.

   _____
   (Initials)

4. Attachment 8, MSL Alternate Decay Heat Removal Boundary Clearance is complete.

   _____
   (Initials)

   _____
   Clearance Number

5. Establish Hotwell Level at approximately 74'6", approximately one foot above the bottom of the Tube Bundles.

   _____
   (Initials)

6. WHEN hotwell level is established, THEN isolate makeup and reject using administrative controls to preclude inadvertent changes.

   _____
   (Initials)

7. Verify reactor coolant temperature is greater than or equal to 120°F and less than or equal to 170°F.

   _____
   (Initials)

8. Verify MSIV Isolation Logic is reset. _____ *(Initials)*

NOTE

Only one (1) MSL is required for this method of Decay Heat Removal. Other MSL MSIVs may be closed.

1. Identify the MSL available.

MSL _____ _____ *(Initials)*

2. H13-P622 (for selected MSIVs and drains).

- Drain Valve Isolation Status Lights are on. _____ *(Initials)*
- MSIV Pilot Solenoid Status Lights are on. _____ *(Initials)*
- MSIV Pilot Solenoid Amps indicate positive amps. _____ *(Initials)*

3. H13-P623 (for selected MSIVs and drains)

- Drain Valve Isolation Status Lights are on. _____ *(Initials)*
- MSIV Pilot Solenoid Status Lights are on. _____ *(Initials)*
- MSIV Pilot Solenoid Amps indicate positive amps. _____ *(Initials)*

9. Verify the available Main Steam Line in Step 6.10.1.8.1 is aligned per the following:

1. MSL A

- B21-AOVF022A, MSL A INBD MSIV open. _____ *(Initials)*
- B21-AOVF028A, MSL A OUTBD MSIV open. _____ *(Initials)*
- B21-MOVF098A, MSL A SHUTOFF VLV open. _____ *(Initials)*
- B21-MOVF067A, MSL A DRAIN VALVE open. _____ *(Initials)*

2. MSL B

- B21-AOVF0O22B, MSL B INBD MSIV open. _____ *(Initials)*
- B21-AOVF028B, MSL B OUTBD MSIV open. _____ *(Initials)*
- B21-MOVF098B, MSL B SHUTOFF VLV open. _____ *(Initials)*
- B21-MOVF067B, MSL B DRAIN VALVE open. _____ *(Initials)*

3. MSL C

- B21-AOVF022C, MSL C INBD MSIV open. _____ *(Initials)*
- B21-AOVF028C, MSL C OUTBD MSIV open. _____ *(Initials)*
- B21-MOVF098C, MSL C SHUTOFF VLV open. _____ *(Initials)*
- B21-MOVF067C, MSL C DRAIN VALVE open. _____ *(Initials)*

4. MSL D

- B21-AOVF022D, MSL D INBD MSIV open. _____ *(Initials)*
- B21-AOVF028D, MSL D OUTBD MSIV open. _____ *(Initials)*
- B21-MOVF098D, MSL D SHUTOFF VLV open. _____ *(Initials)*
- B21-MOVF067D, MSL D DRAIN VALVE open. _____ *(Initials)*

10. Verify all of the following drain paths to the Main Condenser available:

1. INBD MSIV DRAINS

- B21-F016, MSL WARMUP HDR INBD CTMT ISOL _____ *(Initials)*
- B21-F019, MSL WARMUP HDR OUTBD CTMT ISOL _____ *(Initials)*
- B21-F085, MSL WARMUP HDR SHUTOFF VLV _____ *(Initials)*
- B21-F021, MSL WARMUP HDR COND DR BYPASS _____ *(Initials)*
- B21-F033, MSL WARMUP HDR COND DRAIN _____ *(Initials)*
- DTM-V60, INBD MSIV BODY DRN LINE ISOL (DW) _____ *(Initials)*
- DTM-V55, MSIV DRN LINE TO COND ISOL (TB 95') _____ *(Initials)*

2. OUTBD MSIV DRAIN

- B21-F086, MSL DRAIN HDR SHUTOFF VALVE

_____
(Initials)

- B21-F068, MSL DRAIN HDR COND DRAIN BYPASS

_____
(Initials)

- B21-F069, MSL DRAIN HDR COND DRAIN

_____
(Initials)

- DTM-V72, OUTBD MSIV BODY DRAIN HDR COND ISOL (TB 95')

_____
(Initials)

3. Main Steam Equalizing Header Drains

- DTM-AOV12A, MSL EQUALIZING HDR DRAIN BYPASS

_____
(Initials)

- DTM-AOV12B, MSL EQUALIZING HDR DRAIN BYPASS

_____
(Initials)

- DTM-V1, MN STM EQUAL HDR DRN LINE ISOL (TB 95')

_____
(Initials)

- DTM-V2, MN STM EQUAL HDR DRN LINE ISOL (TB 95')

_____
(Initials)

4. Turbine Bypass Line Drains

- DTM-AOV5A, BYP VLV BEFORE SEAT DRAIN

_____
(Initials)

- DTM-AOV5B, BYP VLV BEFORE SEAT DRAIN

_____
(Initials)

- DTM-V27, B/P STM CHEST DR LINE ISOL (TB 95')

_____
(Initials)

5. MSR #1 Drains

- DTM-MOV51A, MSL TO MSR1 COND DR

_____
(Initials)

- DTM-V173, 1MSS-MOV111 DN STM DRAIN LINE ISOL (TB 95')

_____
(Initials)

- DTM-V172, MN STM SUPPLY TO MSR1 DRN LINE ISOL (TB 95')

_____
(Initials)

6. MSR #2 Drains

- DTM-MOV51B, MSL TO MSR2 COND DR

_____
(Initials)

- DTM-V174, MN STM SUPPLY TO MSR2 DR LINE ISOL (TB 95’)

_____
(Initials)

11. Verify all 16 SRVs are installed and closed.

_____
(Initials)

12. Verify the Main Turbine is tripped.

_____
(Initials)

13. Verify one of the following injection flow paths is available:

    1. A FW Injection Line

    - B21-MOVF065A, A FW INBD ISOL _____ *(Initials)*
    - FWS-MOV7A, A FW OUTBD ISOL _____ *(Initials)*
    - B21-AOVF032A, A FW TESTABLE CHECK _____ *(Initials)*
    - B21-VF011A, A FW HDR INBD MANUAL ISOL _____ *(Initials)*

    2. B FW Injection Line

    - B21-MOVF065B, B FW INBD ISOL _____ *(Initials)*
    - FWS-MOV7B, B FW OUTBD ISOL _____ *(Initials)*
    - B21-AOVF032B, B FW TESTABLE CHECK _____ *(Initials)*
    - B21-VF011B, B FW HDR INBD MANUAL ISOL _____ *(Initials)*

6.10.2. Operation

1. Complete Attachment 9, MSL Alternate Decay Heat Removal Valve Lineup. _____ *(Initials)*
2. Complete Attachment 10, MSL Alternate Decay Heat Removal Control Board Lineup. _____ *(Initials)*
3. Verify a Mechanical Vacuum Pump is operating with CNM-AOVVB, CNDS VAC BRKR open. _____ *(Initials)*

4. Begin using STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION to obtain Reactor Coolant Temperatures.

_____
(Initials)

5. Install a tygon tube or appropriate level transmitter at the Condenser Hotwell for level indication.

_____
(Initials)

6. Verify the Shutdown Range Level Alarm on panel H13-P601 is enabled and the alarms set to the following:

   High Alarm: 196"
   Low Alarm: 180"

_____
(Initials)

7. Verify the Reactor Vessel is depressurized.

_____
(Initials)

8. Verify the Turbine Building Ventilation System is in operation per SOP-0064, TURBINE BUILDING HVAC SYSTEM.

_____
(Initials)

9. Notify Radiation Protection to take necessary precautions for increased radiation levels due to implementation of this procedure.

_____
(Initials)

10. Notify Chemistry this procedure is being implemented and periodic sampling, as determined by Chemistry Supervision, of Circulating Water and Service Water for isotopic analysis is required.

_____
(Initials)

11. Prior to injecting Condensate Water into the Reactor Vessel, verify water quality requirements of TRM TR 3.4.13 are met.

_____
(Initials)

NOTE

Circulating Water configuration may be changed per SOP-0006, CIRCULATING WATER, COOLING TOWER, AND VACUUM PRIMING to establish the initial cooldown rate.

Circulating Water pressure should be kept on any out of Service Waterboxes to prevent Hotwell to Circulating Water leakage.

12. Ensure Attachment 11, MSL Alternate Decay Heat Removal Equipment Failures has been reviewed by the Operations Shift.

_____
(Initials)

13. Closely monitor the following parameters while establishing and maintaining Decay Heat Removal:

_____
(Initials)

    1. Condensate Temperature greater than 70°F and less than 140°F.

_____
(Initials)

    2. Reactor Coolant Temperatures

_____
(Initials)

NOTE

A decrease in RPV temperature is to be expected when raising water level to fill the Main Steam Lines.

14. Using the Condensate and Feedwater system with the Startup Level Control Valve in manual per SOP-0009, REACTOR FEEDWATER SYSTEM, raise RPV level to greater than 110" but less than 180" as indicated at H13-P601, on B21-R605, RX WTR LEVEL SHUTDOWN RANGE.

_____
(Initials)

15. IF desired, THEN bypass Feedwater Heaters to minimize areas affected by flow of Reactor Coolant Water as follows:

    1. Open CNM-MOV136, LP HTRS BYP _____ *(Initials)*

    2. Close CNM-MOV33A, LP HTR STG A INL _____ *(Initials)*

    3. Close CNM-MOV33B, LP HTR STG B INL _____ *(Initials)*

    4. Close CNM-MOV32A, LP HTR STG A OUTL _____ *(Initials)*

    5. Close CNM-MOV32B, LP HTR STG B OUTL _____ *(Initials)*

16. Maintain Hotwell Level at approximately 74'6" using the Condensate Transfer System. _____ *(Initials)*

17. Commence monitoring Hotwell Level at least once per shift and record in the Control Room Log. _____ *(Initials)*

18. WHEN flow through the Main Steam Lines has been initiated at greater than 105", THEN initiate a Condition Report for Engineering Analysis to include the following information: _____ *(Initials)*

    - Reactor Coolant Temperature
    - DW Average Air Temperature
    - Main Steam Tunnel Average Air Temperature

CAUTION

Flooding and damage to the SJAE and Mechanical Vacuum Pump if hotwell level is increased above 83'. Do not exceed 83' hotwell level without first isolating the SJAE and Mechanical Vacuum Pump Suction Lines.

19. Adjust RPV level and Condenser Hotwell level or Circulating Water Temperature to obtain the desired cooldown rate.

_____
(Initials)

20. Decrease the cooling of the operating SDC Loop as necessary to control RPV temperature.

_____
(Initials)

NOTE

Closing of the RPV head vents provides a cushion to lessen any water hammer effects should the MSIVs close and the RPV start to pressurize.

The Head Vents may be opened at any time to relieve pressure or to adjust RPV Water Level.

Maintaining Reactor Coolant Temperature less than or equal to 170°F should preclude flashing the Shutdown Level Instrument Reference Leg if a vacuum is drawn on the Vessel.

21. WHEN the desired RPV level is reached AND stabilized, THEN close the following:

    1. B21-F001, RX DN STREAM HEAD VENT TO DW EQUP DR SUMP

    _____
    (Initials)

    2. B21-F002, RX UP STREAM HEAD VENT TO DW EQUP DR SUMP

    _____
    (Initials)

NOTE

Whenever E12-F003A(B), RHR HX OUTLET VALVE(s) is closed, ERIS/E12-R601 recorder RHR inlet temperature indication for Reactor Coolant Temperature is not accurate. During this time, ERIS/E12-R601 recorder points 5 or 6, is more accurate and should be used for Reactor Coolant Temperature Indication.

22. WHEN RPV level is stabilized, THEN slowly bypass the operating SDC Loop Heat Exchanger by performing the following:

    1. Close E12-F003A(B), RHR A(B) HX OUTLET VALVE

    _____
    (Initials)

    2. Open E12-F048A(B), RHR A(B) HX BYPASS VLV to maintain a constant RHR Loop Flow.

    _____
    (Initials)

NOTE

A reactor coolant temperature decrease, which may take up to four hours, constitutes a successful demonstration of the adequacy of this method. A constant reactor coolant temperature over a period of 8 hours also contitutes a successful demonstration.

23. Verify adequate decay heat removal as indicated by temperatures decreasing or constant using STP-050-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION, per Step 5.12.

    _____
    (Initials)

24. Record the following data:

_____
(Initials)

- RPV Water Level _____
- RPV Temperature _____
- Hotwell Level _____
- SW Temperature _____
- FW Temperature _____
- CW Pumps In Operation _____
- Waterboxes Valved In _____
- Cooling Towers Valved In _____
- CWS Inlet Temperature _____
- CWS Outlet Temperature _____

25. Based upon the amount of Decay Heat, the following Drain Valves may be operated in conjunction with RPV Level and Hotwell Level to control temperature.

1. INBOARD MSIV DRAINS (120 gpm)

- B21-F021

_____
(Initials)

- B21-F033

_____
(Initials)

2. OUTBOARD MSIV DRAIN (48 gpm)

- B21-F068

_____
(Initials)

- B21-F069

_____
(Initials)

3. MS EQUALIZE HEADER DRAIN A (150 gpm)

- DTM-AOV12A

_____
(Initials)

4. MS EQUALIZE HEADER DRAIN B (150 gpm)

- DTM-AOV12B

_____ *(Initials)*

5. TURB BYPASS DRAIN LINE A (50 gpm)

- DTM-AOV5A

_____ *(Initials)*

6. TURB BYPASS DRAIN LINE B (50 gpm)

- DTM-AOV5B

_____ *(Initials)*

7. MSR #1 UPSTREAM DRAIN (365 gpm)

- DTM-MOV51A

_____ *(Initials)*

8. MSR #2 UPSTREAM DRAIN (365 gpm)

- DTM-MOV51B

_____ *(Initials)*

6.10.3. WHEN Decay Heat Removal is no longer required via this method, THEN perform the following:

1. Open RPV Head Vents:

   - B21-F001, RX DN STREAM HEAD VENT TO DW EQPT DR SUMP

   _____ *(Initials)*

   - B21-F002, RX UP STREAM HEAD VENT TO DW EQPT DR SUMP

   _____ *(Initials)*

2. Establish a normal shutdown cooling method.

   _____ *(Initials)*

3. Transfer decay heat removal method by lowering RPV Level below the Main Steam Lines, 104", while controlling temperature with the operating Shutdown Cooling Loop.

   _____ *(Initials)*

4. Notify Radiation Protection that RPV Level is being lowered below the Main Steam Lines.

_____
(Initials)

5. Notify Chemistry that Decay Heat Removal via the Main Condenser is not in effect.

_____
(Initials)

6. IF this mode of cooling is to be left in standby and/or is required, THEN Alternate Decay Heat Removal Verification must be completed at its specified frequency.

_____
(Initials)

7. To restart decay heat removal per this means, perform the applicable portions of Section 6.10.1 and 6.10.2.

_____
(Initials)

6.10.4. Shutdown of MSL Alternate Decay Heat Removal

1. Verify Main Steam Line Decay Heat Removal is no longer required.

_____
(Initials)

2. Restore RPV Water Level as necessary for plant conditions.

_____
(Initials)

3. Request I&C to perform recalibration of RPV Level Instrumentation per TSP-0054, Shutdown Range Reactor Water Level indication B21-LTN027 and C33-LTN017.

_____
(Initials)

4. Request I&C to reset the Shutdown Level Alarms to the desired band.

_____
(Initials)

5. Restore the Condenser Hotwell Level per SOP-0008, CONDENSATE STORAGE, MAKEUP AND TRANSFER.

_____
(Initials)

6. Remove the Condenser level tygon tube and Level Transmitter, if installed.

_____
(Initials)

7. Restore Valves per SOP-0007, CONDENSATE SYSTEM.

_____
(Initials)

8. Remove the clearance installed in Step 6.10.1.4 clearance and restore per the applicable SOPs.

_____
(Initials)

MODE SELECTION

1 Time Since Reactor Shutdown

Record current date and time _____/_____

Record date and time of Reactor shutdown _____

Determine length of time since Reactor shutdown _____ Hours

2 Reactor Core Decay Heat from Attachment 6 or Incore Fuels Group

_____10^6 BTU/HR

Attachment 6 / Incore Fuels Group (Circle one)

MODE SELECTION

NOTE

An Alternate Method is required for each inoperable RHR-SDC mode.

More than one system may be needed to meet Reactor Core Decay Heat requirements, however, credit for each system may be used only once.

3 Compare Reactor Core Decay Heat value from Step **2** of this attachment to the systems heat removal capacities below and determine the Alternate Shutdown Cooling Methods. Record Alternate Shutdown Cooling Methods in Step **6.2.3.2**.

SYSTEM	HEAT REMOVAL CAPACITY (BTU/HR)	CONDITIONS/ ASSUMPTIONS
SPC/ADHR	37.67×10^6 40.12×10^6 70.86×10^6	2500 gpm, 83°F Service Water & 2250 gpm, 120°F Rx Coolant 2250 gpm, 140°F Rx Coolant 2250 gpm, 200°F Rx Coolant
FPC Assist	See Attachment 2	2000 gpm, 95°F Service Water
CRD	2.5×10^6	50 gpm, 100°F CRD & 200°F Rx Coolant
Condensate	7.5×10^6	200 gpm, 124°F Condensate & 200°F Rx Coolant
RWCU	See Attachment 3	471 gpm RPCCW** & 248 gpm Rx Coolant
RHR-LPCI	126×10^6	5800 gpm, 95°F Service Water & 5050 gpm, 185°F Rx Coolant
SFC	See Attachment 4	2000 gpm Service Water & 2500 gpm Rx Coolant
MSL Flooding	60×10^6	1758 gpm/20 hrs after shutdown &, 120°F to 170°F Rx Coolant &, 65°F to 100°F Circulating Water

** This pertains to the non-regenerative heat exchanger only.

FPC ASSIST TEMPERATURE DEPENDENT HEAT REMOVAL CAPACITY TABLE

FPC Assist of RHR, Service Water Flow @ 2000GPM							
SW	Heat Removal Capacity (MBtu/hr)						
Tci (°F)	Pool = 95°F	Pool = 100°F	Pool = 105°F	Pool = 110°F	Pool = 120°F	Pool = 130°F	Pool = 140°F
75	11.5	19.17	23.00	26.84	34.50	42.17	49.84
77	9.97	17.64	21.47	25.30	32.97	40.64	48.31
79	8.43	16.10	19.94	23.77	31.44	39.11	46.77
81	6.90	14.57	18.40	22.24	29.90	37.57	45.24
83	5.37	13.04	16.87	20.70	28.37	36.04	43.71
85	3.83	11.50	15.34	19.17	26.84	34.50	42.17
87	2.30	9.97	13.80	17.64	25.30	32.97	40.64
89	.77	8.43	12.27	16.10	23.77	31.44	39.11
91		6.90	10.73	14.57	22.24	29.90	37.57
93		5.37	9.20	13.04	20.70	28.37	36.04
95		3.83	7.67	11.50	19.17	26.84	34.50
97		2.30	6.13	9.97	17.64	25.30	32.97
99		.77	4.60	8.43	16.10	23.77	31.44
101			3.07	6.90	14.57	22.24	29.90
103			1.53	5.37	13.04	20.70	28.37
105				3.83	11.5	19.17	26.84

FPC ASSIST OF RHR, SERVICE WATER FLOW @ 2000GPM						
SW	Heat Removal Capacity (MBtu/hr)					
Tci (°F)	Pool = 150°F	Pool = 160°F	Pool = 170°F	Pool = 180°F	Pool = 190°F	Pool = 200°F
75	57.51	65.18	72.84	80.51	88.18	95.85
77	55.97	63.64	71.31	78.98	86.65	94.31
79	54.44	62.11	69.78	77.44	85.11	92.78
81	52.91	60.57	68.24	75.91	83.58	91.25
83	51.37	59.04	66.71	74.38	82.04	89.71
85	49.84	57.51	65.18	72.84	80.51	88.18
87	48.31	55.97	63.64	71.31	78.98	86.65
89	46.77	54.44	62.11	69.78	77.44	85.11
91	45.24	52.91	60.57	68.24	75.91	83.58
93	43.71	51.37	59.04	66.71	74.38	82.04
95	42.17	49.84	57.51	65.18	72.84	80.51
97	40.64	48.31	55.97	63.64	71.31	78.98
99	39.11	46.77	54.44	62.11	69.78	77.44
101	37.57	45.24	52.91	60.57	68.24	75.91
103	36.04	43.71	51.37	59.04	66.71	74.38
105	34.50	42.17	49.84	57.51	65.18	72.84

RWCU TEMPERATURE DEPENDENT HEAT REMOVAL CAPACITY TABLES

RWCU						
RPCCW	Heat Removal Capacity (MBtu/hr)					
Tci (°F)	Rx = 90°F	Rx = 100°F	Rx = 110°F	Rx = 120°F	Rx = 130°F	Rx = 140°F
75	1.48	2.47	3.46	4.44	5.43	6.42
77	1.28	2.27	3.26	4.25	5.23	6.22
79	1.09	2.07	3.06	4.05	5.04	6.03
81	0.89	1.88	2.86	3.85	4.84	5.83
83	0.69	1.68	2.67	3.65	4.64	5.63
85	0.49	1.48	2.47	3.46	4.44	5.43
87	0.30	1.28	2.27	3.26	4.25	5.23
89	0.10	1.09	2.07	3.06	4.05	5.04
91		0.89	1.88	2.86	3.85	4.84
93		0.69	1.68	2.67	3.65	4.64
95		0.49	1.48	2.47	3.46	4.44
97		0.30	1.28	2.27	3.26	4.25
99		0.10	1.09	2.07	3.06	4.05
101			0.89	1.88	2.86	3.85
103			0.69	1.68	2.67	3.65
105			0.49	1.48	2.47	3.46

RWCU						
RPCCW	Heat Removal Capacity (MBtu/hr)					
Tci (°F)	Rx = 150°F	Rx = 160°F	Rx = 170°F	Rx = 180°F	Rx = 190°F	Rx = 200°F
75	7.41	8.40	9.38	10.37	11.36	12.35
77	7.21	8.20	9.19	10.17	11.16	12.15
79	7.01	8.00	8.99	9.98	10.96	11.95
81	6.82	7.80	8.79	9.78	10.77	11.75
83	6.62	7.61	8.59	9.58	10.57	11.56
85	6.42	7.41	8.40	9.38	10.37	11.36
87	6.22	7.21	8.20	9.19	10.17	11.16
89	6.03	7.01	8.00	8.99	9.98	10.96
91	5.83	6.82	7.80	8.79	9.78	10.77
93	5.63	6.62	7.61	8.59	9.58	10.57
95	5.43	6.42	7.41	8.40	9.38	10.37
97	5.23	6.22	7.21	8.20	9.19	10.17
99	5.04	6.03	7.01	8.00	8.99	9.98
101	4.84	5.83	6.82	7.80	8.79	9.78
103	4.64	5.63	6.62	7.61	8.59	9.58
105	4.44	5.43	6.42	7.41	8.40	9.38

SFC TEMPERATURE DEPENDENT HEAT REMOVAL CAPACITY TABLES

SSW or RPCCW	SFC Heat Removal Capacity (MBtu/hr)					
Tci (°F)	Rx = 90°F	Rx = 100°F	Rx = 110°F	Rx = 120°F	Rx = 130°F	Rx = 140°F
75	6.96	11.61	16.25	20.89	25.54	30.18
77	6.04	10.68	15.32	19.97	24.61	29.25
79	5.11	9.75	14.39	19.04	23.68	28.32
81	4.18	8.82	13.47	18.11	22.75	27.39
83	3.25	7.89	12.54	17.18	21.82	26.47
85	2.32	6.96	11.61	16.25	20.89	25.54
87	1.39	6.04	10.68	15.32	19.97	24.61
89	0.46	5.11	9.75	14.39	19.04	23.68
91		4.18	8.82	13.47	18.11	22.75
93		3.25	7.89	12.54	17.18	21.82
95		2.32	6.96	11.61	16.25	20.89
97		1.39	6.04	10.68	15.32	19.97
99		0.46	5.11	9.75	14.39	19.04
101			4.18	8.82	13.47	18.11
103			3.25	7.89	12.54	17.18
105			2.32	6.96	11.61	16.25

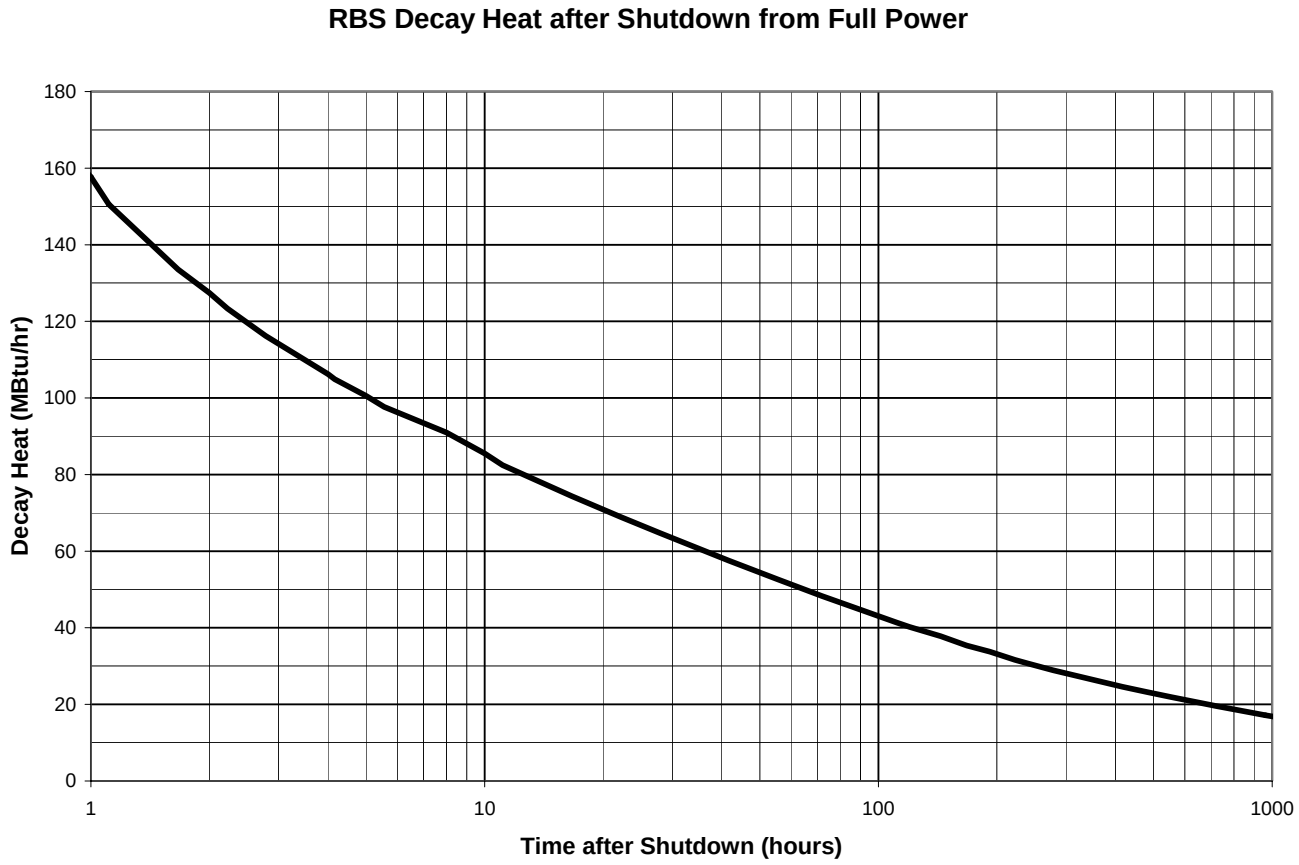
SSW or RPCCW	SFC Heat Removal Capacity (MBtu/hr)					
Tci (°F)	Rx = 150°F	Rx = 160°F	Rx = 170°F	Rx = 180°F	Rx = 190°F	Rx = 200°F
75	34.82	39.47	44.11	48.75	53.40	58.04
77	33.90	38.54	43.18	47.82	52.47	57.11
79	32.97	37.61	42.25	46.90	51.54	56.18
81	32.04	36.68	41.32	45.97	50.61	55.25
83	31.11	35.75	40.40	45.04	49.68	54.33
85	30.18	34.82	39.47	44.11	48.75	53.40
87	29.25	33.90	38.54	43.18	47.82	52.47
89	28.32	32.97	37.61	42.25	46.90	51.54
91	27.39	32.04	36.68	41.32	45.97	50.61
93	26.47	31.11	35.75	40.40	45.04	49.68
95	25.54	30.18	34.82	39.47	44.11	48.75
97	24.61	29.25	33.90	38.54	43.18	47.82
99	23.68	28.32	32.97	37.61	42.25	46.90
101	22.75	27.39	32.04	36.68	41.32	45.97
103	21.82	26.47	31.11	35.75	40.40	45.04
105	20.89	25.54	30.18	34.82	39.47	44.11

COMBINED RWCU AND SFC TEMPERATURE DEPENDENT HEAT REMOVAL CAPACITY TABLES

RWCU and SFC						
RPCCW	Heat Removal Capacity (MBtu/hr)					
Tci (°F)	Rx = 90°F	Rx = 100°F	Rx = 110°F	Rx = 120°F	Rx = 130°F	Rx = 140°F
75	8.45	14.08	19.71	25.34	30.97	36.60
77	7.32	12.95	18.58	24.21	29.84	35.47
79	6.19	11.82	17.46	23.09	28.72	34.35
81	5.07	10.70	16.33	21.96	27.59	33.22
83	3.94	9.57	15.20	20.83	26.47	32.10
85	2.82	8.45	14.08	19.71	25.34	30.97
87	1.69	7.32	12.95	18.58	24.21	29.84
89	0.56	6.19	11.82	17.46	23.09	28.72
91		5.07	10.70	16.33	21.96	27.59
93		3.94	9.57	15.20	20.83	26.47
95		2.82	8.45	14.08	19.71	25.34
97		1.69	7.32	12.95	18.58	24.21
99		0.56	6.19	11.82	17.46	23.09
101			5.07	10.70	16.33	21.96
103			3.94	9.57	15.20	20.83
105			2.82	8.45	14.08	19.71

RWCU and SFC						
RPCCW	Heat Removal Capacity (MBtu/hr)					
Tci (°F)	Rx = 150°F	Rx = 160°F	Rx = 170°F	Rx = 180°F	Rx = 190°F	Rx = 200°F
75	42.23	47.86	53.49	59.12	64.76	70.39
77	41.11	46.74	52.37	58.00	63.63	69.26
79	39.98	45.61	51.24	56.87	62.50	68.13
81	38.85	44.48	50.12	55.75	61.38	67.01
83	37.73	43.36	48.99	54.62	60.25	65.88
85	36.60	42.23	47.86	53.49	59.12	64.76
87	35.47	41.11	46.74	52.37	58.00	63.63
89	34.35	39.98	45.61	51.24	56.87	62.50
91	33.22	38.85	44.48	50.12	55.75	61.38
93	32.10	37.73	43.36	48.99	54.62	60.25
95	30.97	36.60	42.23	47.86	53.49	59.12
97	29.84	35.47	41.11	46.74	52.37	58.00
99	28.72	34.35	39.98	45.61	51.24	56.87
101	27.59	33.22	38.85	44.48	50.12	55.75
103	26.47	32.10	37.73	43.36	48.99	54.62
105	25.34	30.97	36.60	42.23	47.86	53.49

DECAY HEAT AFTER SHUTDOWN FROM FULL POWER



LPCI MODE DATA SHEET

SYSTEM START TIME _____ RHR LOOP USED (A, B) _____

		Rx Press <135 (psig)	Rx Temp <140 (°F)	RHR Hx Out Temp (°F)	ΔT Rx-Hx Out (°F)	LPCI Flow (gpm)	RWCU Flow	Recirc A/B Flow (gpm)	DW Temp >65 (°F)	Cont Temp (°F)	Aux Bldg Temp (°F)
5 Min Prior to Start											
1 Min Prior to Start											
1 Min After Start											
2 Min After Start											
3 Min After Start											
4 Min After Start											
5 Min After Start											
Time (hr)	Initials										
01											
02											
03											
04											
05											
06											
07											
08											
09											
10											
11											
12											

LPCI MODE DATA SHEET

Time (hr)	Initials	Rx Press <135 (psig)	Rx Temp <140 (°F)	RHR Hx Out Temp (°F)	ΔT Rx-Hx Out (°F)	LPCI Flow (gpm)	RWCU Flow	Recirc A/B Flow (gpm)	DW Temp >65 (°F)	Cont Temp (°F)	Aux Bldg Temp (°F)
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											

MSL ALTERNATE DECAY HEAT REMOVAL BOUNDARY CLEARANCE

The following equipment shall be placed in the indicated position and danger tagged to the OSS. Tagging shall be done in accordance with ADM-0027, Protective Tagging.

- FWS-P1A, RFP A MOTOR: Breaker Racked Open
- FWS-P1B, RFP B MOTOR: Breaker Racked Open
- FWS-P1C, RFP C MOTOR: Breaker Racked Open
- One Condensate Pump, CNM-P1A, P1B, OR P1C Breaker Racked Open
- C85-D002A, BYPASS HPU PUMP A: Breaker Off
- C85-D002B, BYPASS HPU PUMP B: Breaker Off
- FWS-MOV27A, FWREG VLV 1A INLT A: Closed
- FWS-MOV27B, FWREG VLV 1B INLT B: Closed
- FWS-MOV27C, FWREG VLV 1C INLT C: Closed
- TMB-HFPM A, EHC FLUID PUMP A: Breaker Racked Out
- TMB-HFPM B, EHC FLUID PUMP B: Breaker Racked Out
- MSS-MOV164, SJAE PCV SPLY ISOL VLV: Closed
- MSS-MOV106, SJAE PCV BYPASS VLV: Closed
- MSS-MOV153, OFG PRE-HEATER SHUTOFF: Closed
- MSS-MOV155, MN STM SPLY TO SSE ISOL: Closed
- MSS-MOV154, RW RBLR PCV SPLY ISOL: Closed
- MSS-MOV112, MSR2 STM SPLY SHUTOFF: Closed
- DTM-MOVRSDV1, MSS-PVRSHLV1 BODY DR: Closed
- DTM-MOV54B, MSL TO MSR2 COND DR: Closed
- DTM-MOVRSDV2, 1MSS-PVRSHLV2 BODY DR: Closed
- DTM-V176, MSS-MOV155 DOWN STREAM DRAIN LINE ISOL: Closed
- E51-F076, RCIC WARMUP LINE SHUT OFF VALVE: Closed

MSL ALTERNATE DECAY HEAT REMOVAL BOUNDARY CLEARANCE

- E51-FO63, RCIC STEAM SUPPLY INBD ISOL VALVE: Closed
- MSS-V31, MSL SAMPLE LINE ROOT VALVE: Closed
- B21-F005, RX HEAD VENT TO MSL A: Closed
- E33-MOVF028, MS ISOL VALVE LK CONT SYS: Closed
- E33-MOVF008, MN STM POS LEAK CONT INBD ISOL: Closed
- MSS-MOV111, MSR1 STM SPLY SHUTOFF: Closed
- DTM-MOV54A, MSL TO MSR1 COND DR: Closed

MSL ALTERNATE DECAY HEAT REMOVAL VALVE LINEUP

VALVE NUMBER	VALVE NAME (OR DESCRIPTION)	REQ'D POSITION	INITIALS	VALVE LABELED
LOCATION: AUX BLDG. 114' EL.				
DTM-V60	INBD MSIV BODY DRN LINE ISOL	OPEN		
LOCATION: RADWASTE 65' EL.				
DTM-V44	MSIV DRN LINE TO COND ISOL	OPEN		
LOCATION: TURBINE BLDG. 95' EL.				
DTM-V1	MN STM EQUAL HDR DRN LINE ISOL VLV	OPEN		
DTM-V2	MN STM EQUAL HDR DRN LINE ISOL VLV	OPEN		
DTM-V27	B/P STM CHEST DRN LINE ISOL VLV	OPEN		
DTM-V28	B/P STM CHEST DRN LIEN ISOL VLV	OPEN		
DTM-V173	1MSS-MOV111 DN STM DRAIN LINE ISOL VLV	OPEN		
DTM-V172	MN STM SUPPLY TO MSR1 DRN LINE ISOL VLV	OPEN		
DTM-V174	MN STM SUPPLY TO MSR2 DRN LINE ISOL VLV	OPEN		

MSL ALTERNATE DECAY HEAT REMOVAL VALVE LINEUP

Remarks: _____

_____

_____

_____

_____

Performed By: _____ _____ _____ _____
Signature KCN Initials Date/Time

_____ _____ _____ _____
Signature KCN Initials Date/Time

_____ _____ _____ _____
Signature KCN Initials Date/Time

Reviewed By: _____ _____ _____
OSS/CRS KCN Date/Time

MSL ALTERNATE DECAY HEAT REMOVAL CONTROL BOARD LINEUP

PANEL ITEM	PANEL ITEM POSITION	INDICATION	INITIALS
THE FOLLOWING ITEMS ARE LOCATED ON PANEL H13-P601			
B21-F016, MSL WARMUP HDR INBD CONTMT ISOL VLV	AUTO AFTER OPEN	RED	
B21-F019, MSL WARMUP HDR OUTBD CONTMT ISOL VLV	AUTO AFTER OPEN	RED	
B21-F021, MSL WARMUP HDR COND DRAIN VALVE	NEUTRAL AFTER OPEN	RED	
B21-F033, MSL WARMUP HDR COND DRAIN VALVE	OPEN	RED	
B21-F086, MSL DRAIN HDR SHUTOFF VALVE	OPEN	RED	
B21-F068, MSL DRAIN HDR COND DRAIN BYP VALVE	NEUTRAL AFTER OPEN	RED	
B21-F069, MSL DRAIN HDR COND DRAIN VALVE	OPEN	RED	
B21-F020, MSL WARMUP HDR SUPPLY VALVE	NEUTRAL AFTER OPEN	GREEN	
THE FOLLOWING ITEMS ARE LOCATED ON PANEL H13-P870			
DTM-AOV12A, MSL EQUALIZING HDR DRAIN BYPASS VALVE	OPEN	RED	
DTM-AOV12B, MSL EQUALIZING HDR DRAIN BYPASS VALVE	OPEN	RED	
DTM-AOV5A, BYP VLV BEFORE SEAT DR	OPEN	RED	
DTM-AOV5B, BYP VLV BEFORE SEAT DR	OPEN	RED	
DTM-MOV51A, MSL TO MSR1 COND DR	NEUTRAL AFTER OPEN	RED	
DTM-MOV51B, MSL TO MSR2 COND DR	NEUTRAL AFTER OPEN	RED	

MSL ALTERNATE DECAY HEAT REMOVAL CONTROL BOARD LINEUP

Remarks: _____

_____

_____

_____

_____

Performed By: _____ _____ _____ _____
Signature KCN Initials Date/Time

_____ _____ _____ _____
Signature KCN Initials Date/Time

_____ _____ _____ _____
Signature KCN Initials Date/Time

Reviewed By: _____ _____ _____
OSS/CRS KCN Date/Time

MSL ALTERNATE DECAY HEAT REMOVAL EQUIPMENT FAILURES

During the use of this procedure, equipment failures could result in an increase of Reactor Pressure, a decrease in Reactor Level, or a loss of Decay Heat Removal capability. Prompt operator action is required to mitigate the transient and restore a method of Decay Heat Removal.

1 MSIV Isolation

NOTES

An isolation causes a significant increase in reactor pressure in approximately 5 minutes assuming a RPV Feed Rate of 2000 gpm.

Only one (1) Main Steam Line open to the Turbine Stop Valves is required for this procedure.

1.1 Close C33LVF002, START UP FWREG VALVE.

NOTE

A decrease in RPV Level of approximately 1 inch/min can occur if FWS-FV104, STARTUP RECIRC FCV is open and RWCU is in service.

1.2 Adjust FWS-FV104, STARTUP RECIRC FCV as necessary to control RPV Water Level.

1.3 Restore the operating loop of RHR in Shutdown Cooling as the means of Decay Heat Removal.

MSL ALTERNATE DECAY HEAT REMOVAL EQUIPMENT FAILURES

2 Increase in Condensate Flow to the RPV

2.1 Inadvertent ECCS Initiation

NOTE

Two (2) Low Pressure ECCS Pumps injecting into the RPV can result in a significant pressure increase in approximately one to two minutes.

2.1.1. Verify ECCS Injection Systems are not required for RPV Level Control.

2.1.2. Stop ECCS injection by securing pumps or closing injection valves.

2.1.3. Restore Reactor Pressure to zero and RPV Water Level as directed by the OSS/CRS.

2.1.4. Restore the operating loop RHR in Shutdown Cooling as the means of Decay Heat Removal.

2.2 C33-LVF002, START UP FWREG VALVE fails open.

2.2.1. Adjust FWS-FV104, STARTUP RECIRC FCV to control RPV Water Level.

2.2.2. IF Condensate flow to the vessel is still excessive, THEN isolate the Feedwater Injection Lines by closing:

- FWS-MOV7A, A FW OUTBD ISOL and FWS-MOV7B, B FW OUTBD ISOL

OR

- B21-F065A, FEEDWATER STOP and B21-F065B, FEEDWATER STOP

2.2.3. Restore the operating loop of RHR in Shutdown Cooling as the means of Decay Heat Removal.

2.3 FWS-FV104, STARTUP RECIRC FCV fails closed.

2.3.1. Adjust the Startup Level Control Valve to maintain RPV Water Level.

2.3.2. Restore the operating loop of RHR in Shutdown Cooling as the means of Decay Heat Removal.

3 Decrease in Condensate Flow to the RPV

3.1 Condensate Pump trip or C33-LVF002, STARTUP FWREG VALVE fails closed.

3.1.1. Close C33-LVF002, STARTUP FWREG VALVE.

3.1.2. Close FWS-FV104, STARTUP RECIRC FCV.

3.1.3. Restore the operating loop of RHR in Shutdown Cooling as the means of Decay Heat Removal.

3.2 Inadvertent SRV opening

NOTE

An open SRV results in a decrease in Hotwell Level and an increase in Suppression Pool Level. As Condenser Tubes are uncovered, Decay Heat Removal via this method is lost.

3.2.1. Close the open SRV.

3.2.2. IF the SRV cannot be closed, THEN restore the operating loop of RHR in Shutdown Cooling as the means of Decay Heat Removal.

3.3 FWS-FV104, STARTUP RECIRC FCV fails open

NOTE

This condition results in reduced or zero condensate flow to the RPV.

3.3.1. Secure this method of Alternate Decay Heat Removal and restore the operating loop of RHR in Shutdown Cooling as the means of Decay Heat Removal.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** COMPLETE LCO STATUS SHEET FOR INOPERATIVE CONTROL ROOM FRESH AIR INITIATION INSTRUMENTATION**

REASON FOR REVISION:

NRC Exam JPM **SRO ADMIN - 2**

PREPARE / REVIEW:

Erich Weinfurter	1497	7/16/2004
Preparer	KCN	Date
Roger Persons	0862	7/18/2004
Technical Review (SME)	KCN	Date
Tiffany Aley	1338	7/20/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Complete LCO Status Sheet for Inoperative Control Room Fresh Air System

TASK REFERENCE:	301001005003

K/A REFERENCE & RATING:	2.1.12, 2.9/4.0

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Classroom	**X**

COMPLETION TIME:	15 min.

MAX TIME:	N/A

JOB LEVEL:	SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: Complete LCO Status Sheet for Inoperative Control Room Fresh Air System

Required Power: N/A

IC No.: N/A

Notes: **Administrative JPM that will be conducted in a classroom.**

DATA SHEET

References for Development:	OSP-0040, LCO Tracking and Safety Function Determination Program Technical Specification 3.3.7.1
Required Materials:	OSP-0040, LCO Tracking and Safety Function Determination Program Technical Specification 3.3.7.1
Required Plant Condition:	N/A
Applicable Objectives:	HLO-408 Obj. 2
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The plant is operating at 100% power on 9/20/2004. Control Room Local Intake Radiation Monitor RMS-RE13B failed high at 1005 hours. The eSOMs Computer system is Out of Service for critical system upgrade to correct a known problem, and will not be available for the remainder of this shift.

Initiating Cue:

Complete attached LCO Status Sheet LCO 1-TS-04-016

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
*_____1.	Complete LCO Status Sheet Blocks 5, 6, and 8.	Completes LCO Status Sheet Blocks 5, 6, and 8 per attached LCO Status Sheet.	____	**NOTE:** LCO Status Sheet KEY provided showing correct entries.
*_____2.	Provide a brief description of the Condition(s) entered. All conditions that must be entered due to the inoperability should be documented.	Completes LCO Status Sheet Block 10 per attached LCO Status Sheet.	____	
*_____3.	Provide the Required Actions if the TS LCO is not met.	Completes LCO Status Sheet Block 11 per attached LCO Status Sheet.	____	
*_____4.	Record the Completion Time associated with each Required Action.	Completes LCO Status Sheet Block 12 per attached LCO Status Sheet.	____	
_____5.	When an LCO is entered for a system designated as a support system in Attachment 1, Support – Supported LCO Matrix of this procedure, evaluate the operability of the supported system. If T.S. 3.0.6 is to be used to prevent entering Conditions and Required Actions for supported systems, perform an evaluation per T.S. 5.5.10 to ensure that no loss of safety function exists.	Completes LCO Status Sheet Blocks 13 and 15 per attached LCO Status Sheet.	____	

Terminating Cue: Status Sheet LCO 1-TS-04-016 completed.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-ADM-S02

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

ATTACHMENT 1 - LCO STATUS SHEET (TYPICAL)

LCO No.: 1-TS- 04 - 016

1 Date: 9/20/04	2 Time: 1005	3 % PWR 100	4 Mode: 1	Page 1 of 1
5 TS/TRM No.: ***3.3.7.1***		6 Mode Change Allowed: ***X*** Yes _ No		
7 Mark No. ***RMS-RE13B*** Sys. No.: ***511*** Description ***Control Room Local Intake Ventilation Radiation Monitor***		8 Applicable Modes: ***X*** 1 ***X*** 2 ***X*** 3 ___4 ___5 Other ***OPDRV's and Movement of recently irradiated fuel assemblies in Containment or Fuel Building***		
9 CONDITION INITIATING LCO: Scheduled Outage_____ Equipment Failure ***XX*** ***Control Room Local Intake Radiation Monitor RMS-RE13B failed high***				

10 Condition	11 Required Action	12 Completion Time	
A. One or more required channels inoperable	***A.1 Enter the condition referenced in Table 3.3.7.1-1 for the channel***	Required by: Date***:*** ***09/20/2004*** Time: ***1005***	Completed: Date:___/___/___ Time:_____ Initials:_____
D. As required by Required Action A.1 and referenced in Table 3.3.7.1-1	***D.1 Declare associated CRFA subsystem inoperable***	Required by: Date:___/___/___ Time:_____	Completed: Date:___/___/___ Time:_____ Initials:_____
	D.2 Place channel in Trip	Required by: Date: ***09/20/2004*** Time: ***1605***	Completed: Date:___/___/___ Time:_____ Initials:_____
		Required by: Date: :___/___/___ Time: _____	Completed: Date:___/___/___ Time:_____ Initials:_____

13 LCO 3.0.6 ENTERED ***N/A***	14 LOSS OF SAFETY FUNCTION EVALUATION COMPLETED Initials/KCN:____/____
15 PREPARED BY: ***Candidate's Name***	16 REVIEWED BY:

LCO CLOSEOUT

17 COMMENTS/CORRECTIVE ACTIONS	18 LCO RESTORED DATE/TIME
19 RESTORED BY:	20 REVIEWED BY:

RJPM-OPS-ADM-S02

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The plant is operating at 100% power on 9/20/2004. Control Room Local Intake Radiation Monitor RMS-RE13B failed high at 1005 hours.

The eSOMs Computer system is Out of Service for critical system upgrade to correct a known problem, and will not be available for the remainder of this shift.

Initiating Cues: Complete attached LCO Status Sheet LCO 1-TS-04-016

ATTACHMENT 2 - LCO STATUS SHEET (TYPICAL)

LCO No.: 1-TS- 04 - 016

1 Date: 9/20/04	2 Time: 1005	3 % PWR 100	4 Mode: 1	Page 1 of 1
5 TS/TRM No.:		6 Mode Change Allowed: ____Yes ____No		
7 Mark No. _____ Sys. No.: ____ Description _____ _____		8 Applicable Modes:___1 ___ 2 ___3 ___4 ___5 Other _____ _____		
9 CONDITION INITIATING LCO: Scheduled Outage_____ Equipment Failure_____ _____ _____ _____				
10 Condition	11 Required Action	12 Completion Time		
_____ _____ _____	_____ _____ _____	Required by: Date:___/___/___ Time:_____	Completed: Date:___/___/___ Time:_____ Initials:_____	
_____ _____ _____	_____ _____ _____	Required by: Date:___/___/___ Time:_____	Completed: Date:___/___/___ Time:_____ Initials:_____	
_____ _____ _____	_____ _____ _____	Required by: Date:___/___/___ Time:_____	Completed: Date:___/___/___ Time:_____ Initials:_____	
_____ _____ _____	_____ _____ _____	Required by: Date: :___/___/___ Time: _____	Completed: Date:___/___/___ Time:_____ Initials:_____	
13 LCO 3.0.6 ENTERED		14 LOSS OF SAFETY FUNCTION EVALUATION COMPLETED Initials/KCN:____/____		
15 PREPARED BY:		16 REVIEWED BY:		

LCO CLOSEOUT

17 COMMENTS/CORRECTIVE ACTIONS	18 LCO RESTORED DATE/TIME
_____ _____ _____	
19 RESTORED BY:	20 REVIEWED BY:

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** REVIEW COMPLETED IST SURVEILLANCE PROCEDURE FOR APPROVAL**

REASON FOR REVISION:

NRC Exam JPM **SRO ADMIN - 3**

PREPARE / REVIEW:

Roger Persons	0862	7/19/2004
Preparer	KCN	Date
Erich Weinfurter	1497	7/19/2004
Technical Review (SME)	KCN	Date
Tiffany Aley	1338	7/20/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Review completed IST Surveillance Procedure for approval.

TASK REFERENCE:	

K/A REFERENCE & RATING:	2.2.12, 3.4

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Classroom	**X**

COMPLETION TIME:	11 min.

MAX TIME:	N/A

JOB LEVEL:	SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	Yes

SIMULATOR SETUP SHEET

Task Description: Review and approve completed IST Surveillance Procedure.

Required Power: N/A

IC No.: N/A

Notes: **Administrative JPM that will be conducted in a classroom.**

DATA SHEET

References for Development:	ADM-0015, Station Surveillance Test Program
Required Materials:	ADM-0015, Station Surveillance Test Program Completed STP-201-6310
Required Plant Condition:	N/A
Applicable Objectives:	
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The plant is operating at 100% power. STP-201-6310, SLC Quarterly Pump and Valve Operability Test has been completed and submitted for Section Superintendent approval.

Initiating Cue:

As CRS, perform the Section Superintendent review and approval of STP-201-6310, SLC Quarterly Pump and Valve Operability Test.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
_____1.	Reviews ADM-0015 for responsibilities of Section Superintendent or Designee.		____	Provide copy of ADM-0015, Station Surveillance Test Program, if requested.
_____2.	Reviews steps of STP for completeness.	Identifies Step 7.2.3 requiring independent verification that was signed by the performer instead of the verifier who signed Step 7.2.4.	____	
*_____3.	Reviews pump and valve data sheets for meeting TS acceptance criteria.	Identifies MEASURED VALUE recorded for Step 7.3.7 is in the Required Action Range and does NOT meet Technical Specifications.	____	**NOTE:** The flow value of 40.4 gpm recorded on Pump Data Sheet for C41-PC001B, Step 7.3.7, STP Page 21 and 22 is unacceptable.
*_____4.	Rejects STP based on results.	Does NOT sign approval of STP and states a CR must be written and TS LCO for INOP SLC Loop B must be entered.	____	**CUE:** CR and TS entry will be done by another CRS. JPM is completed.

Terminating Cue: Review of STP completed and NOT approved based on unacceptable value for SLC Pump B flowrate.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-ADM-S03

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-ADM-S03

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The plant is operating at 100% power.

STP-201-6310, SLC Quarterly Pump and Valve Operability Test has been completed and submitted for Section Superintendent approval.

Initiating Cues: As CRS, perform the Section Superintendent review and approval of STP-201-6310, SLC Quarterly Pump and Valve Operability Test.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** CLASSIFY AN EMERENCY EVENT**

REASON FOR REVISION:

NRC Exam JPM **SRO ADMIN - 5**

PREPARE / REVIEW:

Erich Weinfurter	1497	7/16/2004
Preparer	KCN	Date
Roger Persons	0862	7/17/2004
Technical Review (SME)	KCN	Date
Tiffany Aley	1338	7/20/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Classify an Emergency Event

TASK REFERENCE:	

K/A REFERENCE & RATING:	2.4.41, 4.1

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator		Classroom	**X**

COMPLETION TIME:	10 min.

MAX TIME:	15 min.

JOB LEVEL:	SRO

TIME CRITICAL:	Yes (Max Time is limit)

EIP CLASSIFICATION REQUIRED:	Yes

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: Classify an Emergency Event

Required Power: N/A

IC No.: N/A

Notes: **The performer has 15 minutes, from the time the information is given to classification of the event and complete the short notification form for the communicator to transmit.**

DATA SHEET

References for Development:	EIP-2-001
Required Materials:	EIP-2-001 Notification Message Short Forms for all 4 classifications
Required Plant Condition:	N/A
Applicable Objectives:	ETT-032 Obj. 4 ETT-032R Obj. 4 ETT-023 Obj. 8 ETT-023R Obj. 8
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

A portion of this JPM is time critical. You may take time to review and familiarize yourself with the JPM Task Conditions/Cues.

Let me know when you have completed familiarizing yourself with the JPM Task Conditions/Cues. You will then begin the time critical portion of the JPM.

Then let me know when you have classified the event.

Initial Conditions:

The plant was operating at 100% power when an electrical fault in the EHC Control panel started a small fire which quickly filled the Main Control Room with smoke. The Fire Brigade started suppression efforts to prevent the fire from spreading to the Safety Related RMS panels. Smoke reduced the visibility in the Main Control Room to the point that the Operations Shift Manager (OSM) ordered the evacuation of the Main Control Room (MCR). The following is a time line of the events:

1034 hrs Electrical Fault in EHC Panel results in fire with heavy smoke.
1036 hrs MCR personal in SCBA
1038 hrs ATC Operator overcome by smoke due to a faulty Air Pack and is removed from MCR to the Services Building for treatment
1039 hrs Evacuation of MCR ordered by OSM due to heavy smoke.
1040 hrs Fire Brigade attempts to extinguish fire with CO_2
1045 hrs Fire continues to burn, Div 1 Safety Related RMS panels threatened, but not involved.
1046 hrs Off-Site Fire Departments assistance requested by Fire Brigade.
1052 hrs Unit Operator completes AOP-0031 immediate operator actions, and begins working Attachment 12 actions for ATC.
1057 hrs CRS reports that RHR and RCIC Systems have just been placed in operation from Div.1 Remote Shutdown Panels and that reactor pressure is being controlled by manual operation of one SRV.
1059 hrs Fire Brigade Leader reports the fire under control.

Current Met Tower data is as follows:

- Wind direction is 202 degrees
- Wind speed is 5 miles per hour
- No precipitation.

Initiating Cue:

As OSM and Emergency Director, classify the event and complete the notification short form.

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
_____1.	Review Emergency Action Levels for event classification.	EIP-2-001 reviewed	____	**NOTE: JPM Step 2 is <u>TIME CRITICAL</u> and is to be completed 15 minutes from the time the candidate states he/she understands plant conditions and is ready to begin the classification task.** **CUE:** Provide EIP-0-001, when requested.
*_____2.	Classify event.	Event classified in 15 minutes as SAE (per EAL 15) as an SAE due to failure to establish RSP with in 15 min of evacuation of the Main Control Room	____	**START Time_____** **STOP Time_____**

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP		STANDARD	S/U	COMMENTS
* 3.	Complete short form for notification of SAE.	Short form notification completed as follows: Form GSUN0952.1-99-99(Sept) filled out correctly for communicator. Declared : Time of Performance Step 2 On: Current Date For: Evacuation of the Main Control Room and Control of Shutdown Systems not established at Remote Shutdown Panels in 15 Min. Wind from: 202 deg. At: 5 miles Release: No Authorized by: Signature Title: Emergency Director or ED/RM	____	**CUE:** Use current clock time for the time that the emergency was declared.

Terminating Cue: Classification determined and the short form notification completed.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-ADM-S05

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-ADM-S05

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The plant was operating at 100% power when an electrical fault in the EHC Control panel started a small fire which quickly filled the Main Control Room with smoke. The Fire Brigade started suppression efforts to prevent the fire from spreading to the Safety Related RMS panels. Smoke reduced the visibility in the Main Control Room to the point that the Operations Shift Manager (OSM) ordered the evacuation of the Main Control Room (MCR). The following is a time line of the events:

1034 hrs Electrical Fault in EHC Panel results in fire with heavy smoke.

1036 hrs MCR personal in SCBA

1038 hrs ATC Operator overcome by smoke due to a faulty Air Pack and is removed from MCR to the Services Building for treatment.

1039 hrs Evacuation of MCR ordered by OSM due to heavy smoke.

1040 hrs Fire Brigade attempts to extinguish fire with CO_2

1045 hrs Fire continues to burn, Div 1 Safety Related RMS panels threatened, but not involved.

1046 hrs Off-Site Fire Departments assistance requested by Fire Brigade

1052 hrs Unit Operator completes AOP-0031 immediate operator actions, and begins working Attachment 12 actions for ATC.

1057 hrs CRS reports that RHR and RCIC Systems have just been placed in operation from Div.1 Remote Shutdown Panels and that reactor pressure is being controlled by manual operation of one SRV.

1059 hrs Fire Brigade Leader reports the fire under control.

Current Met Tower data is as follows:

- Wind direction is 202 degrees
- Wind speed is 5 miles per hour
- No precipitation.

Initiating Cues: As OSM and Emergency Director, classify the event and complete the notification short form.

Facility: **RIVER BEND STATION**	Date of Examination: **9/20/2004 – 9/24/2004**
Examination Level: **RO**	Operating Test Number: **1**

CONTROL ROOM SYSTEMS (8 for RO)

System / **JPM Title and No.** / *(Type Codes*)*	SF	KA	IR	Notes
1. 201005 Rod Control and Information System 295037 SCRAM and Reactor Power Above APRM Downscale or Unknown **Defeat RCIS Interlocks Per EOP Enclosure 14** **Exam JPM No. CRS-01** *(D) (C)*	7	K1.02 K5.02 A1.01 EK2.12 EA1.08	3.3 2.8 3.2 3.6 3.6	
2. 400000 Component Cooling Water System **CCP Valve Quarterly Stroke Test Surveillance** **Exam JPM No. CRS-02** *(N) (A) (S)*	8	K1.01 A4.01 AK3.07 AA1.01	3.2 3.1 3.1 3.3	Loss of Normal Service Water creates Alternate Path requiring action to allow initiation of Standby Service Water.
3. 223001 Primary Containment and Auxiliaries **Makeup to Suppression Pool Using SPC/ADHR** **Exam JPM No. CRS-03** *(M) (A) (S)*	5	K1.13 A2.11	3.4 3.6	Failure of RHS-AOV63 creates Alternate Path requiring use of HPCS for SP makeup.
4. 259002 Reactor Water Level Control System **Place FWRV 'C' in service on Master FWLC with Startup FWRV** **Exam JPM No. CRS-04** *(M) (A) (S) (L)*	2	K5.01 A1.05 A4.03	3.1 2.9 3.8	Failure of FWRC 'C' to open creates Alternate Path requiring selection of alternate FWRV
5. 239001 Main and Reheat Steam System **Bypass MSR Steam Supply Valves Interlock per EOP Enclosure 5** **Exam JPM No. CRS-05** *(D) (C)*	3	K1.01 K1.05	3.4 2.8	
6. 288000 Plant Ventilation System **Restore Fuel Building Ventilation to Standby Following Auto Initiation.** **Exam JPM No. CRS-06** *(D) (S)*	9	K4.03 A2.01 A4.01	2.8 3.3 3.1	

** Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA entry*

Facility: **RIVER BEND STATION**	Date of Examination: **9/20/2004 – 9/24/2004**
Examination Level: **RO**	Operating Test Number: **1**

CONTROL ROOM SYSTEMS, continued (8 for RO)

System / **JPM Title and No.** / *(Type Codes*)*	SF	KA	IR	Notes
7. 262001 AC Electrical Distribution 295003 Partial/Complete Loss of AC Power **Parallel Offsite Power to ENS-SWG1B Supplied by Div II EDG** **Exam JPM No. CRS-07** *(M) (A) (S) (L)*	6	A2.01 A2.05 A4.02 AA1.02	3.5 3.6 3.4 4.2	Generator Ground condition creates Alternate Path requiring manual trip of O/P breaker and Diesel shutdown.
8. 201003 Control Rod and Drive Mechanism **Perform Control Rod Operability Check** **Exam JPM No. CRS-08** *(D) (A) (S)*	1	K4.02 A2.02 A4.02	3.8 3.7 3.5	Control Rod Overtravel alarm indicating uncoupled rod, creates the Alternate Path.
IN-PLANT SYSTEMS (3 for RO)				
1. 201001 Control Rod Drive Hydraulic System 295037 SCRAM and Reactor Power Above APRM Downscale or Unknown **Vent Scram Air Header per EOP Enclosure 11** **Exam JPM No. IPS-01** *(D) (R)*	1	K1.09 EK3.07	3.1 4.2	Requires CAA and Primary Containment entry.
2. 264000 Emergency Diesel Generators 295016 Control Room Abandonment **Place Standby Service Water in service for Div I EDG from Remote Shutdown Panel** **Exam JPM No. IPS-02** *(D) (A) (L)*	6	K6.07 AK2.01 AK2.02	3.8 4.4 4.0	Trip of SWP-P2A creates Alternate Path requiring start of SWP-P2C from different panel (EGS-PNL4C)
3. 212000 Reactor Protection System **Restore RPS B Normal power supply.** **Exam JPM No. IPS-03** *(D)*	7	K1.04 K2.01 A1.01 A2.01	3.4 3.2 2.8 3.7	

** Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA entry*

Facility: **RIVER BEND STATION**	Date of Examination: **9/20/2004 – 9/24/2004**
Examination Level: **SRO-Instant**	Operating Test Number: **1**

CONTROL ROOM SYSTEMS (7 for SRO-I)

System / **JPM Title and No.** / *(Type Codes*)*	SF	KA	IR	Notes
1. 201005 Rod Control and Information System 295037 SCRAM and Reactor Power Above APRM Downscale or Unknown **Defeat RCIS Interlocks Per EOP Enclosure 14** **Exam JPM No. CRS-01** *(D) (C)*	7	K1.02 K5.02 A1.01 EK2.12 EA1.08	3.5 3.3 3.3 3.8 3.6	
2. 400000 Component Cooling Water System **CCP Valve Quarterly Stroke Test Surveillance** **Exam JPM No. CRS-02** *(N) (A) (S)*	8	K1.01 A4.01 AK3.07 AA1.01	3.3 3.0 3.2 3.4	Loss of Normal Service Water creates Alternate Path requiring action to allow initiation of Standby Service Water.
3. 223001 Primary Containment and Auxiliaries **Makeup to Suppression Pool Using SPC/ADHR** **Exam JPM No. CRS-03** *(M) (A) (S)*	5	K1.13 A2.11	3.5 3.8	Failure of RHS-AOV63 creates Alternate Path requiring use of HPCS for SP makeup.
4. 259002 Reactor Water Level Control System **Place FWRV 'C' in service on Master FWLC with Startup FWRV** **Exam JPM No. CRS-04** *(M) (A) (S) (L)*	2	K5.01 A1.05 A4.03	3.1 2.9 3.6	Failure of FWRC 'C' to open creates Alternate Path requiring selection of alternate FWRV
5. 239001 Main and Reheat Steam System **Bypass MSR Steam Supply Valves Interlock per EOP Enclosure 5** **Exam JPM No. CRS-05** *(D) (C)*	3	K2.01 K4.05 K6.04 A2.03	3.2 3.7 3.2 4.2	
6. 288000 Plant Ventilation System **Restore Fuel Building Ventilation to Standby Following Auto Initiation.** **Exam JPM No. CRS-06** *(D) (S)*	9	K4.03 A2.01 A4.01	2.9 3.4 2.9	

** Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA entry*

Facility: **RIVER BEND STATION**	Date of Examination: **9/20/2004 – 9/24/2004**
Examination Level: **SRO-Instant**	Operating Test Number: **1**

CONTROL ROOM SYSTEMS, continued (7 for SRO-I)

System / **JPM Title and No.** / *(Type Codes*)*	SF	KA	IR	Notes
7. 262001 AC Electrical Distribution 295003 Partial/Complete Loss of AC Power **Parallel Offsite Power to ENS-SWG1B Supplied by Div II EDG** **Exam JPM No. CRS-07** *(M) (A) (S) (L)*	6	A2.01 A2.05 A4.02 AA1.02	3.6 3.6 3.4 4.3	Generator Ground condition creates Alternate Path requiring manual trip of O/P breaker and Diesel shutdown.
IN-PLANT SYSTEMS (3 for SRO-I)				
1. 201001 Control Rod Drive Hydraulic System 295037 SCRAM and Reactor Power Above APRM Downscale or Unknown **Vent Scram Air Header per EOP Enclosure 11** **Exam JPM No. IPS-01** *(D) (R)*	1	K1.09 EK3.07	3.2 4.3	Requires CAA and Primary Containment entry.
2. 264000 Emergency Diesel Generators 295016 Control Room Abandonment **Place Standby Service Water in service for Div I EDG from Remote Shutdown Panel** **Exam JPM No. IPS-02** *(D) (A) (L)*	6	K6.07 AK2.01 AK2.02	3.9 4.5 4.1	Trip of SWP-P2A creates Alternate Path requiring start of SWP-P2C from different panel (EGS-PNL4C)
3. 212000 Reactor Protection System **Restore RPS B Normal power supply.** **Exam JPM No. IPS-03** *(D)*	7	K1.04 K2.01 A1.01 A2.01	3.6 3.3 2.9 3.9	

* *Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA entry*

Facility: **RIVER BEND STATION**	Date of Examination: **9/20/2004 – 9/24/2004**
Examination Level: **SRO-Upgrade**	Operating Test Number: **1**

CONTROL ROOM SYSTEMS (2 or 3 for SRO-U)

System / **JPM Title and No.** / *(Type Codes*)*	SF	KA	IR	Notes
1. 201005 Rod Control and Information System 295037 SCRAM and Reactor Power Above APRM Downscale or Unknown **Defeat RCIS Interlocks Per EOP Enclosure 14** **Exam JPM No. CRS-01** *(D) (C)*	7	K1.02 K5.02 A1.01 EK2.12 EA1.08	3.5 3.3 3.3 3.8 3.6	
2. 400000 Component Cooling Water System **CCP Valve Quarterly Stroke Test Surveillance** **Exam JPM No. CRS-02** *(N) (A) (S)*	8	K1.01 A4.01 AK3.07 AA1.01	3.3 3.0 3.2 3.4	Loss of Normal Service Water creates Alternate Path requiring action to allow initiation of Standby Service Water.
3. 223001 Primary Containment and Auxiliaries **Makeup to Suppression Pool Using SPC/ADHR** **Exam JPM No. CRS-03** *(M) (A) (S)*	5	K1.13 A2.11	3.5 3.8	Failure of RHS-AOV63 creates Alternate Path requiring use of HPCS for SP makeup.

IN-PLANT SYSTEMS (3 or 2 for SRO-U)

System / **JPM Title and No.** / *(Type Codes*)*	SF	KA	IR	Notes
1. 201001 Control Rod Drive Hydraulic System 295037 SCRAM and Reactor Power Above APRM Downscale or Unknown **Vent Scram Air Header per EOP Enclosure 11** **Exam JPM No. IPS-01** *(D) (R)*	1	K1.09 EK3.07	3.2 4.3	Requires CAA and Primary Containment entry.
2. 264000 Emergency Diesel Generators 295016 Control Room Abandonment **Place Standby Service Water in service for Div I EDG from Remote Shutdown Panel** **Exam JPM No. IPS-02** *(D) (A) (L)*	6	K6.07 AK2.01 AK2.02	3.9 4.5 4.1	Trip of SWP-P2A creates Alternate Path requiring start of SWP-P2C from different panel (EGS-PNL4C)

** Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA entry*

Facility: **RIVER BEND STATION** Date of Examination: **9/20/2004 – 9/24/2004** Examination Level: **ALL (Backup JPM)** Operating Test Number: **1**				
CONTROL ROOM SYSTEMS				
IN-PLANT SYSTEMS				
System / **JPM Title and No.** / *(Type Codes*)*	SF	KA	IR RO/SRO	Notes
1. 223002 Containment Isolation System	5	K1.10	3.1/3.2	
500000 High Containment Hydrogen Conc.		K4.08	3.3/3.7	
Perform emergency containment venting for high H_2 concentration per EOP Enclosure 21		EK1.01	3.3/3.9	
Exam JPM No. BU-02 *(D) (R) (L)*				
* *Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA entry*				

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

***DEFEAT RC&IS INTERLOCKS PER EOP ENCLOSURE 14**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 1**

PREPARE / REVIEW:

Roger L. Persons	0862	6/10/2004
Preparer	KCN	Date
Erich Weinfurter	1496	6/30/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/13/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Defeat RC&IS Interlocks per EOP Enclosure 14

TASK REFERENCE:	200049005001

K/A REFERENCE & RATING:	201005 K1.02, 3.3/3.5 201005 K5.02, 2.8/3.3 201005 A1.01, 3.2/3.3 295037 EK2.12, 3.6/3.8 295037 EA1.08, 3.6/3.6

TESTING METHOD:	Simulate Performance	**X**			Actual Performance	
	Control Room	**X**	Simulator		In-Plant	

COMPLETION TIME:	12 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SAFETY FUNCTION:	7

SIMULATOR SETUP SHEET

Task Description: Defeat RC&IS Interlocks per EOP Enclosure 14.

Required Power: N/A

IC No.: N/A

Notes: This JPM is to be performed in the Control Room.

DATA SHEET

References for Development: EOP-0005, Enclosure 14

Required Materials: EOP-0005, Enclosure 14

Required Plant Condition: N/A

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

A Reactor SCRAM has occurred and 17 rods have failed to insert, Control Rod Withdraw Blocks and Control Rod Insert Blocks exists.

Initiating Cue:

The CRS directs you to defeat the RC&IS Control Rod Insert Blocks using EOP-0005, Enclosure 14. He informs you that EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has already been installed.

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
____*__1.	OBTAIN EOP-0005 ENCL 14 key, one (1). ***[ENCL Step 3.2]***	ENCL Key obtained.	____	**CUE: Key obtained. Once Emergency Key Locker has been opened and key identified.** **NOTE:** Either trip unit, C11-N654A or C11-N654B can be done first.
____*__2.	Location: 1H13-P618 Affected Trip Unit: C11-N654B, FIRST STAGE TURBINE PRESSURE (left column, 2nd row from top, 1st Unit) UNLOCK and REMOVE bar. ***[ENCL Step 3.2.1.1]***	Locking bar is removed.	____	**CUE: Locking Bar removed.** Note: See Encl 14 Page 4 of 4 for MCR backpanel P618 location.
_____3.	VERIFY center knob is full out. ***[ENCL Step 3.2.1.2]***	Center knob on CAL Switch is full out.	____	**CUE: Center knob is full out.** Note: Center knob is located on the CAL Unit CAL Select Switch.
_____4.	VERIFY TRANSIENT CURRENT Knob is full out. ***[ENCL Step 3.2.1.3]***	TRANSIENT CURRENT Knob is full out.	____	**CUE: TRANSIENT CURRENT Knob is full out.** Note: TRANSIENT CURRENT Knob is located on the CAL Unit.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
_____5.	VERIFY center knob is rotated fully counter clockwise. ***[ENCL Step 3.2.1.4]***	Center knob is rotated fully counter-clockwise.	____	**CUE: Center knob is rotated fully counter-clockwise.**
____*6.	ROTATE center knob 1 "click" clockwise to position 1. ***[ENCL Step 3.2.1.5]***	Center knob is in Position 1.	____	**CUE: Center knob is in Position 1.**
____*7.	TURN power switch to ON. ***[ENCL Step 3.2.1.6]***	Power switch is in the ON position.	____	**CUE: Power switch is on.** NOTE: Power switch is located on the CAL Unit.
____*8.	DEPRESS center knob. ***[ENCL Step 3.2.1.7]***	Center knob depressed.	____	**CUE: Center knob is depressed.**
____*9.	ROTATE STABLE CURRENT knob fully clockwise <u>UNTIL</u> meter on trip unit is full scale and TRIP is reset. ***[ENCL Step 3.2.1.8]***	STABLE CURRENT Knob fully clockwise and trip reset. Red trip light on C11-N654B - OFF	____	**CUE: Stable Current Knob is fully clockwise, trip unit C11-N654B is full scale and red trip light on C11-N654B is OFF.** NOTE: Stable Current Knob is located on CAL Unit.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
____*__10.	Location: 1H13-P629 Affected Trip Unit: C11-N654A, FIRST STAGE TURBINE PRESSURE (right column, bottom row, 8th unit) UNLOCK and REMOVE bar. ***[ENCL Step 3.2.1.1]***	Locking bar is removed.	____	**CUE: Locking Bar removed.** Note: See Encl 14 Page 4 of 4 for MCR backpanel P629 location.
_____11.	VERIFY center knob is full out. ***[ENCL Step 3.2.1.2]***	Center knob on CAL Switch is full out.	____	**CUE: Center knob is full out.** Note: Center knob is located on the CAL Unit CAL Select Switch.
_____12.	VERIFY TRANSIENT CURRENT Knob is full out. ***[ENCL Step 3.2.1.3]***	TRANSIENT CURRENT Knob is full out.	____	**CUE: TRANSIENT CURRENT Knob is full out.** Note: TRANSIENT CURRENT Knob is located on the CAL Unit.
_____13.	VERIFY center knob is rotated fully counter clockwise. ***[ENCL Step 3.2.1.4]***	Center knob is rotated fully counter-clockwise.	____	**CUE: Center knob is rotated fully counter-clockwise.**
____*__14.	ROTATE center knob 8 “clicks” clockwise to position 8. ***[ENCL Step 3.2.1.5]***	Center knob is in Position 8.	____	**CUE: Center knob is in Position 8.**

PERFORMANCE STEP *[ENCL Step]*	STANDARD	S/U	COMMENTS
____*__15. TURN power switch to ON. ***[ENCL Step 3.2.1.6]***	Power switch is in the ON position.	____	**CUE: Power switch is on.** NOTE: Power switch is located on the CAL Unit.
____*__16. DEPRESS center knob. ***[ENCL Step 3.2.1.7]***	Center knob depressed.	____	**CUE: Center knob is depressed.**
____*__17. ROTATE STABLE CURRENT knob fully clockwise <u>UNTIL</u> meter on trip unit is full scale and TRIP is reset. ***[ENCL Step 3.2.1.8]***	STABLE CURRENT Knob fully clockwise and trip reset. Red trip light on C11-N654A - OFF	____	**CUE: Stable Current Knob is fully clockwise, trip unit C11-N654A is full scale and red trip light on C11-N654A is OFF.** NOTE: Stable Current Knob is located on CAL Unit. **NOTE: If candidate does not reinstall locking bars, as may be the case if this was being done in an actual emergency, have him/her replace the locking bars at the conclusion of the JPM.**

Terminating Cue: RC&IS Control Rod Insert Blocks defeated using EOP-0005, Enclosure 14.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

RJPM-OPS-CRS-01

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-CRS-01

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: A Reactor SCRAM has occurred and 17 rods have failed to insert, Control Rod Withdraw Blocks and Control Rod Insert Blocks exists.

Initiating Cues: The CRS directs you to defeat the RC&IS Control Rod Insert Blocks using EOP-0005, Enclosure 14. He informs you that EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has already been installed.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

***CCP VALVE QUARTERLY STROKE TEST**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 2**

PREPARE / REVIEW:

Roger L. Persons	0862	6/11/2004
Preparer	KCN	Date
Erich Weinfurter	1497	7/7/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	CCP Valve Quarterly Stroke Test Surveillance

TASK REFERENCE:	208007001001 277007001001

K/A REFERENCE & RATING:	400000 K1.01, 3.2/3.3 400000 A4.01, 3.1/3.2 295018 AK3.07, 3.1/3.2 295018 AA1.01, 3.3/3.4

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator	**X**	In-Plant	

COMPLETION TIME:	15 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	Yes

SAFETY FUNCTION:	8

SIMULATOR SETUP SHEET

Task Description: CCP Valve Quarterly Stroke Test Surveillance (STP-115-6301).

Required Power: Any

IC No.: 168

Notes: **Malfunctions to trip of both operating Normal Service Water Pumps are setup to be inserted by Trigger 1. Initiate Trigger 1 when stroke test time has been recorded for CCP-MOV16A, JPM Step 11.**

DATA SHEET

References for Development:	STP-115-6301, Div 1 Reactor Plant Component Cooling Water Quarterly Valve Operability Test
Required Materials:	STP-115-6301, Div 1 Reactor Plant Component Cooling Water Quarterly Valve Operability Test Stopwatch
Required Plant Condition:	N/A
Applicable Objectives:	
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The Plant is operating at 12% power with no equipment out of service.

Initiating Cue:

The CRS directs you to complete STP-115-6301, Div 1 Reactor Plant Component Cooling Water Quarterly Valve Operability Test, starting at Step 7.4. Steps 7.1 through 7.3 have been completed by the Reactor Building Operator. The CRS has designated you as the dedicated operator to maintain Div I Standby Service Water System availability during the surveillance testing, per Step 7.4.1.

PERFORMANCE STEP *[STP Step]*		STANDARD	S/U	COMMENTS
_____1.	Establish a dedicated operator(s) per ADM-0096 in order to maintain Div I Standby Service Water System availability during testing throughout this section. The dedicated operator(s) will establish communications with the Main Control Room to perform the following functions: ***[STP Step 7.4.1]*** In the Main Control Room: Place the SWP-P2A, STBY SVCE WTR PUMP 2A (LOCKOUT) Switch in RESET upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS. ***[STP Step 7.4.1.a]*** Place the SWP-P2C, STBY SVCE WTR (LOCKOUT) Switch in RESET upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS ***[STP Step 7.4.1.b]***	Reviews step and initials step completion		

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[STP Step]*		STANDARD	S/U	COMMENTS
_____1. (cont'd)	Place the STBY SVCE WTR TEST (DIV 1) to OFF upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS. ***[STP Step 7.4.1.c]*** Place the RPCCW DIV 1 TEST to OFF upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS. ***[STP Step 7.4.1.d]***	Reviews step and initials step completion.	_____	
_____2.	Prohibit the initiation of Standby Service Water, isolation of RPCCW, and trip of the CRD Pumps, by performing the following: Place RPCCW DIV 1 TEST Switch in TEST. ***[STP Step 7.4.2]***	RPCCW DIV 1 TEST Switch in TEST position	_____	NOTE: Will receive alarm P870-55A-G04, DIVISION 1 RPCCW SYSTEM INOPERATIVE
_____3.	Place the STBY SVCE WTR TEST (Div 1) Switch in TEST. ***[STP Step 7.4.2]***	STBY SVCE WTR TEST (Div 1) Switch in TEST position.	_____	NOTE: Will receive alarm P870-55A-H07, DIVISION 1 STBY SERVICE WTR INOPERATIVE
_____4.	Place SWP-P2A, STBY SVCE WTR PUMP 2A in LOCKOUT. ***[STP Step 7.4.2]***	SWP-P2A, STBY SVCE WTR PUMP 2A LOCKOUT pushbutton depressed. (P870)	_____	

PERFORMANCE STEP *[STP Step]*		STANDARD	S/U	COMMENTS
5.	Place SWP-P2C, STBY SVCE WTR in LOCKOUT ***[STP Step 7.4.2]***	SWP-P2C, STBY SVCE WTR PUMP 2C LOCKOUT pushbutton depressed. (P601)		NOTE: Will receive alarm P601-18A-B01, DIV 3 STBY SVCE WATER SYSTEM INOPERATIVE
* 6.	Close and time CCP-MOV130, LOOP A DN STREAM RETURN ***[STP Step 7.4.3]***	Starts stop watch when control switch moved to close and stops when CCP-MOV130 Closed. Green light ON Red light OFF		
* 7.	Record closing stroke time, full stroke exercise result, and valve acceptance determination for CCP-MOV130 on Data Sheet 1. ***[STP Step 7.4.4]***	Closing time for CCP-MOV130 recorded at 28.9 seconds (± 4.3 seconds)		
* 8.	Close and time CCP-MOV335, LOOP A UP STREAM RETURN. ***[STP Step 7.4.5]***	Starts stop watch when control switch moved to close and stops when CCP-MOV335 Closed. Green light ON Red light OFF		
* 9.	Record closing stroke time, full stroke exercise result, and valve acceptance determination for CCP-MOV335 on Data Sheet 1. ***[STP Step 7.4.6]***	Closing time for CCP-MOV335 recorded at 29.6 seconds (± 4.4 seconds)		

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[STP Step]*		STANDARD	S/U	COMMENTS
___*__10.	Close and time CCP-MOV16A, RPCCW LOOP A SUPPLY. ***[STP Step 7.4.7]***	Starts stop watch when control switch moved to close and stops when CCP-MOV16A Closed. Green light ON Red light OFF	____	
_____11.	Record closing stroke time, full stroke exercise result, and valve acceptance determination for CCP-MOV16A on Data Sheet 1. ***[STP Step 7.4.8]***	Closing time for CCP-MOV16A recorded at 29.2 seconds (± 4.3 seconds)	____	**NOTE:** *ALTERNATE PATH* NOTE: The following will alarm ~15 seconds apart: P870-55A-H04, RPCCW TO DIV 1 EXTREME LOW PRESSURE P870-55A-G07, DIVISION 1 STBY SERVICE WATER LOW PRESSURE P870-55A-D07, DIV 1 STBY SERVICE WTR VALVE MISALIGNMENT
___*__12.	Place the SWP-P2A, STBY SVCE WTR PUMP 2A (LOCKOUT) Switch in RESET upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS. ***[STP Step 7.4.1.a]***	SWP-P2A Starts (P870) Green light OFF Red light ON	____	**CUE: As CRS, if candidate reports loss of NSW, direct taking action per STP.**

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[STP Step]*		STANDARD	S/U	COMMENTS
____*__13.	Place the SWP-P2C, STBY SVCE WTR (LOCKOUT) Switch in RESET upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS. ***[STP Step 7.4.1.b]***	SWP-P2C Starts (P601) Green light OFF Red light ON	____	
____*__14.	Place the STBY SVCE WTR TEST (DIV 1) to OFF upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS. ***[STP Step 7.4.1.c]***	Normal Service Water Isolation Valves SWP-MOV57A and SWP-MOV96A Close (P870) Green light ON Red light OFF Standby Cooling Tower Inlet SWP-MOV55A opens Green light OFF Red light ON	____	
_____15.	Place the RPCCW DIV 1 TEST to OFF upon the Loss of Normal Service Water, Loss of CCP and/or directed by the OSM/CRS. ***[STP Step 7.4.1.d]***		____	NOTE: No valves should reposition when this switch is removed from TEST because the vital loop isolation valves were closed as part of the STP.

Terminating Cue: Div I Standby Service Pumps SWP-P2A and SWP-P2C operating with NSW supply and return valves closed.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

RJPM-OPS-CRS-02

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-CRS-02

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The Plant is operating at rated conditions with no equipment out of service.

Initiating Cues: The CRS directs you to complete STP-115-6301, Div 1 Reactor Plant Component Cooling Water Quarterly Valve Operability Test, starting at Step 7.4.

Steps 7.1 through 7.3 have been completed by the Reactor Building Operator.

The CRS has designated you as the dedicated operator to maintain Div I Standby Service Water System availability during the surveillance testing, per Step 7.4.1

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** SUPPRESSION POOL MAKEUP, EOP ENLCOSURE 30 USING SPC/ADHR**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 3**

PREPARE / REVIEW:

Roger L. Persons	0862	7/9/2004
Preparer	KCN	Date
Erich Weinfurter	1497	7/9/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Training Supervisor	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Suppression Pool Makeup per EOP-0005, Enclosure 30

TASK REFERENCE:	200017005002

K/A REFERENCE & RATING:	223001 K1.13, 3.4/3.5 223001 A2.11, 3.6/3.8

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator	**X**	In-Plant	

COMPLETION TIME:	15 min.

MAX TIME:	N/A

JOB LEVEL:	All

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	Yes

SAFETY FUNCTION:	8

SIMULATOR SETUP SHEET

Task Description: Suppression Pool Makeup per EOP-0005, Enclosure 30.

Required Power: Any

IC No.: 162

Notes: **Insert Override to close RHS-AOV63 to occur when valve reaches OPEN position.**

DATA SHEET

References for Development: EOP-0005, Enclosure 30, Suppression Pool Makeup

Required Materials: EOP-0005, Enclosure 30, Suppression Pool Makeup

Required Plant Condition: N/A

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The Plant is operating at rated conditions with RCIC out of service. Suppression Pool level has lowered to 18 feet.

Initiating Cue:

The CRS directs you to raise Suppression Pool water level using SPC/ADHR per EOP-0005, Enclosure 30.

PERFORMANCE STEP *[Encl Step]*		STANDARD	S/U	COMMENTS
_____1.	Obtain copy of EOP-0005, Enclosure 30.		____	Enclosures are located in drawer to the left of the DRMS Monitor.
_____2.	VERIFY E12-F105, RHR PUMP C SUP PL SUCTION VALVE is open (1H13-P601) ***[SPC/ADHR Step 1]***	Verifies E12-F105, RHR PUMP C SUP PL SUCTION VALVE is open. Green light OFF Red light ON	____	
____* 3.	VERIFY open RHS-AOV62, SPC SUCTION VALVE (1H13-P601) ***[SPC/ADHR Step 2]***	Places RHS-AOV62, SPC SUCTION VALVE control switch to OPEN. Green light OFF Red light ON	____	
____* 4.	VERIFY open RHS-AOV63, SPC SUCTION VALVE (1H13-P601) ***[SPC/ADHR Step 3]***	Places RHS-AOV63, SPC SUCTION VALVE control switch to OPEN. Green light OFF Red light ON	____	**NOTE:** *ALTERNATE PATH* RHS-AOV63 recloses when it reaches full open and cannot be reopened.
_____5.	Reports failure of RHS-AOV63 to remain open and informs CRS.		____	**CUE:** As CRS, acknowledge failure of AOV63 and direct using HPCS.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[Encl Step]*		STANDARD	S/U	COMMENTS
4.	VERIFY HPCS pump suction is aligned to the CST. ***[HPCS Step1]***	Verifies E22-MOVF001, HPCS CST SUCTION VALVE is open. Green light OFF Red light ON Verifies E22-MOVF015, HPCS SP SUCTION VALVE is closed. Green light ON Red light OFF		
* 5.	START the HPCS pump. (1H13-P601) VERIFY HPCS pump motor current is less than or equal to 350 amps ***[HPCS Step2.a]***	Places HPCS control switch to START Green light OFF Red light ON Pump current verified <350 amps		
6.	VERIFY OPEN E22-F012 HPCS MIN FLOW VALVE TO SUPPRESSION POOL. (1H13-P601) ***[HPCS Step2.b]***	Verifies E22-F012 open. Green light OFF Red light ON		**CUE: As CRS, additional makeup is NOT reqired.**

Terminating Cue: HPCS operating with minimum flow open transferring water to the Suppression Pool from the CST.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-CRS-03

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-CRS-03

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The Plant is operating at rated conditions with RCIC out of service.

Suppression Pool level has lowered to 18 feet.

Initiating Cues: The CRS directs you to raise Suppression Pool water level using SPC/ADHR per EOP-0005, Enclosure 30.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** PLACE FWREG VALVE C IN MANUAL WITH STARTUP LEVEL CONTROL VALVE IN AUTO**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 4**

PREPARE / REVIEW:

Erich Weinfurter	1497	6/29/2004
Preparer	KCN	Date
Roger Persons	0862	7/7/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Place FWREG Valve C In Manual With Startup Level Control Valve In Auto

TASK REFERENCE:	259013001001

K/A REFERENCE & RATING:	259002 K5.01, 3.1/3.1 259002 A1.05, 2.9/2.9 259002 A4.03, 3.8/3.6

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator	**X**	In-Plant	

COMPLETION TIME:	15 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	Yes

SIMULATOR SETUP SHEET

Task Description:	Place FWREG Valve C In Manual With Startup Level Control Valve In Auto.
Required Power:	12%
IC No.:	IC-168
Notes:	**Malfunction on FWREG Valve is initiated in IC-168.**

DATA SHEET

References for Development:	SOP-0009, Reactor Feedwater System
Required Materials:	SOP-0009, Reactor Feedwater System
Required Plant Condition:	Plant at approximately 10% power with Startup Feedwater Level Controller in Automatic
Applicable Objectives:	
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	007, Manual Control of Feedwater

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The plant is operating at approximately 12% power with Startup Feedwater Level Controller in Automatic.

Initiating Cue:

The CRS has directed you to place FWREG Valve C in manual with the Startup Level Control Valve in Auto in accordance with SOP-0009, Section 4.8, Reactor Feedwater System. An SNEO is stationed at the valve.

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____1.	Verify C33-R602A, FWREG VALVE C FLOW CONTROLLER in MANUAL and set at 0%. ***[SOP Step 4.8.1]***	Controller verified to be in MANUAL and set at 0%.	____	
_____2.	Verify the bias thumbwheel on C33-R601A, FWREG VALVE A FLOW CONTROLLER and C33-R602A, FWREG VALVE C FLOW CONTROLLER set at 50. ***[SOP Step 4.8.2]***	Bias thumbwheels set at 50.	____	
_____3.	Verify C33-R600, FWREG VALVES MASTER FLOW CONTROLLER in MANUAL set at 0%. ***[SOP Step 4.8.3]***	Master FRV controller verified in manual at 0%.	____	
*_____4.	Place C33-R602A, FWREG VALVE FLOW CONTROLLER C in AUTO. ***[SOP Step 4.8.4]***	Controller is placed in AUTO. Green light ON Amber light OFF	____	
_____5.	Verify FWS-MOV27C, FW REG VLV C INLET is closed. ***[SOP Step 4.8.5]***	FWS-MOV27C closed. Green light ON Red light OFF	____	

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____6.	Test stroke C33-LVF001C, FWREG VAVLE C as follows: Station an operator locally at the valve to verify proper valve movement and position. ***[SOP Step 4.8.6.1]***	Operator is stationed locally for observation of the valve during stroking.	____	**CUE: If contacted by Gaitronics respond as Turbine Building Operater stationed locally to observe valve movement and position during stroking.**
*_____7.	Use the OPEN and CLOSE Pushbuttons on C33-R600, FW REG VALVES MASTER FLOW CONTROLLER to stroke open and closed C33-LVF001C ***[SOP Step 4.8.6.2]*** Check proper valve movement and smooth operations. ***[SOP Step 4.8.6.3]*** Check C33-LVF001A full closed. ***[SOP Step 4.8.6.4]***	Recognizes and reports to the CRS that C33-LVF001C could not be stroked. Amber light ON above C33-LVF001C position indication		***NOTE: ALTERNATE PATH*** **CUE: As Turbine Building Operator, inform the candidate that the valve did not move. Valve appears to be bound or stuck.** **CUE: As CRS direct placing the A FWREG valve in service. You will notify I&C to investigate the failure of the "C" FRV**. NOTE: May Place C33-R601C, FWREG VALVE FLOW CONTROLLER C back in MANUAL.
_____8.	Verify C33-R601A, FWREG VALVE A FLOW CONTROLLER in MANUAL and set at 0%. ***[SOP Step 4.8.1]***	Controller verified to be in MANUAL and set at 0%.	____	

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____9.	Verify the bias thumbwheel on C33-R601A, FWREG VALVE A FLOW CONTROLLER and C33-R602A, FWREG VALVE C FLOW CONTROLLER set at 50. ***[SOP Step 4.8.2]***	Bias thumbwheels set at 50.	____	
_____10.	Verify C33-R600, FWREG VALVES MASTER FLOW CONTROLLER in MANUAL set at 0%. ***[SOP Step 4.8.3]***	Master FRV controller verified in manual at 0%.	____	
*_____11.	Place C33-R601A, FWREG VALVE FLOW CONTROLLER A in AUTO. ***[SOP Step 4.8.4]***	Controller is placed in AUTO. Green light ON Amber light OFF	____	
_____12.	Verify FWS-MOV27A, FW REG VLV A INLET is closed. ***[SOP Step 4.8.5]***	FWS-MOV27A closed. Green light ON Red light OFF	____	
_____13.	Test stroke C33-LVF001A, FWREG VAVLE A as follows: Station an operator locally at the valve to verify proper valve movement and position. ***[SOP Step 4.8.6.1]***	Operator is stationed locally for observation of the valve during stroking.	____	**CUE: If contacted by Gaitronics respond as Turbine Building Operater stationed locally at C33-LVF001A to observe valve movement and position during stroking.**

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____14.	Use the OPEN and CLOSE Pushbuttons on C33-R600, FW REG VALVES MASTER FLOW CONTROLLER to stroke open and closed C33-LVF001A ***[SOP Step 4.8.6.2]*** Check proper valve movement and smooth operations. ***[SOP Step 4.8.6.3]*** Check C33-LVF001A full closed. ***[SOP Step 4.8.6.4]***	Uses OPEN and CLOSE Pushbuttons on C33-R600 to fully open and reclose C33-LVF001A per valve position meter above control for FWS-MOV27A. Verifies Building Operator observation of proper valve movement locally.	_____	**CUE: As Turbine Building Operator, inform the candidate that the valve moved from full closed to full open and back to full closed. Valve operation was smooth.**
*_____15.	Open FWS-MOV27A, FW REG VLV A INLET is closed. ***[SOP Step 4.8.6.5]***	FWS-MOV27A open. Green light OFF Red light ON	_____	
*_____16	Use the manual pushbuttons on C33-R600, FW REG VALVES MASTER CONTROLLER to open C33-LVF001A, FWREG VALVE A and then maintain C33-LVF002, START UP FWREG VALVE position greater than 20 and less than 50% open. ***[SOP Step 4.8.7]***	C33-LVF001C, FWREG VALVE C open and START UP FWREG VALVE position greater than 20 and less than 50% open.	_____	

Terminating Cue: RPV level is being maintained automatically by the Startup Level Controller with the "A" FWREG valve in AUTO and the Master Level Controller is in MANUAL.

RJPM-OPS-CRS-04

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-CRS-04

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The plant is operating at approximately 12% power with Startup Feedwater Level Controller in Automatic.

.

Initiating Cues: The CRS has directed you to place FWREG Valve C in manual with the Startup Level Control Valve in Auto in accordance with SOP-0009, Section 4.8, Reactor Feedwater System.

An SNEO is stationed at the valve.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** BYPASS MSR STEAM SUPPLY VALVES INTERLOCK PER EOP ENCLOSURE 5**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 5**

PREPARE / REVIEW:

Roger Persons	0862	7/13/2004
Preparer	KCN	Date
Erich Weinfurter	1497	7/13/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/13/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Bypass MSR Steam Supply Valves Interlock Per EOP Enclosure 5

TASK REFERENCE:	200005005004

K/A REFERENCE & RATING:	239001 K1.01, 3.4/3.4 239001 K1.01, 2.8/2.8

TESTING METHOD:	Simulate Performance	**X**			Actual Performance	
	Control Room	**X**	Simulator		In-Plant	

COMPLETION TIME:	11 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: Bypass MSR Steam Supply Valves Interlock Per EOP Enclosure 5

Required Power: N/A

IC No.: N/A

Notes: This JPM will be simulated in the Main Control Room.

DATA SHEET

References for Development: EOP-0005, Enclosure 5

Required Materials: EOP-0005, Enclosure 5

Required Plant Condition: A scram has occurred following extended high power operations. EOP-0001 and EOP-0002 are being executed. A malfunction in the turbine bypass valves and high suppression pool temperature require use of alternate pressure control methods.

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: None

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

A scram has occurred following extended high power operations. EOP-0001 and EOP-0002 are being executed. A malfunction in the turbine bypass valves and high suppression pool temperature require use of alternate pressure control methods.

Initiating Cue:

The CRS has directed you to install EOP-0005, Enclosure 5 Defeating MSR Steam Supply Valves Interlock.

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
_____1.	OBTAIN EOP-0005 ENCL 5 jumper kit from the Control Room Emergency Locker. ***[ENCL Step 3.1]***	EOP-0005 ENCL 5 jumper Kit No. 5 obtained from Control Room Emergency Locker	____	NOTE: Have candidate return jumper kit to Emergency Locker once identified and inventoried.
_____2.	Inspect kit for 2 jumpers. ***[ENCL Step 3.1.1]***	Two jumpers located in Jumper Kit No 5.	____	NOTE: Controls and indications for MSRs are located on H13-P870, Insert 52
_____3.	Verify MSS-MOV111, MSR 1 STM SPLY SHUTOFF AND, MSS-MOV112, MSR 2 STM SPLY SHUTOFF Control Switches are in CLOSE. ***[ENCL Step 3.2]***	MSS-MOV111 in CLOSE Position Green light ON Red light OFF MSS-MOV112 in CLOSE Position Green light ON Red light OFF	____	**CUE: MSS-MOV111 Green light is on and red light is off** NOTE: With the plant at power these valves should indicate open. **CUE: MSS-MOV112 Green light is on and red light is off**
*_____4.	Location: 1H13-P869 Bay D Affected relay: 63B-1MSSN17 (Left row of agastat relays, 8th relay from top) REMOVE relay 63B-1MSSN17 ***[ENCL Step 3.3.1]***	Locates H13-P869 Bay D and identifies relay 63B-1MSSN17 and describes squeezing upper and lower cover latches to remove relay.	____	NOTE: Relay is labeled 63B-1MSSN17 and is in left row of agastat relays, 8th relay from top **CUE: Relay 63B-1MSSN17 removed**
*_____5.	Jumper No. 1 ***[ENCL Step 3.1.2]*** JUMPER Terminal M3 on Relay Block 63B-1MSSN17 to Terminal R3 on Relay Block 63B-1MSSN17	Identifies terminals to install Jumper No. 1		**CUE: Jumper No. 1 installed** NOTE: Enclosure 5 contains sketch of relay terminals for reference.

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
* 6.	Jumper No. 2 ***[ENCL Step 3.1.3]*** JUMPER Terminal M4 on Relay Block 63B-1MSSN17 to Terminal R4 on Relay Block 63B-1MSSN17	Identifies terminals to install Jumper No. 2		**CUE: Jumper No. 2 installed**
* 7.	OPEN MSS-MOV111, MSR 1 STM SPLY SHUTOFF AND, MSS-MOV112, MSR 2 STM SPLY SHUTOFF as directed by the CRS. ***[ENCL Step 3.4]***	Places MSS-MOV111 control switch to OPEN Position Green light OFF Red light ON Places MSS-MOV112 control switch to OPEN Position Green light OFF Red light ON		**CUE: As CRS, direct opening both MSS-MOV111 and 112.**

Terminating Cue: EOP-0005, Enclosure 5 installed and both MSR Steam Supply Shutoff Valves open.

.

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

JPM Task Conditions/Cues
(Operator Copy)

Initial Conditions: A scram has occurred following extended high power operations.

EOP-0001 and EOP-0002 are being executed.

A malfunction in the turbine bypass valves and high suppression pool temperature require use of alternate pressure control methods.

Initiating Cues: The CRS has directed you to install EOP-0005, Enclosure 5 Defeating MSR Steam Supply Valves Interlock.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** RESTORE FUEL BUILDING FILTRATION SYSTEM TO STANDBY FOLLOWING AN AUTOMATIC INITIATION**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 6**

PREPARE / REVIEW:

Erich Weinfurter	1497	7/1/2004
Preparer	KCN	Date
Roger Persons	0988	7/7/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Restore Fuel Building Filtration System to Standby following an Automatic Initiation

TASK REFERENCE:	289008001001

K/A REFERENCE & RATING:	288000 K4.03, 2.8/2.9 288000 A2.01, 3.3/2.4 288000 A4.01, 3.1/2.9

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator	**X**	In-Plant	

COMPLETION TIME:	12 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: Restore Fuel Building Filtration System to Standby following an Automatic Initiation

Required Power: NA

IC No.: **IC-162**

Notes:

DATA SHEET

References for Development: SOP-0062, Fuel Building Ventilation

Required Materials: SOP-0062, Fuel Building Ventilation

Required Plant Condition: N/A

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The Division I Fuel Building Ventilation Filter Train received an automatic initiation signal from an I&C Surveillance. All conditions are normal and I&C has corrected the problem.

Initiating Cue:

The Control Room Supervisor has directed you to restore the Fuel Building Ventilation System to standby, per SOP-0062. The prerequisites have been verified complete.

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____1.	Verify all initiation and isolation signals have been reset ***[SOP Step 5.7.1]***	Observes that No LOCA or Fuel Building Ventilation Exhaust radiation high-high signals present.	____	NOTE: Candidate should use SOP-0062, Section 5.7. **CUE: If candidate asks, NO fuel movement is in progress in the Fuel Building (P&L 2.2)**
_____2.	Verify only one HVF-FN3A or B, EXH FLTR TRAIN is running ***[SOP Step 5.7.3]***	Observes that only Division 1 Fuel Building Exhaust Filter Train is operating.	____	
_____3.	IF DIVISION 1 and 2 RADIATION OVERRIDE Switches were utilized to override a High-High Radiation signal for Refuel Mode Operation, THEN place the following in NORM: ***[SOP Step 5.7.3]*** DIVISION 1 RADIATION OVERRIDE DIVISION 2 RADIATION OVERRIDE	Neither switch in OVERRIDE.		**NOTE:** Override Switches were not used.

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
* 4.	Verify open the following dampers: *[SOP Step 5.7.4]* • HVF-AOD102, FUEL BLDG EXH FAN INLT • HVF-AOD112, FUEL BLDG EXH FAN INLT • HVF-AOD104, FUEL BLDG EXH ISOL • HVF-AOD137, FUEL BLDG EXH ISOL • HVF-AOD101, FUEL BLDG AIR SPLY ISOL • HVF-AOD122, FUEL BLDG AIR SPLY ISOL	Opens HVF-AOD102 and HVF-AOD104 Green light OFF Red light ON Verifies that all other listed dampers are open Green light OFF Red light ON	____	**NOTE:** Only HVFAOD102 and HVF-AOD104 are critical actions for this step, the remaining dampers listed in this step are already open.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____5.	IF no Fuel Building Supply Fan is running, THEN start one of the following fans: *[SOP Step 5.7.5]* • HVF-ACU1 FN1A, FUEL BLDG SPLY FAN A • HVF-ACU1 FN1B, FUEL BLDG SPLY FAN B	Verifies one fan operating. Green light OFF Red light ON	____	
_____5.	Check associated HVF-AOD13A(B), FUEL BLDG SPLY FAN A(B) DISCH opens ***[SOP Step 5.7.6]***	HVF-AOD13A(B) damper open for fan operating Green light OFF Red light ON	____	
*_____6.	Stop the running HVF-FN3A(B), EXH FLTR TRAIN. ***[SOP Step 5.7.7]***	Places HVF-FN3A fan control switch to STOP. Green light ON Red light OFF	____	

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____7.	Verify the following: *[SOP Step 5.7.8]* • Associated HVF-AOD20A(B), FILTER 2A(B) INLET is closed. • Associated HVF-AOD31A(B), FAN 3A(B) DISCH is closed. • Associated HVF-FN7A(B), FLT 2A(B) DECAY HEAT REMOVAL is running. • Associated HVF-AOD3A(B), DECAY HEAT REMOVAL INLET is open. • Associated HVF-AOD33A(B), DECAY HEAT REMOVAL DISCH is open.	All listed dampers are open Green light OFF Red light ON HVF-FN7A is running Green light OFF Red light ON	____	
*_____8.	Start one HVF-FN8A(B), FUEL BLDG EXH FAN A(B) ***[SOP Step 5.7.9]***	Places HVF-FN8A(B) fan control switch to START and verifies fan started Green light OFF Red light ON	____	
_____9.	Check associated HVF-AOD6A(B), FUEL BLDG EXH FAN A(B) DISCH opens. *[SOP Step 5.7.10]*	HVF-AOD6A(B) damper open Green light OFF Red light ON	____	

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____10	Place the non-running HVF-FN8B(A), FUEL BLDG EXH FAN B(A) in AUTO. *[SOP Step 5.7.11]*	Places HVF-FN8A(B) fan control switch to AUTO	____	
*_____11	WHEN system flow has stabilized, THEN place the stopped HVF-FN3A(B) EXH FLTR TRAIN in AUTO. *[SOP Step 5.7.12]*	Places HVF-FN3A(B) fan control switch to AUTO	____	
*_____12	Verify closed HVF-AOD37A, FUEL BLDG ALT AIR SUPPLY and HVF-AOD37B, FUEL BLDG ALT AIR SUPPLY. *[SOP Step 5.7.13]*	Closes HVF-AOD37A and B Green light ON Red light OFF	____	

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
*_____13	WHEN 30 minutes has elapsed, OR at the discretion of the OSM/CRS, THEN perform the following: *[SOP Step 5.7.143]* • Stop the running HVF-FN7A(B), FLT 2A(B) DECAY HEAT REMOVAL fan. • Check associated HVF-AOD3A(B), DECAY HEAT REMOVAL INLET closes. • Check associated HVF-AOD33A(B), DECAY HEAT REMOVAL DISCH closes. • Return the stopped HVF-FN7A(B), FLT 2A(B) DECAY HEAT REMOVAL fan to AUTO.	Places HVF-FN7A(B) fan control switch to STOP, verifies that the fan stops. Green light ON Red light OFF Listed dampers are closed Green light ON Red light OFF Places HVF-FN7A(B) fan control switch to AUTO	_____	**CUE: CRS directs securing the decay heat removal fan now.**
_____14	At FB 148’ el., check Fuel Building pressure is greater than or equal to 0.104” Water Gauge (WG) on HVF-PDI103, FUEL BLDG PRESSURE MONITOR DIFFERENTIAL PRESSURE INDICATOR. ***[SOP Step 5.7.15]***	Operator Contacts Reactor Building operator for Differential pressure reading.	_____	**CUE: Reactor Building Operator reports that Fuel Building pressure on HVF-PDI103 is 0.125” water gauge**

Terminating Cue: The Fuel Building Ventilation System has been restored to Standby.

RJPM-OPS-CRS-06

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-CRS-06

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The Division I Fuel Building Ventilation Filter Train received an automatic initiation signal from an I&C Surveillance. All conditions are normal and I&C has corrected the problem.

Initiating Cues: The Control Room Supervisor has directed you to restore the Fuel Building Ventilation System to standby, per SOP-0062. The prerequisites have been verified complete.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** PARALLEL OFFSITE POWER WITH DIVISION II EDG SUPPLYING ENS-SWG1B**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 7**

PREPARE / REVIEW:

Erich Weinfurter	1497	6/29/2004
Preparer	KCN	Date
Roger Persons	0862	7/6/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Parallel Offsite Power With Div 2 EDG Supplying ENS-SWG1B.

TASK REFERENCE:	264009001001

K/A REFERENCE & RATING:	264000 A2.01, 3.5/3.6 264000 A2.05, 3.6/3.6 264000 A4.02, 3.4/3.4 295003 AA1.02, 4.2/4.3

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator	**X**	In-Plant	

COMPLETION TIME:	10 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	Yes

ALTERNATE PATH (FAULTED):	Yes

SIMULATOR SETUP SHEET

Task Description: Parallel Offsite Power With Div 2 EDG Supplying ENS-SWG1B

Required Power: Cold Shutdown following a Loss of Offsite Power

IC No.: **162**

Notes:

The simulator will be setup with the plant shutdown. The P877 panel configuration is consistent with expected conditions for performance of this JPM as the final step in recovering Offsite Power. ENS-SWG1A has been returned to normal lineup and Div I EDG has been shutdown.

DATA SHEET

References for Development:	AOP-0004, Loss of Offsite Power SOP-0053, Standby Diesel Generator and Auxiliaries
Required Materials:	SOP-0053, Standby Diesel Generator and Auxiliaries
Required Plant Condition:	Following LOP
Applicable Objectives:	
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

A Loss of Offsite Power has occurred with the plant in cold shutdown. AOP-0004, Loss of Offsite Power was entered and all required actions taken. Plant conditions are stable and Offsite power is being restored to the plant per AOP-0004, Section 5.16. AOP-0004 has been completed through Step 5.16.11.
.

Initiating Cue:

The CRS has directed you to parallel Offsite Power to the ENS-SWG1B per SOP-0053 using the normal supply breaker ACB26.

PERFORMANCE STEP *[SOP/ARP Step]*		STANDARD	S/U	COMMENTS
*_____1.	IF ENS-ACB06(26), NORMAL SUPPLY BRKR is to be closed, THEN place the REMOTE SYNC SW to NORM. ***[SOP Step 5.1.1]***	REMOTE SYNC SW to NORM.	____	SOP-0053, Section 5.1
_____2.	Adjust diesel voltage, as observed on V-1RUN-1SYDA(B)01, RUNNING VOLTAGE to approximately 1- 2 volts above V-1IN-1SYDA(B)01, INCOMING VOLTAGE using the STBY DIESEL GENERATOR A(B) VOLTAGE REGULATOR CONT. ***[SOP Step 5.1.3]***	RUNNING VOLTAGE to approximately 1- 2 volts above V-1IN-1SYDA(B)01, INCOMING VOLTAGE.	____	
*_____3.	Adjust diesel speed, using the STBY DIESEL GENERATOR A(B) GOVERNOR CONTROL, to bring the frequency within the range of grid frequency. Adjust speed so the SY-1-SYDA(B)01, STBY BUS A(B) SYNCHROSCOPE indicator is rotating slowly in the SLOW direction (counterclockwise)at a rate of one revolution in greater than or equal to 4 seconds and less than or equal to 6 seconds. ***[SOP Step 5.1.4]***	SYNCHROSCOPE indicator is rotating slowly in the SLOW direction.	____	

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[SOP/ARP Step]*		STANDARD	S/U	COMMENTS
*_____4.	WHEN the synchroscope indicator is moving slowly in the SLOW direction AND the synchroscope indicator is 5 minutes to 2 minutes before the 12 o'clock position, THEN close the desired feeder breaker, ENS-ACB06(26), NORMAL SUPPLY BRKR or ENS-ACB04(24), ALTERNATE SUPPLY BRKR. Verify the red breaker closed light comes ON. If not, return the breaker handswitch to TRIP. ***[SOP Step 5.1.5]***	NORMAL SUPPLY BRKR closed. RED light ON GREEN light OFF	____	***NOTE: ALTERNATE PATH*** **NOTE:** Annunciator for STANDBY DIESEL GEN B BACKUP PROT ACTIVATED will alarm at this time.
_____5.	Acknowledges alarm, informs CRS, and refers to ARP-P877-32A-H02.	Alarm acknowledged and CRS informed.	____	**CUE:** Direct Candidate to complete ARP Operator Actions Section.
_____6.	Trips ENS-ACB31, STBY D/G B NEUTRAL BRKR. ***[ARP Step 2.b.1]***	Opens ENS-ACB31, STBY D/G B NEUTRAL BRKR RED light OFF GREEN light ON	____	**NOTE:** Candidate must determine from initial conditions that EDG is operating in Emergency Mode and Neutral Breaker should have tripped per ARP.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[SOP/ARP Step]*		STANDARD	S/U	COMMENTS
*_____7.	Reduce load with the STBY DIESEL GENERATOR A(B) GOVERNOR CONTROL to approximately 175 Kw, and reactive load to no less than 0 KVAR using the STBY DIESEL GENERATOR A(B) VOLTAGE REGULATOR CONT. Allow diesel cylinder temperatures to stabilize. ***[SOP Step 6.1.1]***	Reduces load to ~175 Kw	____	**CUE:** As CRS, the Div 2 EDG is no longer required. Rapidly unload and shutdown the EDG per SOP-0053.
*_____8.	Trip ENS-ACB27, STBY D/G B OUTPUT BRKR. ***[SOP Step 6.1.2]***	Trips ENS-ACB27, STBY D/G B OUTPUT BRKR RED light OFF GREEN light ON	____	**CUE:** As CRS, if requested, Step 6.1.3 to adjust EDG frequency to 60 Hz may be NA'd.
*_____9.	Depress the STBY DIESEL ENGINE A(B) EMERGENCY START RESET pushbutton on H13-P877. Div 2 EDG ***[SOP Step 6.1.4]***	Depresses STBY DIESEL ENGINE B EMERGENCY START RESET pushbutton	____	**CUE:** After candidate depresses EMERGENCY START RESET pushbutton, state that the Div 2 EDG has now run unloaded for 2 minutes.
*_____10.	Allow the diesel to run unloaded for approximately 2 minutes, then depress both STBY DIESEL ENGINE A(B) STOP pushbuttons simultaneously ***[SOP Step 6.1.5]***	Depresses both STBY DIESEL ENGINE B STOP pushbuttons simultaneously.	____	**CUE:** JPM is terminated, another operator will complete the EDG shutdown.

Terminating Cue: Offsite Power supplying ENS-SWG1B and the Div II Emergency Diesel shutdown.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

RJPM-OPS-CRS-07

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-CRS-07

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: A Loss of Offsite Power has occurred with the plant in cold shutdown. AOP-0004, Loss of Offsite Power was entered and all required actions taken. Plant conditions are stable and Offsite power is being restored to the plant per AOP-0004, Section 5.16. AOP-0004 has been completed through Step 5.16.11.

Initiating Cues: The CRS has directed you to parallel Offsite Power to the ENS-SWG1B per SOP-0053 using the normal supply breaker ACB26.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** PERFORM CONTROL ROD OPERABILITY CHECK**

REASON FOR REVISION:

NRC Exam JPM **CR SYSTEMS - 8**

PREPARE / REVIEW:

Erich Weinfurter	1497	6/29/2004
Preparer	KCN	Date
Roger Persons	0862	7/9/2004
Technical Review (SME)	KCN	Date
Tom Naylor	0803	9/7/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Perform Control Rod Operability Check With Rod Over-Travel

TASK REFERENCE:	201024001001 201001002001

K/A REFERENCE & RATING:	201003 K4.02, 3.8/3.9 201003 A2.02, 3.7/3.8 201003 A$.02, 3.5/3.5

TESTING METHOD:	Simulate Performance				Actual Performance	**X**
	Control Room		Simulator	**X**	In-Plant	

COMPLETION TIME:	12 min.

MAX TIME:	N/A

JOB LEVEL:	All

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	Yes

SIMULATOR SETUP SHEET

Task Description: Perform control rod operability check with rod over-travel.

Required Power: >27%

IC No.: **161**

Notes: Before start of JPM enter the following at the instructor console:

Malfunction(MFS)	15
Rod	16-29
Failure	E (Rod Uncoupled) on Trigger 1

Malfunction to be removed when rod is driven into position 46 the second time at JPM Step 9.

DATA SHEET

References for Development: STP-052-0101
REP-0051

Required Materials: STP-052-0101
ARP-P680-

Required Plant Condition: Reactor at power, steady state >27%

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

Reactor at power, steady state 100%.

Initiating Cue:

The CRS has directed you to perform control rod operability check on control rod 16-29 ONLY.

PERFORMANCE STEP *[STP/ARP Step]*		STANDARD	S/U	COMMENTS
_____1.	Print out an OD-7 of initial control rod positions. ***[Step 7.1]***	OD-7 printed out.	____	**CUE: Provide copy of OD7 (JPM Page 11)** **NOTE:** OD-7 print out not available in simulator. Both copies of OD-7 to be given to the candidate have identical rod pattern only time and slight variations expected in CTP, WT and LL are different.
_____2.	If any control rod is not fully withdrawn to position 48 or is inoperable, THEN record NA for that control rod on Data Sheet 1, CONTROL ROD OPERABILITY DATA SHEET. ***[Step 7.2]***	Verifies all control rods on Data Sheet 1 are NA except Control Rod 16-29.	____	**NOTE:** CRS has already NA'd all control rods on Data Sheet 1 except 16-29.
*_____3	Perform Data Sheet 1, CONTROL ROD OPERABILITY DATA SHEET ***[Step 7.3]*** Select control rod 16-29. ***[Step 7.3.1]***	Depresses pushbuttons 16 and 29 simultaneously on Operator Control Module Rod Select matrix Control rod 16-29 position displayed as 48 on full core display.	____	**NOTE:** Candidates may refer to SOP-0071 RC&IS to confirm control rod manipulation steps per that procedure are "Reference only" meaning they can perform the steps in this procedure without having to use SOP-0071 also.
*_____4.	Insert control rod to position 46 and verify position indication changes. ***[Step 7.3.2]***	Depresses INSERT pushbutton momentarily Position reads 46 on full core display.	____	

PERFORMANCE STEP *[STP/ARP Step]*		STANDARD	S/U	COMMENTS
*_____5.	Withdraw control rod to position 48 and verify position indication change. ***[Step 7.3.3]***	Depresses WITHDRAW pushbutton momentarily Position reads 48 on full core display.	____	
*_____6.	Perform coupling check. ***[Step 7.3.4]***	Depresses WITHDRAW pushbutton.	____	***NOTE: ALTERNATE PATH*** Annunciator P680-7A-C02 CONTROL ROD OVERTRAVEL
_____7.	Acknowledges alarm P680-7A-C02 CONTROL ROD OVERTRAVEL and notifies CRS of uncoupled rod 16-29.	Alarm acknowledged and CRS notified.	____	**CUE: CRS directs the Operator to take actions per ARP-P680-7A-C02.**
_____8.	Determine uncoupled rod. Depress ROD UNCOUPLED pushbutton and observe red lights. ***[ARP OA Step 1]***	Refers to ARP-P680-7A-C02: Depresses ROD UNCOUPLED pushbutton Red light observed next to control rod 16-29 on full core display.		
*_____9.	Attempt to recouple rod by driving in to Position 46 and withdrawing to Position 48 ***[ARP OA Step 2]***	Depresses INSERT pushbutton momentarily Position reads 46 on full core display. Depresses WITHDRAW pushbutton momentarily Position reads 48 on full core display.		**NOTE:** Simulator operator will remove malfunction when insert signal is initiated to recouple.

PERFORMANCE STEP *[STP/ARP Step]*		STANDARD	S/U	COMMENTS
*_____10.	Check the success of recoupling by attempting to withdraw beyond position 48. ***[ARP LTA Step 1]***	Depresses WITHDRAW pushbutton momentarily Position reading returns to 48 on full core display. Notifies CRS rod 16-29 recoupling successful.		**CUE: As CRS, acknowledge rod 16-29 recoupling successful and that he will consult with Reactor Engineering the disposition of the STP. Direct the candidate to complete his/her ARP actions.**
_____11.	IF successfully recoupled, THEN note in Logbook. ***[ARP LTA Step 1.a]***	Notes Control Rod 16-29 successfully recoupled in log.		

Terminating Cue: Control rod operability check for 16-29 completed in accordance with STP-052-0101.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-CRS-08

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-CRS-08

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: Reactor at power, steady state 100%.

Initiating Cues: The CRS has directed you to perform control rod operability check on control rod 16-29 ONLY.

RJPM-OPS-CRS-08

OD7 Control Rod Positions 09 / 20 / 04 12:10:04 RIVER BEND

53							40						
49													
45							10						
41													
37					06		20		06				
33													
29	40		10		20				20		10		40
25													
21					06		20		06				
17													
13							10						
09													
05							40						
	04	08	12	16	20	24	28	32	36	40	44	48	52

Control Rod Sequence : Control Rod Density : 0.0667

% CTP: 99.72 % WT: 92.47 % LL 105.13

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** VENT THE SCRAM AIR HEADER PER EOP-0005, ENCLOSURE 11**

REASON FOR REVISION:

NRC Exam JPM **IN-PLANT – 1**

PREPARE / REVIEW:

Erich Weinfurter	1497	6/29/2004
Preparer	KCN	Date
Roger Persons	0862	7/5/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/8/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Vent the Scram Air Header per EOP-0005, Enclosure 11, Venting Scram Air Header

TASK REFERENCE:	201001005004

K/A REFERENCE & RATING:	201001 K1.09, 3.1/3.2
	295037 EK3.07, 4.2/4.3
	295037 EA1.05, 3.9/4.0

TESTING METHOD:	Simulate Performance	**X**			Actual Performance	
	Control Room		Simulator		In-Plant	**X**

COMPLETION TIME:	18 min.

MAX TIME:	N/A

JOB LEVEL:	All

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: N/A

Required Power: N/A

IC No.: N/A

Notes: **This JPM is to be simulated in the plant. It involves entering the CAA and Primary Containment.**

DATA SHEET

References for Development:	EOP-0005, Enclosure 11, Venting Scram Air Header
Required Materials:	EOP-0005, Enclosure 11, Venting Scram Air Header
Required Plant Condition:	A scram condition has occurred but all control rods failed to insert and power is above 6%.
Applicable Objectives:	
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues, I may provide cues during the performance of this JPM, I may ask follow-up questions as part of this JPM. When you complete the task successfully, the objective for this JPM will be satisfied, you should inform me when you have completed the task.

Initial Conditions:

A scram condition has occurred but all control rods failed to insert and power is above 6%

Initiating Cue:

The CRS has instructed you to implement EOP-0005, Enclosure 11, VENTING SCRAM AIR HEADER, to insert control rods per Emergency Procedure EOP-0001A, RPV CONTROL - ATWS.

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
___1.	OBTAIN EOP-0005 ENCL 11 tool kit from Control Room Emergency Locker ***[ENCL Step 3.1]***	Key to emergency locker obtained and the tool kit for EOP-0005, Enclosure 11 identified.	____	NOTE: This JPM begins in the Control Room but involves entering the CAA and Primary Containment.
___2.	INSPECT kit for the following: ***[ENCL Step 3.1.1]*** 1. One (1) Flashlight with batteries 2. Two (2) 10" Cresent wrenches	Verifies Flashlight and two cresent wrenches in tool kit.	____	**CUE:** Return tool kit to Emergency Locker
*___3.	CLOSE C11-VF095 INSTR AIR SUPPLY TO SCRAM PILOT VALVES ISOL (Containment EL 114 ft AZ 195, to right of backup scram valves) ***[ENCL Step 3.2]***	Identifies C11-VF095 and indicates valve is closed by turning handwheel in clockwise direction.	____	**CUE:** Valve is closed
*___4.	Remove test connection cap downstream of C11-PT-N052-V2 PILOT AIR HEADER PRESSURE TRANSMITTER TEST VALVE (above and left of backup scram valve) ***[ENCL Step 3.3]***	Identifies test connection and cap downstream of C11-PT-N052-V2. Describes removal of cap using cresent wrenches in tool kit.	____	**CUE:** Cap is removed
*___5.	OPEN C11-PT-N052-V2 PILOT AIR HEADER PRESSURE TRANSMITTER TEST VALVE ***[ENCL Step 3.4]***	Identifies C11-PT-N052-V2 and indicates valve is opened by turning handwheel in counter-clockwise direction.	____	**CUE**: Valve is open and the sound of air flow is present at test connection.

Terminating Cue: Scram air header vented in accordance with EOP-0005, Enclosure 11 VENTING SCRAM AIR HEADER

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

RJPM-OPS-IPS-01
VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-IPS-01

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: A scram condition has occurred but all control rods failed to insert and power is above 6%

Initiating Cues: The CRS has instructed you to implement EOP-0005, Enclosure 11, VENTING SCRAM AIR HEADER, to insert control rods per Emergency Procedure EOP-0001A, RPV CONTROL - ATWS

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

*** PLACE DIV. 1 STANDBY SERVICE WATER IN SERVICE FROM THE REMOTE SHUTDOWN PANEL**

REASON FOR REVISION:

NRC Exam JPM **IN-PLANT – 2**

PREPARE / REVIEW:

Erich Weinfurter	1497	6/29/2004
Preparer	KCN	Date
Roger Persons	0862	7/7/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Verification	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Place Div. 1 Standby Service Water System in service from the Remote Shutdown Panel (with SWP-P2A Pump Trip)

TASK REFERENCE:	400076004001

K/A REFERENCE & RATING:	264000 K6.07, 3.8/3.9 295016 AK2.01, 4.4/4.5 295016 AK2.02, 4.0/4.1

TESTING METHOD:	Simulate Performance	**X**			Actual Performance	
	Control Room		Simulator		In-Plant	**X**

COMPLETION TIME:	10 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	Yes

ALTERNATE PATH (FAULTED):	Yes

SIMULATOR SETUP SHEET

Task Description:	Place Div. 1 Standby Service Water in service from the Remote Shutdown Panel (with SWP-P2A Pump Trip)
Required Power:	N/A
IC No.:	N/A
Notes:	This JPM is to be simulated in the Control Building.

DATA SHEET

References for Development:	AOP-0031, Shutdown from Outside the Main Control Room
Required Materials:	AOP-0031, Shutdown from Outside the Main Control Room, without attachments
Required Plant Condition:	Any
Applicable Objectives:	
Safety Related Task:	(If K/A less than 3.0)
Control Manipulations:	N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions: The Control Room has been evacuated. The Reactor is in Hot Shutdown and control has been established at the Remote Shutdown Panel. There has been no fire. Normal Service Water is NOT available.

Initiating Cue: The CRS has directed you to place the Division 1 Standby Service Water System in service by starting SWP-P2A (preferred) or SWP-P2C from the appropriate Remote Shutdown Panel, per AOP-0031, step 5.10.5

PERFORMANCE STEP *[AOP Step]*		STANDARD	S/U	COMMENTS
_____1.	On C61-P001, verify both LOCAL SWP EMERGENCY CONTROL ALIGNED Lights are on. ***[AOP Step 5.10.5.1]***	Verifies both lights on.	____	**CUE:** If operator requests as CRS direct him to begin with procedure step 5.10.5 **CUE:** Inform operator that both lights are on.
*_____2.	On RSS-PNL101,start SWP-P2A ***[AOP Step 5.10.5.2.a]***	Places SWP-P2A pump control switch to START and verifies tripped (or started and tripped).	____	**NOTE:** ***ALTERNATE PATH*** **CUE:** SWP-P2A Pump Status RED light on, GREEN light off; and immediately, RED light off, GREEN light on. **CUE:** As CRS if P2A is reported as failing to start, direct starting P2C.
*_____3.	On EGS-PNL4C, start SWP-P2C (Located in Div 3 Swgr Room) ***[AOP Step 5.10.5.2.a]***	Places SWP-P2C pump control switch to START and verifies pump started.	____	**CUE:** SWP-P2C Pump Status RED light on, GREEN light off
_____4.	Verify SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve opens. ***[AOP Step 5.10.5.2.b]***	SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve open	____	**CUE:** SWP-MOV40C STBY SVCE WTR PUMP DISCHARGE Valve status RED light on, GREEN light off

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[AOP Step]*		STANDARD	S/U	COMMENTS
*_____5.	Open SWP-MOV55A STBY CLG TOWER 1 INLET ***[AOP Step 5.10.5.2.c]***	Places SWP-MOV55A STBY CLG TOWER 1 INLET valve control switch momentarily to OPEN (then released). Verifies valve has opened.	____	**CUE:** SWP-MOV55A STBY CLG TOWER 1 INLET Valve status RED light on, GREEN light off.
*_____6.	Close both of the following valves: On RSS-PNL101, SWP-MOV96A NORM SVC WTR RETURN ***[AOP Step 5.10.5.2.d]***	Places SWP-MOV96A NORM SVCE WTR RETURN Valves control switch momentarily to CLOSE (then released). Verifies valve has closed.	____	**CUE:** SWP-MOV96A NORM SVCE WTR RETURN Valve status RED lights off, GREEN lights on.
*_____7.	On RSS-PNL102, SWP-MOV96B NORM SVC WTR RETURN ***[AOP Step 5.10.5.2.d]***	Places SWP-MOV96B NORM SVCE WTR RETURN Valves control switch momentarily to CLOSE (then released). Verifies valve has closed.	____	**CUE:** SWP-MOV96B NORM SVCE WTR RETURN Valve status RED lights off, GREEN lights on.
_____8.	IF check valve leakage is excessive, THEN locally, close the following valves: SWP-MOV57A and SWP-MOV57B NORMAL SERVICE WATER SUPPLY VALVES. ***[AOP Step 5.10.5.2.e]***	Reports Div 1 SSW operating with P2C running and requests CRS have Standby Cooling Tower Basin Level monitored for excessive leakage from Standby Service Water to Normal Service Water System.	____	**CUE:** As CRS acknowledges Dive 1 SSW in service with P2C running and request for Basin Level monitoring for leakage from SSW. Terminate JPM.

Terminating Cue: Division 1 Standby Service Water is in service.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-IPS-02

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-IPS-02

JPM Task Conditions/Cues
(Operator Copy)

Initial Conditions: The Control Room has been evacuated.

The Reactor is in Hot Shutdown and control has been established at the Remote Shutdown Panel.

There has been no fire.

Normal Service Water is NOT available.

Initiating Cues: The CRS has directed you to place the Division 1 Standby Service Water System in service by starting SWP-P2A (preferred) or SWP-P2C from the appropriate Remote Shutdown Panel, per AOP-0031, Step 5.10.5.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

***RESTORE RPS B NORMAL POWER SUPPLY**

REASON FOR REVISION:

NRC Exam JPM **IN-PLANT - 3**

PREPARE / REVIEW:

Erich Weinfurter	1497	6/29/2004
Preparer	KCN	Date
Roger Persons	0862	7/7/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Restore RPS B Normal Power Supply

TASK REFERENCE:	212004001004

K/A REFERENCE & RATING:	212000 K1.04, 3.4/3.6 212000 K2.01, 3.2/3.3 212000 A1.01, 2.8/2.9 212000 A2.01, 3.7/3.9

TESTING METHOD:	Simulate Performance	**X**			Actual Performance	
	Control Room		Simulator		In-Plant	**X**

COMPLETION TIME:	10 min.

MAX TIME:	N/A

JOB LEVEL:	All

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SIMULATOR SETUP SHEET

Task Description: Restore RPS B Normal Power Supply

Required Power: N/A

IC No.: N/A

Notes: This JPM is to be performed at the Plant in the Control Building.

DATA SHEET

References for Development: SOP-0079, Reactor Protection System

Required Materials: SOP-0079, Reactor Protection System

Required Plant Condition: N/A

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

The plant is at 100% power. Electrical maintenance has completed work on the RPS B MG set generator output breaker. RPS B Bus is being supplied from the Alternate Power Supply.

Initiating Cue:

The CRS has directed you to start the RPS MG set and close the appropriate breakers to make RPS Bus B ready to transfer to the Normal Supply, in accordance with SOP-0079, Reactor Protection System.

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
* ^ 1.	At NHS-MCC10B, close BKR 1C, REACTOR PROT SYSTEM MOTOR GENERATOR SET. ***[SOP Step 4.1.1]***	Indicates Breaker 1C on NHS-MCC10B closed by moving handle all the way to left.	____	**NOTE:** MG Set components are located on 116' EL of the Control Building. **NOTE:** The CAUTION at the beginning of the procedure requires checking the torque seal intact prior to closing the Generator Output Breaker. This is NOT a Critical Step since the torque seal is intact for the JPM. **CUE:** If verified, torque seal is intact. Breaker closed when red end of breaker control level is in the fully left position (red end of handle against the breaker compartment). **CUE:** Breaker BKR 1C is closed.
* ^ 2.	At MG Set Panel C71-S001B, depress the MOTOR ON pushbutton while observing the Motor Generator Set output voltmeter. ***[SOP Step 4.1.2.1]***	MOTOR ON pushbutton depressed as motor generator comes up to proper voltage..	____	**CUE:** MG status lights above motor control pushbuttons are Green light OFF Red light ON AND Generator Output voltage is rising.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
_____3.	Verify Motor Generator Set output voltmeter stabilizes at ≥ 123.5 volts. ***[SOP Step 4.1.2.3]***	Motor Generator Set output voltage verified to be ≥ 123.5 volts.	_____	**CUE:** MG Set output voltmeter indicates 124 volts.
*_____4.	WHEN the MG Set output voltmeter is ≥ 123.5 volts, THEN at C71-S001B, close the Generator Output Breaker. ***[SOP Step 4.1.3]***	Torque seal verified intact, and indicates the Generator Output Breaker on C71-S001B is closed by moving it to the upper position.	_____	**NOTE:** The CAUTION at the beginning of the procedure requires checking the torque seal intact prior to closing the Generator Output Breaker. This is NOT a Critical Step since the torque seal is intact for the JPM. **CUE:** If verified, torque seal is intact. **CUE:** Generator Output Breaker is Closed. On EPA Breaker C71-S003B: EPA INPUT - Red light ON POWER SUPPLY OUTPUT - Red light ON

PERFORMANCE STEP *[SOP Step]*		STANDARD	S/U	COMMENTS
* ^ 5.	Close C71-S003B, MG SET LOAD BREAKER ***[SOP Step 4.1.4]***	Indicates how EPA Breaker C71-S003B is closed by rotating breaker lever to the ON (fully counter-clockwise) position		**CUE:** EPA Breaker C71-S003B EPA OUTPUT red light ON and on EPA Breaker C71-S003D: EPA INPUT - Red light ON POWER SUPPLY OUTPUT - Red light ON
* ^ 6.	Close C71-S003D, RPS BUS B NORMAL SUPPLY Breaker. ***[SOP Step 4.1.5]***	Indicates how EPA Breaker C71-S003D is closed by rotating breaker lever to the ON (fully counter-clockwise) position		**CUE:** EPA Breaker C71-S003D EPA OUTPUT red light ON
7.	Verify targets are reset on all EPA breakers. ***[SOP Step 4.1.10]***	Verifies targets on EPA breakers C71-S003B and D are reset		**CUE:** All targets on EPA Breakers are reset.

Terminating Cue: RPS MG Set B running with power available to transfer RPS B Bus to the Normal Supply.

RJPM-OPS-IPS-03

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-IPS-03

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: The plant is at 100% power.

Electrical maintenance has completed work on the RPS B MG set generator output breaker.

RPS B Bus is being supplied from the Alternate Supply.

Initiating Cues: The CRS has directed you to start the RPS MG set and close the appropriate breakers to make RPS bus B ready to transfer to the Normal supply, in accordance with SOP-0079, Reactor Protection System.

JOB PERFORMANCE MEASURE

TRAINING PROGRAM:

JOB PERFORMANCE MEASURE

LESSON PLAN:

***ESTABLISH EMERGENCY CONTAINMENT VENTING PER EOP ENCLOSURE 21**

REASON FOR REVISION:

NRC Exam JPM **BACKUP - 2**

PREPARE / REVIEW:

Roger L. Persons	0862	6/10/2004
Preparer	KCN	Date
Erich Weinfurter	1496	6/30/2004
Technical Review (SME)	KCN	Date
Frank McLean	0803	7/9/2004
Operations Validation	KCN	Date

* Indexing Information

TASK DESCRIPTION:	Establish Emergency Containment Venting per EOP Enclosure 21

TASK REFERENCE:	200023005002

K/A REFERENCE & RATING:	223002 K1.10, 3.1/3.2 223002 K4.08, 3.3/3.7 500000 EK1.01, 3.3/3.9

TESTING METHOD:	Simulate Performance	**X**			Actual Performance	
	Control Room	**X**	Simulator		In-Plant	**X**

COMPLETION TIME:	23 min.

MAX TIME:	N/A

JOB LEVEL:	RO/SRO

TIME CRITICAL:	No

EIP CLASSIFICATION REQUIRED:	No

PSA RISK DOMINATE:	No

ALTERNATE PATH (FAULTED):	No

SAFETY FUNCTION:	7

SIMULATOR SETUP SHEET

Task Description: Establish Emergency Containment Venting per EOP Enclosure 21

Required Power: N/A

IC No.: N/A

Notes: This JPM is to be performed in the Control Room and requires entering the CAA to perform the final step in the Auxiliary Building.

DATA SHEET

References for Development: EOP-0005, Enclosure 21

Required Materials: EOP-0005, Enclosure 21

Required Plant Condition: N/A

Applicable Objectives:

Safety Related Task: (If K/A less than 3.0)

Control Manipulations: N/A

Items marked with an "*" are required to be performed, and are **Critical Steps**, failure to successfully complete a **Critical Step** requires the JPM to be evaluated as "Unsatisfactory". Comments describing the reason for failure are required in the comments section of the Verification of Completion sheet.

Items marked with an "^" are required to be performed in the sequence described, if not performed in the sequence described, appropriate cues other than described in the body of the JPM may be required to provide proper feedback.

If In-Plant or In the Control Room:

Caution the Operator NOT to MANIPULATE the controls, but make clear what they would do if this were not a simulated situation.

Read to the Operator:

I will explain the initial conditions, and provide initiating cues. I may provide cues during the performance of this JPM, and I may ask follow-up questions as part of this JPM. When you have completed the task successfully, the objective for this JPM will be satisfied, and you should inform me when you have completed this task.

Initial Conditions:

A large break LOCA has occurred in the Drywell. Containment pressure is 12 psig and Containment Hydrogen concentration cannot be maintained in the Safe Zone of the Hydrogen Deflagration Overpressure Limit (HDOL). Normal Containment Vent and Purge, Hydrogen Mixing and the Hydrogen Recombiners have been secured. EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has been installed.

Initiating Cue:

The CRS has directed you install EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks.

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
_____1.	OBTAIN EOP-0005 ENCL 21 jumper kit from the Control Room Emergency Locker. ***[ENCL Step 3.2]***	Obtains jumper kit.	____	**NOTE:** Simulate obtaining jumper kit
_____2.	INSPECT kit for 2 jumpers ***[ENCL Step 3.2.1]***	Kit contains two jumpers.	____	
____*__3.	DEFEAT isolation interlocks as follows: ***[ENCL Step 3.3]*** 1. Location:1H13*P852 Bay E(left side of bay) ***[ENCL Step 3.3.1]*** • Affected Terminal Boards: TB0175 (5th row of terminal boards from door, 2nd board from top) TB0317(2nd row of terminal boards from door, top terminal board) Jumper No. 1 JUMPER Terminal 12 on TB0175 to Terminal 2 on TB0317	Locates P852 Bay E, opens door and shows how/where Jumper No. 1 is installed.	____	**CUE:** Jumper No.1 installed.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
* 4.	2. Location: 1H13*P952 Bay A ***[ENCL Step 3.3.2]*** Affected Relay: 45-1HVRB20 (2nd row of relays from top, 4th relay from left) Jumper No. 2 JUMPER Terminal M1 on Relay Block 45-1HVRB20. to Terminal R1 on Relay Block 45-1HVRB20.	Locates P952 Bay A, opens door and shows how/where Jumper No. 2 is installed.		**CUE:** Jumper No.2 installed.
* 5.	OPEN 1HVR*AOV128 CONTMT RTN INBD ISOL as directed by the CRS. ***[ENCL Step 3.5]***	At P863, demonstrates placing HVR-AOV128 control switch to open momentarily and verifies valve open RED light ON GREEN light OFF		**CUE:** CRS directs you to open 1HVR*AOV128. **CUE:** 1HVR*AOV128 RED light on, GREEN light off
* 6.	VENT Primary Containment as follows: ***[ENCL Step 3.6]*** 1. OBTAIN EOP-0005 ENCL 21 key, one (1) for CPP-PNL102. ***[ENCL Step 3.6.1]***	Obtains ENCL 21 Key.		

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
_____7.	2. VERIFY the Annulus Mixing System in operation with flow to SGTS. ***[ENCL Step 3.6.2]***	At P863, verifies at least one Annulus Mixing Train in operation aligned to SGTS: HVR-FN11A(B) ANNULUS MIXING FAN on RED light ON GREEN light OFF HVR-AOD53A(B) ANNULUS MIX FAN A(B) DISCH open RED light ON GREEN light OFF HVR- AOD22A(B) ANNULUS MIX SPLY TO SGTopen RED light ON GREEN light OFF	____	**CUE:** Annulus Mixing is in operation with flow to SGTS.

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
_____8.	3. VERIFY the SGTS in operation with flow to the main plant exhaust duct. ***[ENCL Step 3.6.3]***	At P863, verifies at least one SGTS Train in operation aligned to main plant exhaust duct: GTS-AOD1A(B) SGT FILTER A(B) SUCT ISOL open RED light ON GREEN light OFF GTS -FN1A(B) SGT EXH FAN A(B) on RED light ON GREEN light OFF GTS –AOD3A(B) SGT EXH FAN A(B) DISCH open RED light ON GREEN light OFF	____	**CUE:** SGTS is aligned to Main Plant Stack.
_____9.	4. VERIFY 1IAS*MOV107 INST AIR SHUTOFF VALVE <u>AND</u> 1IAS*MOV106 INST AIR OUTBD ISOL are open (1H13*P870) ***[ENCL Step 3.6.4]***	At P870, verifies both MOVs are open. RED light ON GREEN light OFF	____	**CUE:** 1IAS*MOV107 and 1IAS*MOV106 both have RED light on, GREEN light off

*** Denotes <u>Critical Step</u>**
^ Denotes <u>Sequence Critical</u>
(<u>must</u> be performed after previous step marked ^)

PERFORMANCE STEP *[ENCL Step]*		STANDARD	S/U	COMMENTS
_____10.	5. VERIFY 1HVR*AOV128 CONTMT RTN INBD ISOL is open (1H13*P863). ***[ENCL Step 3.6.5]***	At P863, verifies 1HVR*AOV128 open. RED light ON GREEN light OFF	____	**CUE:** 1HVR*AOV128 RED light on, GREEN light off
____*__11.	6. OPEN 1HVR-AOD127 CONTMT PURGE RTN ISOL (1H13*P863). ***[ENCL Step 3.6.6]***	At P863, demonstrates placing HVR-AOV127 control switch to open momentarily and verifies valve open RED light ON GREEN light OFF	____	**CUE:** 1HVR-AOD127 RED light on, GREEN light off. **NOTE:** The next step is in the plant (Aux Bldg) requiring CAA entry.
____*__12.	7. OPEN 1CPP*MOV105 H2 PURGE FAN DISCH VALVE TO ANNULUS at 1CPP-PNL102 (171 ft Aux Bldg East Side, Containment Purge FLT 6/HVR FAN 14 Room). ***[ENCL Step 3.6.7]***	Locates panel, opens door with key and demonstrates placing CPP*MOV105 control switch to open momentarily and verifies valve open RED light ON GREEN light OFF	____	**CUE:** CPP*MOV105 RED light on, GREEN light off..

Terminating Cue: EOP-0005, Enclosure 21 installation has been completed and the Containment is being vented.

*** Denotes Critical Step**
^ Denotes Sequence Critical
(must be performed after previous step marked ^)

RJPM-OPS-BU-02

VERIFICATION OF COMPLETION

Operator: _____ SSN: _____

Evaluator: _____ KCN: _____

Date: _____ License (Circle one): RO / SRO No. of Attempts: _____

Follow-up Questions:

Follow-up Question Response:

Time to complete JPM: _____ minutes

Comments / Feedback:

RESULT: **Satisfactory / Unsatisfactory**

Note: An "**Unsatisfactory**" requires comments and remedial training.

Evaluator's Signature: _____ Date: _____

RJPM-OPS-BU-02

JPM Task Conditions/Cues

(Operator Copy)

Initial Conditions: A large break LOCA has occurred in the Drywell.

Containment pressure is 12 psig and Containment Hydrogen concentration cannot be maintained in the Safe Zone of the Hydrogen Deflagration Overpressure Limit (HDOL).

Normal Containment Vent and Purge, Hydrogen Mixing and the Hydrogen Recombiners have been secured.

EOP-0005, Enclosure 16, Defeating Containment Instrument Air Isolation Interlocks has been installed.

Initiating Cues: The CRS has directed you install EOP-0005, Enclosure 21, Emergency Containment Venting and Defeating Containment Vent Path Isolation Interlocks.

Facility: River Bend Station **Scenario No.:** **1** (SIS-19.0, IC-163) **Op.-Test No.:** **1**
NEW SCENARIO

Examiners: _____ **Operators:** **CRS – Control Room Suprv. (SRO)**
_____ **ATC – At-the-Controls (RO)**
_____ **UO – Unit Operator (BOP-RO)**

Initial Conditions: Plant startup in progress at 40% power. Reactor Recirc pumps were shifted to fast speed last shift. Reactor Engineering has requested that reactor power be raised with recirc flow to raise core flow to 50%.

Turnover: APRM 'C' INOP and bypassed due to power supply failure. Heater Drain Pumps, HDL–P1A and C tagged out due to excessive leakage. Main Generator voltage regulator in Manual due to erratic operation in Auto. Continue plant startup by raising core flow with Recirc flow control valves per Reactor Engineer request.

Event No.	Malf. No.	Event Type *	Event Description
1 T = 0 min.	N/A	R (ATC)	Raise power and core flow with recirc flow control valves
2 T = 8 min.	CRD001B	C (UO/CRS)	CRD Pump B trip.
	CRDM4813(2)	I (ATC/CRS)	Accumulator instrument failure causes accumulator trouble to not clear when CRD Pump A is started. *(Tech Specs for CRS)*
3 T = 20 min.	CRDM2405(1)	C (ATC/CRS)	Control Rod Drifts out. *(Tech Spec for CRS)*
4 T = 30 min.	RPS003B	C (ALL)	Loss of RPS B
5 T = 40 min.	FWS007C	I (ATC/CRS)	FWRV 'C' control signal fails high failing FWRV open.
Automatic scram signal will be initiated on (or manual scram signal before reaching) high reactor water level.			
6 T = 40 min	CRD014	M (ALL)	Hydraulic ATWS
7 T = 42 min.	RCIC003	C (UO/CRS)	RCIC flow controller fails low. *(After EOP Entry)*

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op Test No.: **1** Scenario No.: **1** Event No.: **1** Page 1 of 7

Event Description: The CRS directs the ATC to raise reactor power with recirc flow control valves to raise core flow to 50%. Reactor Engineer stated there are no core related restrictions on the power ramp rate.

Time	Position	Applicants Actions or Behaviors
T = 0	CRS	Directs ATC to raise core flow (and reactor power) to 50% of rated flow.
	ATC	Alternately opens both recirc FCVs to raise core flow to 50% (P680). Monitors reactor power and RPV level during changes in flow (P680) Monitors loop flows to maintain them within 10% of each other per Tech Spec requirements (P680)

Op Test No.: **1** Scenario No.: **1** Event No.: **2** Page 2 of 7

Event Description: UO responds to CRD Pump B Trip. ATC identifies Control Rod 48-13 with accumulator fault that does not clear when CRDH charging header pressure returns to normal. CRS consults TS LCO for CR Accumulator instrumentation.

Time	Position	Applicants Actions or Behaviors
T = 8 min		***CUES:*** *Alarm P601-22A-A01, CRD PUMP A OR B AUTO TRIP* *P601 CRDH flows, pressures and ΔPs drop to zero.*
	CRS	Directs UO to start standby pump per ARP
		CUES: *Alarm P680-7A-C03, ACCUMULATOR TROUBLE*
	ATC	Referring to ARP-P680-7A-C03, depresses P680 ACC FAULT button to display CR 48-13 with fault and reports to CRS. NOTE: Other accumulator faults may come in while recovering the CRD pump
	UO	Refers to ARP-P601-22A-A01 for the following: Starts CRD Pump A oil pump (P601). Places CRD Flow Controller to MANUAL (P601). Closes CRD Flow Control Valve (P601). Starts Standby CRD Pump (P601). Reopens CRD Flow Control Valve (P601). Places CRD Flow Controller to AUTO (P601).
	ATC	Reports to CRS that accumulator fault does not clear on return of CRD Pump.
	CRS	Directs investigation of Accumulator Trouble on CR 48-13. Consults Tech Spec 3.1.5, Accumulators Directs RB Operator to blowdown level switch per SOP-0002 Consults TR 3.1.5.1, Accumulator Instrumentation when blowdown fails

Op Test No.: **1** Scenario No.: **1** Event No.: **3** Page 3 of 7

Event Description: ATC responds to Control Rod 24-05 drifting out due to the failure of a directional control valve. Control rod HCU must be hydraulically isolated.

Time	Position	Applicants Actions or Behaviors
T = 20 min	CRS	***CUES:*** *Alarm P680-07A-B02, CONTROL ROD DRIFT* *When selected, CR 24-05 position indicates rod moving out.*
	ATC	Refers to ARP-P680-07A-B02 Depresses ROD DRIFT pushbutton to find drifting control rod on Full Core display (P680) Selects drifting control rod 24-05 with RCIS Select Matrix (P680) Depresses and holds INSERT pushbutton (P680) Verifies (or requests UO verify) cooling water pressure @ 20 psid (P601)
	UO	As directed or requested, monitors/verifies normal CRDH parameters (P601)
	ATC	Releases INSERT pushbutton and reports control rod drifting out (P680) Depresses and holds INSERT pushbutton (P680)
	CRS	Directs Reactor Building Operator to Hydraulically Isolate CR 24-05
	ATC	After HCU is reported hydraulically isolated, releases INSERT pushbutton and reports control rod stays inserted (P680)
	CRS	Per ARP-P680-07A-B02: Refers to AOP-0061, Control Rod(s) Mispositioned/Malfuntion Notifies Reactor Engineering of directional control valve failure on control rod 24-05. Consults TS 3.1.3 for inoperable control rod

Op Test No.: **1** Scenario No.: **1** Event No.: **4** Page 4 of 7

Event Description: RPS MG Set B output breaker trips. Crew must transfer RPS bus is re-energized, reset isolation logic and restore isolated systems.

Time	Position	Applicants Actions or Behaviors
T = 30 min	CRS	***CUES:*** *Alarms P680-DIV 2 RPS LOGIC ACTUATED* *All trip status lights for all four RPS 'B' APRMs are lit (P680).* *'B' RPS scram solenoid white light above each manual scram pushbutton NOT lit.*
	ATC	Recognizes loss of RPS Bus B and reports to CRS
	UO	When directed, transfers RPS bus B to Alternate power (P610 backpanel switches in simulator) Reset CRVICS depressing both RESET pushbuttons (P601)
	CRS	Directs entry and execution of AOP-0010, Loss of One RPS Bus Directs investigation of the loss of RPS Bus B
	ATC	Requests Backpanel Operator to reset NMS power supplies Resets RPS B Trip once all APRM trips are cleared.
	UO	**CRITICAL TASK:** Restores RPCCW to Reactor Recirc Pump Seals (P870) Verifies/restores Drywell cooling (P877, P870, P863) Verifies/restores remaining isolation valves, as directed by CRS (P870, P808). Continues AOP-0010 system restoration actions, as directed by CRS

Op Test No.: **1** Scenario No.: **1** Event No.: **5** Page 5 of 7

Event Description: FWRV C fails open causing rapid RPV level rise and High RPV Water Level Scram. ATC may initiate manual scram when he determines the automatic scram is imminent.

Time	Position	Applicants Actions or Behaviors
T = 40 min		***CUES:*** *Alarm P680-3A REACTOR HIGH/LOW WATER LEVEL* *FWRV C Position vs Demand 5% Error Amber light lit (P680)* *RPV level rising on all P680 level instruments*
	CRS	Directs entry into AOP-0001 and AOP-0002 for Level 8
	ATC	Per AOP-0006, Condensate/Feedwater Failures: May place flow controller for FWRV C in MAN and attempt to close (P680) or recognize controller is demanding zero and proceed to inform CRS manual scram required (P680) Per AOP-0001, Reactor Scram: Arms and Depresses four manual scram pushbuttons (P680) Places Reactor Mode switch in SHUTDOWN (P680) Initiates ARI (P680) Per AOP-0002, Turbine Generator Trip: Verifies Turbine trip and Generator Output breakers open (P680)

Op Test No.: **1** Scenario No.: **1** Event No.: **6** Page 6 of 7

Event Description: On scram initiation, the RPS functions correctly de-energizing scram solenoids and depressurizing scram air header but a hydraulic lock due to a partially filled SDV prevents most of the control rods from scramming. Use of EOP Encl. 12 will insert all rods after two more scrams.

Time	Position	Applicants Actions or Behaviors
T = 40 min	ATC	***CUES:*** *P680 Alarms RPS TRIP LOGICS ACTIVATED* *Alarm P680 SCRAM PILOT VALVE AIR HEADER PRESS LOW* *Most Control Rods on Full Core Display indicating full out* *APRMs reactor power at ~15%*
	CRS	Enters EOP-0001 RPV Control and transitions to execute EOP-0001A RPV Control – ATWS. Enters EOP-0002, Containment Control following High DW Temperature
	ATC	Per AOP-0001, determines numerous Control Rods Failed to insert and that power remaining above 5%. Reports to CRS When directed, trips recirc pumps (P680) When directed, attempts to insert rods by individual insertion and using Encl 12 to reset and manual scram. (P680) Isolates FWRV C and opens Inlet Isolation for FWRV A or B and if directed, starts RFP to inject into RPV (P680)
	UO	When directed, inhibits ADS (P601) When directed, maximizes CRD flow (P601) When directed, terminates and prevents ECCS injection to lower RPV water level. Installs EOP Enclosures Verifies Isolations per AOP-0003
	ALL	**CRITICAL TASK:** Lower RPV water level to –56 inches.

Op Test No.: **1** Scenario No.: **1** Event No.: **7** Page 7 of 7

Event Description: RCIC initiates or is manually initiated by UO and fails to inject due to flow controller failed in AUTO. UO must recognize failure of flow controller and take manual control to inject into RPV

Time	Position	Applicants Actions or Behaviors
T = 42 min		***CUES:*** *Alarm P601-16A-A04, HPCS INITIATION LOW RX WATER LEVEL 2* *RCIC steam stop, trip & throttle and injection valves open (P601)* *RCIC flow controller output low with 0 injection flow (P601)*
	UO	Recognizes failure of RCIC to inject and reports to CRS (P601) If directed by CRS to inject with RCIC, transfers RCIC Flow Controller to Manual. (P601) Raises Manual setting of RCIC Flow Controller to raise turbine speed and inject into RPV to maintain level as directed by CRS (P601) If directed to secure RCIC (ATC restoring level with Feed System then shuts down RCIC (P601)
	UO/ATC	**CRITICAL TASK:** Restore injection into the RPV to maintain RPV level above –186 inches**.**
		Termination Criteria: 1. RPV Level stabilized above -186 inches 2. RPV pressure stabilized. 3. Containment parameters stabilized

CRITICAL TASKS:

1. Restore RPCCW cooling to Reactor Recirculation Pumps
2. Lower RPV water level to –56 inches.
3. Restore injection into the RPV to maintain RPV level above –186 inches**.**

Facility: River Bend Station **Scenario No.:** 2 (SIS-21.0, IC-165) **Op.-Test No.:** 1
MODIFIED SCENARIO

Examiners: _____ **Operators:** **CRS – Control Room Suprv. (SRO)**
_____ **ATC – At-the-Controls (RO)**
_____ **UO – Unit Operator (BOP-RO)**

Initial Conditions: Steady state operation at 100% power. RHR B is in suppression pool cooling.

Turnover: APRM 'C' INOP and bypassed due to power supply failure. Heater Drain Pumps, HDL–P1A and C tagged out due to excessive leakage. Main Generator voltage regulator in Manual due to erratic operation in Auto. RCIC slow roll was completed last shift and suppression pool temperatures have been returned to normal. Remove RHR B from suppression pool cooling.

Event No.	Malf. No.	Event Type *	Event Description
1 T = 0 min.	N/A	N (UO/CRS)	Remove RHR B from suppression pool cooling.
2 T = 10 min.	HPCS004	C (UO/CRS)	Spurious HPCS automatic start and injection. *(Tech Specs for CRS)*
3 T = 17 min.	NMS015F	I (ALL)	APRM 'F' flow reference signal fails downscale. *(Tech Specs for CRS)*
4 T = 27 min.	MSS010	C (UO/CRS)	Turbine gland seal pressure regulator valve fails closed.
5 T = 35 min.	P680_2a:e_8	C (ATC /CRS)	Heater Drain Pump HDL-P1D overload.
	N/A	R (ATC)	Lower reactor power with Recirc flow to maintain RPV level
Scram will be automatically initiated on high drywell pressure.			
6 T = 45 min	RCS001	M (ALL)	Rupture of A recirculation loop (Large break LOCA)
	Override	C (ATC/CRS)	Recirc loop A suction isolation valve fails in open position. *(After EOP Entry)*
7 T = 47 min.	LPCS002	C (UO/CRS)	LPCS injection valve fails to open *(After EOP Entry)*.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op Test No.: **1** Scenario No.: **2** Event No.: **1** Page 1 of 7

Event Description: Unit Operator removes RHR B from Suppression Pool cooling and returns it to standby lineup.

Time	Position	Applicants Actions or Behaviors
T = 0	CRS	Directs UO to remove RHR B from Suppression Pool Cooling
	UO	Using SOP-0031: Closes RHR Pump B Test Return to Suppression Pool [E12-MOVF024B] (P601). Stops RHR Pump B (P601). Verifies minimum flow [E12-MOVF064B] and HX outlet valves [E12-MOVF003B] are open (P601). Opens RHR B HX Bypass valve [E12-MOVF048B] (P601). Closes RHR HX B Service Water Return [SWP-MOVF068B] (P870).

Op Test No.: **1** Scenario No.: **2** Event No.: **2** Page 2 of 7

Event Description: Unit Operator responds to a spurious initiation of HPCS.

Time	Position	Applicants Actions or Behaviors
T = 10 min		***CUES:*** *P601 HPCS initiation signal white light lit* *P601 HPCS pump breaker closed and injection valve open.* *Alarm P601-16A-C02, DIV III D/G RUNNING* *P680 All three FWLC level instruments stable above 35 inches* *P680 Stable feed flow indication lower than steam flow.*
	ATC	Confirms/reports FWLC controlling at higher stable level and Feed Flow/Steam Flow mismatch exists (P680). Enters AOP-0006 and verifies proper operation of FWLC system (P680).
	CRS	Directs UO to verify by two independent means adequate core cooling to confirm HPCS misoperation Directs UO to secure HPCS injection
	UO	Verifies adequate core cooling PAM recorders (P601) When directed by CRS, overrides HPCS injection valve [E22-MOVF004] closed (P601) When directed by CRS, stops HPCS pump (P601) Verifies HPCS minimum flow valve [E22-MOVF012] closes (P601) Refers to ARP-P601-16A-C02 for HPCS Diesel Start and directs local operator to shutdown HPCS Diesel.
	CRS	Directs investigation of spurious HPCS initiation Consults TS 3.5.1 for inoperable HPCS and TS 3.3.5.1 HPCS initiation instrumentation.

Op Test No.: **1** Scenario No.: **2** Event No.: **3** Page 3 of 7

Event Description: APRM F flow reference signal fails downscale resulting in a half-scram.

Time	Position	Applicants Actions or Behaviors
T = 17 min		***CUES:*** *Alarm P680-06A-A03, APRM B OR F UPSCALE TRIP OR INOP* *P680 Recorder and PMS indicates APRM F reading ~100%* *Alarm P680-6A-B03, APRM UPSCALE OR INOP TRIP*
	ATC	Refers to ARPs for P680-06A-A03 and P680-06A-B03 Identifies APRM Channel F causing failed upscale (P680) Compares APRM F with other APRMs Verifies no control rod scrams (P680) When directed by CRS, bypasses APRM F (P680). When directed by CRS, resets half-scram (P680).
	CRS	Directs ATC to bypass APRM F when determined failed Consults Tech Spec Section 3.3.1.1, RPS Instrumentation
	UO	Investigates APRM F failure at Backpanel Identifies flow unit downscale

Op Test No.: **1** Scenario No.: **2** Event No.: **4** Page 4 of 7

Event Description: A failure of the Turbine Gland Seal header pressure control valve causes a loss of gland seal steam.

Time	Position	Applicants Actions or Behaviors
T = 27 min		***CUES:*** *Alarm P870-54A-E05, SEAL STEAM EVAP STEAM HEADER LOW PRESSURE* *Seal Steam Header Pressure indication lowering to or at 0 psig on TME-PIEPR-4 (P870)*
	UO	Refers to ARP-P870-54A-E05: Diagnoses loss of seal steam condition (P870) **CRITICAL TASK:** Opens seal steam PCV bypass [TME-MOVS2] (P870) Monitors seal steam header pressure TME-PIEPR-4 (P870) Adjusts MOVS2 to maintain 4-6 psig seal steam header (P870)
	CRS	Directs entery into AOP-0005 ATC to monitor condenser vacuum Requests TB operator investigate status of seal steam header pressure control valve TME-PCVSSFV
	ATC	Monitors condenser vacuum and (P680)
		NOTE: May receive Blown Offgas loop seals alarms on Offgas panel during this event which would be expected due to a rapid rise in condenser air in-leakage upon loss of LP turbine sealing steam.

Op Test No.: **1** Scenario No.: **2** Event No.: **5** Page 5 of 7

Event Description: ATC responds to Heater Drain Pump P1D Overload. ATC must reduce reactor power to prevent a low suction pressure trip of a Reactor Feedwater Pump.

Time	Position	Applicants Actions or Behaviors
T = 35 min		***CUES:*** *Alarm P680-02A-F08, HTR DR PUMP 1HDL-P1D OVERLOAD* *HDL-P1D Current indicates 175 amps (P680)*
	CRS	Directs implementation of AOP-0006
	ATC	Refers to ARP-P680-02A-F08: Reduces reactor power (~83%) to prevent RFP low suction trip(P680) Closes HDL-P1D discharge valve [HDL-MOV55D] (P680) Stops HDL-P1D (P680)
	CRS	Directs WMC investigate HDL-P1D overload

Op Test No.: **1** Scenario No.: **2** Event No.: **6** Page 6 of 7

Event Description: A large break LOCA occurs on the A Recirculation Loop suction line. ATC attempts to isolate and the recirc loop A suction isolation valve will not close.

Time	Position	Applicants Actions or Behaviors
T = 45 min		***CUES:*** *All Division of ECCS initiation signal white lights lit (P601)* *Alarm P680-6A-B05,NSSSS INIT DRYWELL HIGH PRESSURE and reactor scram (P680)* *Rapidly rising Drywell Pressure and Temperature, Suppression Pool Level and Temperature on ERIS and P808*
	CRS	Enters EOP-0001, RPV Control and EOP-0002, Primary Containment Control and directs actions Implements EOP-0004, Emergency Depressurization for high suppression pool level or because reactor water level cannot be determined.
	ATC	Completes applicable actions for AOP-0001, Reactor Scram and AOP-0002, Turbine Trip (P680) Maximizes injection flow from the Condensate and Feedwater Systems to inject contents of condenser hotwell. (P680) Attempts to close Recirc Loop Suction isolation to isolate leak and reports failure to CRS (P680)
	UO	Verifies ECCS initiation and injection as applicable (P601) Maximizes CRD flow Inhibits ADS **CRITICAL TASK:** Opens seven ADS valves for Emergency Depressurization, when directed.

Op Test No.: **1** Scenario No.: **2** Event No.: **7** Page 7 of 7

Event Description: The LPCS injection valve fails to open when the system automatically initiates.

Time	Position	Applicants Actions or Behaviors
T = 47 min		***CUES:*** *DIV 1 ECCS initiation signal white light lit (P601)* *Alarm P601-21A-D08, LPCS PUMP E21-C001 AUTO START* *Alarm P601-21A-E06, LPCS INJ RX PRESS LOW PERMISSIVE* *LPCS pump running with injection valve closed (P601)*
	UO	Recognizes failure of LPCS injection valve F005 (P601) Attempts to open injection valve F005 (P601) Reports failure to CRS When directed by CRS, directs Building Operator to attempt to manually open LPCS injection valve.
		Termination Criteria: 1. RPV level restored and maintained above -162 inches. 2. Containment parameters stabilized.

CRITICAL TASKS:

1. Manually bypass the Seal Steam Header pressure control valve to re-establish gland seal steam.
2. Emergency Depressurize RPV due to high Suppression Pool level.

Facility: River Bend Station **Scenario No.:** **3 [BU]** (SIS-20.0, IC-164) **Op.-Test No.:** **1**
BANK SCENARIO

Examiners: _____ **Operators:** **CRS – Control Room Suprv. (SRO)**
_____ **ATC – At-the-Controls (RO)**
_____ **UO – Unit Operator (BOP-RO)**

Initial Conditions: Power ascension to rated in progress, holding at 90% power for Reactor Engineer to check core performance and effects of new rod pattern. RHR B in Suppression Pool Cooling Mode for RCIC slow roll to be done this shift.

Turnover: APRM 'C' INOP and bypassed due to power supply failure. Heater Drain Pumps, HDL–P1A and C tagged out due to excessive leakage. Main Generator voltage regulator in Manual due to erratic operation in Auto. Complete preparations and slow roll RCIC following lube oil addition.

Event No.	Malf. No.	Event Type *	Event Description
1 T = 0 min.	N/A	N (UO/CRS)	Place Containment HVAC in High Volume Purge.
2 T = 10 min.	NMS011D CRDM4829	I (ATC/CRS)	APRM 'D' fails upscale with single rod scram. *(Tech Specs for CRS)*
3 T = 20 min.	RCIC001	C (UO/CRS)	RCIC trip throttle valve fails to open during turbine slow roll. *(Tech Specs for CRS)*
4 T = 30 min.	OR_P680_3a:d-2 (Alarm Override)	C (ATC/CRS)	Loss of TPCCW to Reactor Feed Pump FWS-P1A Gear Increaser Lube Oil Cooler (requiring P1A shutdown).
	N/A	R (ATC/CRS)	Lower power with Recirc flow as needed for RFP shutdown.
Scram should be manually initiated before automatic on high reactor pressure with Turbine CVs shutting. RPS failure to scram requires ARI initiation to insert control rods.			
5 T = 40 min	EHC001	M (ALL)	Turbine governor fails low closing Turbine Control Valves
	ED002B		Loss of NPS-SWG1B on transfer from Main Generator to Preferred Transformer.
	RPS001A		RPS fails to scram automatically and manually.
6 T = 41 min.	MSS001		A steam leak in Drywell rises to 500 GPM over 3 minutes. *(After EOP Entry)*.
7 T = 42 min.	HPCS003	C (UO/CRS)	HPCS fails to auto initiate. *(After EOP Entry)*.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op Test No.: **1** Scenario No.: **3 [BU]** Event No.: **1** Page 1 of 7

Event Description: Unit Operator places Containment HVAC in High Volume Purge.

Time	Position	Applicants Actions or Behaviors
T = 0	CRS	Directs UO to place Containment HVAC in High Volume Purge
	UO	Using SOP-0059, Containment HVAC. Section 5.5 Opens containment purge valves and dampers (P863) HVR-AOV165, Contmt Sply Outbd Isol HVR-AOV123, Contmt Sply Inbd Isol HVR-AOD124, Contmt Purge Sply Isol HVR-AOD127, Contmt Purge Rtn Isol HVR-AOV128, Contmt Rtn Inbd Isol HVR-AOV166, Contmt Rtn Outbd Isol HVR-AOD245, Contmt Purge to SGT HVR-AOD162, Contmt Purge to SGT Starts either train of SGTS (P863) Verifies proper start in alignment of SGTS (P863) Starts HVR-FN8 High Volume Purge supply fan (P863) Verifies HVR-FN8 Discharge Damper opens (P863)

Op Test No.: **1** Scenario No.: **3 [BU]** Event No.: **2** Page 2 of 7

Event Description: APRM D Upscale failure. Using ARPs ATC identifies single scrammed control rod.

Time	Position	Applicants Actions or Behaviors
T = 10 min		***CUES:*** *Alarm P680-6A-B03, APRM D OR H UPSCALE TRIP OR INOP* *Alarm P680-7A-B02, CONTROL ROD DRIFT* *APRM D recorder pen full scale (P680)* *Full Core display CR 48-29 full in green light lit (P680)*
	ATC	Refers to ARP-P680-06A-B03 Verifies half scram (P680) Compares channel with other APRMs (P680) Verifies core flow unchanged (P680)
	CRS	Refers to AOP-0061, Mispositioned Control Rod(s)
	ATC	Bypasses APRM D on CRS direction (P680) Resets half scram on CRS direction (P680) Refers to ARP-P680-07A-B02 Identifies scrammed rod [48-29] using RCIS (P680) Reports scrammed rod 48-29 to CRS
	CRS	Consults Tech Spec 3.3.1.1 for APRM Consults Tech Spec 3.1.3 for scrammed Control Rod Notifies RE for predictor case and control rod pattern recovery directions

Op Test No.: **1** Scenario No.: **3 [BU]** Event No.: **3** Page 3 of 7

Event Description: UO attempts to slow roll RCIC and discovers RCIC Trip & Throttle Valve fails to open. Reports condition to CRS and places RCIC in lineup as directed by CRS.

Time	Position	Applicants Actions or Behaviors
T = 20 min	CRS	Directs UO to Slow Roll RCIC per SOP-0035
	UO	Refers to SOP-0035, RCIC, Section 4.3: Starts Gland Seal Compressor (P601) Closes Trip & Throttle Valve [E51-MOVC002] operator (P601) Acknowledges RCIC SYSTEM INOPERATIVE alarm (P601) Opens E51-F045, Steam Supply Turbine Stop Valve (P601) Verifies closed E51-F025, F026, F004, F005 Supply and Exh Drain Pot isolation valves (P601) Attempts to reopen Trip & Throttle valve [E51-MOVC002] to raise turbine speed to 3000 RPM (P601)
		CUES: *The Trip & Throttle valve indicates full closed - green light on, red light off as Trip & Throttle Valve Operator indication goes to intermediate position green light on and red light on.* *RCIC SYSTEM INOPERATIVE alarm does not clear.*
	UO	Reports to CRS that Trip & Throttle Valve failed to open.
	CRS	Directs local attempt to reset RCIC Trip & Throttle Valve Directs UO to return RCIC to pre-start lineup Determines RCIC remains inoperable and stays in LCO 3.5.3
	UO	When directed by CRS, returns RCIC to pre-start lineup

Op Test No.: **1** Scenario No.: **3 [BU]** Event No.: **4** Page 4 of 7

Event Description: Loss of TPCCW to Reactor Feed Pump FWS-P1A Gear Increaser Lube Oil Cooler requires lowering reactor power and shutdown of FWS-P1A.

Time	Position	Applicants Actions or Behaviors
T = 30 min	CRS	***CUES:*** *Alarm P680-3A-B05, REACTOR FEED PUMP COOLING COIL LEAKAGE* *Alarm P680-3A-D02, RX FWP 1A GEAR INCREASER HIGH TEMP*
	ATC	Refers to ARPs P680-3A-B05 and P680-3A-D02 and informs CRS
	ATC/UO	Contacts Turbine Bldg Operator to investigate alarms on feed pumps.
	CRS	Enters AOP-0006, Condensate/Feedwater Failures Directs ATC to lower reactor power with Recirc flow to within capacity of 2 reactor feed pumps (~75-80%)
	ATC	When directed by CRS, lowers power with individual RR FCV controllers (P680)
	CRS	Directs ATC to secure RFP A
	ATC	Refers to SOP-0009, Feedwater System Directs Turbine Building Operator to isolate Hydrogen injection for RFP A Closes FWS-P1A discharge valve [FWS-MOV26A] on (P680). Verifies min flow valve [FWR-FV2A] for P1A opens (P680). Monitors SF/FF mismatch and RPV Level to verify capability of remaining RFPs (P680). Stops Reactor Feed Pump FWS-P1A (P680).

Op Test No.: **1** Scenario No.: **3 [BU]** Event No.: **5** Page 5 of 7

Event Description: EHC governor fails low closing Turbine Control Valves. An automatic scram will be initiated on High RPV pressure if operators fail to manually scram. RPS will fail to initiate electrically requiring ARI initiation to scram all control rods. NPS-SWG1B is lost on the automatic bus transfer failure following the Generator Output Breaker trip resulting in a loss of normal feed.

Time	Position	Applicants Actions or Behaviors
T = 40 min		***CUES:*** *MW Electric lowering on Main Generator* *Alarm P680-7A-A07, TURBINE BYPASS VALVE OPEN* *Alarm P680-3A-A09, REACTOR HIGH PRESSURE* *Alarms P680-5A-A09 & A10 RPS TRIP LOGICS ACTIVATED* *Control Rods on Full Core Display indicating full out (P680)* *APRMs reactor power ~80% (P680)*
	CRS	Directs implementation of AOP-0001, Reactor Scram and AOP-0002, Turbine Trip
	ATC	Executes AOP-0001 and AOP-0002 immediate and applicable subsequent actions Recognizes RPS failure to insert control rods **CRITICAL TASK:** Initiates ARI (P680) Reports RPS failed to scram and ARI inserted all rods Reports loss of Feedwater due to loss of power to RFPs
	CRS	Enters and coordinates executing EOP-0001, depending on how quickly loss of feed is diagnosed and HPCS recovered, may enter EOP-0004, Alternate Level Control.

Op Test No.: **1** Scenario No.: **3 [BU]** Event No.: **6** Page 6 of 7

Event Description: The high RPV pressure caused by the EHC failure causes a steam leak to develop in the Drywell. The leak grows to 500 gpm three minutes after the scram.

Time	Position	Applicants Actions or Behaviors
T = 41 min		***CUES:*** *Alarm P680-6A-C05, DRYWELL HIGH/LOW PRESSURE followed shortly by* *Alarm P680-6A-B05, NSSSS INIT DRYWELL HIGH PRESSURE* *Alarm P601-19A-B05, DRYWELL AIR COOLER DRAIN HIGH LEAKAGE FLOW* *DRMS Drywell Rad Monitors trending up* *ERIS Drywell temperature trending up*
	CRS	Enters EOP-0002, Containment Control following High DW Pressure / Temperature
	UO/ATC	Recognize indications of leak in the Drywell and report to CRS
	UO	Verifies ECCS initiations (P601) and EDG starts (P877). When directed by CRS, maximizes CRD flow (P601) When directed by CRS, maximizes Drywell Cooling (P863) When directed by CRS, verifies auto isolations per AOP-0003 (P601, P870, P808) Installs EOP Enclosures as directed by CRS

Op Test No.: **1** Scenario No.: **3 [BU]** Event No.: **7** Page 7 of 7

Event Description: Following the High Drywell Pressure condition caused by the steam leak, HPCS will fail to auto initiate.

Time	Position	Applicants Actions or Behaviors
T = 42 min		***CUES:*** *Alarm P601-16A-A04, HPCS INITIATION LOW RX WATER LEVEL 2* *HPCS Pump not running (P601)* *HPCS Injection Valve E22-MOVF004 closed (P601)*
	UO	Recognizes failure of HPCS to initiate and reports to CRS Attempts to auto start with manual initiation pushbutton (P601). **CRITICAL TASK:** Starts HPCS pump with pump breaker control switch and opens Injection valve [E22-MOVF004]. Injects into RPV with HPCS as directed by CRS
		Termination Criteria: 1. RPV level stabilized in control band of 10 – 51 inches 2. Containment parameters stabilized

CRITICAL TASKS:

1. Initiate ARI to insert all control rods
2. Establish HPCS injection into the RPV to maintain RPV level above –162 inches**.**